

COHO SALMON FISHERIES AND HARVESTS IN SOUTHEAST ALASKA



By

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ABSTRACT

The 1992 harvest of approximately 3.8 million coho salmon *Oncorhynchus kisutch* from waters of Southeastern Alaska set an all time record exceeding the previous record year of 1986 by more than 300,000 fish. The total documented annual harvests of coho salmon from Southeast Alaska did not exceed 2 million fish during the 22 year period from 1960 through 1981; however since 1981, more than 2 million coho salmon have been harvested annually in 8 of the past 11 years. Annual averages of the total documented harvests of coho salmon from Southeast Alaska were about 1,978,000 fish during the 1980's and about 3,342,000 fish so far during the first three years of the 1990's. Since 1960, the commercial troll fishery has accounted for the largest harvests, followed by the commercial purse seine fishery, the commercial drift gill net fishery, the commercial set gill net fishery, the sport fishery, the subsistence/personal use fishery, and the commercial trap fishery. Annual harvests of coho salmon in various areas of Southeast Alaska by these various fisheries are presented and discussed.

The Alaska Board of Fisheries has allocated shares of the allowable harvest of coho salmon from waters of Southeastern Alaska to various commercial gear groups. The troll fleet was allocated 61% of the commercially harvested coho salmon, they have harvested an average of 62.5% of the commercially harvested coho salmon, and they have exceeded their allocation in 67% of the years since 1975. The purse seine fleet was allocated 19% of the commercially harvested coho salmon, they have harvested an average of 15.6% of the commercially harvested coho salmon, and they have exceeded their allocation in 6% of the years since 1975. The drift gill net fleet was allocated 13% of the commercially harvested coho salmon, they have harvested an average of 13.6% of the commercially harvested coho salmon, and they have exceeded their allocation in 33% of the years since 1975. Set gill net fishermen were allocated 7% of the commercially harvested coho salmon, they have harvested an average of 8.4% of the commercially harvested coho salmon, and they have exceeded their allocation in 72% of the years since 1975. Sport harvest shares have averaged 2.93% of the total coho salmon harvests in Southeast Alaska since 1977. Documented subsistence/personal use harvest shares have averaged 0.06% of the total documented coho salmon harvests in Southeast Alaska since 1975.

Participation in commercial fisheries in Southeastern Alaska during the first three years of the 1990's has averaged 841 power troll permits fished, 681 hand troll permits fished, 366 purse seine permits fished, 466 drift gill net permits fished, and 159 set gill net permits fished. An average of 97,300 sport anglers fished in waters of Southeastern Alaska during the first three years of the 1990's. An average of 2,699 permits were issued to Alaskan residents to participate in subsistence/personal use fisheries in waters of Southeastern Alaska during the first three years of the 1990's.

Ex-vessel value of coho salmon harvested in commercial fisheries of Southeastern Alaska averaged \$23,341,500 during the first three years of the 1990's as compared to an average value of \$18,228,600 during the 1980's. Ex-vessel value of coho salmon harvested by trollers averaged \$16,274,500 during the 1990's, ex-vessel value of coho salmon harvested by purse seiners averaged

\$2,074,300 during the 1990's, ex-vessel value of coho salmon harvested by drift gill net fishermen averaged \$4,278,400 during the 1990's, and ex-vessel value of coho salmon harvested by set gill net fishermen averaged \$1,496,000 during the 1990's.

The Alaska Department of Fish and Game has conducted long-term micro-wire tag studies on four wild stocks of coho salmon in Southeast Alaska. Annual average harvest rates exerted on the Auke Lake and Berners River stocks of coho salmon have decreased during the 1990's as compared to the 1980's, whereas harvest rates exerted on the Ford Arm Lake and Hugh Smith Lake stocks of coho salmon have increased.

Sixty-nine streams were chosen from the historic data base to document escapement trends for coho salmon spawning in Southeast Alaska. Average annual counts of spawning coho salmon during the 1980-1989 period as compared to the 1990-1992 period increased in 39 of the 69 streams and decreased in the other 30 streams. Average counts in the 69 streams during the 1980's totaled about 91,200 spawning coho salmon whereas during the first three years of the 1990's, average counts in the 69 streams decreased by about 4% to a total of about 87,700 spawning coho salmon. Coho salmon escapements tended to decrease during the 1990's in the Yakutat Area as well as in the central inside and southern areas of Southeast Alaska. Coho salmon escapements tended to increase during the 1990's in the northern inside and central outside areas of Southeast Alaska.

A variety of hatcheries release coho salmon to augment harvests in Southeast Alaska and the peak release occurred in 1991 when over 13.7 million juveniles were released. Hatchery contributions to commercial harvests in Southeast Alaska ranged from 15.4 to 21.8 percent during the first three years of the 1990's. In 1991 and 1992, Alaskan hatcheries produced an average of more than 96 percent of the hatchery coho salmon harvested by commercial fishermen in Southeast Alaska, whereas British Columbia hatcheries produced an average of 3.11 percent of these fish and hatcheries located in the State of Washington produced 0.10 percent of these fish. Whitman Lake, Earl West Cove, Port Armstrong, Klawock, Tamgas, Gastineau, Medvejie, and Neets Bay hatcheries were the eight largest contributors to the commercial troll, purse seine and drift gill net fisheries of Southeast Alaska during 1991 and 1992.

KEY WORDS: coho salmon, *Oncorhynchus kisutch*, Southeast Alaska, Yakutat, commercial fishery harvests, troll fishery, purse seine fishery, drift gill net fishery, set gill net fishery, sport fishery harvests, harvest shares, fishing effort, ex-vessel value, harvest rates, escapement trends, hatchery contributions to harvests.

INTRODUCTION

Coho salmon (*Oncorhynchus kisutch*) have been commercially harvested in Southeast Alaska since the late 1800's and historically, coho were utilized by natives indigenous to Southeast Alaska. Although the 1990 and 1991 harvests of Southeastern coho salmon were very large, the 1992 harvest (about 3.8 million) was the largest harvest documented since catch statistics have been maintained (since about 1890). It is believed important and appropriate to summarize existing fishery information at this time because of the larger than normal harvests that have taken place during the 1990's.

This report is written to assemble and summarize existing information through 1992 concerning: (1) fishery harvests of coho salmon from Southeastern waters; (2) fishing effort exerted on Southeastern coho salmon; (3) ex-vessel value of landed coho salmon; (4) harvest rates exerted on Southeastern Alaska coho salmon stocks; (5) escapement trends for wild coho salmon stocks; and, (6) hatchery produced contributions to coho salmon harvests. Report emphasis is on recent information with harvest related data being reported since 1960 and other information being reported for the past couple of decades. The Coho Technical Committee of the Pacific Salmon Commission (PSC) developed a coho salmon status report for the northern panel area that summarized information for Southeast Alaska (and northern British Columbia) through 1989 (Pacific Salmon Commission 1991). Much of the information presented in this report updates information provided for Southeast Alaska coho salmon fisheries and stocks in the 1991 PSC report. It is hoped that this data compilation will be a useful document for fishery managers and planners as future decisions concerning these fisheries and stocks are made.

HARVESTS

Coho salmon are harvested from Southeastern Alaska in commercial fisheries with power troll, hand troll, purse seine, drift gill net, set gill net, and trap gear as well as in sport, subsistence, and personal use fisheries (fishery and gear definitions are provided in later sections). Commercial harvests of coho salmon are monitored with fish tickets; sales receipts filled out when commercial fishermen sell harvested fishery resources to processors. Commercial harvest information presented in this report was obtained by making various computer runs of fish ticket based information from the Integrated Fisheries Data Base (IFDB) located on the VAX computer at the Southeast Regional office of the Commercial Fisheries Management and Development Division of the Alaska Department of Fish and Game, Douglas, Alaska. Sport harvests of coho salmon have been monitored annually since 1977 through the use of a postal questionnaire sent to randomly selected licensed sport fishermen. Statewide sport harvest and effort statistics are estimated annually based upon returned questionnaires and these published reports (Mills 1979-1993) were used for sport harvest information presented in this report. Subsistence/personal use fisheries for coho salmon in Southeast Alaska are monitored through returns of fishing permits, although not all permits are returned nor are permits always required to legally participate in subsistence or personal use fisheries. For example, commercial fishermen sometimes retain a portion of their catch for personal use and these harvests are not

monitored. Subsistence/personal use fishery harvest information is included in the IFDB system and this data base was used as a source of subsistence/personal use harvest information for this report even though the documented harvests are considered incomplete.

Commercial fisheries operating in Southeast Alaska have harvested from about 427,000 to almost 3,700,000 coho salmon annually since 1960 (Table 1) with the highest harvest in 1992 being almost nine-fold the lowest harvest in 1975. During the 33 year period of 1960-1992, commercial fishermen harvested a total of approximately 50.7 million coho salmon from Southeast Alaska; averaging about 1.53 million coho salmon per year. Sport fisheries taking place in Southeast Alaska during the 16 year period of 1977-1992 harvested a total of about 969 thousand coho salmon. Since 1977 sport harvests of coho salmon in Southeast Alaska have ranged from about 23,000 to almost 124,000 fish per year with the highest harvest in 1991 representing more than a five fold increase over the lowest harvest in 1979 (Table 1). During the 16 year period from 1977-1992, sport fishermen harvested a total of about 969,000 coho salmon from Southeast Alaska waters and the average harvest was about 60,600 coho salmon per year. Documented subsistence/personal use harvests of coho salmon in Southeast Alaska since 1975 have ranged from under 100 fish harvested in 1976 to almost 5,000 fish harvested in 1992 with the 18 year total being about 21,000 fish and the annual average being almost 1,200 fish (Table 1).

The total documented annual harvests of coho salmon from Southeast Alaska did not exceed 2 million fish during the 22 year period from 1960 through 1981; however since 1981, more than 2 million coho salmon have been harvested annually in 8 of the past 11 years (exceptions were 1984, 1987, and 1988; Figure 1). Annual averages of the total documented harvests of coho salmon from Southeast Alaska are about 1,129,000 fish during the 1960's, about 1,060,000 fish during the 1970's, about 1,978,000 fish during the 1980's, and about 3,342,000 fish so far during the first three years of the 1990's. Since 1960, the commercial troll fishery has accounted for the largest harvests, followed by the commercial purse seine fishery, the commercial drift gill net fishery, the commercial set gill net fishery, the sport fishery, the subsistence/personal use fishery, and the commercial trap fishery (Figure 2). The following sections provide detailed information concerning harvests of coho salmon in these various fisheries.

Commercial Fishery - All Gear Harvests

Commercial fishing is the taking or fishing for fish with the intent of disposing of the harvested fish for profit, or by sale, barter, trade, or in commercial channels. In Southeastern Alaska, the commercial fishery harvests coho salmon from 29 fishing districts (Figure 3). Commercial trolling occurs in 25 districts (all fishing districts of Southeast Alaska except those districts associated with in-river set gill net fisheries along the northern coast near Yakutat). Commercial purse seine fisheries occur in 13 fishing districts (Districts 101-107 and 109-114). Commercial drift gill net fisheries occur in 5 fishing districts (Districts 101, 106, 108, 111, and 115). Commercial set gill net fisheries occur, primarily as an in-river, terminal harvest gear, in 7 fishing districts associated with rivers and along the beaches in the Yakutat area (Districts 181, 182, 183, 185, 186, 191, and

Table 1. Documented harvests of coho salmon from Southeastern Alaska, 1960-1992.*

Year	Harvest of Coho Salmon					Subsistence & Personal Use ^d	
	Commercial Fishery by Gear Type					Sport ^c Fishery	Use ^d
	Hand & Power Troll	Purse Seine	Gill Net		All Gear ^b Total		
		Drift	Set				
1960	396,211	125,871	37,986	119,149	681,604		
1961	399,932	246,524	52,743	128,670	833,609		
1962	643,740	239,382	98,404	170,776	1,156,277		
1963	693,050	316,491	112,776	141,365	1,265,328		
1964	730,766	506,505	172,411	169,780	1,586,258		
1965	695,887	557,005	166,452	122,207	1,543,807		
1966	528,621	452,057	155,922	66,252	1,218,827		
1967	443,677	188,965	134,029	97,211	864,250		
1968	779,500	463,553	202,965	92,005	1,539,686		
1969	388,443	109,956	65,053	32,555	596,407		
1970	267,647	294,574	163,901	30,279	758,900		
1971	391,279	326,264	159,143	37,734	914,420		
1972	791,941	390,343	275,393	46,289	1,508,654		
1973	540,125	129,593	124,349	41,776	836,167		
1974	845,109	166,687	186,583	77,556	1,276,941		
1975	214,170	70,201	102,321	37,403	427,357		136
1976	524,762	87,604	156,469	51,743	823,667		64
1977	506,845	160,519	183,702	92,214	944,654	36,152	849
1978	1,100,902	245,074	223,321	139,500	1,714,505	48,508	969
1979	918,845	176,593	83,050	95,873	1,284,635	23,112	780
1980	696,391	185,479	112,081	119,684	1,116,237	32,808	992
1981	860,898	238,502	119,595	132,579	1,358,806	28,158	1,830
1982	1,316,013	431,804	201,337	148,854	2,117,303	53,436	2,279
1983	1,276,363	360,287	218,219	81,541	1,946,995	55,403	571
1984	1,132,637	361,325	199,211	182,256	1,909,478	59,812	1,293
1985	1,600,294	422,636	332,920	202,835	2,598,859	59,910	422
1986	2,127,922	588,642	448,766	92,097	3,403,972	58,322	863
1987	1,041,175	131,458	189,171	124,406	1,543,119	50,284	996
1988	500,282	158,428	170,924	205,866	1,046,390	43,688	294
1989	1,417,970	350,125	259,373	176,847	2,202,395	90,789	1,433
1990	1,832,849	447,293	378,671	148,890	2,810,108	105,212	1,625
1991	1,723,230	611,006	600,278	166,356	3,188,380	123,946	851
1992	1,929,158	773,054	699,698	290,342	3,692,469	99,939	4,855

* Data sources: commercial and subsistence/personal use data from the Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Region I, IFDB computer files; sport data from Mills (1979-1993).

^b Includes trap and other miscellaneous harvesting gears. Commercial harvests include common property, hatchery controlled, test, and miscellaneous fisheries.

^c Comprehensive surveys of the sport fishery first started in 1977.

^d Subsistence and personal use harvests provided are documented harvests; but, these data are incomplete and represent only a portion of the actual use.

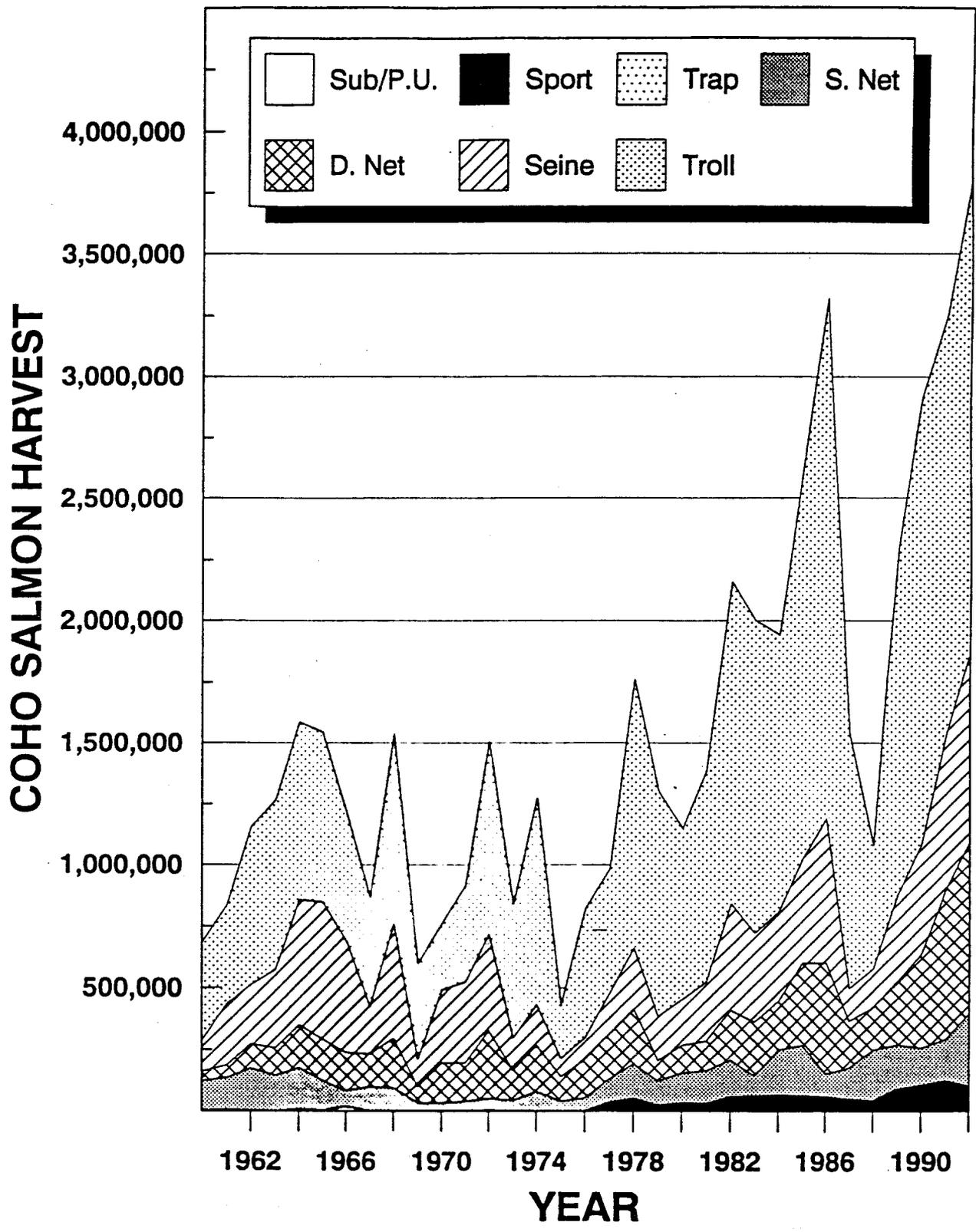


Figure 1. Documented harvests of coho salmon, Southeast Alaska, 1960-1992.

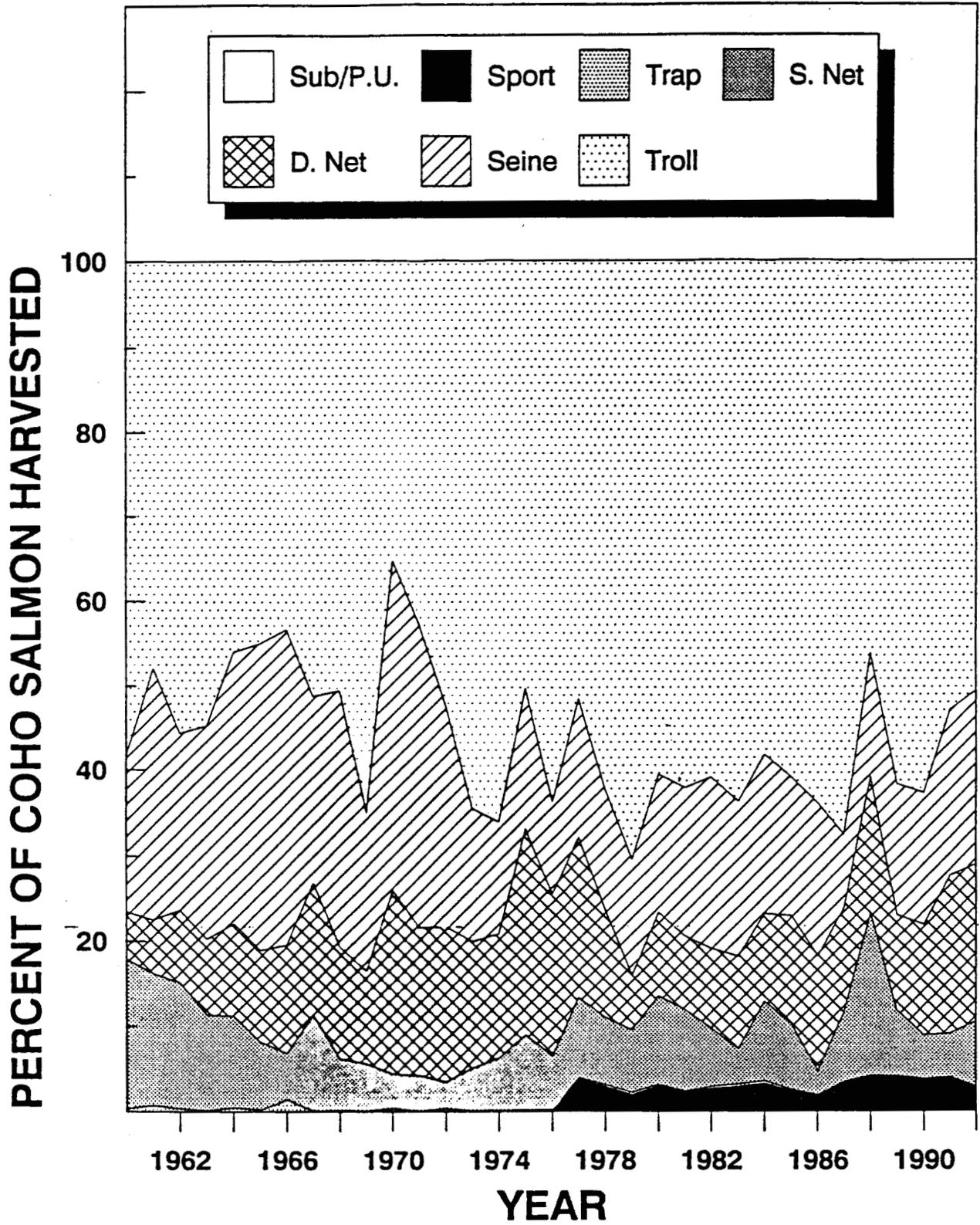


Figure 2. Harvest shares of coho salmon by gear type, Southeast Alaska, 1960-1992.

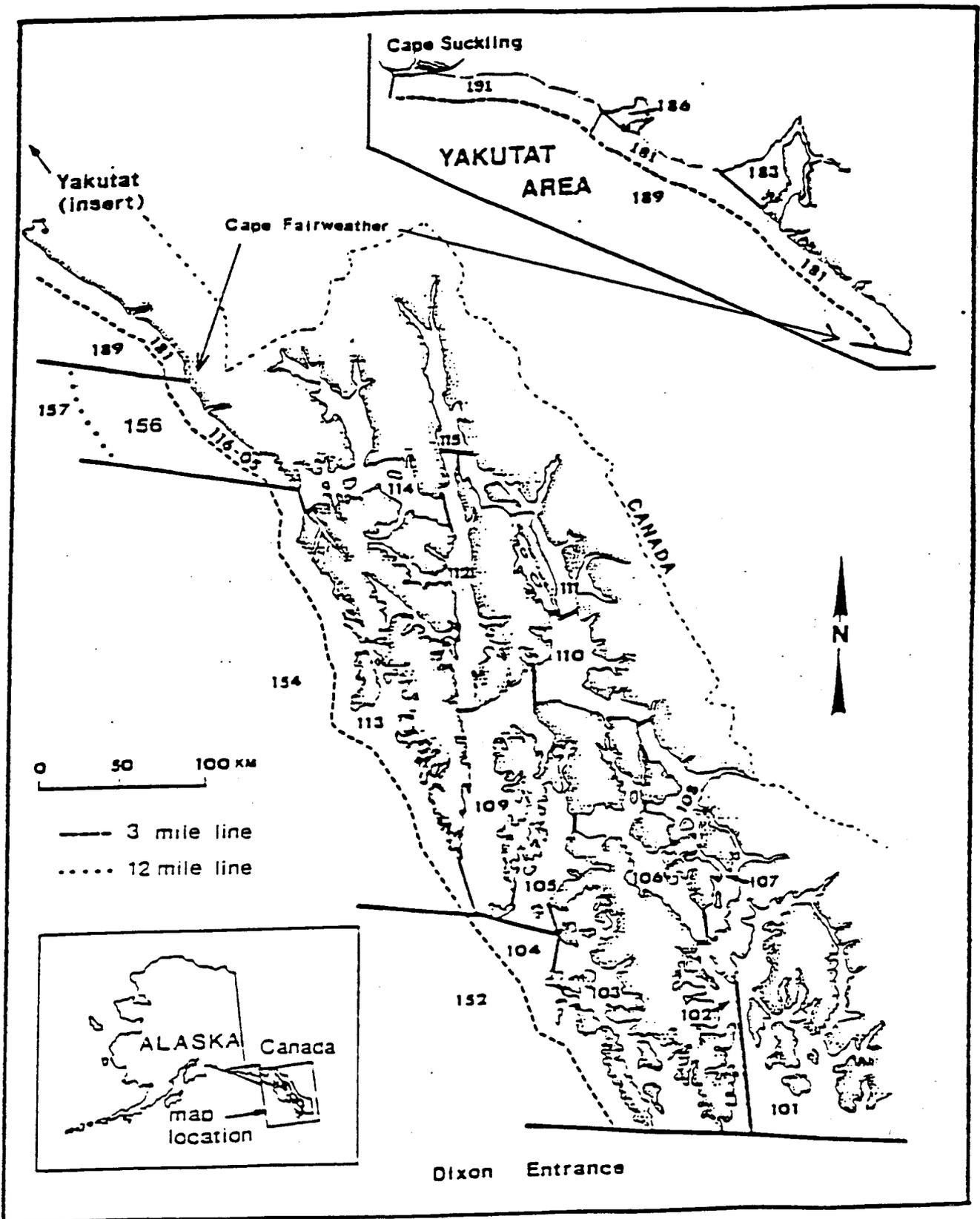


Figure 3. Map of Southeast Alaska showing fishing districts and harvest monitoring areas.

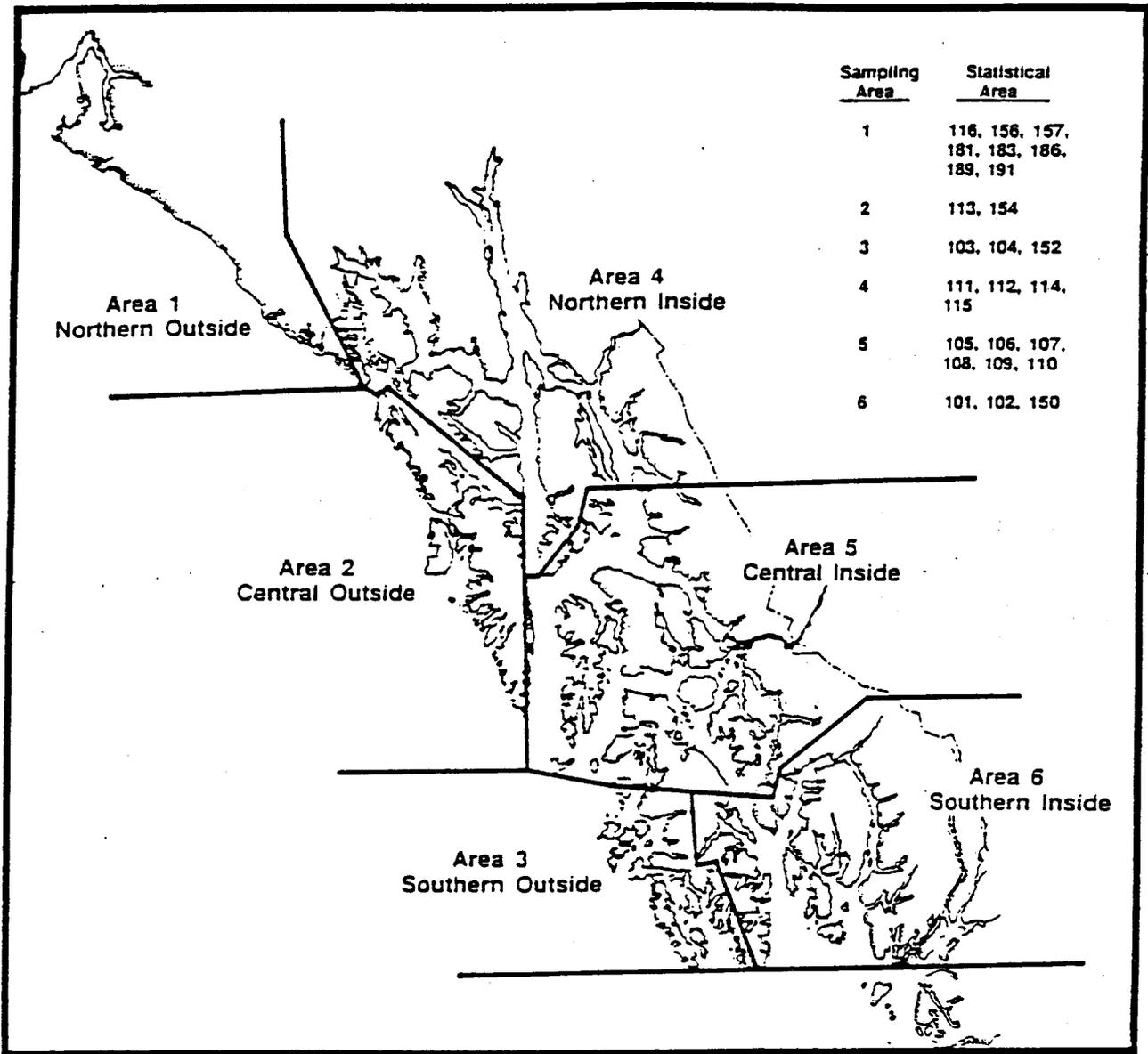


Figure 3. Continued.

192). Four floating fish traps along with troll gear, purse seines and drift gill nets are used to harvest coho salmon in the Annette Island Fishery Reserve, a fishing area that extends from the coast of Annette Island offshore 3,000 feet. To reduce the number of tables and simplify portions of this report, harvests have been grouped into six areas used routinely by the Alaska Department of Fish and Game for analysis of fisheries performance (Figure 3). The northern outside area (Area 1) is comprised of the waters north and west of Cape Spencer and includes fishing districts 116, 156, 157, 181, 182, 183, 185, 186, 189, 191, and 192. The central outside area (Area 2) is comprised of the waters west of Baranof and Chichagof Islands between Cape Spencer and Cape Ommaney and includes fishing districts 113 and 154. The southern outside area (Area 3) is comprised of the waters west of Prince of Wales Island between Cape Ommaney and Cape Muzon and includes fishing districts 103, 104, and 152. The northern inside area (Area 4) is comprised of the waters of Icy Straight, North Chatham, Lynn Canal, and Stephens Passage and includes fishing districts 111, 112, 114, and 115. The central inside area (Area 5) is comprised of the waters of Frederick Sound, South Chatham, and Sumner Straight and includes fishing districts 105, 106, 107, 108, 109, and 110. The southern inside area (Area 6) is comprised of the waters of Clarence Straight and Dixon Entrance and includes fishing districts 101, 102, and 150.

As stated earlier, commercial fisheries throughout Southeast Alaska have harvested an average of about 1.53 million coho salmon per year since 1960 and the majority of the harvest has been taken from the three outside areas. The following sections provide information specific to the commercial all-gear harvests in the six areas. The all-gear commercial harvests provided in the following sections include: (1) common property fisheries such as traditional commercial fisheries, hatchery terminal area fisheries, experimental areas, and Annette Island Reserve fisheries; (2) hatchery controlled fisheries; and (3) test fisheries. Summary information concerning hatchery controlled fisheries and test fisheries is provided following the all-gear harvest information provided for the six areas. Following the information presented in the section entitled "Hatchery Controlled and Test Fisheries", commercial fishery harvest data presented in this report refers only to common property fisheries.

Northern Outside Area - All Gear Harvests

Since 1960, commercial harvests of coho salmon in the northern outside area have ranged from about 47,000 fish in 1970 to about 591,000 fish in 1992, more than a twelve-fold difference (Table 2). Harvests have exceeded 200,000 coho salmon each year in the northern outside area since 1981 (Figure 4). Annual commercial harvest of coho salmon from the northern outside area averaged about 329,000 fish during the 1980's and has averaged about 448,000 fish so far during the 1990's. The troll fleet accounts for over one-half of the harvest of coho salmon in the northern outside area with the remainder of the commercial harvest being taken by set gill net gear.

Central Outside Area - All Gear Harvests

Coho salmon are commercially harvested from the central outside area with both troll gear and purse seines although the purse seine component of the harvest

Table 2. Commercial fishery harvests of coho salmon from northern, central, and southern outside and inside harvest monitoring areas of Southeastern Alaska, 1960-1992.*

Year	Harvest of Coho Salmon					
	Northern Outside	Central Outside	Southern Outside	Northern Inside	Central Inside	Southern Inside
	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6
1960	151,468	70,662	105,372	173,506	48,457	132,139
1961	159,686	82,896	129,265	209,241	78,123	174,398
1962	204,301	135,500	196,337	182,233	157,069	280,837
1963	191,140	228,421	203,763	394,879	164,000	83,125
1964	195,643	199,791	281,483	368,826	264,450	276,065
1965	193,805	189,573	305,246	476,713	263,956	114,514
1966	92,571	106,949	197,086	325,204	271,056	225,961
1967	228,373	44,872	92,905	358,266	116,674	23,160
1968	228,018	81,263	208,857	480,805	261,366	279,377
1969	130,081	44,765	47,868	277,901	48,179	47,613
1970	46,669	27,961	80,994	355,704	119,662	127,921
1971	57,959	52,425	135,736	329,984	193,525	144,791
1972	154,378	94,405	280,844	375,149	262,624	341,254
1973	139,540	69,903	162,731	235,857	111,858	116,511
1974	214,018	99,904	350,696	255,188	179,209	177,926
1975	47,899	14,789	78,145	81,948	71,891	132,685
1976	151,999	138,142	110,426	203,955	102,626	116,519
1977	181,976	80,171	84,577	288,542	123,227	186,161
1978	276,697	350,006	192,246	337,436	204,545	353,578
1979	214,156	325,348	345,930	82,857	185,942	130,404
1980	180,796	225,471	331,068	112,030	113,473	153,399
1981	229,417	235,260	417,379	201,980	156,414	118,356
1982	346,931	480,016	333,880	331,009	284,962	340,450
1983	271,338	496,805	400,735	249,657	255,698	272,866
1984	363,173	523,611	336,591	255,572	184,904	245,627
1985	535,033	648,141	447,356	324,560	257,798	385,986
1986	336,811	1,124,880	680,630	200,868	471,907	588,792
1987	287,519	287,523	390,857	198,150	174,617	204,453
1988	322,394	96,905	222,678	233,249	95,535	75,629
1989	420,671	468,496	437,451	348,448	317,005	212,012
1990	460,276	587,171	570,075	367,074	515,302	367,372
1991	292,869	713,064	523,589	584,866	642,252	437,647
1992	591,274	962,652	430,184	610,656	687,666	412,126

* Data taken from the Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Region I, IFDB computer files. Harvests include common property, hatchery controlled, test, and miscellaneous fisheries. Area 1 = Districts 116, 156, 157, 181, 182, 183, 185, 186, 189, 191, and 192; Area 2 = Districts 113 and 154; Area 3 = Districts 103, 104, and 152; Area 4 = Districts 111, 112, 114, and 115; Area 5 = Districts 105, 106, 107, 108, 109, and 110; and, Area 6 = Districts 101, 102, and 150.

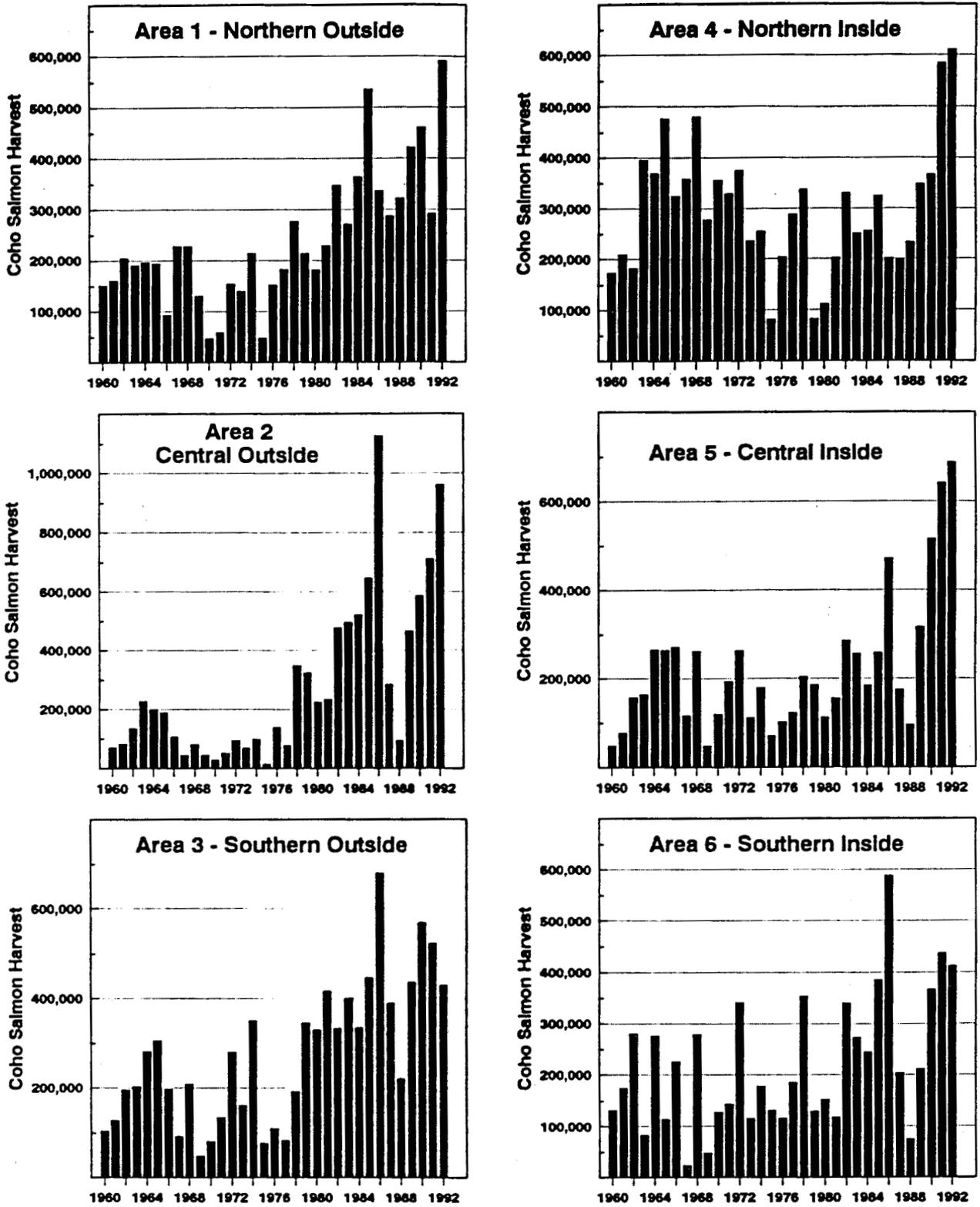


Figure 4. Commercial harvests of coho salmon in six harvest monitoring areas of Southeast Alaska, 1960-1992.

is minor. Since 1960, annual commercial harvests of coho salmon from the central outside area have ranged from about 15,000 fish in 1975 to about 1,125,000 fish in 1986, a seventy-five-fold difference (Table 2). Large increases in the harvest of coho salmon from the central outside area occurred starting in 1978 and annual commercial harvests of coho salmon from the central outside area have exceeded 200,000 fish each year since 1978 with the exception of 1988 (Figure 4). The central outside area produced an annual commercial harvest of about 459,000 coho salmon during the 1980's and an annual harvest of about 754,000 coho salmon so far during the 1990's.

Southern Outside Area - All Gear Harvests

Coho salmon are commercially harvested from the southern outside area with both troll gear and purse seines and the latter gear type represented about 45% of the overall harvest between 1980 and 1992. Since 1960, annual commercial harvests of coho salmon from the southern outside area have ranged from about 48,000 fish in 1969 to about 681,000 fish in 1986, a fourteen-fold difference (Table 2). Annual commercial harvests of coho salmon from the southern outside area have exceeded 200,000 fish each year since 1979 (Figure 4). The southern outside area produced an annual commercial harvest of about 400,000 coho salmon during the 1980's and an annual harvest of about 508,000 coho salmon so far during the 1990's.

Northern Inside Area - All Gear Harvests

Coho salmon are commercially harvested from the northern inside area with troll gear, purse seines, and drift gill nets. In the northern inside area since 1980, troll gear accounted for about 48% of the harvest of coho salmon, whereas, purse seine gear accounted for about 8% and drift gill net gear accounted for about 44%. Since 1960, annual commercial harvests of coho salmon from the northern inside area have ranged from about 82,000 fish in 1975 to about 611,000 fish in 1992, a seven-fold difference (Table 2). Large harvests of coho salmon were taken from the northern inside area between 1963 and 1974. This was followed with lower levels of harvest from 1975-1980. Annual commercial harvests of coho salmon from the northern inside area have exceeded 200,000 fish each year since 1981 with the exception of 1987 (Figure 4). The northern inside area produced an annual commercial harvest of about 246,000 coho salmon during the 1980's and an annual harvest of about 521,000 coho salmon so far during the 1990's.

Central Inside Area - All Gear Harvests

Coho salmon are commercially harvested from the central inside area with troll gear, purse seines, and drift gill nets. In the central inside area since 1980, troll gear accounted for about 53% of the harvest of coho salmon, whereas, purse seine gear accounted for about 12% and drift gill net gear accounted for about 35%. Since 1960, annual commercial harvests of coho salmon from the central inside area have ranged from about 48,000 fish in 1969 to about 688,000 fish in 1992, a fourteen-fold difference (Table 2). Annual commercial harvests of coho salmon from the central inside area have exceeded 200,000 fish each year since 1989 (Figure 4). The central inside area produced an annual commercial harvest of about 231,000 coho salmon during the

1980's and an annual harvest of about 615,000 coho salmon so far during the 1990's.

Southern Inside Area - All Gear Harvests

Coho salmon are commercially harvested from the southern outside area with troll gear, purse seines, drift gill nets, and traps (Annette Island). In the southern inside area since 1980, troll gear accounted for about 43% of the harvest of coho salmon, whereas purse seines accounted for about 36% and drift gill nets accounted for about 20%. Trap harvests of coho salmon in the southern inside area only represent about 1% of the total harvest. Since 1960, annual commercial harvests of coho salmon from the southern inside area have ranged from about 23,000 fish in 1967 to about 589,000 fish in 1986, a twenty-five-fold difference (Table 2). The annual harvest pattern in the southern inside area is erratic largely due to incidental harvesting of coho salmon by purse seiners and drift gill net fishermen attempting to target other salmon species. Annual commercial harvests of coho salmon from the southern inside area have exceeded 200,000 fish each year since 1982 with the exception of 1988 (Figure 4). The southern inside area produced an annual commercial harvest of about 260,000 coho salmon during the 1980's and an annual harvest of about 406,000 coho salmon so far during the 1990's.

Hatchery Controlled and Test Fisheries

As the hatchery program in Southeast Alaska began releasing coho salmon to augment the common property fisheries of the region, special fisheries were established to provide for cost recovery for private non-profit hatcheries and for clean-up of surplus hatchery fish at State and Federal facilities. Commercial sales of fish harvested for these purposes are specially marked on fish tickets so that these harvests can be segregated from common property fisheries. These fisheries are termed hatchery controlled fisheries. Harvests of coho salmon in Southeast Alaska from hatchery controlled fisheries has been as high as 285,872 fish (Table 3). Hatchery controlled harvests of coho salmon have exceeded 100,000 fish annually since 1990 (Figure 5) with the most recent three year average harvest being about 227,000 fish and representing about 8.6% of the all-gear harvest. Annual harvests in excess of 10,000 coho salmon have been taken in hatchery controlled fisheries that have occurred in Districts 101, 109, and 111.

The Alaska Department of Fish and Game also periodically harvests and commercially sells coho salmon while engaging in run assessments, special studies, or for other stock assessment purposes. Such harvests are kept track of and are termed test fisheries. Harvests of coho salmon in Southeast Alaska in test fisheries have been minor with a maximum of 1,932 fish harvested in 1987 (Table 4).

Commercial Troll Fishery

Both power troll and hand troll gear may be used to harvest fish by commercial fishermen in Southeast Alaska. Power troll gear consists of a line or lines with lures or baited hooks which are drawn through the water by a power gurdy. A gurdy is a spool-type device designed to deploy and retrieve troll lines,

Table 3. Commercial coho salmon harvests from hatchery controlled fisheries of Southeast Alaska, 1975-1992.*

Year	Harvest of Coho Salmon by District					
	Dist. 101	Dist. 102	Dist. 103	Dist. 104	Dist. 106	Dist. 107
1975						
1976						
1977						
1978						
1979					5,893	
1980						
1981	5,003					
1982	11,510				640	
1983	4,219					
1984	15,663					4,996
1985	30,655					
1986	72,808					
1987	37,642				15	3,390
1988	2,868	1			3,506	79
1989	568			119	1,688	
1990	85,416		3,264		1,117	6,113
1991	109,901				3,410	1,023
1992	146,477		3,855		2	

Year	Harvest of Coho Salmon by District				All Districts
	Dist. 109	Dist. 111	Dist. 112	Dist. 113	
1975		2,700			2,700
1976					0
1977					0
1978					0
1979					5,893
1980					0
1981					5,003
1982					12,150
1983				1	4,220
1984	4,508	1,667		2	26,836
1985		2,252		238	33,145
1986				2	72,810
1987	9,229		28	151	50,455
1988	640	249	4	284	7,631
1989	16,451		18	318	19,162
1990	29,782	50	7	13	125,762
1991	80,099	84,247	3,162	5,017	285,872
1992	51,425	64,434	2,789	228	270,233

* Data from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files.

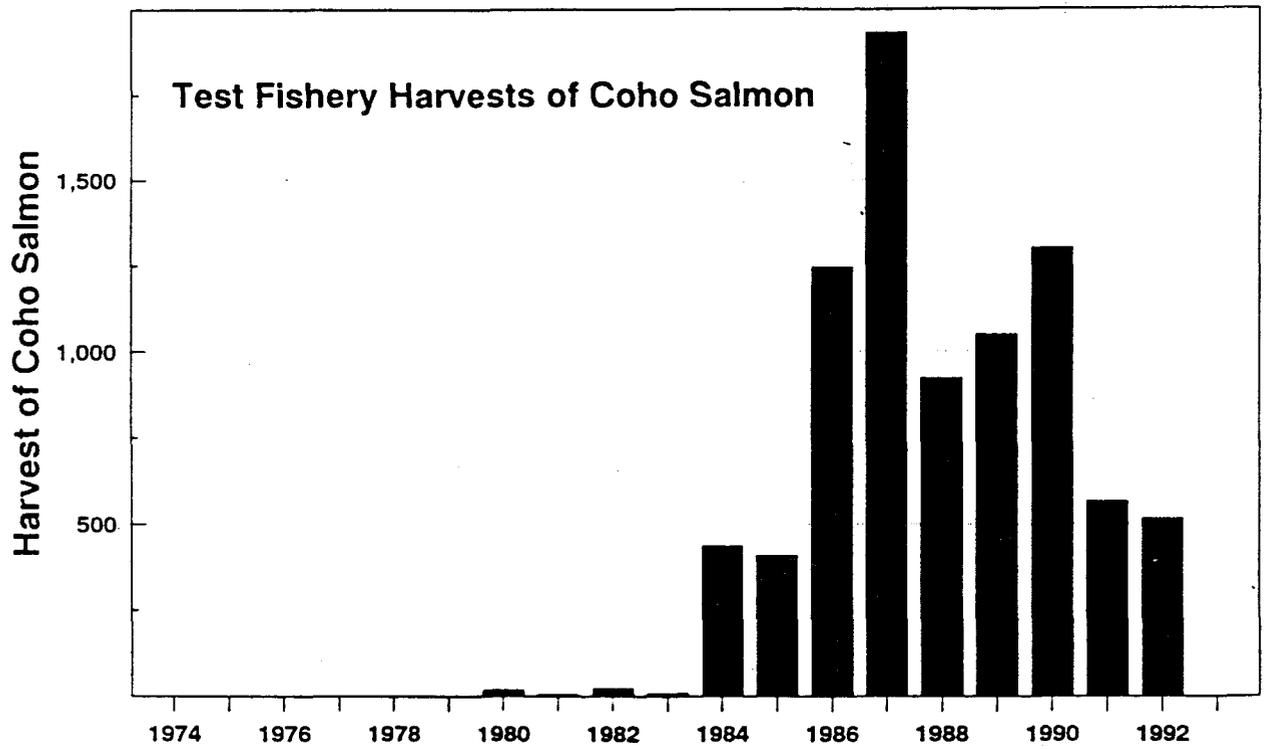
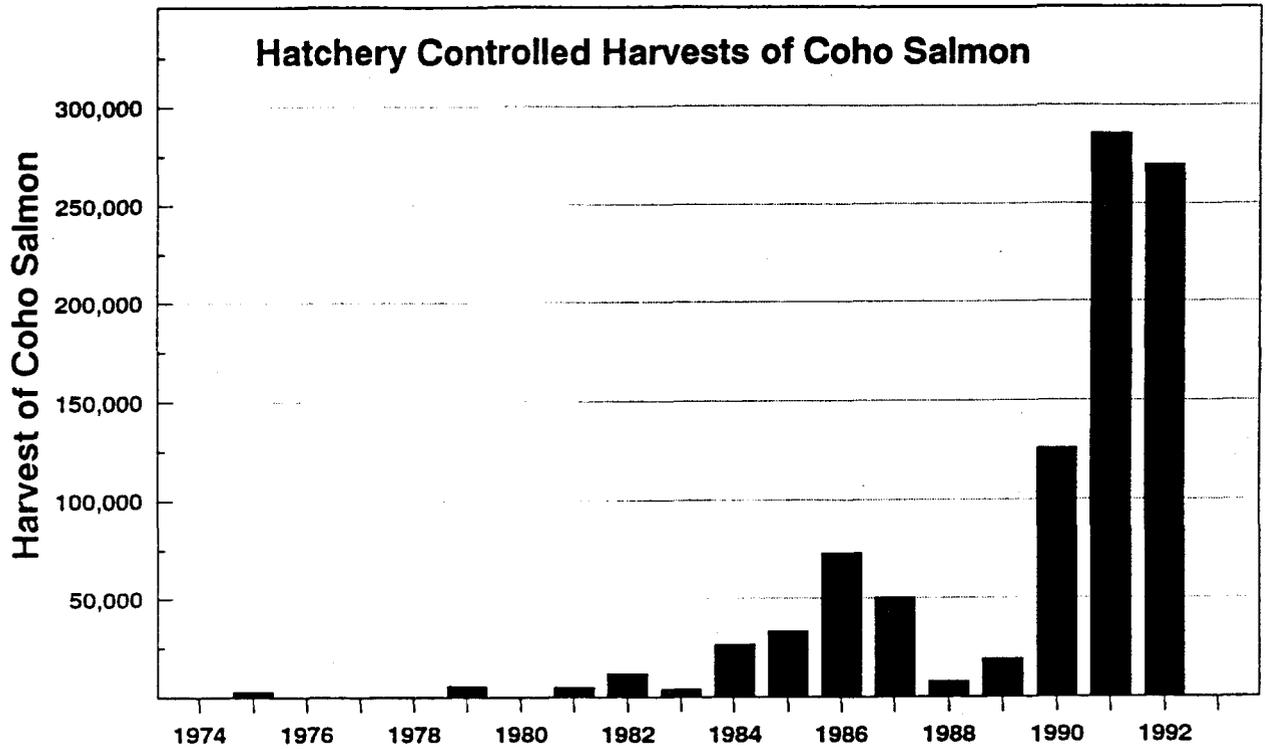


Figure 5. Commercial harvests of coho salmon from hatchery controlled fisheries (upper panel) and from test fisheries (lower panel), Southeast Alaska, 1974-1992.

Table 4. Commercial coho salmon harvests resulting from test fisheries conducted for stock assessment, run assessment, or special studies in Southeast Alaska, 1980-1992.*

Year	Harvest of Coho Salmon by Gear Type			Total
	Drift Gill Net	Purse Seine	Not Designated	
1980			21	21
1981			5	5
1982			23	23
1983			9	9
1984			438	438
1985			410	410
1986			1,244	1,244
1987			1,932	1,932
1988			922	922
1989	966	83	0	1,049
1990	827	474	0	1,301
1991	224	342	0	566
1992	445	71	0	516

* Data from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files.

weights, and lures and does not include a reel attached to a fishing rod, but does include a downrigger. A downrigger is a device designed to be used to deploy and retrieve a troll line to a selected depth. A power troller may use a maximum of six lines when fishing in the Seaward Biological Influence Zone north of Cape Spencer or a maximum of four lines when fishing elsewhere in Southeast Alaska waters. Hand troll gear consists of a line or lines with lures or baited hooks which are drawn through the water from a vessel by hand trolling, strip fishing, or other types of trolling, and which are retrieved by hand power or hand powered crank and not by any type of electrical, hydraulic, mechanical, or other device or attachment. Hand trollers may use an aggregate of four fishing rods or an aggregate of two hand troll gurdies. A fishing rod is a tapered, often jointed, rod equipped with a hand grip and line guides and upon which is mounted a hand powered reel used to deploy and retrieve the trolling line. Rods used for hand trolling are limited to one line with one leader to which is attached either one lure or two baited hooks. A hand troll gurdy is a troll gurdy powered by hand or hand crank that is not mounted on or used in conjunction with a fishing rod. Gurdies used for hand trolling are limited to one line to which multiple leaders and hooks may be attached.

Commercial troll harvests of coho salmon from common property fisheries in Southeast Alaska have ranged from about 214 thousand fish (in 1975) to about 2.127 million fish (in 1986), a 10-fold difference (Figure 6). Trollers have harvested an annual average of 886,564 coho salmon during the 33 year period of 1960-1992. Annual coho salmon harvests during the 1960's, 1970's, 1980's, and the first three years of the 1990's from Southeast Alaska averaged about 570,000, 610,000, 1,197,000, and 1,828,000 fish; respectively. Harvests for fishermen using power troll gear has been kept separate from harvests for fishermen using hand troll gear since 1975 (Figure 6).

During the 18 year period from 1975-1992, power trollers have annually harvested from about 173,000 coho salmon in 1975 to about 1,788,000 coho salmon in 1986 from common property fisheries (Table 5). Almost all power troll harvested fish have been taken from traditional fisheries with only 63, 338, and 4,898 of the approximately 17 million coho salmon harvested by power trollers between 1975 and 1992 being taken in hatchery terminal area fisheries, Annette Island Reserve fisheries, and experimental area fisheries; respectively (Table 5). Power trollers harvested an average of about 940,000 coho salmon per year from Southeast Alaska from 1975 through 1992. During the 1980's, power trollers harvested an annual average of about 984,000 coho salmon; and, during the first three years of the 1990's, they harvested an annual average of about 1,574,000 coho salmon.

During the 18 year period from 1975-1992, hand trollers have annually harvested from about 41,000 coho salmon in 1975 to about 379,000 coho salmon in 1978 from common property fisheries (Table 6). Almost all hand troll harvested fish have been taken from traditional fisheries with only 13, 685, and 707 of the approximately 3.8 million coho salmon harvested by hand trollers between 1975 and 1992 being taken in hatchery terminal area fisheries, Annette Island Reserve fisheries, and experimental area fisheries; respectively (Table 6). Hand trollers harvested an average of about 211,000 coho salmon per year from Southeast Alaska from 1975 through 1992. During the

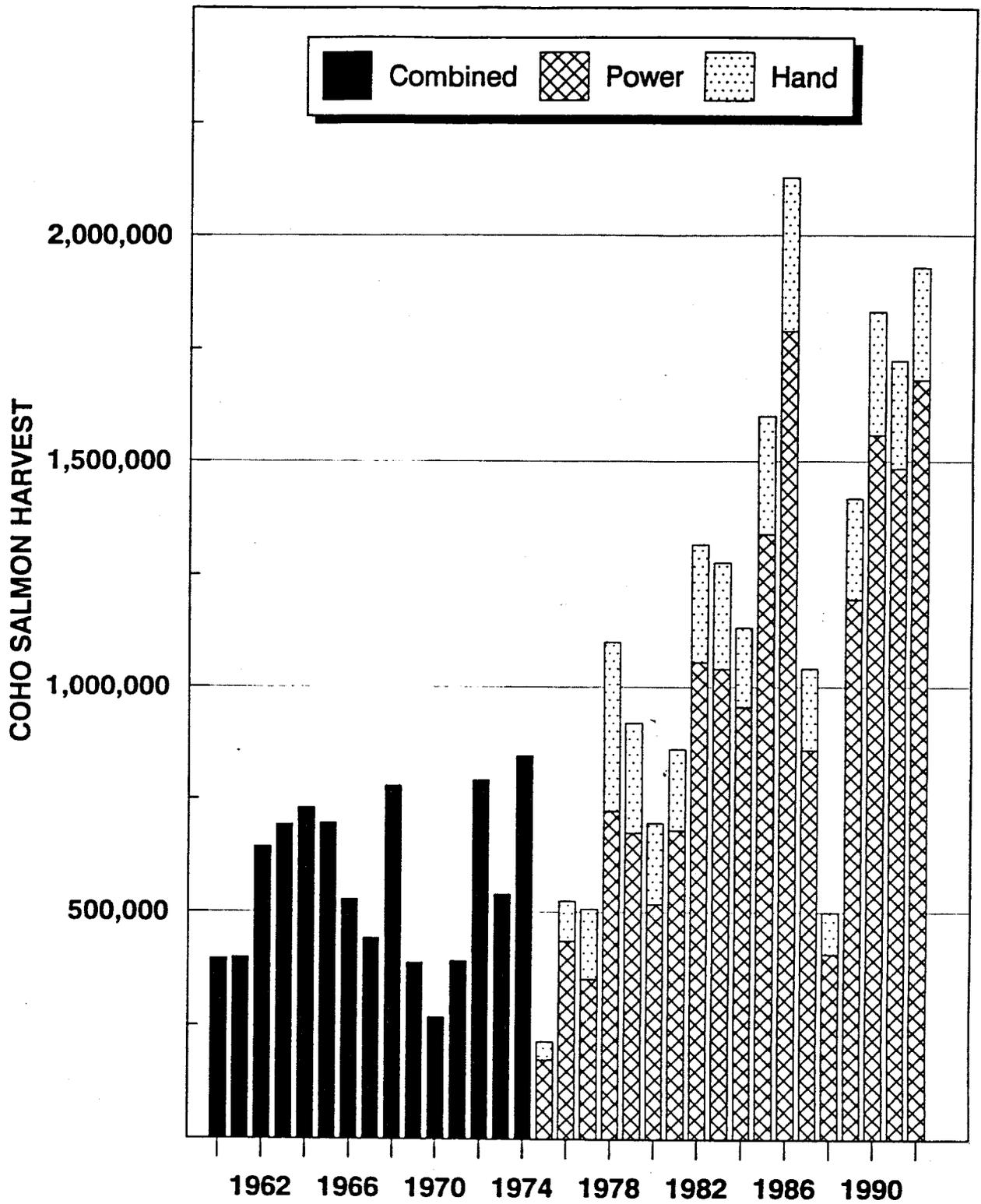


Figure 6. Commercial troll harvests of coho salmon from Southeast Alaska, 1960-1992.

Table 5. Commercial power troll harvests of coho salmon from common property fisheries by harvest type, Southeastern Alaska, 1975-1992.*

Year	Harvest of Coho Salmon from Common Property Fisheries				All Harvests
	Traditional Fisheries	Experimental Area Fisheries	Annette Island Reserve	Hatchery Terminal Areas	
1975	173,248				173,248
1976	436,029				436,029
1977	351,032				351,032
1978	721,975				721,975
1979	674,030				674,030
1980	517,269				517,269
1981	679,432				679,432
1982	1,055,310				1,055,310
1983	1,040,678				1,040,678
1984	954,237				954,237
1985	1,339,603				1,339,603
1986	1,788,499				1,788,499
1987	857,953				857,953
1988	407,630	370			408,000
1989	1,194,316	938			1,195,257
1990	1,556,291	1,840	23	3	1,558,154
1991	1,479,682	762	200	18	1,484,127
1992	1,678,494	988	115	42	1,679,639

* Data taken from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files.

Table 6. Commercial hand troll harvests of coho salmon from common property fisheries by harvest type, Southeastern Alaska, 1975-1992.*

Harvest of Coho Salmon from Common Property Fisheries					
Year	Traditional Fisheries	Experimental Area Fisheries	Annette Island Reserve	Hatchery Terminal Areas	All Harvests
1975	40,922				40,922
1976	88,733				88,733
1977	155,813				155,813
1978	378,927				378,927
1979	244,815				244,815
1980	179,122				179,122
1981	181,466				181,466
1982	260,703				260,703
1983	235,685				235,685
1984	178,400				178,400
1985	260,691				260,691
1986	339,423	0			339,423
1987	183,159	63			183,222
1988	92,163	104	15	0	92,282
1989	220,159	92	0	3	220,254
1990	273,191	170	166	0	273,527
1991	238,392	103	504	6	239,005
1992	249,340	175		4	249,519

* Data taken from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files.

1980's, hand trollers harvested an annual average of about 213,000 coho salmon; and, during the first three years of the 1990's, they harvested an annual average of about 254,000 coho salmon.

Northern Outside Area - Troll Harvests

Annual commercial harvests of coho salmon from common property troll fisheries in the northern outside area during the period 1960-1992 have ranged from about 17,000 fish in 1970 to about 332,000 fish in 1985 (Table 7). Since 1975, annual power troll harvests of coho salmon from the northern outside area of Southeast Alaska have ranged from a low of about 10,000 fish in 1975 to a high of about 296,000 fish in 1990, a thirty-fold difference (Table 8). Annual hand troll harvests of coho salmon from the northern outside area during the period 1975-1992 have ranged from a low of about 500 fish in 1975 to a high of about 47,000 fish in 1985, almost a hundred-fold difference (Table 9). During the 1980's, troll harvests in the northern outside area annually averaged about 183,000 fish (Figure 7), power troll harvests annually averaged about 161,000 fish (Figure 8), and hand troll harvests annually averaged about 22,000 fish (Figure 9). During the first three years of the 1990's, troll harvests in the northern outside area averaged about 247,000 fish per year (Figure 7), power troll harvests averaged about 234,000 fish per year (Figure 8), and hand troll harvests averaged about 13,000 fish per year (Figure 9). The power versus hand troll split of commercially caught coho salmon increased from about 10:1 in the 1980's to about 20:1 during the 1990's in the northern outside area.

Central Outside Area - Troll Harvests

Commercial harvests of coho salmon from common property troll fisheries in the central outside area during the period 1960-1992 have annually ranged from about 24,000 fish in 1970 to about 1,124,000 fish in 1986 (Table 7). Since 1975, annual power troll harvests of coho salmon from the central outside area of Southeast Alaska have ranged from a low of about 13,000 fish in 1975 to a high of about 1,024,000 fish in 1986, about a seventy-five-fold difference (Table 8). Hand troll harvests of coho salmon from the central outside area during the period 1975-1992 have annually ranged from a low of about 1,300 fish in 1975 to a high of about 100,000 fish in 1986, about a seventy-five-fold difference (Table 9). During the 1980's, troll harvests in the central outside area averaged about 450,000 fish per year (Figure 7), power troll harvests averaged about 418,000 fish per year (Figure 8), and hand troll harvests averaged about 32,000 fish per year (Figure 9). During the first three years of the 1990's, annual troll harvests in the central outside area averaged about 750,000 fish (Figure 7), annual power troll harvests averaged about 700,000 fish (Figure 8), and annual hand troll harvests averaged about 50,000 fish (Figure 9).

Southern Outside Area - Troll Harvests

Annual commercial harvests of coho salmon from common property troll fisheries in the southern outside area during the period 1960-1992 have ranged from about 31,000 fish in 1970 to about 343,000 fish in 1990 (Table 7). Since 1975, annual power troll harvests of coho salmon from the southern outside

Table 7. Commercial troll fishery harvests of coho salmon from northern, central, and southern outside and inside harvest monitoring areas of Southeastern Alaska, 1960-1992.*

Year	Harvest of Coho Salmon					
	Northern Outside	Central Outside	Southern Outside	Northern Inside	Central Inside	Southern Inside
	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6
1960	32,319	68,372	46,879	105,419	42,513	100,709
1961	31,016	70,208	60,782	105,313	31,052	101,561
1962	33,525	132,452	120,664	103,646	79,594	173,859
1963	49,775	216,048	92,893	221,641	75,321	37,372
1964	25,863	196,148	149,520	154,100	102,023	103,112
1965	71,598	164,020	108,650	208,289	117,099	26,231
1966	26,319	104,161	95,360	125,367	113,207	64,207
1967	131,162	41,775	33,504	144,541	79,690	13,005
1968	136,013	78,815	96,481	228,842	101,451	137,898
1969	97,819	38,262	34,155	151,525	29,728	36,954
1970	16,921	24,477	31,292	127,165	26,760	41,032
1971	20,539	50,244	77,519	129,476	59,998	53,503
1972	108,674	93,723	191,960	134,297	83,588	179,699
1973	97,695	69,452	133,013	122,603	56,659	60,703
1974	136,462	96,423	274,367	136,951	102,990	97,916
1975	10,496	13,970	59,468	19,971	28,994	81,271
1976	100,256	137,916	78,076	88,738	57,700	62,076
1977	89,762	77,557	55,489	142,199	60,279	81,559
1978	137,176	345,231	108,732	248,110	95,098	166,555
1979	118,217	315,231	229,154	37,430	132,032	86,781
1980	61,112	223,084	202,298	35,697	88,633	85,567
1981	96,838	215,150	251,015	109,911	122,530	65,454
1982	198,077	475,582	175,990	158,209	154,838	153,317
1983	189,786	473,408	189,079	132,219	155,039	136,832
1984	180,895	520,233	156,149	128,563	87,980	58,817
1985	332,153	632,073	270,056	135,247	113,446	117,319
1986	244,797	1,124,110	331,817	78,111	236,277	112,810
1987	163,109	279,588	321,320	93,336	115,366	68,456
1988	116,528	96,119	115,751	89,105	59,515	23,264
1989	243,824	464,468	254,243	217,732	164,370	70,874
1990	311,386	586,644	343,202	214,395	266,659	109,395
1991	126,513	706,092	286,252	199,819	261,459	142,997
1992	300,932	956,817	187,588	226,559	183,853	73,409

* Data taken from the Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Region I, IFDB computer files. Area 1 = Districts 116, 156, 157, 181, 183, 186, 189, and 191; Area 2 = Districts 113 and 154; Area 3 = Districts 103, 104, and 152; Area 4 = Districts 111, 112, 114, and 115; Area 5 = Districts 105, 106, 107, 108, 109, and 110; and, Area 6 = Districts 101, 102, and 150. Traditional, experimental area, Annette Island Reserve, and hatchery terminal area fisheries included.

Table 8. Commercial power troll fishery harvests of coho salmon from northern, central, and southern outside and inside harvest monitoring areas of Southeastern Alaska, 1975-1992.*

Year	Harvest of Coho Salmon					
	Northern Outside	Central Outside	Southern Outside	Northern Inside	Central Inside	Southern Inside
	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6
1975	9,977	12,677	52,428	13,623	23,014	61,527
1976	96,293	124,590	66,543	57,726	42,107	48,770
1977	79,432	64,471	40,174	64,629	37,425	64,901
1978	113,656	303,776	74,456	76,936	43,324	109,827
1979	104,530	280,597	173,638	8,376	50,292	56,597
1980	52,003	211,222	148,968	7,552	36,067	61,457
1981	85,501	201,336	201,148	66,254	71,801	53,392
1982	174,397	447,369	127,924	94,684	92,536	118,400
1983	165,853	445,010	133,431	83,935	99,596	112,853
1984	148,474	495,548	120,629	84,838	58,125	46,623
1985	285,362	586,978	205,575	90,984	73,499	97,205
1986	225,580	1,023,810	256,736	40,235	151,589	90,549
1987	145,257	250,473	264,326	55,318	83,379	59,200
1988	103,296	86,677	90,103	63,053	44,870	20,001
1989	225,457	430,270	194,249	160,254	119,621	65,406
1990	295,760	543,082	282,563	147,785	192,783	96,181
1991	121,510	662,220	222,148	147,383	203,121	127,745
1992	284,159	894,544	147,315	169,425	121,027	63,169

* Data taken from the Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Region I, IFDB computer files. Area 1 = Districts 116, 156, 157, 181, 183, 186, 189, and 191; Area 2 = Districts 113 and 154; Area 3 = Districts 103, 104, and 152; Area 4 = Districts 111, 112, 114, and 115; Area 5 = Districts 105, 106, 107, 108, 109, and 110; and, Area 6 = Districts 101, 102, and 150. Traditional, experimental area, Annette Island Reserve, and hatchery terminal area fisheries included.

Table 9. Commercial hand troll fishery harvests of coho salmon from northern, central, and southern outside and inside harvest monitoring areas of Southeastern Alaska, 1975-1992.*

Year	Harvest of Coho Salmon					
	Northern Outside	Central Outside	Southern Outside	Northern Inside	Central Inside	Southern Inside
	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6
1975	517	1,293	7,040	6,348	5,980	19,744
1976	3,963	13,326	11,533	31,012	15,593	13,306
1977	10,330	13,086	15,315	77,570	22,854	16,658
1978	23,520	41,455	34,276	171,174	51,774	56,728
1979	13,687	34,634	55,516	29,052	81,740	30,184
1980	9,109	11,862	53,330	28,145	52,566	24,110
1981	11,337	13,814	49,867	43,657	50,729	12,062
1982	23,680	28,213	48,066	63,525	62,302	34,917
1983	23,933	28,398	55,648	48,284	55,443	23,979
1984	32,421	24,685	35,520	43,725	29,855	12,194
1985	46,791	45,095	64,481	44,263	39,947	20,114
1986	19,217	100,300	75,081	37,876	84,688	22,261
1987	17,852	29,115	56,994	38,018	31,987	9,256
1988	13,232	9,442	25,648	26,052	14,645	3,263
1989	18,367	34,198	59,994	57,478	44,749	5,468
1990	15,626	43,562	60,639	66,610	73,876	13,214
1991	5,003	43,872	64,104	52,436	58,338	15,252
1992	16,773	62,273	40,273	57,134	62,826	10,240

* Data taken from the Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Region I, IFDB computer files. Area 1 = Districts 116, 156, 157, 181, 183, 186, 189, and 191; Area 2 = Districts 113 and 154; Area 3 = Districts 103, 104, and 152; Area 4 = Districts 111, 112, 114, and 115; Area 5 = Districts 105, 106, 107, 108, 109, and 110; and, Area 6 = Districts 101, 102, and 150. Traditional, experimental area, Annette Island Reserve, and hatchery terminal area fisheries included.

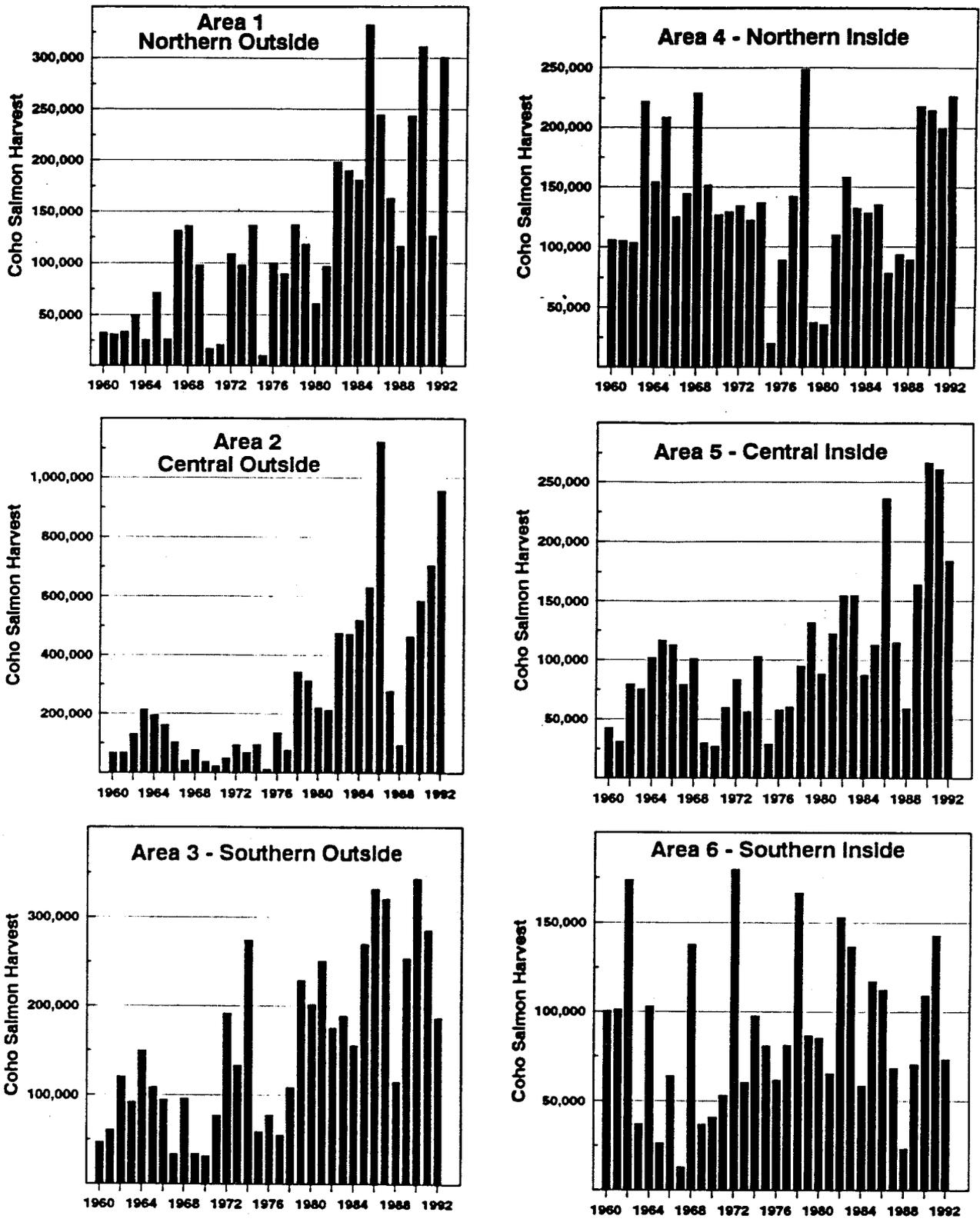


Figure 7. Commercial harvests of coho salmon from troll fisheries in six harvest monitoring areas of Southeast Alaska, 1960-1992.

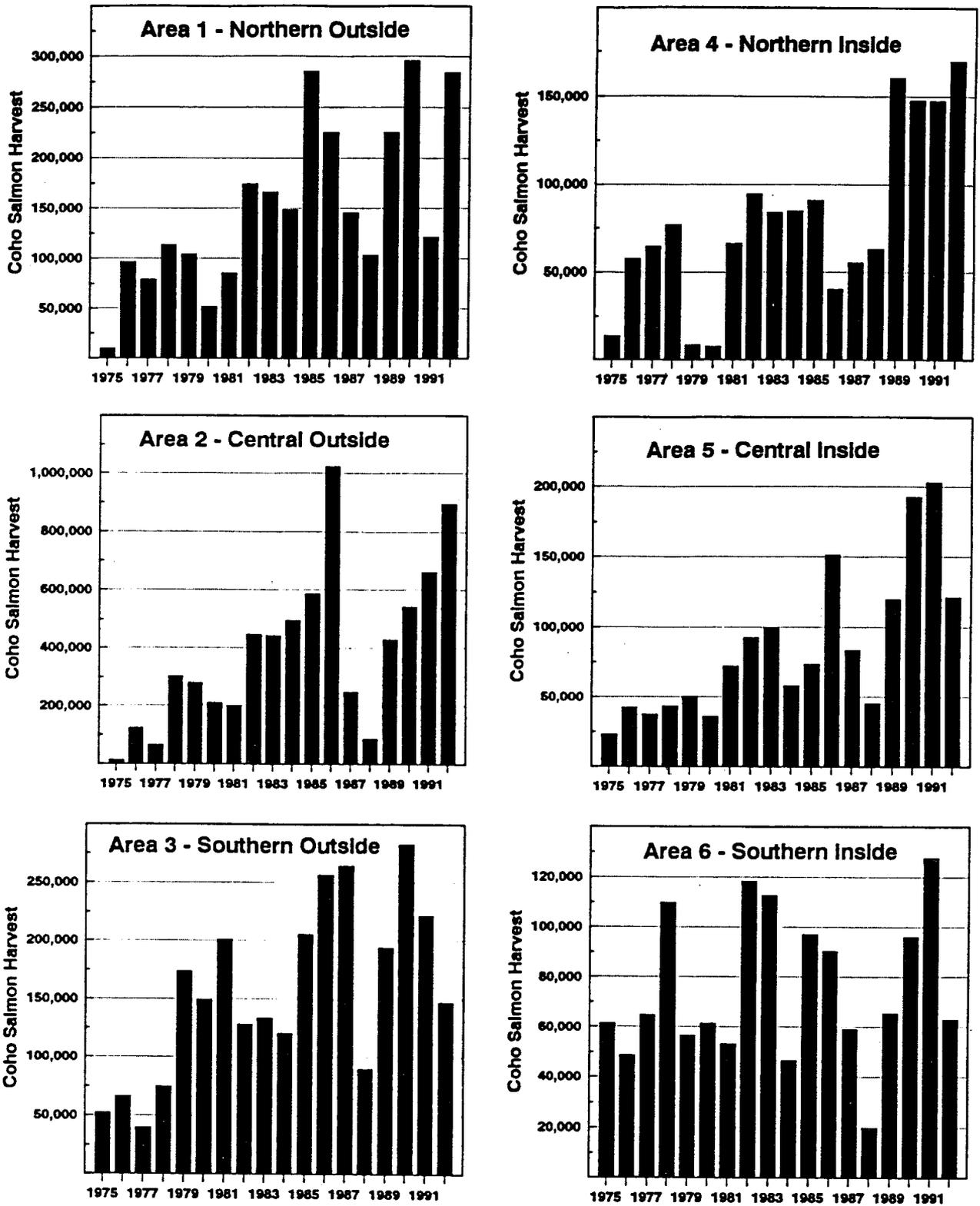


Figure 8. Commercial harvests of coho salmon from power troll fisheries in six harvest monitoring areas of Southeast Alaska, 1960-1992.

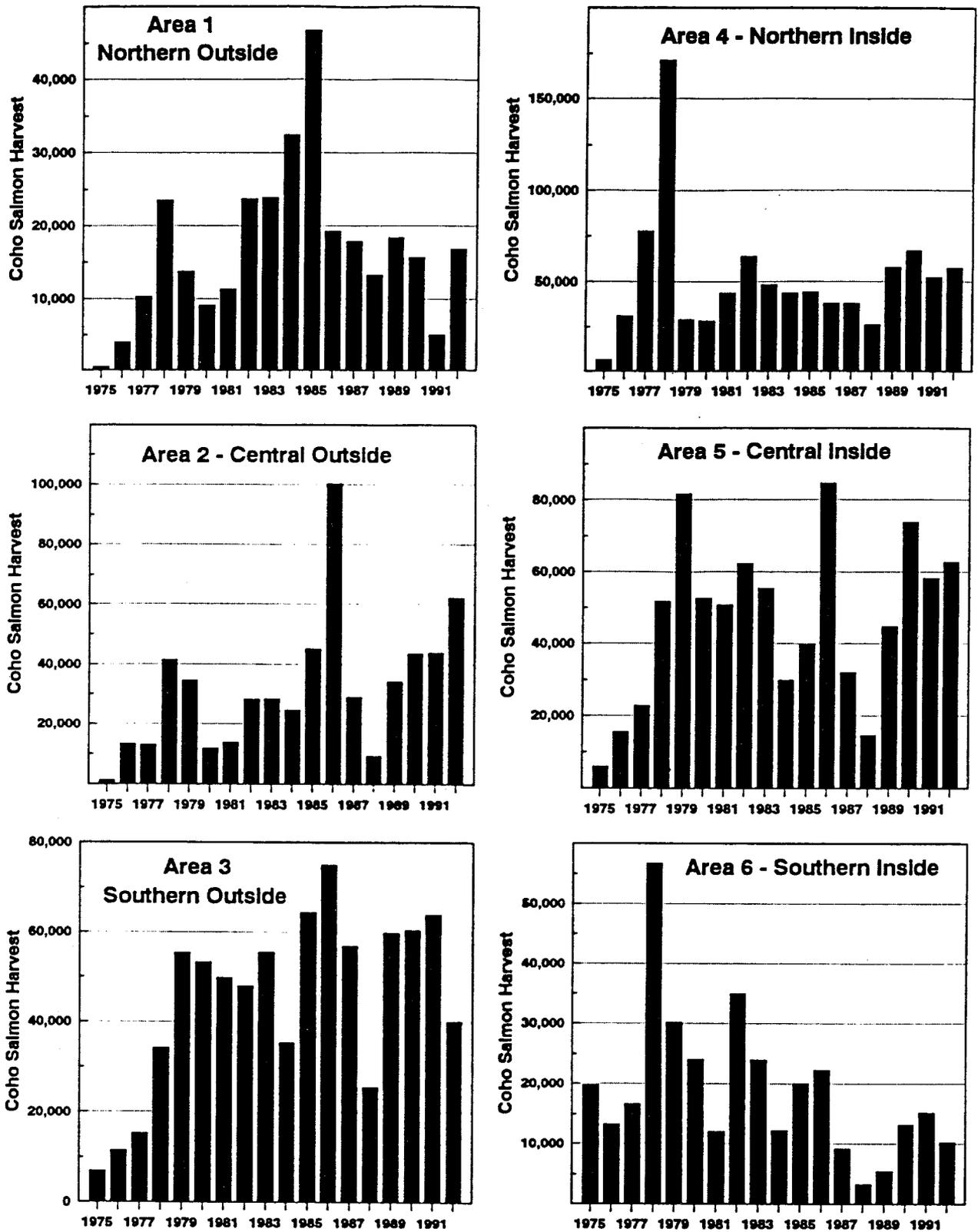


Figure 9. Commercial harvests of coho salmon from hand troll fisheries in six harvest monitoring areas of Southeast Alaska, 1960-1992.

area of Southeast Alaska have ranged from a low of about 40,000 fish in 1977 to a high of about 283,000 fish in 1990, a seven-fold difference (Table 8). Annual hand troll harvests of coho salmon from the southern outside area during the period 1975-1992 have ranged from a low of about 7,000 fish in 1975 to a high of about 75,000 fish in 1986, about a ten-fold difference (Table 9). During the 1980's, troll harvests in the southern outside area averaged about 227,000 fish per year (Figure 7), power troll harvests averaged about 175,000 fish per year (Figure 8), and hand troll harvests averaged about 52,000 fish per year (Figure 9). During the first three years of the 1990's, troll harvests in the southern outside area averaged about 272,000 fish per year (Figure 7), power troll harvests averaged about 217,000 fish per year (Figure 8), and hand troll harvests averaged about 55,000 fish per year (Figure 9).

Northern Inside Area - Troll Harvests

Commercial harvests of coho salmon from common property troll fisheries in the northern inside area during the period 1960-1992 have annually ranged from about 20,000 fish in 1975 to about 248,000 fish in 1978 (Table 7). Since 1975, annual power troll harvests of coho salmon from the northern inside area of Southeast Alaska have ranged from a low of about 8,000 fish in 1980 to a high of about 169,000 fish in 1992, about a twenty-fold difference (Table 8). Annual hand troll harvests of coho salmon from the northern inside area during the period 1975-1992 have ranged from a low of about 6,000 fish in 1975 to a high of about 171,000 fish in 1978, about a thirty-fold difference (Table 9). During the 1980's, annual troll harvests in the northern inside area averaged about 118,000 fish (Figure 7), annual power troll harvests averaged about 75,000 fish (Figure 8), and annual hand troll harvests averaged about 43,000 fish (Figure 9). During the first three years of the 1990's, troll harvests in the northern inside area averaged about 214,000 fish per year (Figure 7), power troll harvests averaged about 155,000 fish per year (Figure 8), and hand troll harvests averaged about 59,000 fish per year (Figure 9).

Central Inside Area - Troll Harvests

Annual commercial harvests of coho salmon from common property troll fisheries in the central inside area during the period 1960-1992 have ranged from about 27,000 fish in 1970 to about 267,000 fish in 1990 (Table 7). Since 1975, annual power troll harvests of coho salmon from the central inside area of Southeast Alaska have ranged from a low of about 23,000 fish in 1975 to a high of about 203,000 fish in 1991, about a nine-fold difference (Table 8). Annual hand troll harvests of coho salmon from the central inside area during the period 1975-1992 have ranged from a low of about 6,000 fish in 1975 to a high of about 85,000 fish in 1986, about a fourteen-fold difference (Table 9). During the 1980's, troll harvests in the central inside area averaged about 130,000 fish per year (Figure 7), power troll harvests averaged about 83,000 fish per year (Figure 8), and hand troll harvests averaged about 47,000 fish per year (Figure 9). During the first three years of the 1990's, troll harvests in the central inside area averaged about 237,000 fish per year (Figure 7), power troll harvests averaged about 172,000 fish per year (Figure 8), and hand troll harvests averaged about 65,000 fish per year (Figure 9).

Southern Inside Area - Troll Harvests

Commercial harvests of coho salmon from common property troll fisheries in the southern inside area during the period 1960-1992 have annually ranged from about 13,000 fish in 1967 to about 180,000 fish in 1972 (Table 7). Since 1975, annual power troll harvests of coho salmon from the southern inside area of Southeast Alaska have ranged from a low of about 20,000 fish in 1988 to a high of about 128,000 fish in 1991, about a six-fold difference (Table 8). Hand troll harvests of coho salmon from the southern inside area during the period 1975-1992 have annually ranged from a low of about 3,000 fish in 1988 to a high of about 57,000 fish in 1978, almost a twenty-fold difference (Table 9). During the 1980's, troll harvests in the southern inside area averaged about 89,000 fish per year (Figure 7), power troll harvests averaged about 72,000 fish per year (Figure 8), and hand troll harvests averaged about 17,000 fish per year (Figure 9). During the first three years of the 1990's, troll harvests in the southern inside area averaged about 108,000 fish per year (Figure 7), power troll harvests averaged about 96,000 fish per year (Figure 8), and hand troll harvests averaged about 12,000 fish per year (Figure 9).

Commercial Purse Seine Fishery

The purse seine fishery is confined to the Southeastern Area of Southeast Alaska which includes all waters of Alaska between Cape Fairweather and Dixon Entrance. There are 15 commercial fishing districts within the Southeastern Area and purse seines can be used in all of these fishing districts with the exception of districts 108 and 115. A purse seine is a floating net designed to surround fish and the net can be closed at the bottom by means of a free-running line through one or more rings attached to the lead line. In Southeast Alaska, purse seines can only be from 150 to 450 meshes in depth and from 150 to 250 fathoms in length. Maximum allowed seine mesh is 4.5 inches except for the first 25 meshes above the lead line which may not exceed 7 inches.

Commercial purse seine harvests of coho salmon from Southeast Alaska have ranged from a low of about 70,000 fish in 1975 to a high of about 773,000 fish in 1992, a ten-fold difference (Table 10). During the 33 year period between 1960 and 1992, purse seiners harvested a total of about 10.3 million coho salmon with an average of about 313,000 fish per year. Annual coho salmon harvests with purse seine gear from Southeast Alaska during the 1960's, 1970's, 1980's, and the first three years of the 1990's averaged about 321,000, 205,000, 323,000, and 617,000 fish; respectively.

The majority of the harvest of coho salmon by purse seiners has been through traditional common property fisheries, although purse seine harvests of coho salmon from hatchery controlled fisheries has risen dramatically during the 1990's to a level of more than 268,000 fish in 1992 (Figure 10). During the first three years of the 1990's, approximate annual average harvests of coho salmon with purse seine gear by type of fishery were as follows: (1) traditional fisheries - 418,000 fish (69%); (2) Annette Island Reserve fisheries - 10,000 fish (2%); (3) hatchery terminal area fisheries - 3,000 fish (less than 1%); (4) hatchery controlled fisheries - 175,000 fish (29%); and, (5) test fisheries - 4,000 fish (less than 1%). Prior to 1989,

Table 10. Commercial purse seine harvests of coho salmon, Southeastern Alaska, 1960-1992.*

Harvest of Coho Salmon						
Year	Common Property Fisheries					All Harvests
	Traditional Fisheries	Annette Island Reserve	Hatchery Terminal Areas	Hatchery Controlled Fisheries	Test Fisheries	
1960	125,871					125,871
1961	246,524					246,524
1962	239,382					239,382
1963	316,449	42				316,491
1964	506,341	164				506,505
1965	556,981	24				557,005
1966	451,888	169				452,057
1967	188,959	6				188,965
1968	463,270	283				463,553
1969	109,956					109,956
1970	294,574	0				294,574
1971	326,264					326,264
1972	390,325	18				390,343
1973	129,593					129,593
1974	166,687					166,687
1975	70,193	8				70,201
1976	87,473	131				87,604
1977	150,535	9,984				160,519
1978	242,961	2,113				245,074
1979	176,354	239				176,593
1980	184,570	909				185,479
1981	237,402	1,100				238,502
1982	428,700	3,104				431,804
1983	360,287					360,287
1984	350,037	11,288				361,325
1985	418,725	3,911				422,636
1986	568,333	20,309				588,642
1987	122,254	9,204				131,458
1988	156,997	1,431				158,428
1989	329,329	2,127	1,432	17,154	83	350,125
1990	370,983	6,863	1,490	67,483	474	447,293
1991	401,954	5,513	3,773	189,424	10,342	611,006
1992	482,760	16,736	5,343	268,144	71	773,054

* Data taken from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files.

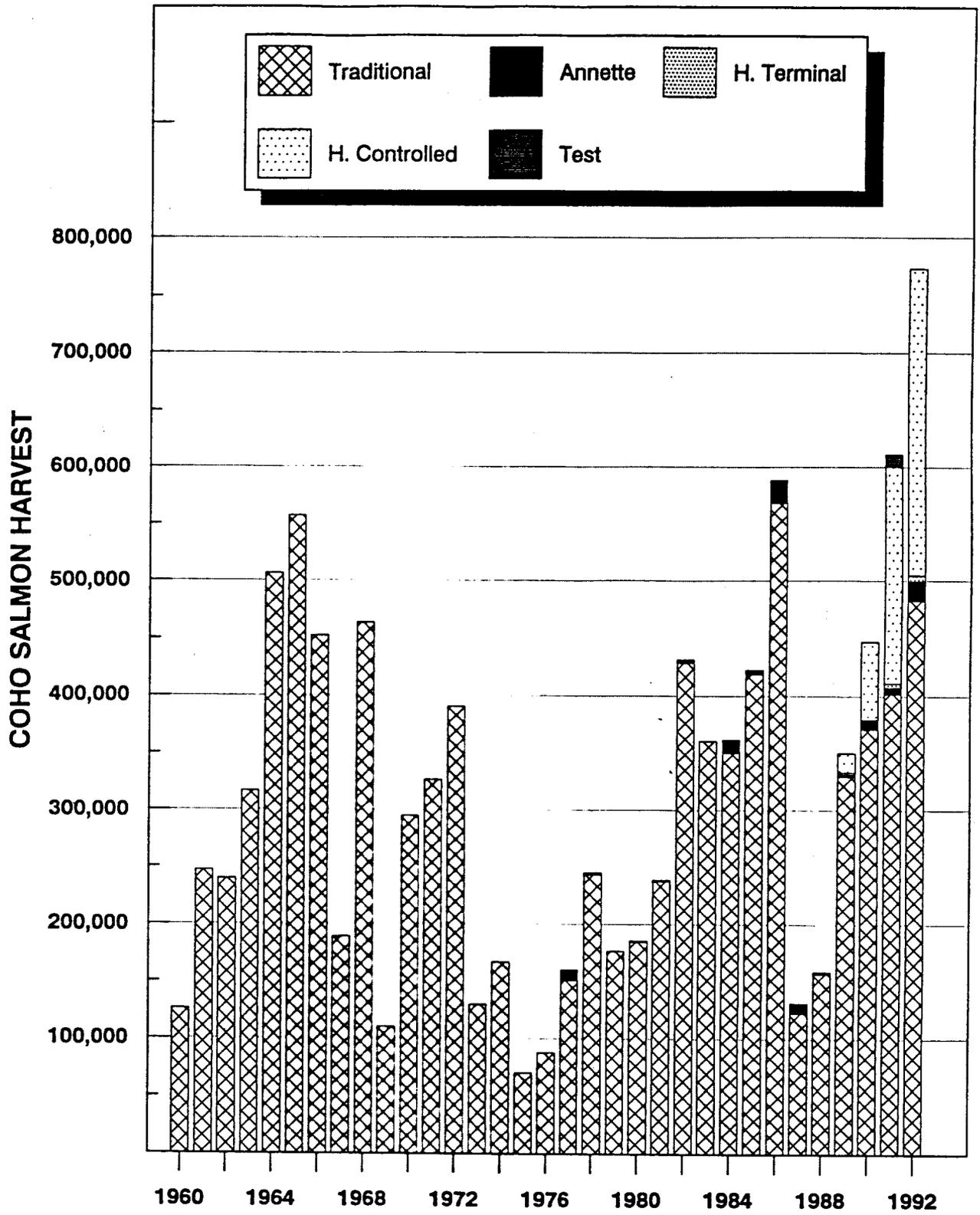


Figure 10. Commercial purse seine harvests of coho salmon from Southeast Alaska, 1960-1992.

documented purse seine harvests of coho salmon from Southeast Alaska were either from traditional common property fisheries or were from the Annette Island Reserve; the Annette Island Reserve harvests averaged about 3,000 fish per year representing about 1% of the overall harvest between 1960 and 1988 (Table 10).

The following sections discuss commercial purse seine harvests of coho salmon in common property fisheries taking place in the northern inside, central outside, central inside, southern outside, and southern inside areas of Southeastern Alaska. Harvests discussed (and tabular and graphic presentations) include only the traditional common property fisheries, although, the harvests in hatchery terminal area fisheries are included in footnotes on the tables.

Northern Inside - Purse Seine Harvests

Commercial harvests of coho salmon from traditional purse seine fisheries in the northern inside area of Southeast Alaska during the period 1960-1992 have ranged from 0 fish in 1977 to about 197,000 fish in 1965 (Table 11). During the 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in traditional purse seine fisheries from the northern inside area were about 23,000 and 32,000 fish; respectively (Figure 11).

Northern inside area purse seine harvests took place in districts 111, 112, and 114. The traditional fishery harvest of coho salmon with purse seines from district 111 during the 1960-1992 period ranged from a low of 0 during most years to a high of about 2,000 fish in 1968 (Table 12). Coho salmon were only harvested with purse seines from district 111 during 2 years in the 1980's and none have been harvested during the 1990's (Figure 12). The traditional fishery harvest of coho salmon with purse seines from district 112 during the 1960-1992 period ranged from a low of 0 during the period 1975-1977 to a high of about 71,000 fish in 1970 (Table 12). During the 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in traditional purse seine fisheries from district 112 were about 20,000 and 25,000 fish; respectively (Figure 12). The traditional fishery harvest of coho salmon with purse seines from district 114 during the 1960-1992 period ranged from a low of 0 in 1977 and 1978 to a high of about 152,000 fish in 1965 (Table 12). During the 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in traditional purse seine fisheries from district 114 were about 3,000 and 7,000 fish; respectively (Figure 12).

Central Outside - Purse Seine Harvests

Commercial harvests of coho salmon from traditional purse seine fisheries in the central outside area of Southeast Alaska during the period 1960-1992 have ranged from about 200 fish in 1976 to about 26,000 fish in 1965, more than a hundred-fold difference (Table 11). During the 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in traditional purse seine fisheries from the central outside area were about 8,000 and 2,000 fish; respectively (Figure 11). All fish were caught in district 113.

Table 11. Commercial purse seine harvests of coho salmon from the common property fisheries in the northern, central, and southern outside and inside harvest monitoring areas of Southeastern Alaska, 1960-1992.*

Year	Harvest of Coho Salmon				
	Central Outside (Area 2) (Dist. 113)	Southern Outside (Area 3) (Dist. 103 & 104)	Northern Inside (Area 4) (Dist. 111, 112, & 114)	Central Inside (Area 5) (Dist. 105 thru 110)	Southern Inside (Area 6) (Dist. 101 & 102)
1960	2,290	58,493	34,749	5,608	24,731
1961	12,688	68,483	70,186	32,137	63,030
1962	3,048	75,673	38,490	31,278	90,893
1963	12,373	110,870	127,287	24,964	40,955
1964	3,643	131,963	152,064	68,385	150,286
1965	25,553	196,596	196,676	62,828	75,328
1966	2,788	101,726	132,978	78,533	135,863
1967	3,097	59,401	107,225	12,567	6,669
1968	2,448	112,376	169,598	56,357	122,491
1969	6,503	13,713	80,254	2,381	7,105
1970	3,484	49,691	134,405	39,029	67,965
1971	2,181	58,217	109,182	70,566	86,118
1972	682	88,884	132,516	47,089	121,154
1973	445	29,718	51,490	10,915	37,025
1974	3,481	76,329	14,689	14,511	57,677
1975	819	18,677	549	11,935	38,213
1976	226	32,350	1,504	17,878	35,515
1977	2,614	29,088	0	38,530	80,303
1978	4,770	83,511	2,913	21,219	130,548
1979	10,108	116,774	1,613	16,329	31,530
1980	2,387	128,770	4,964	5,228	43,221
1981	20,110	166,364	20,130	9,865	20,933
1982	4,434	157,890	68,861	64,258	133,257
1983	23,396	211,656	26,470	22,754	76,011
1984	3,376	180,421	21,848	33,990	110,402
1985	15,759	177,291	30,139	41,273	154,263
1986	768	348,813	9,220	15,335	194,197
1987	7,784	69,241	13,432	7,479	24,318
1988	502	106,729	15,151	11,152	23,463
1989	3,710	182,631 ^a	25,834 ^b	34,250	82,904 ^b
1990	514	223,497 ^a	19,793 ^b	33,094 ^b	94,085 ^b
1991	1,955	237,337	41,789 ^b	68,716 ^b	52,157 ^b
1992	2,569 ^b	238,741	33,084 ^b	127,814 ^b	80,552 ^b

* Data taken from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files; Annette Island Reserve harvests not included.

^b In addition to these harvests, there were hatchery terminal area fisheries; see following tables for harvests of coho salmon in hatchery terminal areas by year and district.

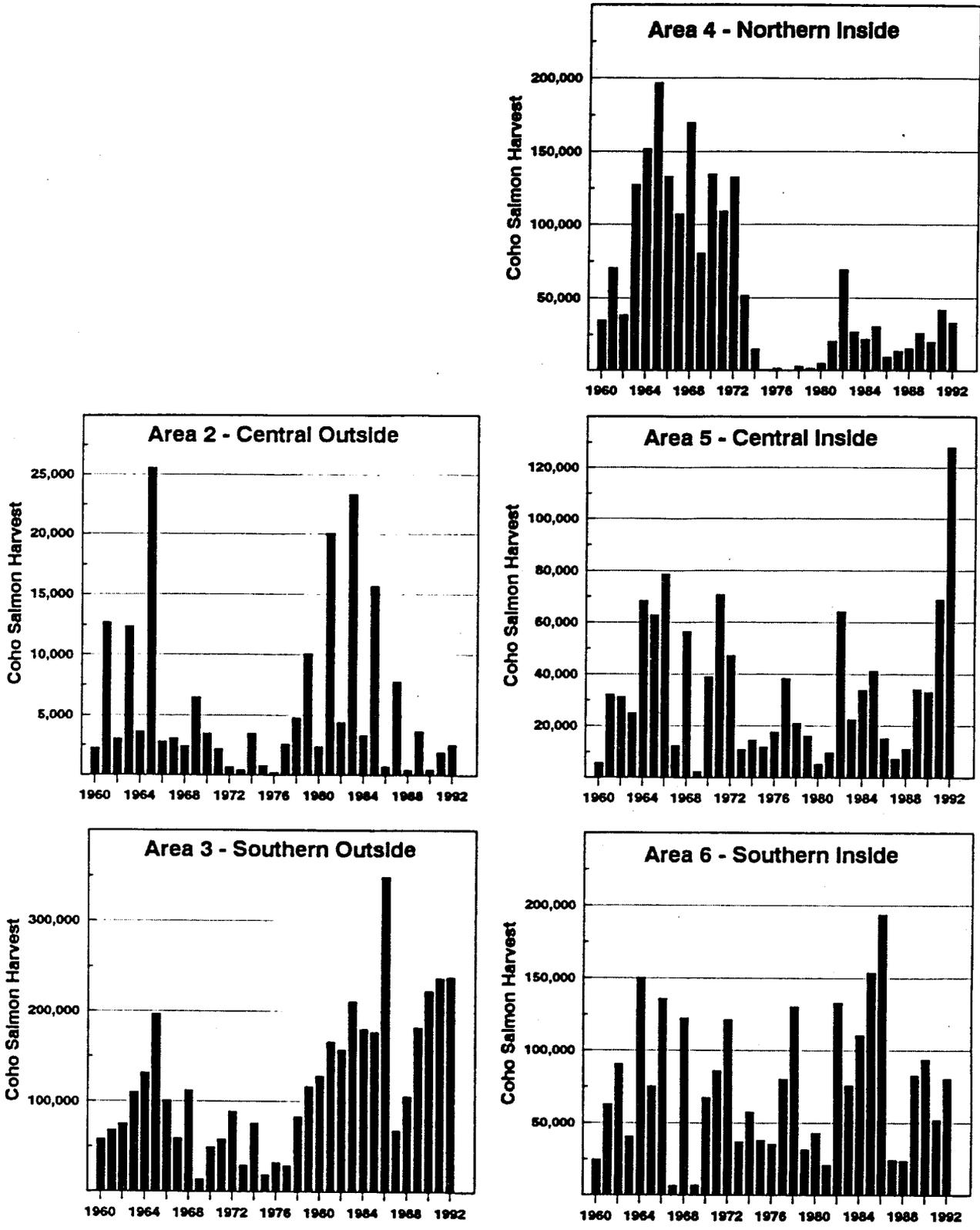


Figure 11. Commercial harvests of coho salmon from traditional purse seine fisheries in five monitoring areas of Southeast Alaska, 1960-1992.

Table 12. Commercial purse seine harvests of coho salmon from the common property fisheries of northern Southeastern Alaska, 1960-1992.*

Year	Harvest of Coho Salmon from Northern Inside Waters		
	District 111	District 112	District 114
1960	1,112	5,774	27,863
1961	1,232	16,423	52,531
1962	112	3,795	34,583
1963	2,240	15,914	109,133
1964	1,194	35,204	115,666
1965	0	44,188	152,488
1966	518	26,464	105,996
1967	0	13,878	93,347
1968	2,253	35,860	131,485
1969	0	13,844	66,410
1970	1,928	71,370	61,107
1971	0	28,135	81,047
1972	807	42,889	88,820
1973	0	3,747	47,743
1974	0	7,965	6,724
1975	0	0	549
1976	0	0	1,504
1977	0	0	0
1978	0	2,913	0
1979	264	1,219	130
1980	0	3,014	1,950
1981	0	13,327	6,803
1982	1,653	62,163	5,045
1983	0	22,268	4,202
1984	0	17,413	4,435
1985	0	25,825	4,314
1986	0	8,668	552
1987	164	11,027	2,241
1988	0	12,997	2,154
1989	4	22,515 ^b	3,319
1990	0	16,253 ^b	3,540
1991	0	36,668 ^b	5,121
1992	0	21,074 ^b	12,010

* Data taken from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files.

^b In addition to these harvests, there were hatchery terminal area fisheries in District 112 which resulted in the harvests of 53, 773, 728, and 1,943 coho salmon in the years 1989-1992.

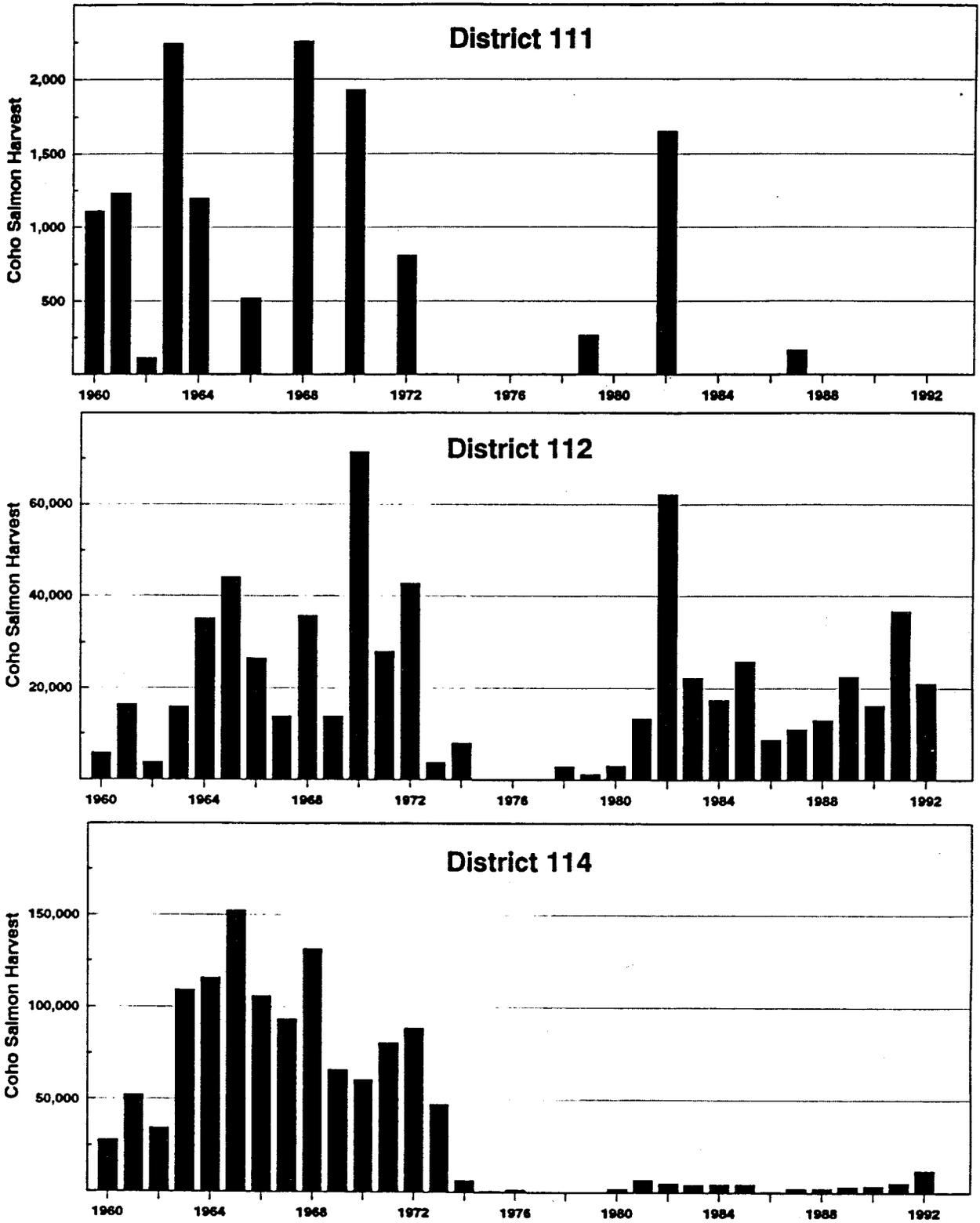


Figure 12. Commercial harvests of coho salmon from traditional purse seine fisheries that take place in three districts located in the northern portion of Southeast Alaska, 1960-1992.

Central Inside - Purse Seine Harvests

Commercial harvests of coho salmon from traditional purse seine fisheries in the central inside area of Southeast Alaska during the period 1960-1992 have ranged from about 2,000 fish in 1969 to about 128,000 fish in 1992, more than a sixty-fold difference (Table 11). During the 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in traditional purse seine fisheries from the central inside area were about 24,000 and 77,000 fish; respectively (Figure 11).

The central inside area purse seine harvests took place in districts 105, 106, 107, 109, and 110. The traditional fishery harvest of coho salmon with purse seines from district 105 during the 1960-1992 period ranged from a low of 0 fish in 1989 to a high of about 6,600 fish in 1965 (Table 13). During the 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in traditional purse seine fisheries from district 105 were about 1,000 and 1,500 fish; respectively (Figure 13). The traditional fishery harvest of coho salmon with purse seines from district 106 during the 1960-1992 period ranged from a low of 0 fish in 1980, 1987, 1988, and 1992 to a high of about 33,000 fish in 1971 (Table 13). During the 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in traditional purse seine fisheries from district 106 were about 3,000 and 2,500 fish; respectively (Figure 13). The traditional fishery harvest of coho salmon with purse seines from district 107 during the 1960-1992 period ranged from a low of 0 fish in 1967, 1980, and 1987 to a high of about 20,000 fish in 1971 (Table 13). During the 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in traditional purse seine fisheries from district 107 were about 1,500 and 4,000 fish; respectively (Figure 13). The traditional fishery harvest of coho salmon with purse seines from district 109 during the 1960-1992 period ranged from a low of 14 fish in 1976 to a high of about 112,000 fish in 1992 (Table 13). During the 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in traditional purse seine fisheries from district 109 were about 12,000 and 63,000 fish; respectively (Figure 13). The traditional fishery harvest of coho salmon with purse seines from district 110 during the 1960-1992 period ranged from a low of 0 fish in 1975-1978, 1986, and 1988 to a high of about 36,000 fish in 1982 (Table 13). During the 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in traditional purse seine fisheries from district 110 were about 6,000 and 7,000 fish; respectively (Figure 13).

Southern Outside - Purse Seine Harvests

Commercial harvests of coho salmon from traditional purse seine fisheries in the southern outside area of Southeast Alaska during the period 1960-1992 have ranged from about 14,000 fish in 1969 to about 349,000 fish in 1986, about a twenty-five-fold difference (Table 11). During the 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in traditional purse seine fisheries from the northern inside area were about 173,000 and 233,000 fish; respectively (Figure 11).

Table 13. Commercial purse seine harvests of coho salmon from the common property fisheries of central Southeastern Alaska, 1960-1992.*

Year	Harvest of Coho Salmon					Central
	Central Inside (Area 5)					Outside (Area 2)
	Dist 105	Dist 106	Dist 107	Dist 109	Dist 110	Dist 113
1960	100	625	1,344	1,067	2,472	2,290
1961	2,437	13,069	879	10,315	5,437	12,688
1962	3,930	17,679	6,363	2,721	585	3,048
1963	1,310	15,069	1,346	6,887	352	12,373
1964	4,553	30,760	9,211	17,147	6,714	3,643
1965	6,614	29,134	5,800	20,943	337	25,553
1966	1,545	30,745	11,655	32,053	2,535	2,788
1967	1,020	1,575	0	9,772	200	3,097
1968	1,827	12,074	5,938	17,846	18,672	2,448
1969	58	888	461	960	14	6,503
1970	900	7,784	2,294	23,848	4,203	3,484
1971	1,282	32,522	20,422	16,340	0	2,181
1972	317	12,965	11,377	18,955	3,475	682
1973	184	4,595	1,846	4,162	128	445
1974	2,513	1,686	1,067	8,386	859	3,481
1975	29	8,930	2,159	817	0	819
1976	15	14,462	3,387	14	0	226
1977	46	8,298	12,606	17,580	0	2,614
1978	233	11,746	7,822	1,418	0	4,770
1979	212	6,546	1,302	8,052	217	10,108
1980	201	0	0	5,021	6	2,387
1981	1,689	4,280	120	2,447	1,329	20,110
1982	805	0	1,415	26,205	35,833	4,434
1983	3,538	11,213	3,412	3,747	844	23,396
1984	1,914	5,438	3,159	21,889	1,590	3,376
1985	4,468	5,122	5	21,364	10,314	15,759
1986	1,108	5,013	1,416	7,798	0	768
1987	203	0	0	4,178	3,098	7,784
1988	332	0	1,503	9,317	0	502
1989	0	3,049	4,263	17,209	9,729	3,710
1990	733	5,432	4,625 ^b	20,521	1,783	514
1991	3,590	2,217	1,449 ^b	54,900	6,560	1,955
1992	133	0	5,452 ^b	111,597	10,632	2,569 ^b

* Data taken from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files.

^b In addition to these harvests, there were hatchery terminal area fisheries in: (1) District 107 which resulted in the harvests of 1, 2,451, and 1 coho salmon in the years 1990-1992; and, (2) District 113 which resulted in the harvest of 3,038 coho salmon in 1992.

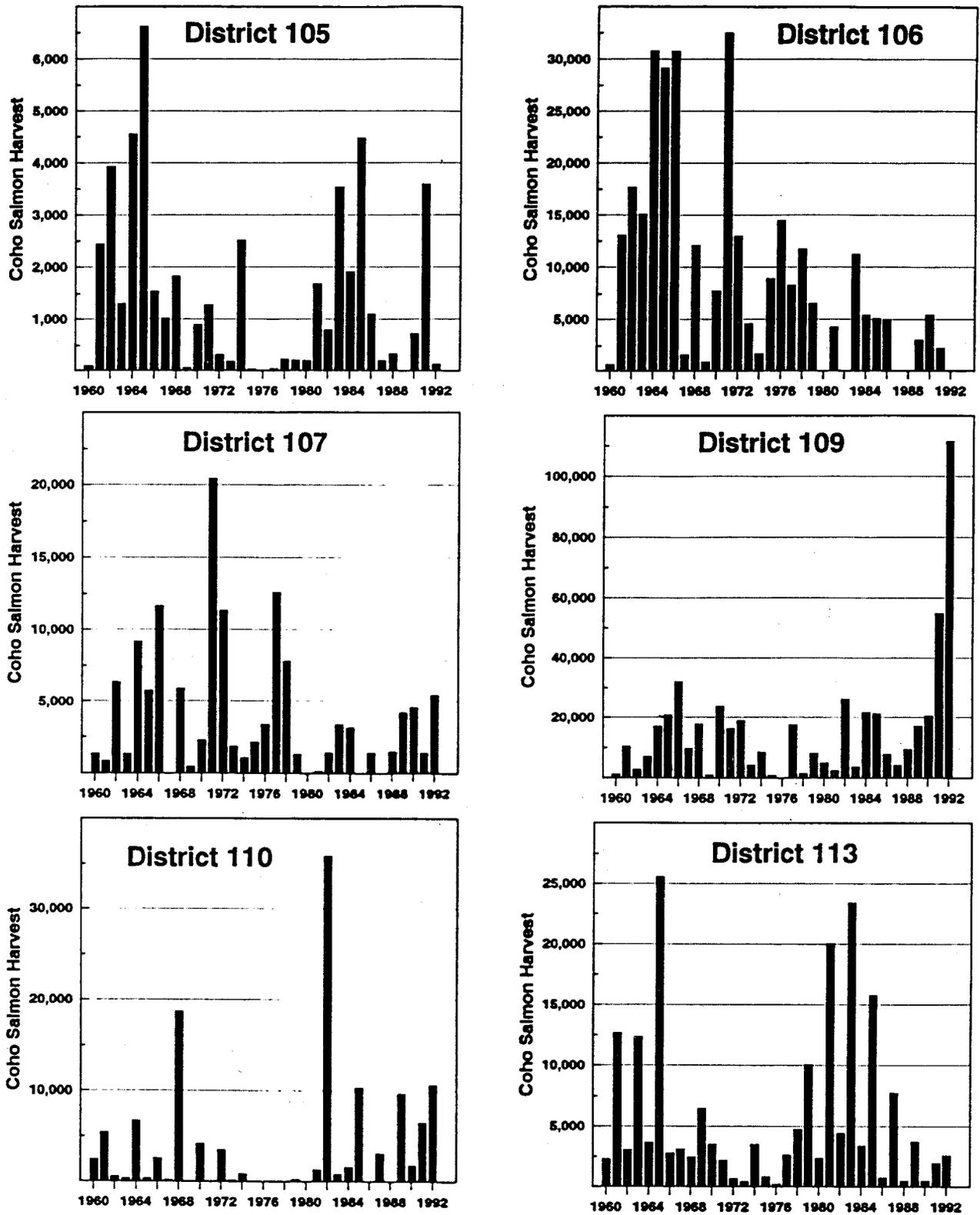


Figure 13. Commercial harvests of coho salmon from traditional purse seine fisheries that take place in six districts located in the central portion of Southeast Alaska, 1960-1992.

The southern outside area purse seine harvests took place in districts 103 and 104. The traditional fishery harvest of coho salmon with purse seines from district 103 during the 1960-1992 period ranged from a low of about 1,000 fish in 1969 to a high of about 76,000 fish in 1986 (Table 14). During the 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in traditional purse seine fisheries from district 103 were about 32,000 and 26,000 fish; respectively (Figure 14). The traditional fishery harvest of coho salmon with purse seines from district 104 during the 1960-1992 period ranged from a low of about 6,000 fish in 1970 to a high of about 273,000 fish in 1986 (Table 14). During the 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in traditional purse seine fisheries from district 104 were about 140,000 and 207,000 fish; respectively (Figure 14).

Southern Inside - Purse Seine Harvests

Commercial harvests of coho salmon from traditional purse seine fisheries in the southern inside area of Southeast Alaska during the period 1960-1992 have ranged from about 7,000 fish in 1967 to about 194,000 fish in 1986, more than a twenty-five-fold difference (Table 11). During the 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in traditional purse seine fisheries from the southern inside area were about 86,000 and 76,000 fish; respectively (Figure 11).

The southern inside area purse seine harvests took place in districts 101 and 102. The traditional fishery harvest of coho salmon with purse seines from district 101 during the 1960-1992 period ranged from a low of about 500 fish in 1967 to a high of about 132,000 fish in 1986 (Table 14). During the 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in traditional purse seine fisheries from district 101 were about 50,000 and 29,000 fish; respectively (Figure 14). The traditional fishery harvest of coho salmon with purse seines from district 102 during the 1960-1992 period ranged from a low of about 6,000 fish in 1967 to a high of about 104,000 fish in 1964 (Table 14). During the 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in traditional purse seine fisheries from district 102 were about 36,000 and 47,000 fish; respectively (Figure 14).

Commercial Drift Gill Net Fishery

The drift gill net fishery is confined to the Southeastern Area of Southeast Alaska which includes all waters of Alaska between Cape Fairweather and Dixon Entrance. Within the Southeast Area, drift gill nets can only be used in five fishing districts (districts 101, 106, 108, 111, and 115). A drift gill net is a drifting net that has not been intentionally staked, anchored, or otherwise fixed in a specific location. A gill net is a net primarily designed to fish from the surface of the water and catch fish by entanglement in the mesh which consists of a single sheet of webbing hung between a floating cork line and a lead line. Drift gill nets with mesh smaller than 8 inches may not be deeper than 60 meshes and nets with mesh 8 inches or larger may not be deeper than 40 meshes. In addition, there are various district

Table 14. Commercial purse seine harvests of coho salmon from the common property fisheries of southern Southeastern Alaska, 1960-1992.*

Year	Harvest of Coho Salmon			
	Southern Inside (Area 6)		Southern Outside (Area 3)	
	District 101	District 102	District 103	District 104
1960	13,415	11,316	4,091	54,402
1961	23,171	39,859	40,461	28,022
1962	44,448	46,445	16,366	59,307
1963	11,378	29,577	37,409	73,461
1964	46,526	103,760	28,153	103,810
1965	5,166	70,162	71,836	124,760
1966	40,262	95,601	44,868	56,858
1967	503	6,166	2,915	56,486
1968	69,750	52,741	30,708	81,668
1969	905	6,200	995	12,718
1970	32,183	35,782	43,815	5,876
1971	27,768	58,350	30,000	28,217
1972	71,759	49,395	17,686	71,198
1973	4,807	32,218	8,045	21,673
1974	22,632	35,045	25,300	51,029
1975	4,167	34,046	10,880	7,797
1976	4,804	30,711	17,666	14,684
1977	28,555	51,748	5,565	23,523
1978	58,312	72,236	11,994	71,517
1979	4,013	27,517	14,178	102,596
1980	27,513	15,708	20,725	108,045
1981	4,793	16,140	41,272	125,092
1982	79,864	53,393	15,536	142,354
1983	44,966	31,045	24,397	187,259
1984	64,375	46,027	39,646	140,775
1985	103,607	50,656	48,108	129,183
1986	132,263	61,934	75,526	273,287
1987	7,932	16,386	20,249	48,992
1988	6,913	16,550	12,466	94,263
1989	30,690 ^b	52,214	23,911 ^b	158,720
1990	32,224 ^b	61,861	25,255 ^b	198,242
1991	20,697 ^b	31,460	35,501	201,836
1992	32,763 ^b	47,789	18,366	222,375

* Data taken from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files; Annette Island Reserve harvests not included.

^b In addition to these harvests, there were hatchery terminal area fisheries in: (1) District 101 which resulted in the harvests of 921, 604, 594, and 361 coho salmon in the years 1989-1992; and, (2) District 103 which resulted in the harvests of 458 and 112 coho salmon in the years 1989 and 1990.

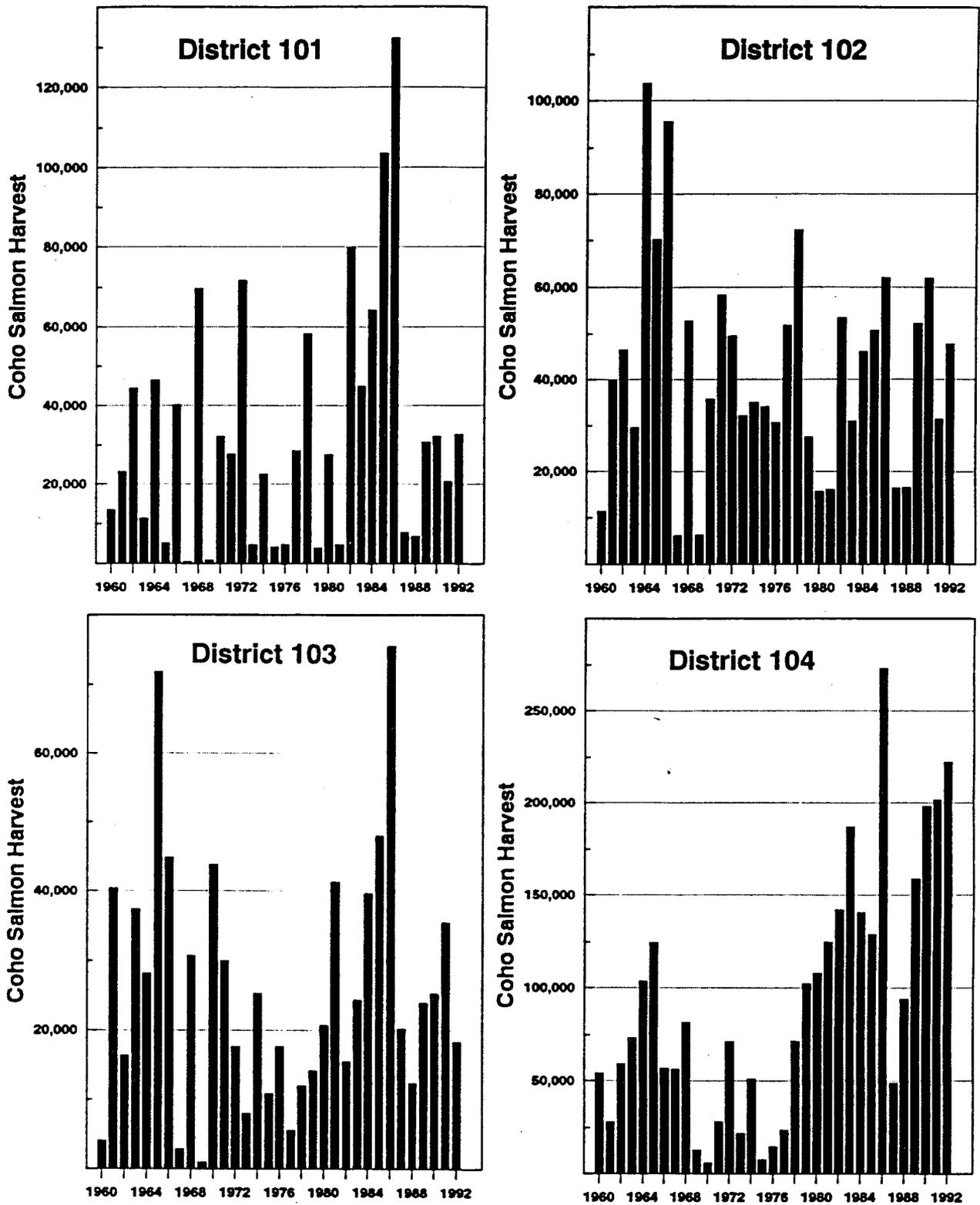


Figure 14. Commercial harvests of coho salmon from traditional purse seine fisheries that take place in four districts located in the southern portion of Southeast Alaska, 1960-1992.

specific regulations governing the length of drift gill nets as well as maximum and minimum mesh sizes.

Commercial drift gill net harvests of coho salmon from Southeast Alaska have ranged from a low of about 38,000 fish in 1960 to a high of about 700,000 fish in 1992, almost a twenty-fold difference (Table 15). During the 33 year period between 1960 and 1992, drift gill net gear harvested a total of about 6.8 million coho salmon with the average harvest being about 206,000 fish per year. Annual coho salmon harvests with drift gill net gear from Southeast Alaska during the 1960's, 1970's, 1980's, and the first three years of the 1990's averaged about 120,000, 166,000, 225,000, and 561,000 fish; respectively.

The majority of the harvest of coho salmon by drift gill net gear in Southeast Alaska has been through traditional common property fisheries (Figure 15). During the period 1989-1992, approximate annual average harvests of coho salmon with drift gill net gear by type of fishery were as follows: (1) traditional fisheries - 439,000 fish (91%); (2) Annette Island Reserve fisheries - 39,000 fish (8%); (3) hatchery terminal area fisheries - 4,000 (1%); (4) hatchery controlled fisheries - less than 1,000 fish (less than 1%); and, (5) test fisheries - less than 1,000 fish (less than 1%). Prior to 1989, documented drift gill net harvests of coho salmon from Southeast Alaska were either from traditional common property fisheries or were from the Annette Island Reserve; the Annette Island Reserve harvests averaged about 4,700 fish per year representing about 3% of the overall harvest between 1960 and 1988 (Table 15).

The following sections discuss commercial drift gill net harvests of coho salmon in common property fisheries taking place in the northern, central, and southern inside areas of Southeastern Alaska.

Northern Inside - Drift Gill Net Harvests

Commercial harvests of coho salmon from traditional drift gill net fisheries in the northern inside area of Southeast Alaska during the period 1960-1992 have ranged from about 33,000 fish in 1960 to about 281,000 fish in 1992, almost a ten-fold difference. During the 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in traditional drift gill net fisheries from the northern inside area were about 102,000 and 222,000 fish; respectively.

The northern inside area drift gill net harvests took place in districts 111 and 115. The traditional fishery harvest of coho salmon with drift gill nets from district 111 during the 1960-1992 period ranged from a low of about 1,000 fish in 1975 to a high of about 173,000 fish in 1992 (Table 16). During the 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in traditional drift gill net fisheries from district 111 were about 37,000 and 122,000 fish; respectively (Figure 16). The traditional fishery harvest of coho salmon with drift gill nets from district 115 during the 1960-1992 period ranged from a low of about 11,000 fish in 1960 to a high of about 128,000 fish in 1991 (Table 16). During the 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in

Table 15. Commercial drift gill net harvests of coho salmon, Southeastern Alaska, 1960-1992.*

Year	Harvest of Coho Salmon					All Harvests
	Common Property Fisheries					
	Traditional Fisheries	Annette Island Reserve	Hatchery Terminal Areas	Private Hatchery Fisheries	Test Fisheries	
1960	37,986					37,986
1961	52,743					52,743
1962	98,404					98,404
1963	112,776					112,776
1964	172,411					172,411
1965	166,452					166,452
1966	155,922					155,922
1967	134,029					134,029
1968	202,955	10				202,965
1969	65,053					65,053
1970	163,901					163,901
1971	159,143					159,143
1972	275,393					275,393
1973	124,349					124,349
1974	186,583					186,583
1975	102,321					102,321
1976	156,469					156,469
1977	182,934	768				183,702
1978	221,134	2,187				223,321
1979	81,324	1,726				83,050
1980	109,516	2,565				112,081
1981	114,503	5,092				119,595
1982	194,672	6,665				201,337
1983	218,219					218,219
1984	190,971	8,240				199,211
1985	309,693	23,227				332,920
1986	395,932	52,834				448,766
1987	165,138	24,033				189,171
1988	163,786	7,138				170,924
1989	231,251	21,266	3,173	2,717	966	259,373
1990	345,922	26,764	5,158		827	378,671
1991	538,787 ^b	55,804	5,460		224	600,278
1992	642,283	54,289	2,681		445	699,698

* Data taken from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files.

^b In addition to this legal harvest, 3 coho salmon were confiscated in 1991.

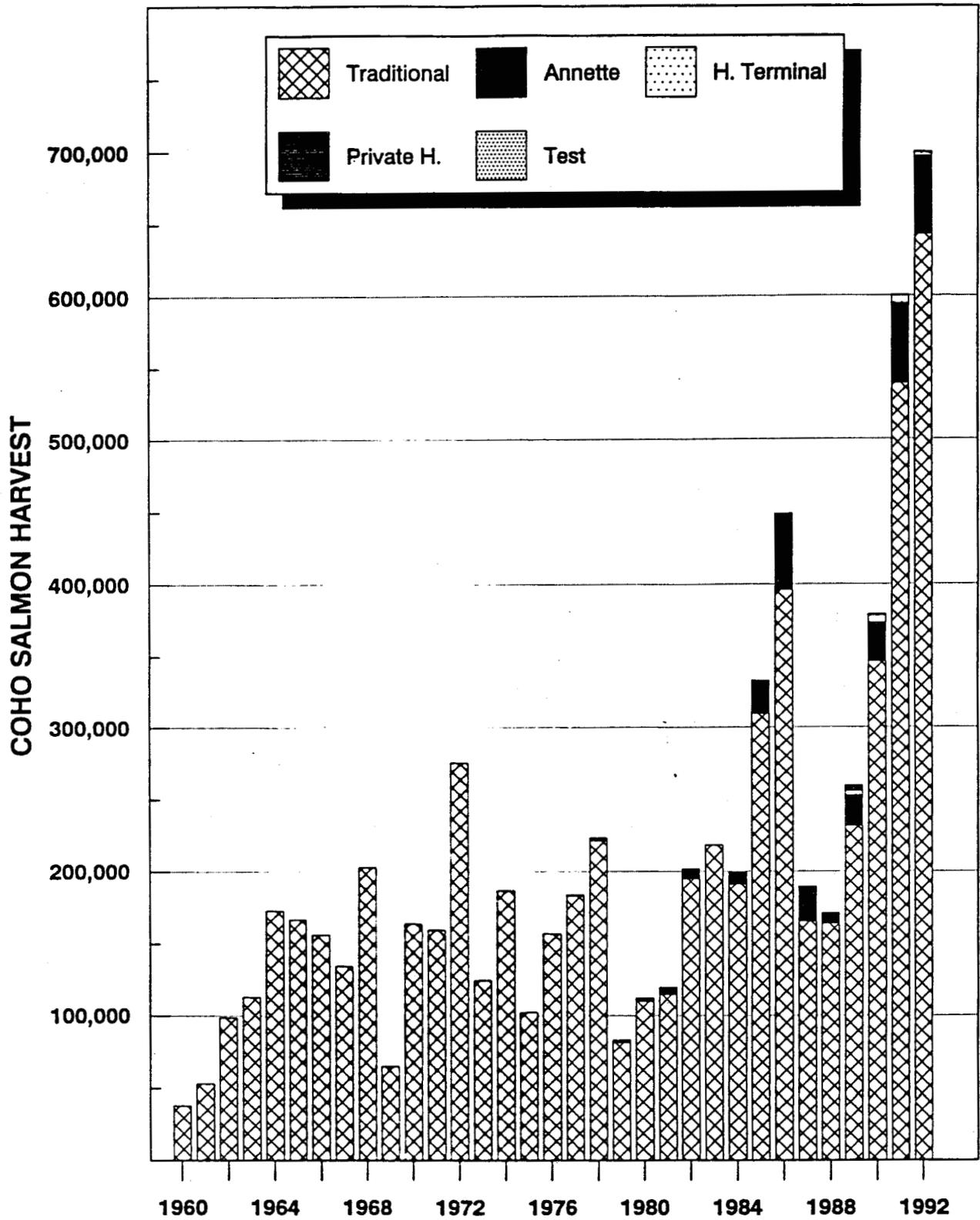


Figure 15. Commercial drift gill net harvests of coho salmon from Southeast Alaska, 1960-1992.

Table 16. Commercial drift gill net harvests of coho salmon, from the common property fisheries of Southeastern Alaska, 1960-1992.*

Year	Harvest of Coho Salmon					
	Annette Is. Reserve	Tree Point	Prince of Wales	Stikine	Taku- Snettisham	Lynn Canal
	Dist. 101	Dist. 101	Dist. 106	Dist. 108	Dist. 111	Dist. 115
1960		4,312	336	0	22,374	10,964
1961		4,067	14,934	0	15,486	18,256
1962		12,110	42,276	3,921	15,661	24,436
1963		3,110	52,103	11,612	10,855	35,096
1964		15,707	64,654	29,388	29,315	33,347
1965		10,675	75,728	8,301	32,667	39,081
1966		9,362	62,823	16,493	26,065	40,794
1967		3,112	17,670	6,747	40,391	66,109
1968	10	17,032	67,151	36,407	39,103	43,262
1969		3,154	10,280	5,790	10,802	35,027
1970		16,425	35,470	18,403	44,960	48,643
1971		5,170	48,085	14,876	41,830	49,182
1972		35,695	93,427	38,520	49,780	57,971
1973		18,459	38,447	5,837	35,453	26,153
1974		21,327	45,687	16,021	38,667	64,881
1975		12,631	30,962	0	1,185	57,543
1976		17,574	19,126	6,056	41,729	71,984
1977	768	12,173	8,401	14,405	54,917	91,426
1978	2,187	47,797	55,578	32,650	31,944	53,165
1979	1,726	6,427	31,454	234	16,194	27,015
1980	2,565	19,329	16,666	2,946	41,677	28,898
1981	5,092	19,125	22,614	1,403	26,711	44,650
1982	6,665	28,015	45,244	19,971	29,072	72,370
1983		49,443	62,442	15,369	21,455	69,510
1984	8,240	35,384	48,244	5,141	33,836	68,215
1985	23,227	53,019	97,559	5,132	55,597	98,290
1986	52,834	63,073	205,598	14,324	30,512	82,121
1987	24,033	38,123	37,151	1,015	35,219	53,630
1988	7,138	17,206	14,419	12	44,881	81,537
1989 ^b	21,266	32,485	92,386	4,261	51,812	50,307
1990 ^b	26,764	42,893	164,211	8,218	67,530	63,070
1991 ^b	55,804	70,319	197,803	15,864	126,436 ^c	128,365
1992 ^b	54,289	40,001	298,740	22,127	172,662	108,753

* Data taken from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files.

^b In addition to these harvests, there were hatchery terminal area fisheries in: (1) District 101 which resulting in the harvests of 388, 33, 40, and 63 coho salmon in the years 1989-1992; and, (2) in District 106 which resulted in the harvests of 1,392, 2,961, 626, and 949 coho salmon in the years 1989-1992.

^c In addition, 3 coho salmon were confiscated in District 111 in 1991.

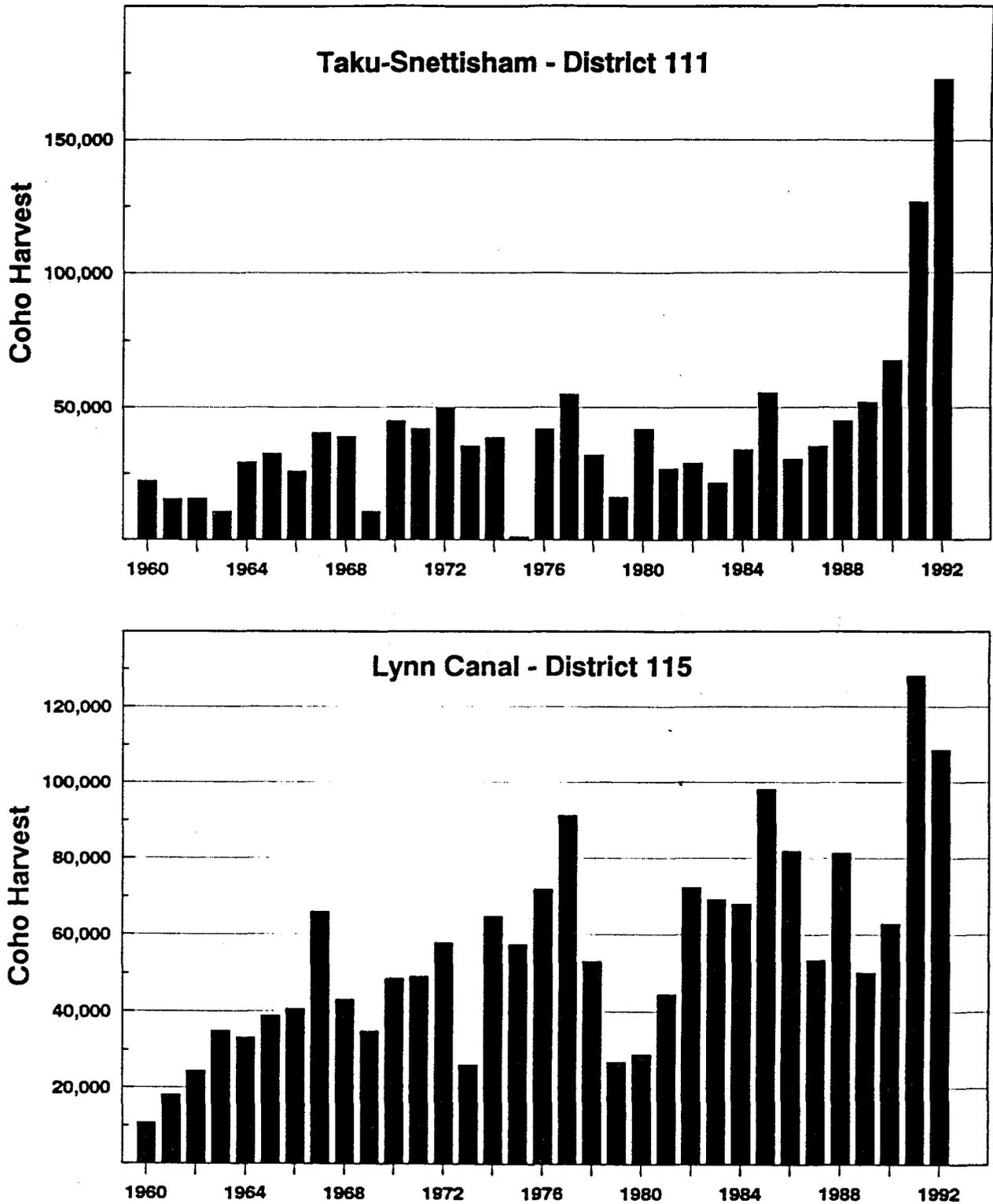


Figure 16. Commercial harvests of coho salmon from traditional drift gill net fisheries that take place in two districts located in the northern portion of Southeast Alaska, 1960-1992.

traditional drift gill net fisheries from district 115 were about 65,000 and 100,000 fish; respectively (Figure 16).

Central Inside - Drift Gill Net Harvests

Commercial harvests of coho salmon from traditional drift gill net fisheries in the central inside area of Southeast Alaska during the period 1960-1992 have ranged from a low of about 300 fish in 1960 to a high of about 321,000 fish in 1992, approximately a thousand-fold difference. During the 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in traditional drift gill net fisheries from the central inside area were about 71,000 and 235,000 fish; respectively.

The central inside area drift gill net harvests took place in districts 106 and 108. The traditional fishery harvest of coho salmon with drift gill nets from district 106 during the 1960-1992 period ranged from a low of about 300 fish in 1960 to a high of about 299,000 fish in 1992 (Table 16). During the 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in traditional drift gill net fisheries from district 106 were about 64,000 and 220,000 fish; respectively (Figure 17). The traditional fishery harvest of coho salmon with drift gill nets from district 108 during the 1960-1992 period ranged from a low of 0 fish in 1960, 1961, and 1975 to a high of about 39,000 fish in 1972 (Table 16). During the 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in traditional drift gill net fisheries from district 108 were about 7,000 and 15,000 fish; respectively (Figure 17).

Southern Inside - Drift Gill Net Harvests

Traditional commercial harvests of coho salmon in the southern inside area all took place in district 101. Commercial harvests of coho salmon from traditional drift gill net fisheries in the southern inside area of Southeast Alaska during the period 1960-1992 have ranged from a low of about 3,000 fish in 1963 to a high of about 70,000 fish in 1991, approximately a twenty-five-fold difference (Table 16). During the 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in traditional drift gill net fisheries from the southern inside area were about 35,000 and 51,000 fish; respectively (Figure 17). Harvests of coho salmon with drift gill nets also took place in the Annette Island Reserve (Figure 17); these harvests are discussed later under the Annette Island Reserve section of this report.

Commercial Set Gill Net Fishery

The set gill net fishery is confined to the rivers and beaches in the Yakutat Area of Southeast Alaska which includes all waters between the longitude of Cape Suckling and a line projected southwest from the westernmost tip of Cape Fairweather. A set gill net is a gill net that has been intentionally staked, anchored, or otherwise fixed in a specific location. A set gill net is designed to fish from the surface of the water and catch fish by entanglement in the mesh. The mesh consists of a single sheet of webbing hung between a floating cork line and a lead line. Set gill nets with mesh size smaller than 8 inches may not be deeper than 45 meshes and set gill nets with mesh size 8

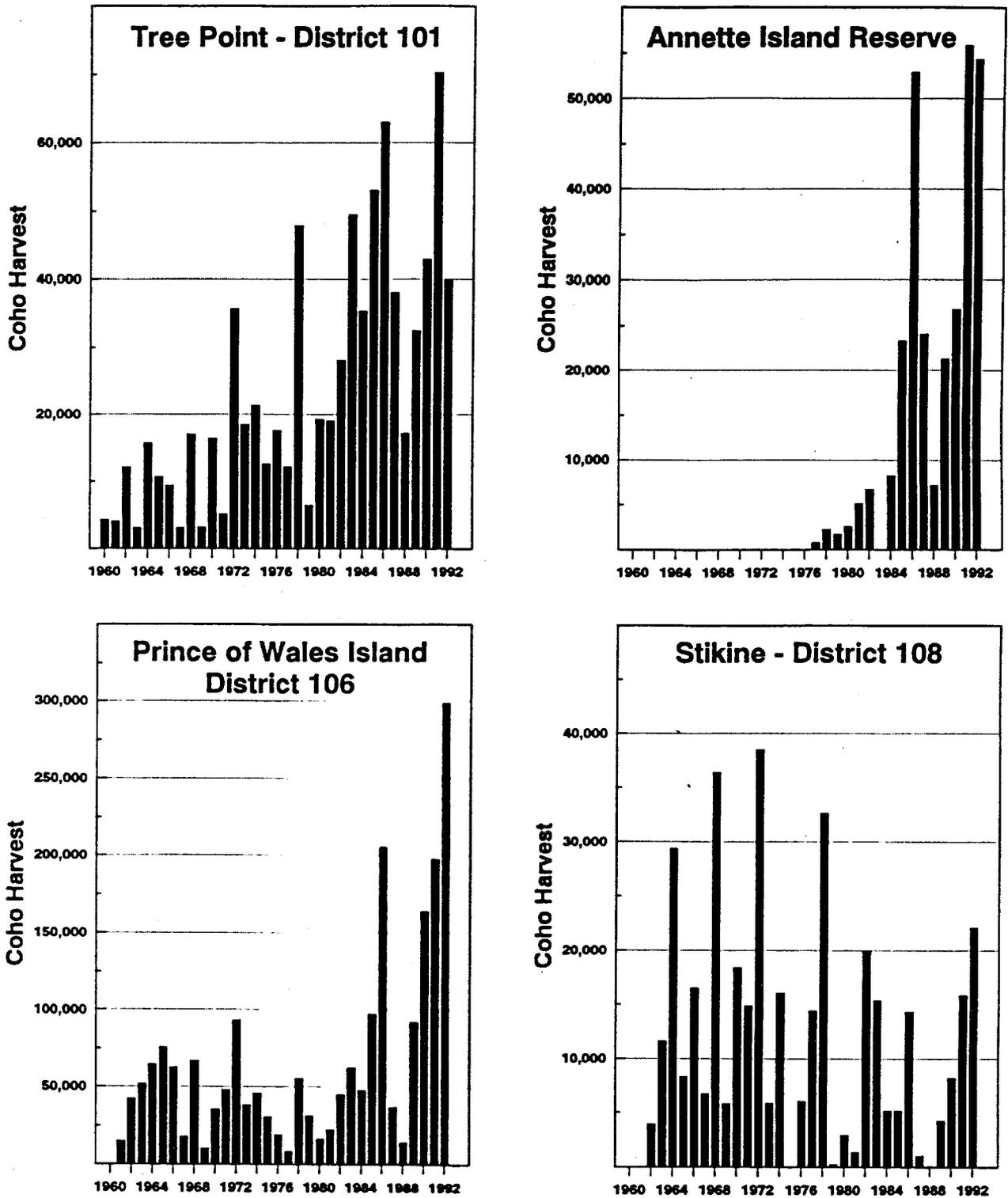


Figure 17. Commercial harvests of coho salmon from traditional drift gill net fisheries that take place in three districts located in the southern portion of Southeast Alaska and from the Annette Island Reserve, 1960-1992.

inches or larger may not be deeper than 35 meshes. In addition, there are various district specific restrictions concerning length of set nets, placement of set nets, and minimum distances between set nets.

Commercial set gill net harvests of coho salmon from the Yakutat Area have ranged from a low of about 30,000 fish in 1970 to a high of about 290,000 fish in 1992, almost a ten-fold difference (Table 1). Other than a few coho salmon being confiscated by the State of Alaska and later sold (see footnotes on Tables 17 and 18), all commercial harvests with set net gear have been through traditional common property fisheries. During the 33 year period between 1960 and 1992, set gill net gear harvested a total of almost 3.8 million coho salmon with the average harvest being about 117,000 fish per year. Annual coho salmon harvests with set gill net gear from the Yakutat Area during the 1960's, 1970's, 1980's, and the first three years of the 1990's averaged about 114,000, 65,000, 147,000, and 202,000 fish; respectively (Figure 18).

The following sections discuss coho salmon harvests from the larger commercial set gill net fisheries in the Yakutat Area of Southeast Alaska

Tsiu River - Set Gill Net Harvests

The Tsiu River is located about 200 km west of the City of Yakutat and the set gill net fishery takes place in-river. Commercial harvests of coho salmon from the Tsiu River set gill net fishery during the period 1960-1992 have ranged from 0 fish in 1961, 1970-1972, and 1975 to about 92,000 fish in 1992 (Table 17). During the 1960's, 1970's, 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in the Tsiu River set gill net fishery were about 23,000, 9,000, 41,000 and 55,000 fish; respectively (Figure 19).

Kaliakh River - Set Gill Net Harvests

The Kaliakh River is located about 150 km west of the City of Yakutat and the set gill net fishery takes place in-river. Commercial harvests of coho salmon from the Kaliakh River set gill net fishery during the period 1960-1992 have ranged from 0 fish in 1970-1972 and 1975 to about 52,000 fish in 1960 (Table 17). During the 1960's, 1970's, 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in the Kaliakh River set gill net fishery were about 22,000, 2,000, 12,000 and 7,000 fish; respectively (Figure 19).

Situk River - Set Gill Net Harvests

The Situk River is located about 50 km east of the City of Yakutat and the set gill net fishery takes place in-river. Commercial harvests of coho salmon from the Situk River set gill net fishery during the period 1960-1992 have ranged from about 10,000 fish in 1973 to about 134,000 fish in 1992 (Table 18). During the 1960's, 1970's, 1980's and the first three years of the 1990's, the annual average harvests of coho salmon in the Situk River set gill net fishery were about 28,000, 21,000, 35,000 and 89,000 fish; respectively (Figure 20).

Table 17. Commercial set gill net harvests of coho salmon from various fisheries in the portion of the Yakutat area west of Ocean Cape, 1960-1992.*

Year	Harvest of Coho Salmon						
	8-Mile Creek	Tsiu River	Kaliakh River	Yahtse River	Yana River	Manby Shore	Yakutat Bay
	192- 60	192- 42	192- 41	185- 10	185- 05	183-20, 25 55, 80, 90	183-10, 15, & 40
1960	0	10,169	51,622	5,005	0	0	1,801
1961	0	0	51,417	16,454	0	0	2,967
1962	0	38,739	23,443	19,863	0	0	6,068
1963	0	19,771	15,833	16,280	0	21,827	3,525
1964	0	34,644	24,769	0	0	26,638	6,796
1965	0	41,357	25,896	0	0	11,167	2,490
1966	0	28,960	12,202	0	0	0	1,861
1967	0	34,899	9,486	4,735	0	7,783	1,333
1968	0	16,064	5,799	11,807	0	7,638	1,281
1969	0	3,144	785	1,800	0	4,833	2,046
1970	0	0	0	4,980	0	3,190	99
1971	0	0	0	0	0	0	204
1972	0	0	0	5,130	0	2,953	958
1973	0	8,803	601	4,908	0	1,770	385
1974	0	8,258	1,101	6,679	0	2,199	1,326
1975	0	0	0	3,444	0	3,426	743
1976	0	3,129	1,221	0	0	11,906	1,505
1977	0	5,691	1,778	2,672	0	12,130	150
1978	0	34,392	5,507	3,428	0	9,277	662
1979	0	32,621	5,266	3,752	0	4,575	1,155
1980	1,571	28,711	8,725	15,040	0	8,611	2,396
1981	0	30,109	3,093	11,585	0	8,341	2,179
1982	0	46,436	16,489	7,362	0	10,544	4,046
1983	0	20,119	4,598	6,796	0	5,391	3,869
1984	0	51,322	13,081	1,526	0	17,594	3,519
1985	0	63,922	22,809	3,707	0	16,282	3,414
1986	0	19,593	10,770	18,278	0	4,164	3,203
1987	902	35,297	15,923	12,688	0	7,606	2,417
1988	3,169	56,116	8,867	2,836	306	20,844	3,164
1989	3,015	62,939	16,858	10,762	1,373	7,150	4,712
1990	731	33,757	13,731	7,478	2,245	16,295	5,472
1991	287	38,195	4,379	20	2,251	5,425 ^c	5,296
1992	0	92,290 ^b	4,138	0	3,048	8,112	6,567

* Data taken from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files.

^b In addition, 53 coho salmon were confiscated.

^c In addition, 184 coho salmon were confiscated.

Table 18. Commercial set gill net harvests of coho salmon from various fisheries in the portion of the Yakutat area east of Ocean Cape, 1960-1992.*

Year	Harvest of Coho Salmon						
	Lost River	Situk River	Dangerous River	Itallo River	Akwe River	Alsek River	East River
	182-80	182-70	182-60	182-50 & 55	182-40	182-30 & 31	182-20, 21, & 22
1960	9,546	25,613	0	4,336	5,125	0	5,920
1961	8,447	26,324	0	1,704	13,359	7,679	310
1962	10,783	53,502	0	7	10,009	0	8,362
1963	10,228	38,294	0	1,266	6,913	7,164	264
1964	12,197	43,079	0	0	6,775	9,760	5,122
1965	7,463	20,454	0	0	2,703	9,638	1,039
1966	2,605	15,963	0	0	912	2,688	1,061
1967	3,275	23,278	0	0	2,014	10,090	318
1968	6,958	19,149	0	3,866	5,375	10,586	3,482
1969	3,133	10,656	0	1,637	601	2,493	1,134
1970	2,401	11,879	0	150	1,536	2,188	3,325
1971	2,719	21,389	0	0	4,656	4,730	3,722
1972	3,627	17,848	0	940	5,267	7,296	1,685
1973	2,385	10,026	132	1,785	4,670	4,395	1,353
1974	4,300	32,968	0	5,460	4,988	7,046	3,231
1975	3,486	16,408	0	3,064	3,160	2,230	1,442
1976	3,786	15,664	0	4,553	3,816	4,883	1,280
1977	6,052	32,020	553	4,912	10,299	11,817	4,140
1978	6,360	32,057	1,144	8,130	14,903	13,913	7,635
1979	4,265	17,624	0	6,110	10,223	6,158	4,124
1980	6,813	21,947	0	6,927	8,624	7,863	2,456
1981	7,541	37,871	1,861	6,138	6,691	10,232	6,938
1982	9,366	27,549	0	6,940	11,008	6,534	2,580
1983	5,223	15,207	0	4,804	5,290	5,253	4,991
1984	10,717	47,511	267	9,213	8,714	7,868	10,924
1985	9,119	55,223	17	9,491	4,429	5,490	8,932
1986	2,489	14,760	202	1,856	8,629	1,344	2,825
1987	3,750	29,898	0	1,399	7,119	2,517	4,890
1988	5,905	61,689	0	1,920	13,705	4,986	20,148
1989	5,737	39,318	421	0	10,096 ^c	5,972	7,287
1990	4,922	45,075	454	3,031	6,718	1,437	7,482
1991	3,621	89,410	0	1,877	5,697	5,956	3,857
1992	10,244	133,956 ^b	23	1,482	3,402	3,309	21,550

* Data taken from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files.

^b In addition, 1 coho salmon was confiscated.

^c In addition, 43 coho salmon were confiscated.

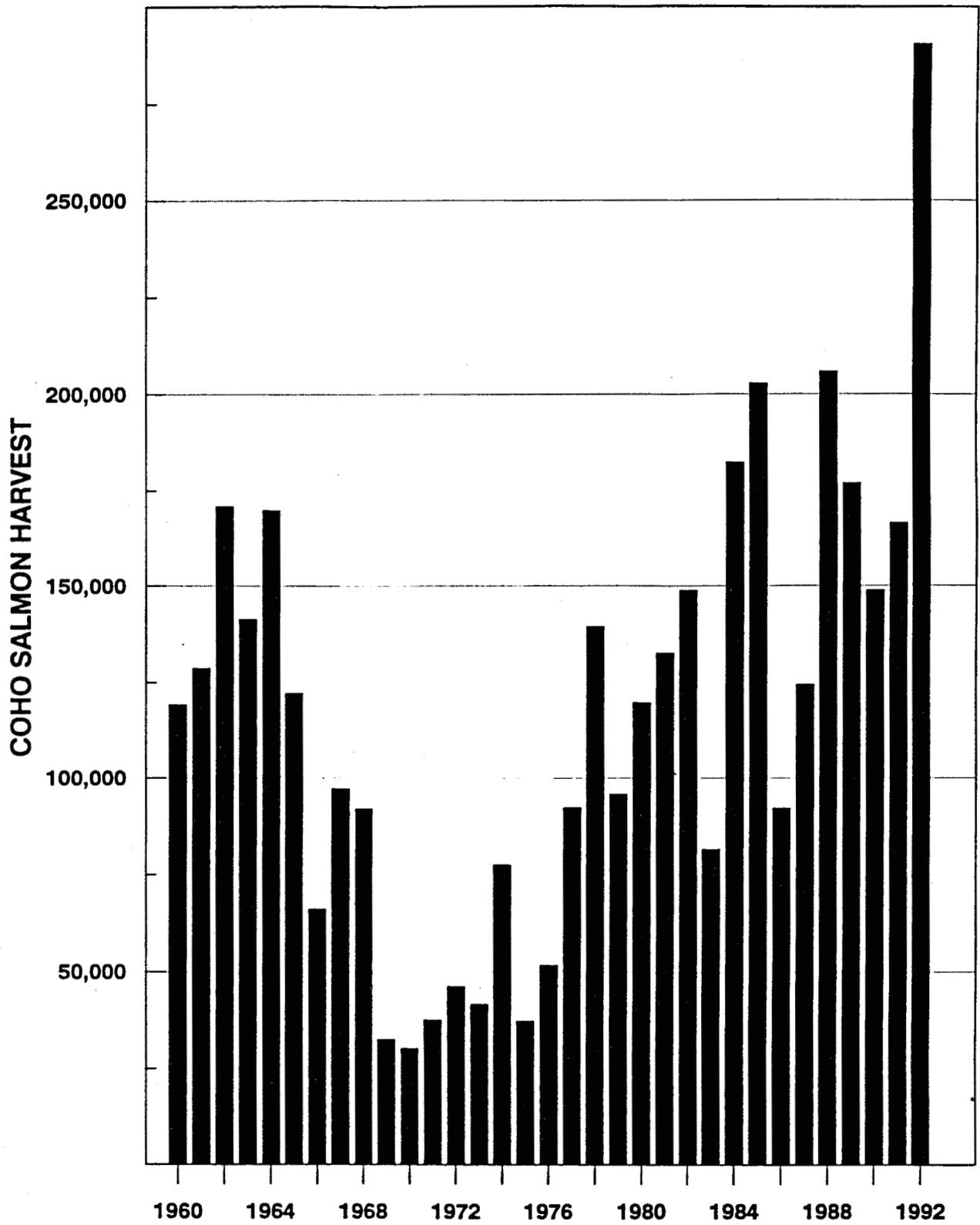


Figure 18. Commercial set gill net harvests of coho salmon from Southeast Alaska, 1960-1992.

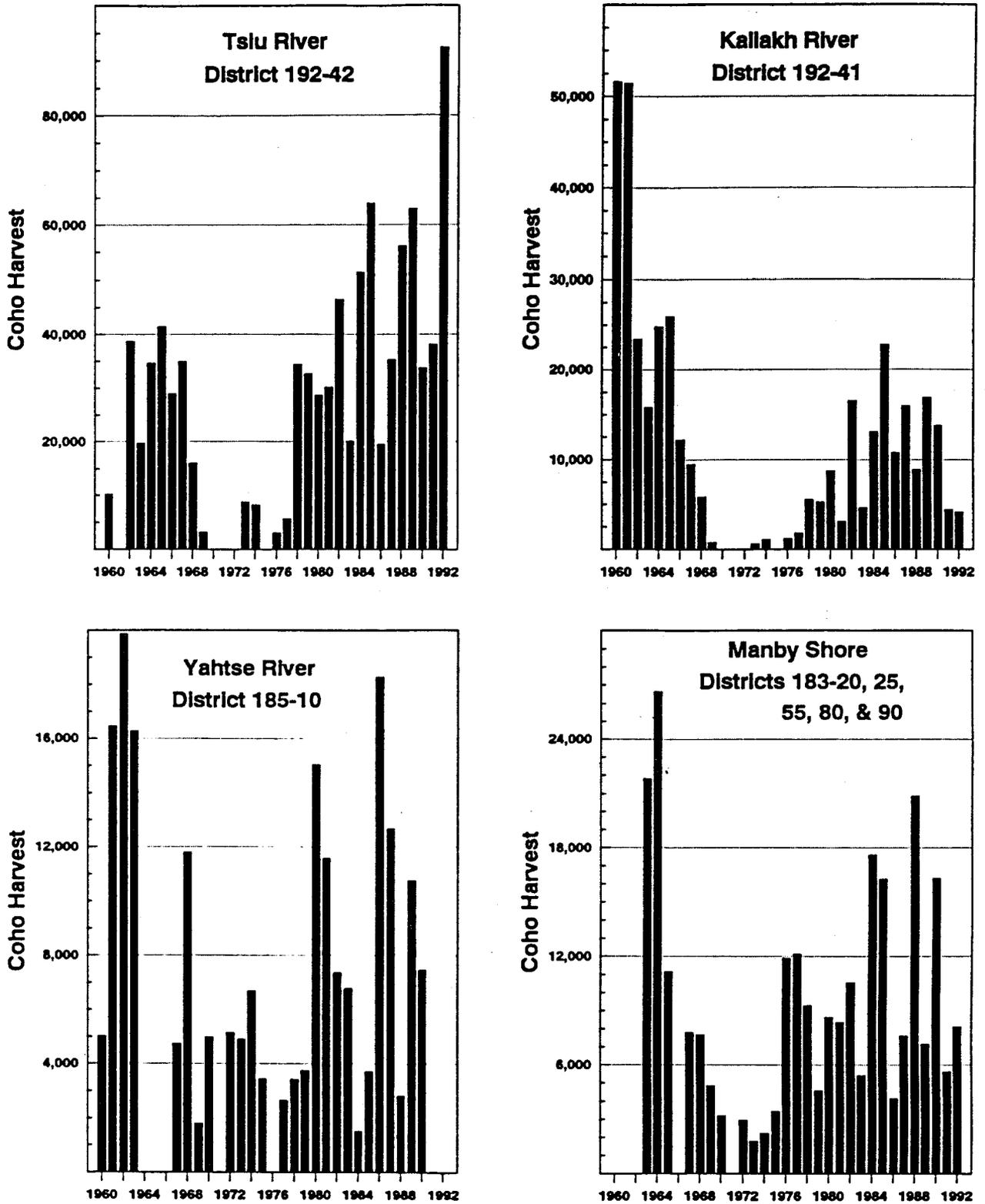


Figure 19. Set gill net harvests of coho salmon from selected fisheries in the Yakutat area west of Ocean Cape, 1960-1992.

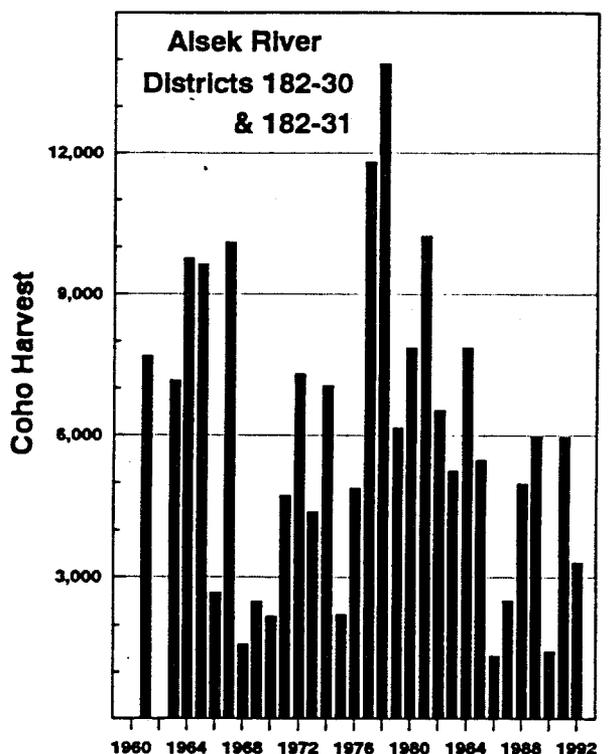
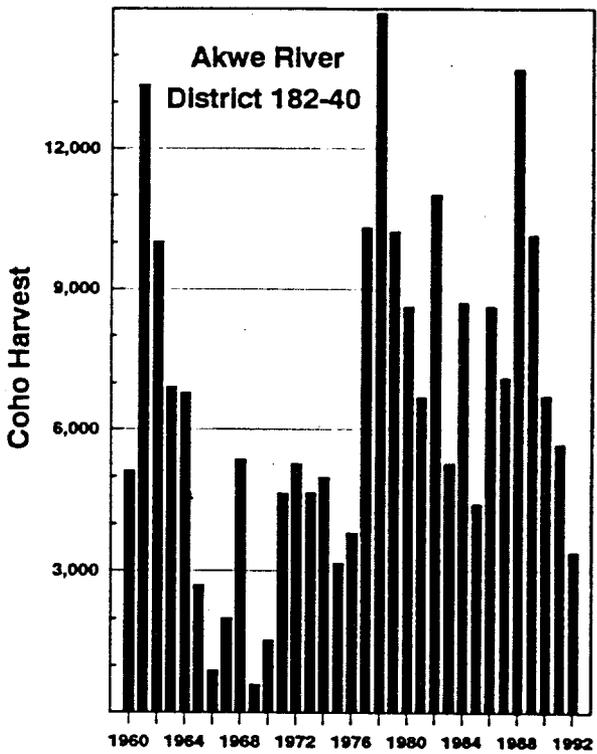
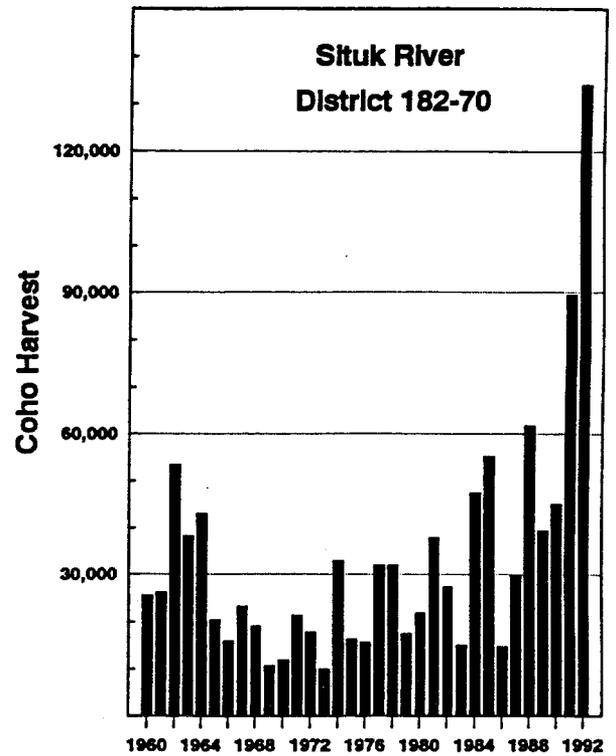
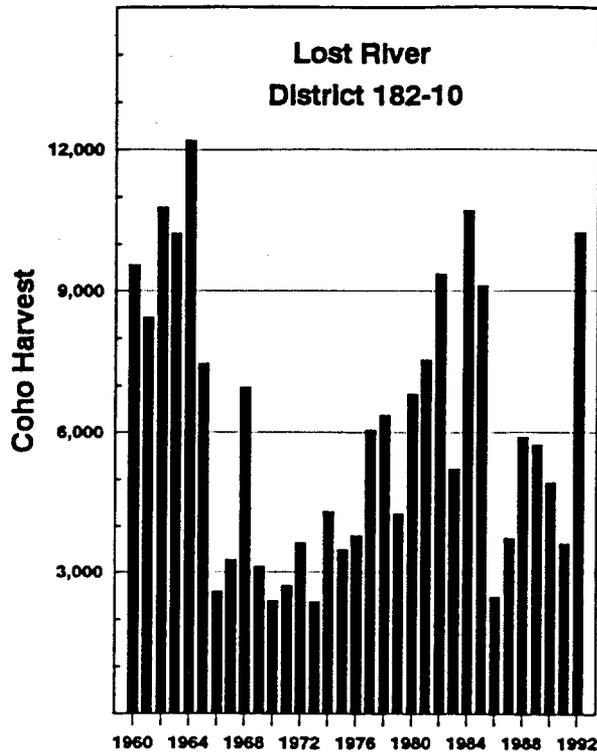


Figure 20. Set gill net harvests of coho salmon from selected fisheries in the Yakutat area east of Ocean Cape, 1960-1992.

Other Yakutat Area Set Gill Net Harvests

Eight Mile Creek located west of the Tsiu River has supported set gill net harvests of as many as 3,169 coho salmon a year but harvests have only taken place in 6 of the past 33 years; harvest in the first three years of the 1990's has averaged only about 300 fish per year (Table 17). The Yahtse River (located about half way between the Tsiu River and the City of Yakutat) has supported set gill net harvests in all but 6 of the past 33 years with the peak harvest of almost 20,000 coho salmon occurring in 1962; annual harvests in the 1980's and the first three years of the 1990's have averaged about 9,000 and 2,000 fish; respectively (Table 17). The Yana River (located just east of the Yahtse River) has supported set gill net harvests that have annually averaged about 3,000 coho salmon per year during the first three years of the 1990's; prior to 1988, coho salmon were not harvested from this river (Table 17). Commercial fishermen fish along the beach on the western shore of Yakutat Bay with set nets and the fishery is collectively referred to as the Manby Shore fishery. Manby shore has produced harvests of as high as 26,638 coho salmon (in 1964); annual harvests in the 1980's and the first three years of the 1990's were about 11,000 and 10,000 fish; respectively (Table 17). Set gill nets are also fished in other parts of Yakutat Bay where coho harvests in the 1980's and the first three years of the 1990's annually averaged about 3,000 and 6,000 fish; respectively (Table 17).

Lost River located just east of the City of Yakutat has supported a set gill net fishery each year since 1960; annual coho salmon harvests have ranged from about 2,400 fish in 1973 to about 12,000 fish in 1964 (Figure 20). Set gill net harvests of coho salmon from the Lost River set gill net fishery have annually averaged about 7,000 fish during the 1980's and about 6,000 fish during the first three years of the 1990's. The Dangerous River located about 35 km east of the City of Yakutat has supported coho salmon harvests with set gill net gear in 10 of the past 33 years; harvests in the 1980's averaged under 300 fish per year and harvests during the first three years of the 1990's averaged about 150 fish per year (Table 18). Set gill net harvests of up to 9,491 coho salmon have been taken from the Italo River which is located about 50 km east of the City of Yakutat. Harvests of coho salmon from the Italo River have averaged about 5,000 fish per year during the 1980's and about 2,000 fish per year during the first three years of the 1990's (Table 18). The Akwe River located about 60 km east of the City of Yakutat has produced set gill net harvests of almost 15,000 coho salmon (Figure 20). Harvests of coho salmon from the Akwe River have averaged about 8,000 fish per year during the 1980's and about 5,000 fish per year during the first three years of the 1990's (Table 18).

The Alsek River is located about 80 km east of the City of Yakutat and is a trans-boundary river with it's headwaters originated in Canada. The Alsek River has supported a set gill net fishery with coho salmon harvests ranging from 0 in 1960 and 1962 to a high of almost 14,000 fish in 1978 (Figure 20). Harvests of coho salmon from the Alsek River have averaged about 6,000 fish per year during the 1980's and about 3,000 fish per year during the first three years of the 1990's (Table 18). The East River located to the east of the Alsek River was once the outlet for the Alsek River. The East River has supported a set gill net fishery with coho salmon harvests ranging from a low

of about 300 fish in 1963 to a high of about 22,000 fish in 1992 (Table 18). Harvests of coho salmon from the East River have averaged about 7,000 fish per year during the 1980's and about 11,000 fish per year during the first three years of the 1990's (Table 18).

Transboundary River Harvests of Coho Salmon

Coho salmon returning to transboundary rivers such as the Alsek, Taku, and Stikine rivers which have their headwaters in Canada are potentially subject to harvest by both United States and Canadian commercial fishermen. Commercial harvests by United States fishermen of coho salmon returning to the Alsek River were discussed in the preceding paragraph. Commercial harvests of Alsek River coho salmon by Canadian commercial fishermen have not occurred during the past 33 years. Coho salmon returning to the Taku and Stikine rivers have been harvested by Canadian commercial fishermen (Table 19). Annual Canadian commercial harvests of coho salmon from the Stikine River have been as high as almost 16,000 fish; harvests during the 1980's averaged about 5,000 fish per year and harvests during the first three years of the 1990's averaged about 3,000 fish per year (Figure 21). Annual Canadian commercial harvests of coho salmon from the Taku River have been as high as 8,390 fish (Table 19); harvests during the 1980's averaged about 4,000 fish per year and harvests during the first three years of the 1990's also averaged about 4,000 fish per year (Table 19).

Annette Island Fishery Reserve and Trap Fishery

Fisheries in the waters within 3,000 feet of the shore of Annette Island are under the exclusive control of the Metlakatla Indian Community. Commercial harvests of coho salmon have been taken from this area with hand and power troll gear, purse seine gear, drift gill net gear, and trap gear (Figure 22). Between 1960 and 1992, annual harvests of coho salmon from the Annette Island reserve have ranged from 0 fish in 1971 to a high of 74,553 fish in 1986 (Table 20). Annual coho salmon harvests from the Annette Island Fisheries Reserve during the 1960's, 1970's, 1980's, and the first three years of the 1990's averaged about 4,000, 4,000, 23,000, and 56,000 fish; respectively (Figure 22). Harvests of coho salmon from the Annette Island Fisheries Reserve with both power and hand troll gear have been minor; only 1,023 coho salmon have been caught with troll gear during all years since 1960. Purse seine harvests of coho salmon from the Annette Island Fisheries Reserve have been made in 25 of the past 33 years with the highest harvest of over 20,000 fish being landed in 1986 (Table 20). Harvest of coho salmon from the Annette Island Fisheries Reserve with purse seine gear averaged about 5,000 fish per year during the 1980's and about 10,000 fish per year during the first three years of the 1990's (Table 20). Drift gill net harvests of coho salmon from the Annette Island Fisheries Reserve have been made in 16 of the past 33 years with the highest harvest of almost 56,000 fish being landed in 1991 (Table 20). Harvest of coho salmon from the Annette Island Fisheries Reserve with drift gill net gear averaged about 15,000 fish per year during the 1980's and about 46,000 fish per year during the first three years of the 1990's (Table 20).

Table 19. Inriver harvests of coho salmon from transboundary rivers, 1964-1992.*

Year	Harvest of Coho Salmon			
	U. S. Alsek	Lower Stikine	Canada Upper Stikine	Taku
1960	0			
1961	7,679			
1962	0			
1963	7,164			
1964	9,760			
1965	9,638			
1966	2,688			
1967	10,090			
1968	10,586			
1969	2,493			
1970	2,188			
1971	4,730			
1972	7,296			
1973	4,395			
1974	7,046			
1975	2,230		45	
1976	4,883		13	
1977	11,817		0	
1978	13,913		0	
1979	6,158	10,720 ^b		6,006
1980	7,863	6,629	40	6,405
1981	10,232	2,667	0	3,607
1982	6,534	15,904	0	51
1983	5,253	6,170	0	8,390
1984	7,868			5,357
1985	5,490	2,172	0	1,770
1986	1,344	2,278	0	1,783
1987	2,517	5,728	0	5,599
1988	4,986	2,112	0	3,123
1989	5,972	6,092	0	2,876
1990	1,437	4,020	0	3,207
1991	5,956	2,638	0	3,415
1992	3,309	1,850	0	4,027

* Alsek harvest data taken from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files for 1964 - 1992. Canadian harvest data taken from PSC (1992).

^b The Upper and Lower Stikine commercial harvests in 1979 were combined.

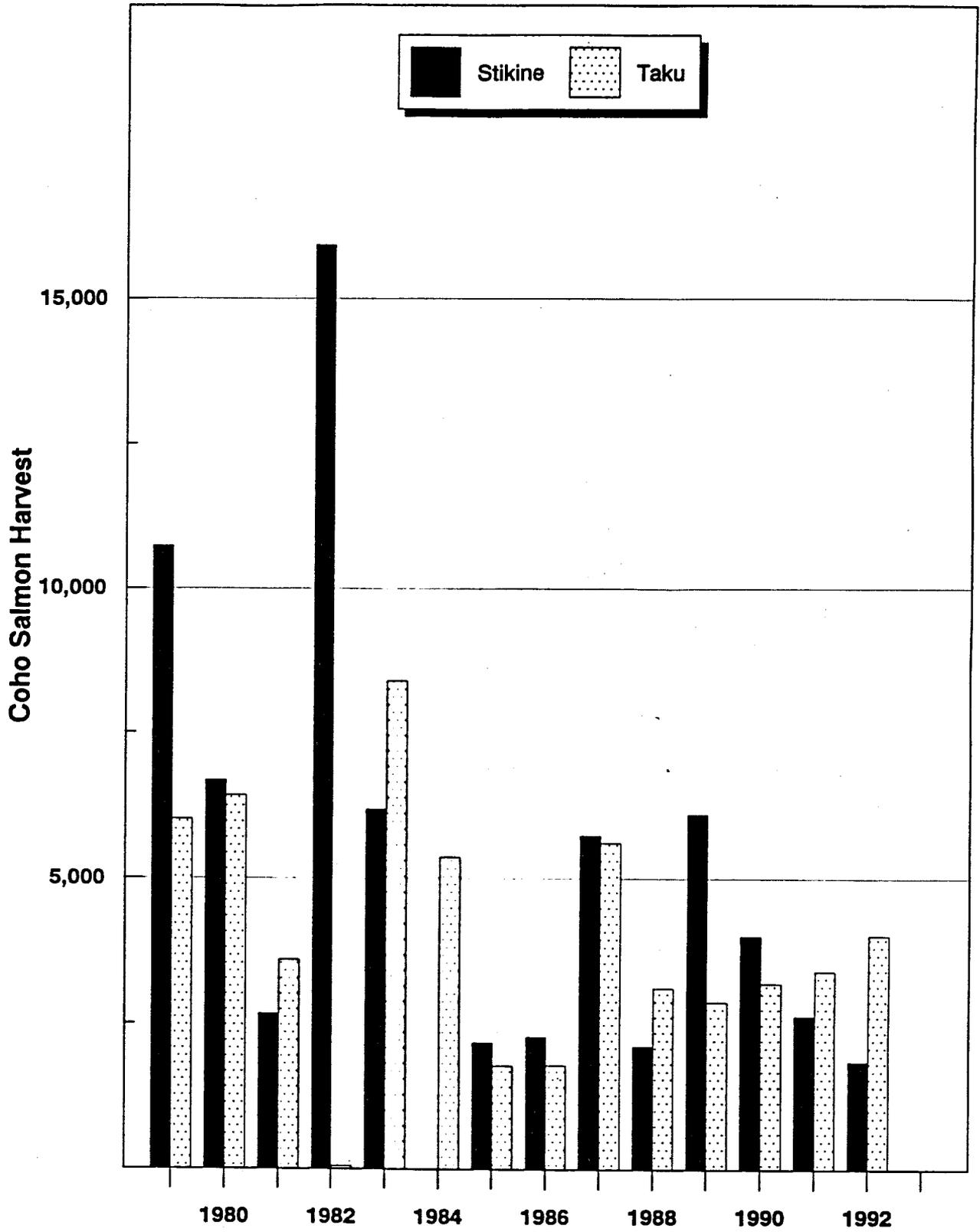


Figure 21. Canadian inriver harvests of coho salmon from the Stikine and Taku Rivers, 1979-1992.

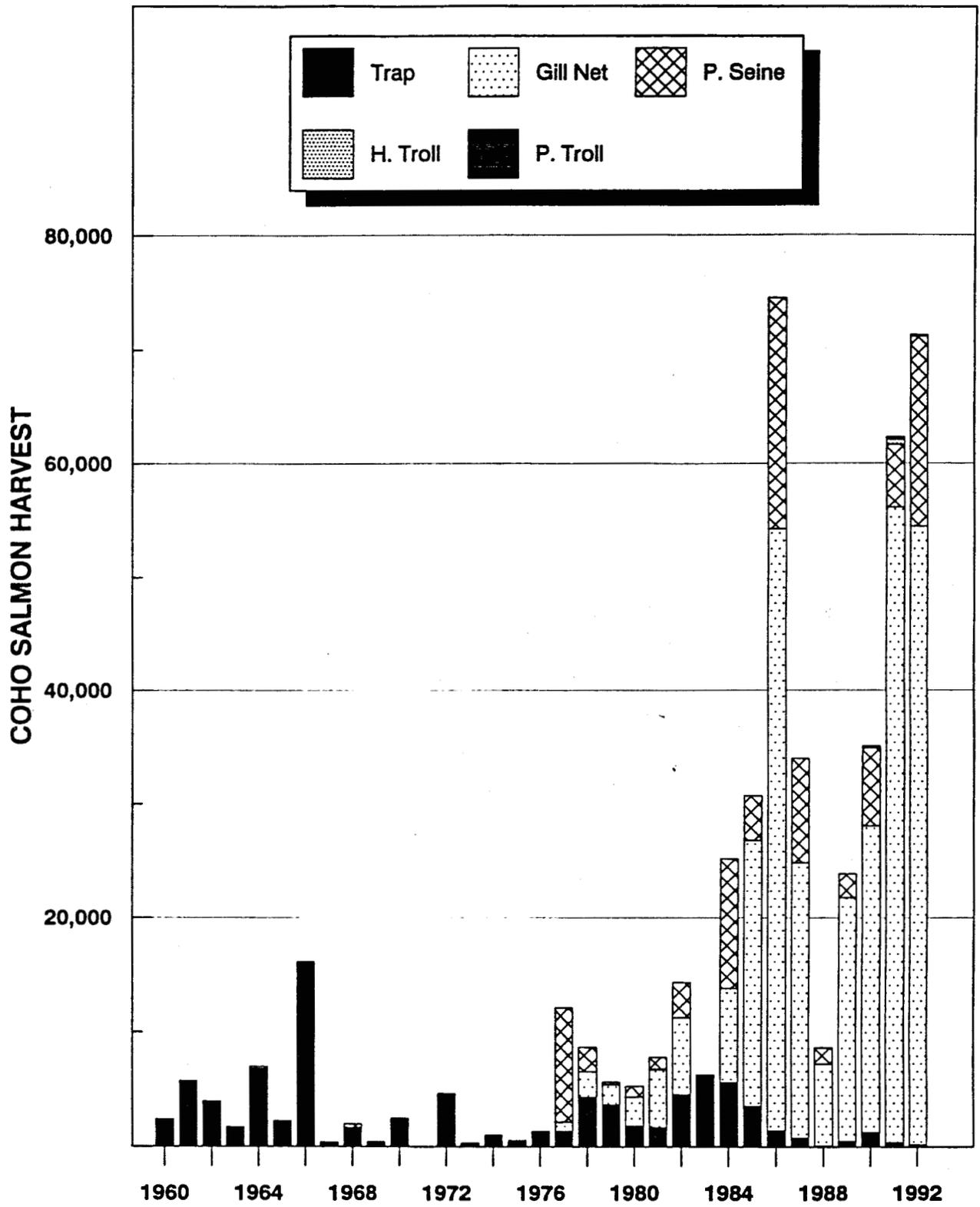


Figure 22. Commercial harvests of coho salmon from the Annette Island Reserve by harvest gear type, 1960-1992.

Table 20. Commercial trap harvests of coho salmon from the Annette Island Reserve along with commercial harvests by other gear types from the reserve, 1960-1992.*

Year	Harvest of Coho Salmon					Total
	Commercial Gear Type					
	Trap	Gill Net	Seine	Hand Troll	Power Troll	
1960	2,387					2,387
1961	5,740					5,740
1962	3,975					3,975
1963	1,646		42			1,688
1964	6,796		164			6,960
1965	2,256		24			2,280
1966	15,975		169			16,144
1967	368		6			374
1968	1,663	10	283			1,956
1969	400					400
1970	2,499			0		2,499
1971	0					0
1972	4,688		18			4,706
1973	324					324
1974	1,006					1,006
1975	562		8			570
1976	1,223		131			1,354
1977	1,374	768	9,984			12,126
1978	4,371	2,187	2,113			8,671
1979	3,684	1,726	239			5,649
1980	1,789	2,565	909			5,263
1981	1,647	5,092	1,100			7,839
1982	4,576	6,665	3,104			14,345
1983	6,270					6,270
1984	5,595	8,240	11,288			25,123
1985	3,540	23,227	3,911			30,678
1986	1,410	52,834	20,309			74,553
1987	754	24,033	9,204			33,991
1988	87	7,138	1,431	15		8,671
1989	477	21,266	2,127	0	0	23,870
1990	1,288	26,764	6,863	166	23	35,104
1991	318	55,804	5,513	504	200	62,339
1992	142	54,289	16,736		115	71,282

* Data taken from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files.

Traps have been used to commercially harvest coho salmon from the Annette Island Fisheries Reserve in all but 1 of the past 33 years (1971 was the exception). Annual coho salmon harvests from the Annette Island Fisheries Reserve with trap gear during the 1960's, 1970's, 1980's, and the first three years of the 1990's averaged about 4,000, 2,000, 2,600, and 600 fish; respectively (Figure 22).

Sport Fishery

Sport fishing is the taking of or attempting to take for personal use (and not for sale or barter) fish by hook and line held in the hand or by hook and line with the line attached to a pole or rod which is held in the hand or closely attended. Unlike commercial fisheries which are predominantly regulated by restricting times and areas open for fishing, the sport fishery is predominantly regulated with daily bag and possession limits. The sport fishery bag limit for coho salmon in most of Southeast Alaska marine and fresh waters is 6 fish per day and 12 in possession. Exceptions include Juneau area roadside streams where the daily bag limit is 2 coho salmon. The sport fishery has occasionally been further restricted on an in-season area and time basis by reducing bag limits to conserve weak coho salmon stocks.

Sport harvests of coho salmon from Southeast Alaska have ranged from a low of about 23,000 fish in 1979 to a high of about 124,000 fish in 1991, more than a five-fold difference (Table 21). During the 16 year period between 1977 and 1992, sport anglers harvested a total of about 969,000 coho salmon; average harvest during this time period was about 60,600 fish per year. Annual coho salmon harvests by sport anglers from Southeast Alaska during the last three years of the 1970's, the ten years of the 1980's, and the first three years of the 1990's averaged about 35,900, 53,300, and 109,700 fish; respectively (Figure 23).

Most of the sport harvest of coho salmon in Southeast Alaska takes place in marine waters. Sport harvests of coho salmon from marine waters of Southeast Alaska have ranged from a low of about 19,000 fish in 1979 to a high of about 109,000 fish in 1991, almost a six-fold difference (Table 22). During the 16 year period between 1977 and 1992, sport anglers harvested an average of about 51,200 fish per year from marine waters. Annual coho salmon harvests by sport anglers from marine waters of Southeast Alaska during the last three years of the 1970's, the ten years of the 1980's, and the first three years of the 1990's averaged about 31,100, 43,400, and 97,400 fish; respectively (Figure 23). Sport harvests of coho salmon from fresh waters of Southeast Alaska have ranged from a low of about 4,200 fish in 1979 to a high of about 15,300 fish in 1992, almost a four-fold difference (Table 23). During the 16 year period between 1977 and 1992, sport anglers harvested an average of about 51,200 fish per year from fresh waters of Southeast Alaska. Annual coho salmon harvests by sport anglers from fresh waters of Southeast Alaska during the last three years of the 1970's, the ten years of the 1980's, and the first three years of the 1990's averaged about 4,800, 9,900, and 12,300 fish; respectively (Figure 23).

Table 21. Sport harvests of coho salmon from the eight harvest monitoring areas of Southeastern Alaska, 1977-1992.*

Harvest of Coho Salmon									
Year	Prince of Petersburg-		Sitka	Juneau	Haines- Skagway	Glacier		Total	
	Ketchikan Area	Wales Area				Wrangell Area	Bay Area		Yakutat Area
1977	4,583	1,917	3,048	3,116	20,068	1,270	744	1,406	36,152
1978	7,667	2,677	5,493	2,364	24,348	1,898	880	3,181	48,508
1979	2,336	1,681	2,917	1,708	10,825	455	227	2,963	23,112
1980	6,914	3,986	2,874	2,202	13,750	551	216	2,315	32,808
1981	5,132	2,561	1,864	3,306	10,066	2,172	573	2,484	28,158
1982	11,442	4,125	3,051	3,887	25,015	1,944	1,163	2,809	53,436
1983	14,181	8,374	4,133	4,648	18,861	2,259	619	2,328	55,403
1984	21,296	7,487	4,046	2,644	15,677	1,616	371	6,675	59,812
1985	17,751	7,360	1,580	3,680	19,744	2,888	336	6,571	59,910
1986	21,191	8,639	2,215	4,077	12,959	2,420	391	6,430	58,322
1987	13,435	6,557	2,540	2,715	19,485	1,521	1,044	2,987	50,284
1988	7,785	3,094	2,581	2,745	20,862	1,673	1,345	3,603	43,688
1989	13,328	15,099	2,602	8,291	39,063	2,047	2,376	7,983	90,789
1990	35,197	17,049	5,387	7,808	33,961	1,498	1,746	2,566	105,212
1991	26,839	24,964	5,117	11,474	40,269	3,678	5,653	5,952	123,946
1992	22,016	13,419	4,967	9,167	40,170	3,067	1,507	5,626	99,939

* Data taken from Mills (1979-1993).

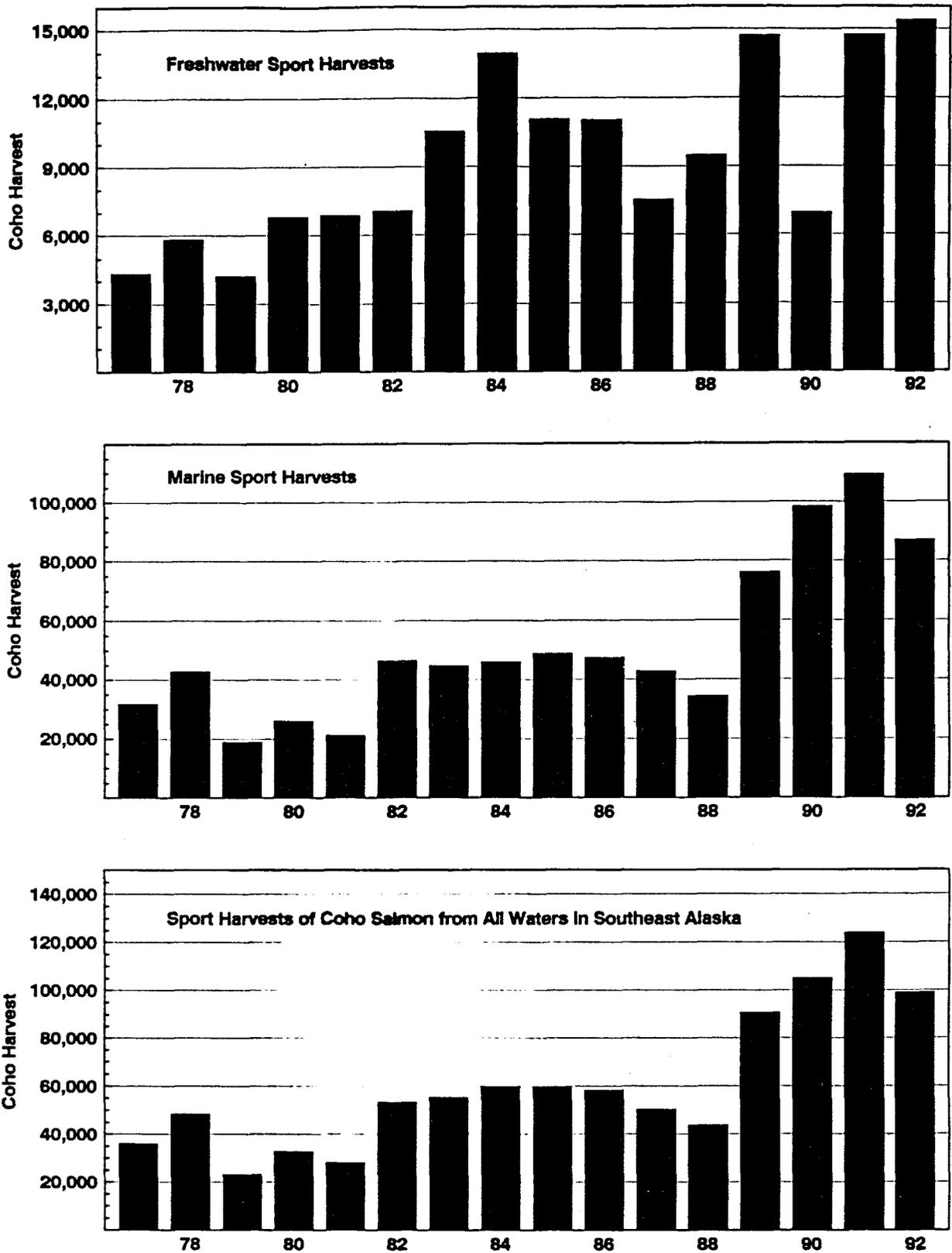


Figure 23. Sport harvests of coho salmon, Southeastern Alaska, 1977-1992.

Table 22. Sport harvests of coho salmon from marine fisheries in Southeastern Alaska, 1977-1992.*

Year	Harvest of Coho Salmon							Total Marine
	Ketchikan	Prince of Wales	Petersburg Wrangell	Sitka	Juneau	Glacier Bay	Other	
1977	4,210	1,048	2,767	2,855	17,703	744	2,495	31,822
1978	7,177	1,961	5,141	2,188	22,312	880	3,016	42,675
1979	2,281	1,200	2,572	1,554	9,726	227	1,327	18,887
1980	6,604	2,066	1,281	1,876	12,252	207	1,730	26,016
1981	4,643	1,367	1,085	3,122	8,921	562	1,599	21,299
1982	10,804	2,400	2,507	3,741	22,542	1,163	3,207	46,364
1983	12,969	5,050	3,468	4,312	15,787	619	2,607	44,812
1984	19,918	4,220	2,630	2,389	13,509	247	2,940	45,853
1985	17,005	6,154	1,258	3,332	16,757	324	3,984	48,814
1986	20,688	7,562	1,856	3,962	11,150	224	1,844	47,286
1987	13,146	3,620	2,054	2,673	16,639	956	3,674	42,762
1988	7,440	1,784	1,818	2,437	17,862	508	2,345	34,194
1989	13,060	11,752	2,322	8,030	34,326	1,817	4,769	76,076
1990	34,159	16,077	4,284	7,721	28,220	1,251	6,540	98,252
1991	26,462	21,846	4,240	11,084	34,874	4,873	5,818	109,197
1992	21,652	9,745	3,260	8,706	33,645	1,158	6,501	84,667

* Data taken from Mills (1979-1993).

Table 23. Sport harvests of coho salmon from freshwater fisheries in Southeastern Alaska, 1977-1992.*

Year	Harvest of Coho Salmon					Total Freshwater
	Prince of Wales Island	Juneau Area	Haines & Skagway Area	Yakutat Area	Other	
1977	869	336	987	1,223	915	4,330
1978	716	541	1,056	2,502	1,018	5,833
1979	481	263	282	2,645	554	4,225
1980	1,920	310	448	1,876	2,238	6,792
1981	1,194	313	1,740	2,149	1,463	6,859
1982	1,725	356	1,724	1,939	1,328	7,072
1983	3,324	1,375	1,976	1,730	2,186	10,591
1984	3,267	558	1,114	5,847	3,173	13,959
1985	1,206	485	2,475	5,502	1,428	11,096
1986	1,077	379	2,351	6,085	1,144	11,036
1987	2,937	512	1,195	1,973	905	7,522
1988	1,310	1,345	1,329	3,257	2,253	9,494
1989	3,347	1,557	1,468	6,973	1,368	14,713
1990	972	523	1,133	1,609	2,723	6,960
1991	3,118	1,883	3,069	4,255	2,424	14,749
1992	3,674	1,448	2,185	5,084	2,881	15,272

* Data taken from Mills (1979-1993).

The statewide sport fish harvest survey splits Southeastern Alaska into eight harvest monitoring areas and the following sections discuss sport harvests of coho salmon in these eight areas.

Ketchikan Area - Sport Harvests

Sport harvests of coho salmon in the Ketchikan Area of Southeast Alaska between 1977 and 1992 ranged from a low of about 2,300 fish in 1979 to a high of about 35,200 fish in 1990, more than a fifteen-fold difference (Table 21). Annual coho salmon harvests by sport anglers in the Ketchikan Area during the 1980's and the first three years of the 1990's averaged about 13,200 and 28,000 fish; respectively (Figure 24).

Almost all coho salmon harvested in the Ketchikan Area by sport anglers have been taken in marine waters. Marine harvests of coho salmon in the Ketchikan Area during the 1977-1992 period ranged from about 2,300 fish in 1979 to about 34,200 fish in 1990 (Figure 25). Annual coho salmon harvests by sport anglers from marine waters of the Ketchikan Area during the 1980's and the first three years of the 1990's averaged about 12,600 and 27,500 fish; respectively (Table 22). Freshwater harvests in the Ketchikan Area represented less than 5% of the total harvest of coho salmon during the 1980's and less than 2% of the total harvest of coho salmon during the first three years of the 1990's.

Prince of Wales Area - Sport Harvests

Sport harvests of coho salmon in the Prince of Wales Area of Southeast Alaska between 1977 and 1992 ranged from a low of about 1,700 fish in 1979 to a high of about 25,000 fish in 1991, almost a forty-fold difference (Figure 24). Annual coho salmon harvests by sport anglers in the Prince of Wales Area during the 1980's and the first three years of the 1990's averaged about 6,700 and 18,500 fish; respectively (Table 21).

Most coho salmon harvested in the Prince of Wales Area by sport anglers have been taken from marine waters. Marine harvests of coho salmon in the Prince of Wales Area during the 1977-1992 period ranged from about 1,000 fish in 1977 to about 21,800 fish in 1991 (Figure 25). Annual coho salmon harvests by sport anglers from marine waters of the Prince of Wales Area during the 1980's and the first three years of the 1990's averaged about 4,600 and 15,900 fish; respectively (Table 22). Fresh water harvests of coho salmon in the Prince of Wales Area during the 1977-1992 period ranged from about 500 fish in 1979 to about 3,700 fish in 1992 (Figure 26): Annual coho salmon harvests by sport anglers from fresh waters of the Prince of Wales Area during the 1980's and the first three years of the 1990's averaged about 2,100 and 2,600 fish; respectively (Table 23). Freshwater harvests in the Prince of Wales Area represented about 31% of the total harvest of coho salmon during the 1980's and about 14% of the total harvest of coho salmon during the first three years of the 1990's.

Petersburg-Wrangell Area - Sport Harvests

Sport harvests of coho salmon in the Petersburg-Wrangell Area of Southeast Alaska between 1977 and 1992 ranged from a low of about 1,600 fish in 1985 to

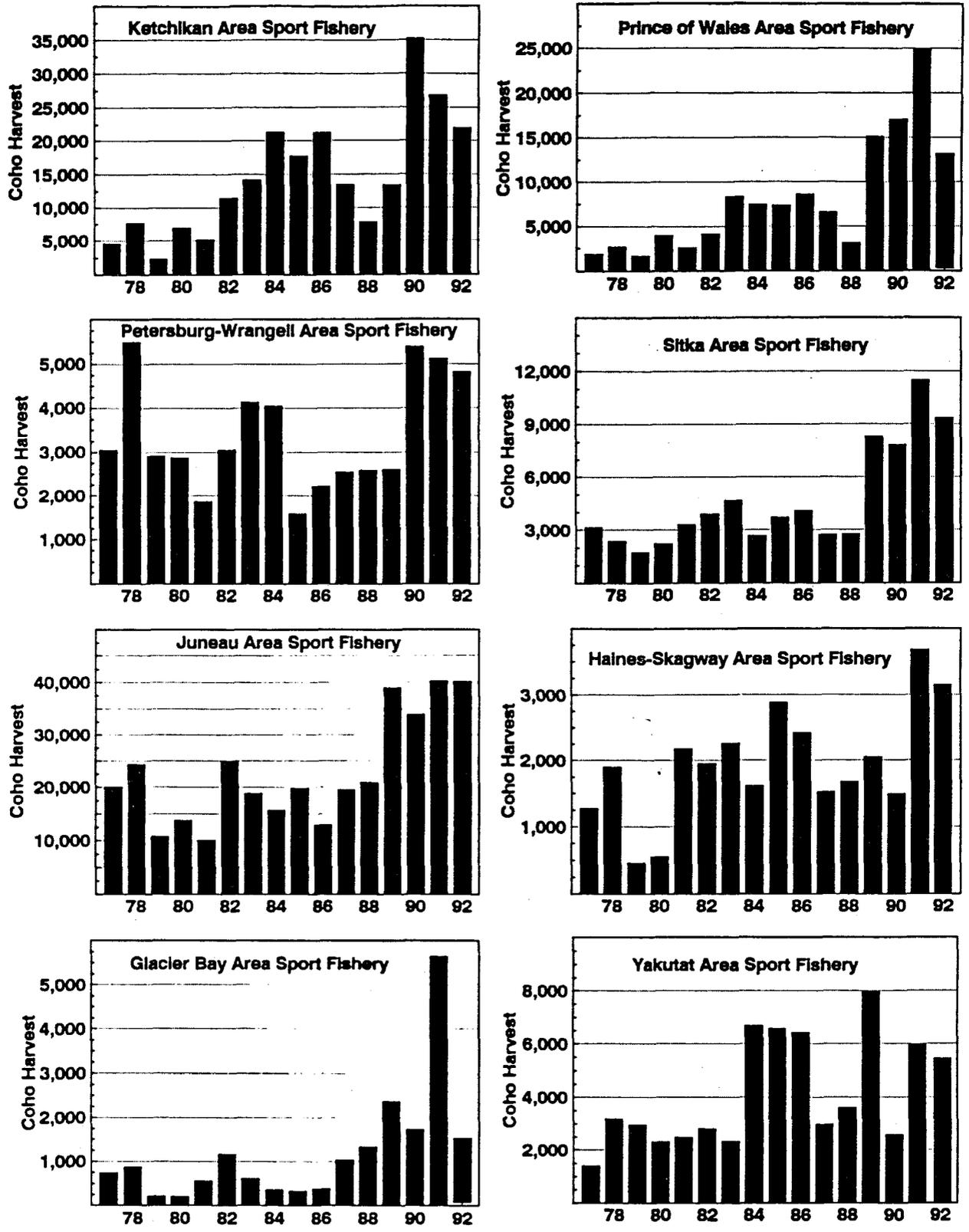


Figure 24. Sport harvests of coho salmon by management area, Southeast Alaska, 1977-1992.

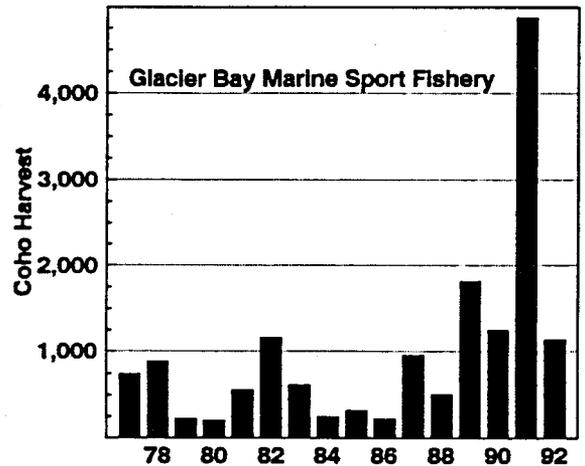
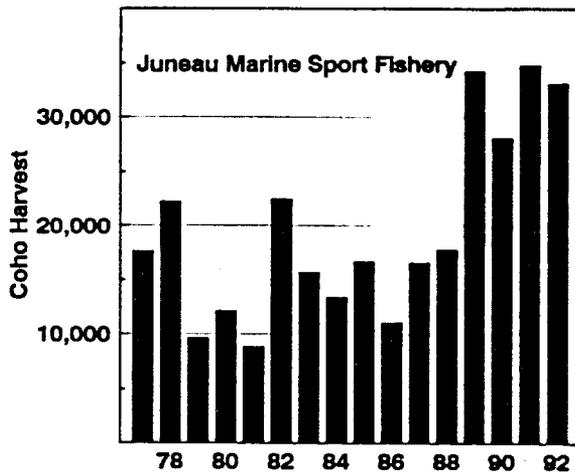
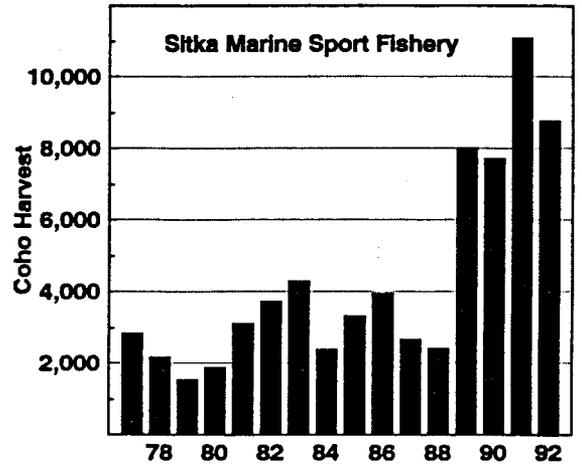
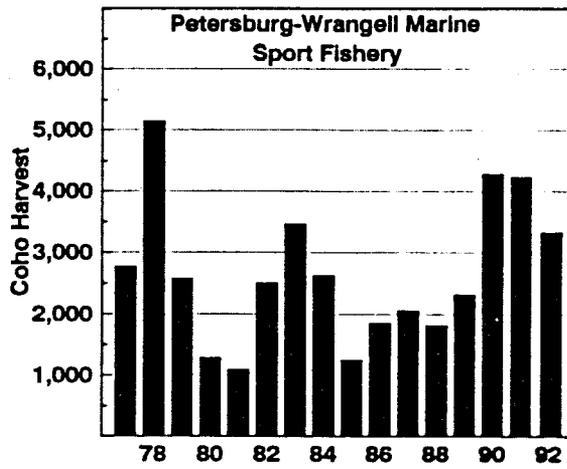
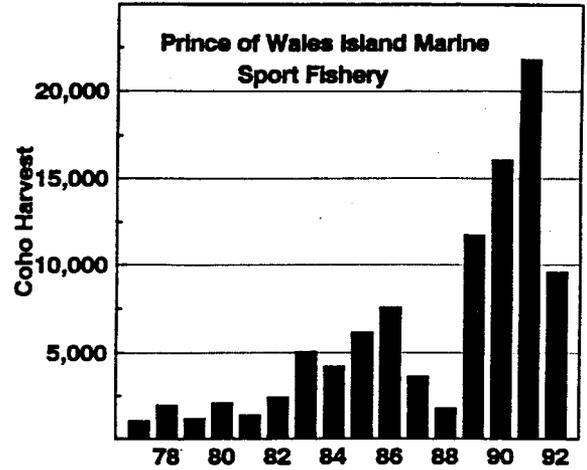
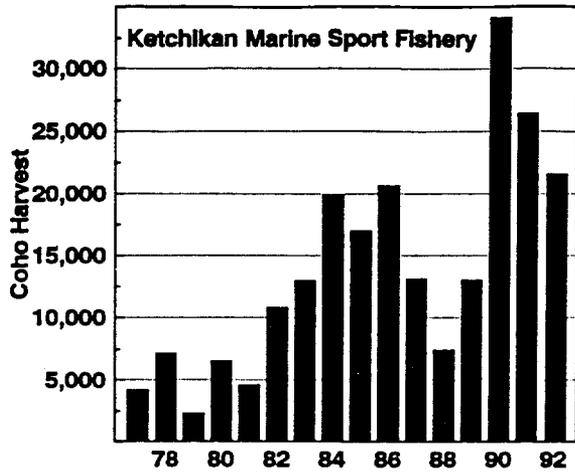


Figure 25. Coho salmon harvests in various marine sport fisheries of Southeast Alaska, 1977-1992.

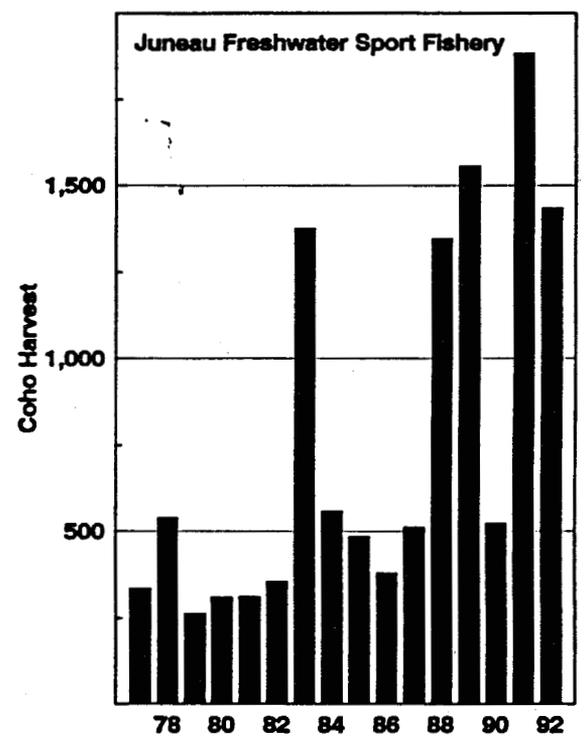
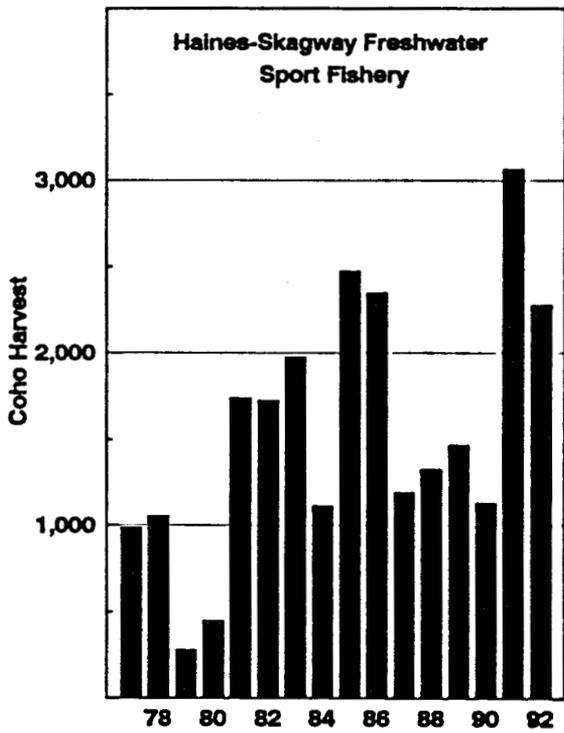
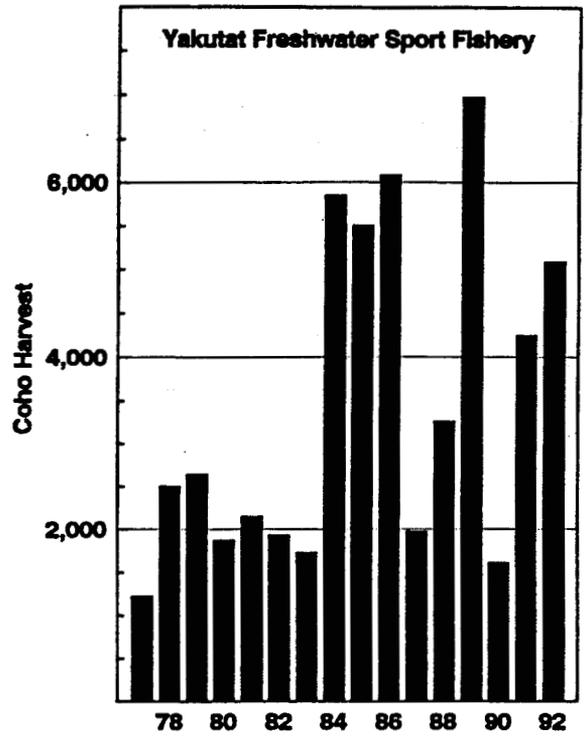
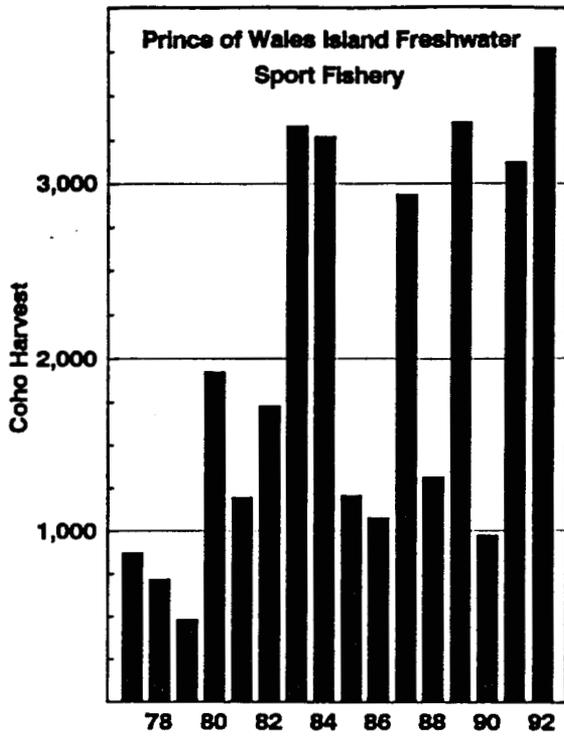


Figure 26. Coho salmon sport harvests in various fresh water fisheries of Southeast Alaska, 1977-1992.

a high of about 5,500 fish in 1978, more than a three-fold difference (Figure 24). Annual coho salmon harvests by sport anglers in the Petersburg-Wrangell Area during the 1980's and the first three years of the 1990's averaged about 2,800 and 5,200 fish; respectively (Table 21).

Most coho salmon harvested in the Petersburg-Wrangell Area by sport anglers have been taken from marine waters. Marine harvests of coho salmon in the Petersburg-Wrangell Area during the 1977-1992 period ranged from about 1,100 fish in 1981 to about 5,100 fish in 1978 (Figure 25). Annual coho salmon harvests by sport anglers from marine waters of the Petersburg-Wrangell Area during the 1980's and the first three years of the 1990's averaged about 2,000 and 3,900 fish; respectively (Table 22). Marine harvests in the Petersburg-Wrangell Area represented about 71% of the total harvest of coho salmon during the 1980's and about 75% of the total harvest of coho salmon during the first three years of the 1990's.

Sitka Area - Sport Harvests

Sport harvests of coho salmon in the Sitka Area of Southeast Alaska between 1977 and 1992 ranged from a low of about 1,700 fish in 1979 to a high of about 11,500 fish in 1991, almost a seven-fold difference (Figure 24). Annual coho salmon harvests by sport anglers in the Sitka Area during the 1980's and the first three years of the 1990's averaged about 3,800 and 9,500 fish; respectively (Table 21).

Almost all coho salmon harvested in the Sitka Area by sport anglers have been taken from marine waters. Marine harvests of coho salmon in the Sitka Area during the 1977-1992 period ranged from about 1,600 fish in 1979 to about 11,100 fish in 1991 (Figure 25). Annual coho salmon harvests by sport anglers from marine waters of the Sitka Area during the 1980's and the first three years of the 1990's averaged about 3,600 and 9,200 fish; respectively (Table 22). Marine harvests in the Sitka Area represented about 95% of the total harvest of coho salmon during the 1980's and about 97% of the total harvest of coho salmon during the first three years of the 1990's.

Juneau Area - Sport Harvests

Sport harvests of coho salmon in the Juneau Area of Southeast Alaska between 1977 and 1992 ranged from a low of about 10,100 fish in 1981 to a high of about 40,300 fish in 1991, almost a four-fold difference (Figure 24). Annual coho salmon harvests by sport anglers in the Juneau Area during the 1980's and the first three years of the 1990's averaged about 19,500 and 38,200 fish; respectively (Table 21).

Almost all coho salmon harvested in the Juneau Area by sport anglers have been taken from marine waters. Marine harvests of coho salmon in the Juneau Area during the 1977-1992 period ranged from about 8,900 fish in 1981 to about 34,900 fish in 1991 (Figure 25). Annual coho salmon harvests by sport anglers from marine waters of the Juneau Area during the 1980's and the first three years of the 1990's averaged about 17,000 and 32,200 fish; respectively (Table 22). Fresh water harvests of coho salmon in the Juneau Area during the 1977-1992 period ranged from about 300 fish in 1979 to about 1,900 fish in 1991

(Figure 26). Annual coho salmon harvests by sport anglers from fresh waters of the Juneau Area during the 1980's and the first three years of the 1990's averaged about 700 and 1,300 fish; respectively (Table 23). Fresh water harvests in the Juneau Area represented about 4% of the total harvest of coho salmon during both the 1980's and the first three years of the 1990's.

Haines-Skagway Area - Sport Harvests

Sport harvests of coho salmon in the Haines-Skagway Area of Southeast Alaska between 1977 and 1992 ranged from a low of about 500 fish in 1979 to a high of about 3,700 fish in 1991, more than a seven-fold difference (Figure 24). Annual coho salmon harvests by sport anglers in the Haines-Skagway Area during the 1980's and the first three years of the 1990's averaged about 1,900 and 2,800 fish; respectively (Table 21).

Most coho salmon harvested in the Haines-Skagway Area by sport anglers have been taken from fresh waters. Fresh water harvests of coho salmon in the Haines-Skagway Area during the 1977-1992 period ranged from about 300 fish in 1979 to about 3,100 fish in 1991 (Figure 26). Annual coho salmon harvests by sport anglers from fresh waters of the Haines-Skagway Area during the 1980's and the first three years of the 1990's averaged about 1,600 and 2,100 fish; respectively (Table 23). Fresh water harvests in the Haines-Skagway Area represented about 84% of the total harvest of coho salmon during the 1980's and about 75% of the total harvest of coho salmon during the first three years of the 1990's.

Glacier Bay Area - Sport Harvests

Sport harvests of coho salmon in the Glacier Bay Area of Southeast Alaska between 1977 and 1992 ranged from a low of about 200 fish in 1980 to a high of about 5,700 fish in 1991, almost a thirty-fold difference (Figure 24). Annual coho salmon harvests by sport anglers in the Glacier Bay Area during the 1980's and the first three years of the 1990's averaged about 800 and 3,000 fish; respectively (Table 21).

Most coho salmon harvested in the Glacier Bay Area by sport anglers have been taken from marine waters. Marine harvests of coho salmon in the Glacier Bay Area during the 1977-1992 period ranged from about 200 fish in 1980 to about 4,900 fish in 1991 (Figure 25). Annual coho salmon harvests by sport anglers from marine waters of the Glacier Bay Area during the 1980's and the first three years of the 1990's averaged about 600 and 2,500 fish; respectively (Table 22). Marine harvests in the Glacier Bay Area represented about 75% of the total harvest of coho salmon during the 1980's and about 83% of the total harvest of coho salmon during the first three years of the 1990's.

Yakutat Area - Sport Harvests

Sport harvests of coho salmon in the Yakutat Area of Southeast Alaska between 1977 and 1992 ranged from a low of about 1,400 fish in 1977 to a high of about 8,000 fish in 1989, almost a six-fold difference (Figure 24). Annual coho salmon harvests by sport anglers in the Yakutat Area during the 1980's and the

first three years of the 1990's averaged about 4,400 and 4,700 fish; respectively (Table 21).

Most coho salmon harvested in the Yakutat Area by sport anglers have been taken from fresh waters. Fresh water harvests of coho salmon in the Yakutat Area during the 1977-1992 period ranged from about 1,200 fish in 1977 to about 7,000 fish in 1989 (Figure 26). Annual coho salmon harvests by sport anglers from fresh waters of the Yakutat Area during the 1980's and again during the first three years of the 1990's averaged about 3,700 fish (Table 23). Fresh water harvests in the Yakutat Area represented about 84% of the total harvest of coho salmon during the 1980's and about 79% of the total harvest of coho salmon during the first three years of the 1990's.

Commercial Sales of Sport Caught Coho Salmon in Fishing Derbies

Some of the coho salmon caught by sport anglers during fishing derbies that take place in Southeast Alaska are sold by derby organizers. Because these fish are actually harvested through the sport fishery, the catches are reported as sport harvests rather than as commercial harvests. Sales of derby caught coho salmon have been as high as 2,994 fish (Table 24). Annual sales during the 1980's averaged about 1,400 coho salmon and annual sales during the first three years of the 1990's averaged about 400 coho salmon (Table 24).

Subsistence/Personal Use Fishery

Subsistence fishing is the taking of or attempting to take fish by an Alaskan resident domiciled in a rural area of Alaska for subsistence uses with a gill net, seine, line, or other means defined by the Alaska Board of Fisheries. Personal use fishing is the taking of or attempting to take fish by an Alaskan resident for personal use (and not for sale or barter) with a gill or dip net, seine, line, or other means defined by the Alaska Board of Fisheries. Coho salmon harvests from these two categories of use in Southeastern Alaska have been combined for presentation in this report. Coho salmon are usually managed as an incidental species in most subsistence and personal use fisheries in Southeastern Alaska. Fishermen engaging in either subsistence or personal use fisheries in Southeast Alaska are limited to a specific seasonal harvest per individual or per household. Both State of Alaska and Federal law require that a preference be given to subsistence fisheries over commercial, sport, or personal use fisheries when conservation actions are needed.

Subsistence/personal use fisheries for coho salmon in Southeast Alaska are monitored through returns of fishing permits, although not all permits are returned nor are permits always required to participate in these fisheries. For instance, commercial fishermen sometimes retain a portion of their catch for personal use and these harvests are not monitored. The subsistence/personal use fishery harvest information presented in this report is considered incomplete.

Documented subsistence/personal use harvests of coho salmon in Southeast Alaska since 1975 have ranged from under 100 fish harvested in 1976 to almost 5,000 fish harvested in 1992 with the 18 year total being about 21,000 fish and the annual average being almost 1,200 fish (Table 25). Documented annual

Table 24. Commercial sales of sport caught coho and other species of salmon during fishing derbies, Southeastern Alaska, 1977-1992.*

Year	Commercial Sales of Salmon					All Salmon
	Coho	Chinook	Sockeye	Pink	Chum	
1978	1,290	461	0	214	18	1,983
1979	607	818	1	116	53	1,595
1980	790	599	0	63	120	1,572
1981	541	678	0	103	22	1,344
1982	2,506	884	0	691	53	4,134
1983	0	0	0	0	0	0
1984	961	1,252	6	457	101	2,777
1985	2,994	874	6	2,088	150	6,112
1986	25	45	0	419	0	489
1987	1,961	878	10	0	35	2,884
1988	2,250	1,008	3	330	157	3,748
1989	2,459	1,103	14	2	22	3,600
1990	1,168	283	2	0	43	1,496
1991	0	0	0	0	0	0
1992	16	729	0	0	0	745

* Data taken from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files.

Table 25. Reported subsistence and personal use harvests of coho salmon from Southeast Alaska and Yakutat, 1975-1992.*

Year	Harvest of Coho Salmon		Total
	Southeast Alaska	Yakutat	
1975	96	40	136
1976	9	55	64
1977	68	781	849
1978	57	912	969
1979	60	720	780
1980	10	982	992
1981	129	1,701	1,830
1982	99	2,180	2,279
1983	211	360	571
1984	721	572	1,293
1985	363	59	422
1986	277	586	863
1987	113	883	996
1988	118	176	294
1989	553	880	1,433
1990	816	809	1,625
1991	638	213	851
1992	1,210	3,645	4,855

* Data taken from PSC (1991) for the years 1975-1988 and from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files for 1989 - 1992. These harvests are summaries of returned permits and represent only a portion of the actual subsistence and personal use harvests of coho salmon.

coho salmon harvests by subsistence/personal use fishermen from waters of Southeastern Alaska during the 1980's and the first three years of the 1990's averaged about 1,100 and 2,400 fish; respectively (Table 25).

Most of the documented coho salmon harvest in the subsistence/personal use fishery has been taken from the Yakutat Area of Southeastern Alaska. Documented annual coho salmon harvests by subsistence/personal use fishermen from waters of the Yakutat Area during the 1980's and the first three years of the 1990's averaged about 800 and 1,600 fish; respectively (Table 25). The Yakutat Area represented about 76% of the total documented harvest of coho salmon by subsistence/personal use fishermen during the 1980's and about 64% of the total documented harvest of coho salmon by these users during the first three years of the 1990's.

HARVEST SHARES

A variety of users share in the harvest of coho salmon from waters of Southeastern Alaska. The Alaska Board of Fisheries has directly allocated harvest shares of coho salmon among various commercial gear groups, but has not made direct allocation decisions concerning the harvest shares of coho salmon for which sport, subsistence, or personal use fishermen are entitled. The following sections discuss Alaska Board of Fisheries allocations of Southeastern Alaska coho salmon and resultant harvest sharing patterns.

Commercial Fishery Harvest Shares

The Alaska Board of Fisheries has allocated shares of the allowable harvest of coho salmon to various gear groups. Under 5 AAC 33.365, the Alaska Board of Fisheries has stated intent and provided direction to the Alaska Department of Fish and Game through regulation as follows: "*(1) the historical harvest allocation of coho salmon in Southeastern Alaska and Yakutat commercial fisheries is 19 percent purse seine, 13 percent drift gill net, seven percent set gill net, and 61 percent troll; while these percentages may vary from season to season, given fluctuations in salmon abundance and distribution and the limitations of fisheries management, these allocation guidelines are to be maintained over the long term; the department shall not disrupt any of the traditional commercial fisheries upon which this historical allocation is founded; the department may, however, make in-season adjustments to attempt to achieve these long term allocation guidelines*".

The share of the traditional commercial harvest of coho salmon from Southeastern Alaska taken with purse seine gear has ranged from a low of 8.4% in 1987 to a high of 20.5% in 1982 and has averaged 15.6% during the 18 year period of 1975-1992 (Table 26). During this 18 year period, the purse seine share of coho salmon has only exceeded the Board of Fisheries guideline of 19% once while harvest shares during the other 17 years have been less than the guideline (Figure 27). During the first three years of the 1990's, the purse seine harvest share has ranged from 4.6 to 5.2% under the Board guideline of 19%.

Table 26. Harvest shares of coho salmon by the traditional power troll, hand troll, purse seine, drift gill net, and set gill net commercial fisheries of Southeastern Alaska, 1975-1992.*

Year	Percent Harvest Shares in Traditional Fisheries						Total
	Troll			Purse	Drift	Set	
	Power	Hand	Combined	Seine	Gill Net	Gill Net	
1975	40.9%	9.6%	50.5%	16.6%	24.1%	8.8%	100.0%
1976	53.1%	10.8%	64.0%	10.7%	19.1%	6.3%	100.0%
1977	37.6%	16.7%	54.4%	16.1%	19.6%	9.9%	100.0%
1978	42.4%	22.2%	64.6%	14.3%	13.0%	8.2%	100.0%
1979	53.0%	19.2%	72.2%	13.9%	6.4%	7.5%	100.0%
1980	46.6%	16.1%	62.7%	16.6%	9.9%	10.8%	100.0%
1981	50.5%	13.5%	64.0%	17.6%	8.5%	9.9%	100.0%
1982	50.5%	12.5%	63.0%	20.5%	9.3%	7.1%	100.0%
1983	53.7%	12.2%	65.9%	18.6%	11.3%	4.2%	100.0%
1984	51.4%	9.6%	61.0%	18.9%	10.3%	9.8%	100.0%
1985	52.9%	10.3%	63.2%	16.5%	12.2%	8.0%	100.0%
1986	56.2%	10.7%	66.8%	17.8%	12.4%	2.9%	100.0%
1987	59.1%	12.6%	71.7%	8.4%	11.4%	8.6%	100.0%
1988	39.7%	9.0%	48.7%	15.3%	16.0%	20.1%	100.0%
1989	55.5%	10.2%	65.7%	15.3%	10.7%	8.2%	100.0%
1990	57.7%	10.1%	67.9%	13.8%	12.8%	5.5%	100.0%
1991	52.4%	8.4%	60.8%	14.2%	19.1%	5.9%	100.0%
1992	50.2%	7.5%	57.7%	14.4%	19.2%	8.7%	100.0%

* Alaska Board of Fisheries allocations are: 61% troll; 19% purse seine; 13% drift gill net; and 7% set gill net. Troll harvest share of 61% allocated 80% to power troll gear and 20% to hand troll gear.

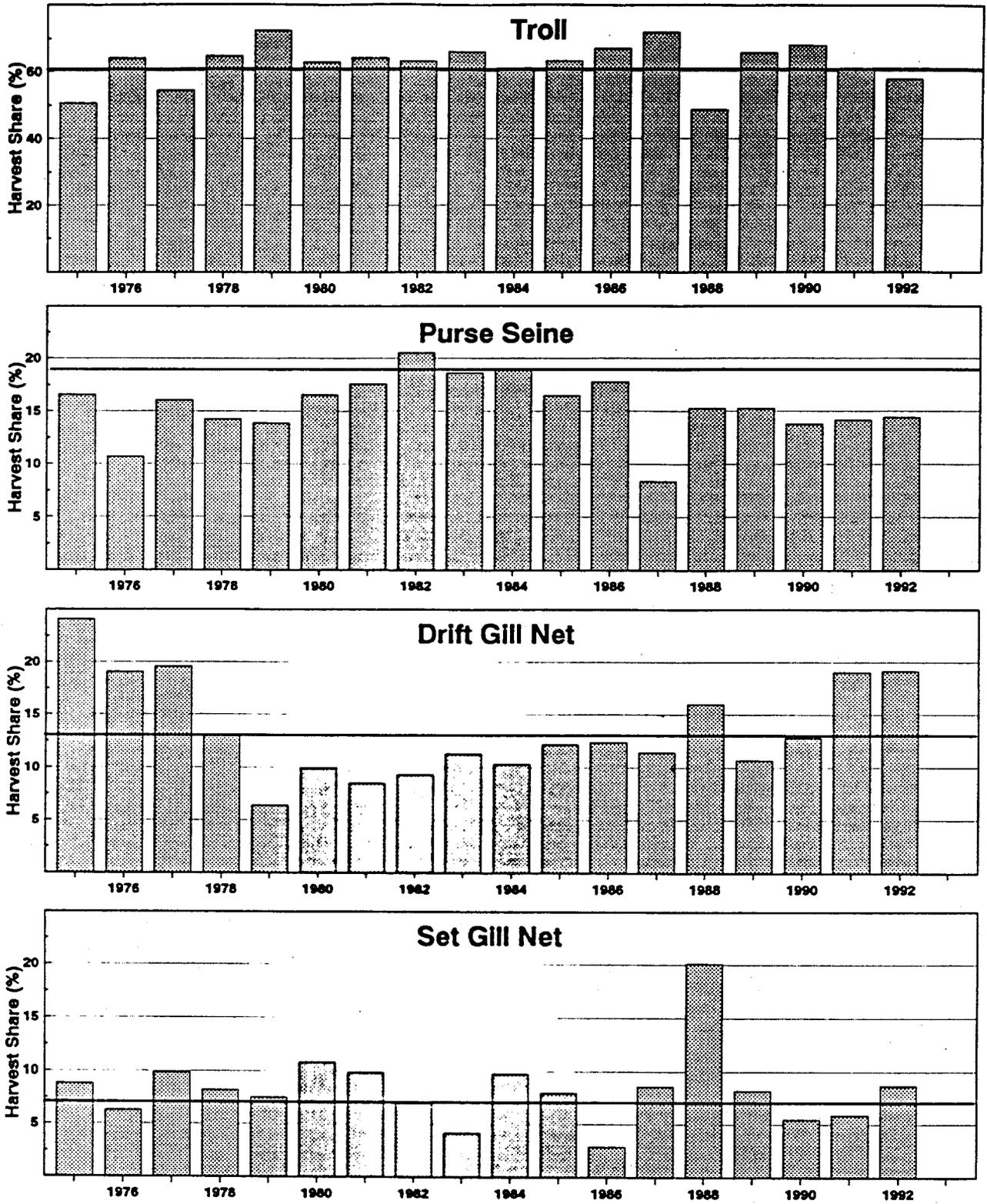


Figure 27. Harvest shares of coho salmon by the traditional troll, purse seine, drift gill net, and set gill net fisheries, Southeast Alaska, 1975-1992.

The share of the traditional commercial harvest of coho salmon from Southeastern Alaska taken with drift gill net gear has ranged from a low of 6.4% in 1979 to a high of 24.1% in 1975 and has averaged 13.6% during the 18 year period of 1975-1992 (Table 26). During this 18 year period, the drift gill net share of coho salmon has exceeded the Board of Fisheries guideline of 13% in 6 of the years while harvest shares during 11 of the years have been less than the guideline (Figure 27). During the first three years of the 1990's, the drift gill net harvest share has ranged from 0.2% under the 13% guideline to 6.2% over the 13% guideline.

The share of the traditional commercial harvest of coho salmon from Southeastern Alaska taken with set gill net gear has ranged from a low of 2.9% in 1986 to a high of 20.1% in 1988 and has averaged 8.4% during the 18 year period of 1975-1992 (Table 26). During this 18 year period, the set gill net share of coho salmon has exceeded the Board of Fisheries guideline of 7% in 13 of the years while harvest shares during 5 of the years have been less than the 7% guideline (Figure 27). During the first three years of the 1990's, the set gill net harvest share has ranged from 1.5% under the 7% guideline to 1.7% over the 7% guideline.

The share of the traditional commercial harvest of coho salmon from Southeastern Alaska taken with troll gear has ranged from a low of 48.7% in 1988 to a high of 72.2% in 1979 and has averaged 62.5% during the 18 year period of 1975-1992 (Table 26). During this 18 year period, the troll share of coho salmon has exceeded the Board of Fisheries guideline of 61% in 12 of the years while harvest shares during 5 of the years have been less than the 61% guideline (Figure 27). During the first three years of the 1990's, the troll harvest share has ranged from 3.3% under the guideline to 6.9% over the Board guideline.

The Alaska Board of Fisheries has also made allocation decisions regarding the harvest of coho salmon by power versus hand trollers. Under 5 AAC 33.365, the Alaska Board of Fisheries states: "(6) recognizing that the hand troll fleet retains a large potential for expansion, it is the policy of the Board of Fisheries to regulate the troll fishery in a manner that will result in 80 percent of the troll caught coho salmon being taken by power troll gear and 20 percent by hand troll gear; the department shall evaluate the power and hand troll coho salmon catches during the salmon fishing season; when the projected hand troll catch of coho salmon indicates that the hand troll fleet will take approximately 20 percent or more of the total coho salmon troll harvest by September 20, the department shall provide for additional closures to hand trolling during the coho salmon troll fishing season in order to maintain the harvest ratio at approximately 80 percent/20 percent".

The share of the traditional commercial troll harvest of coho salmon from Southeastern Alaska taken with power troll gear has ranged from a low of 65.6% in 1978 to a high of 87.1% in 1992 and has averaged 80.3% during the 18 year period of 1975-1992 (Figure 28). During this 18 year period, the power troll share of coho salmon has exceeded the Board of Fisheries guideline in 13 of the years while harvest shares during 5 of the years have been less than the 80% guideline (Figure 28). During the first three years of the 1990's, the

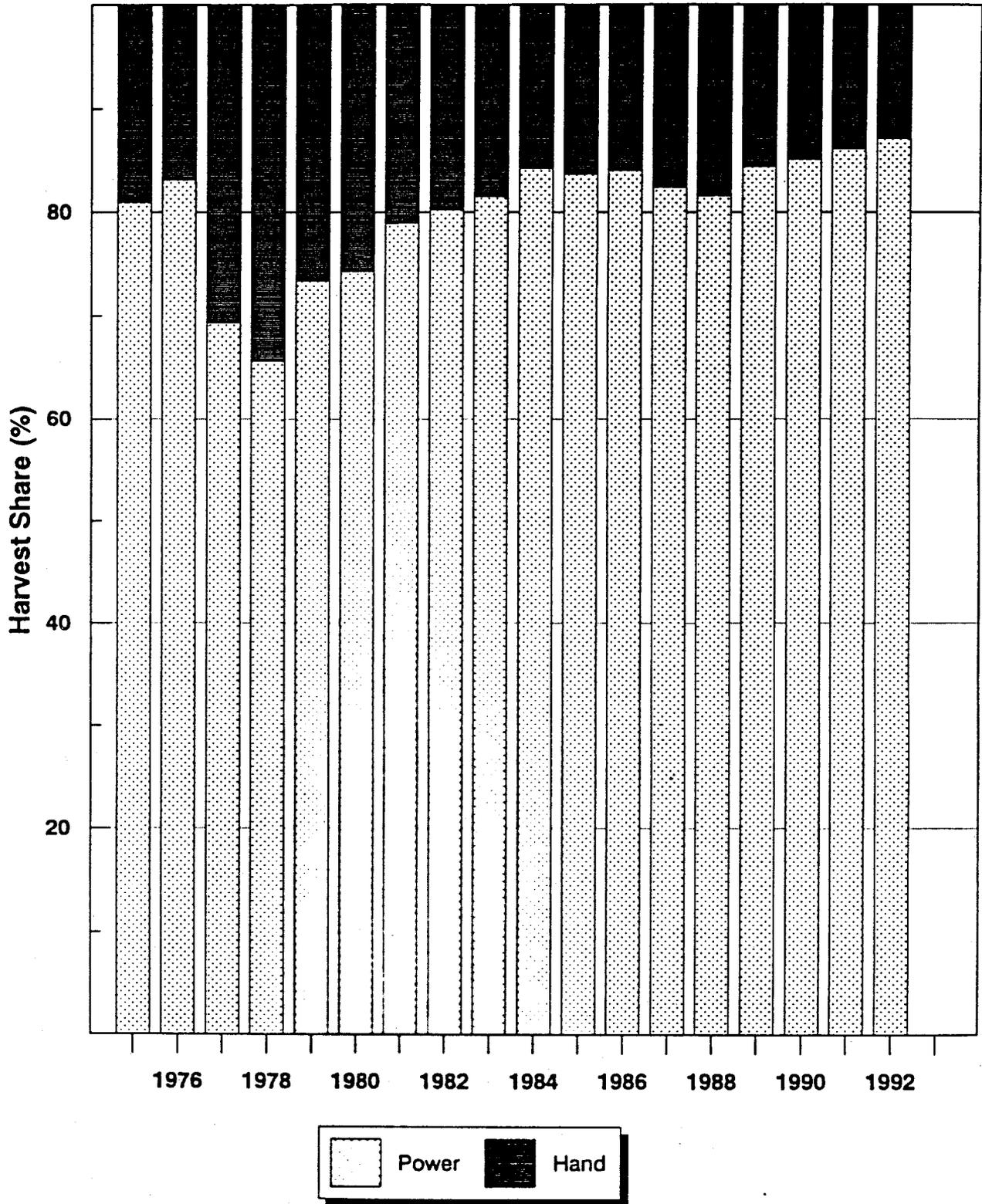


Figure 28. Harvest shares of coho salmon by the traditional power and hand troll commercial fisheries, Southeast Alaska, 1975-1992.

power troll harvest share has ranged from 5.1 to 7.1% over the Board guideline of 80%.

Sport and Subsistence/Personal Use Harvest Shares

The coho salmon harvest shares taken by sport, subsistence, and personal use fishermen from waters of Southeastern Alaska have been minor. Harvest shares of coho salmon from Southeastern Alaska by sport anglers have ranged from a low of 1.76% in 1986 to a high of 4.05% in 1988 and have averaged 2.93% during the 16 year period of 1977-1992 (Table 27). There is no apparent upward or downward trend in the annual sport harvest share of coho salmon since 1977 (Figure 29). Documented harvest shares of coho salmon from Southeastern Alaska by subsistence/personal use fishermen have ranged from a low of 0.01% in 1976 to a high of 0.13% in 1981 and 1992 (Table 27). The subsistence/personal use harvest share has averaged 0.06% during the 18 year period of 1975-1992 based upon documented harvests by this user group. There is no apparent upward or downward trend in the documented annual harvest share of coho salmon taken by subsistence/personal use fishermen since 1977 (Figure 29).

FISHING EFFORT

Commercial fishing effort in Southeast Alaska is limited by the Commercial Fisheries Limited Entry Commission whereas participation in sport, subsistence, and personal use fisheries is not limited.

Commercial Fishing Effort

All commercial fisheries harvesting coho salmon in Southeast Alaska are under limited entry. The power troll, purse seine, drift gill net, and set gill net fisheries first came under limited entry provisions in 1975. The hand troll fishery first came under limited entry in 1980. The number of limited entry permits fished each year is less than the number of permits issued and the proportion fished varies by gear type. In 1992 for instance, there were 957 power troll permits issued of which 837 fished (87%); there were 1,689 hand troll permits issued of which 645 fished (38%); there were 420 purse seine permits issued of which 354 fished (84%); there were 484 drift gill net permits issued of which 467 fished (96%); and, there were 170 drift gill net permits issued of which 159 fished (94%).

The number of power troll permits fished in Southeast Alaska since 1975 has varied from a low of 746 permits fished in 1976 to a high of 842 permits fished in 1980 (Table 28). The number of hand troll permits fished in Southeast Alaska since 1975 has varied from a low of 645 permits fished in 1992 to a high of 2,624 permits fished in 1978 (Table 28). During the 1980's and the first three years of the 1990's, annual averages of 819 and 841 commercial power troll permits were fished in Southeast Alaska; respectively. During the 1980's and the first three years of the 1990's, annual averages of 963 and 681 commercial hand troll permits were fished in Southeast Alaska; respectively.

Table 27. Harvest shares of coho salmon by the sport fishery since 1977 and by the documented subsistence/personal use fishery since 1975, Southeastern Alaska.

<u>Year</u>	<u>Sport Harvest Share</u>	<u>Subsistence/Personal Use Harvest Share</u>
1975		0.03%
1976		0.01%
1977	3.68%	0.09%
1978	2.75%	0.05%
1979	1.78%	0.06%
1980	2.85%	0.09%
1981	2.04%	0.13%
1982	2.48%	0.11%
1983	2.77%	0.03%
1984	3.08%	0.07%
1985	2.28%	0.02%
1986	1.76%	0.03%
1987	3.27%	0.06%
1988	4.05%	0.03%
1989	3.96%	0.06%
1990	3.61%	0.06%
1991	3.81%	0.03%
1992	2.64%	0.13%

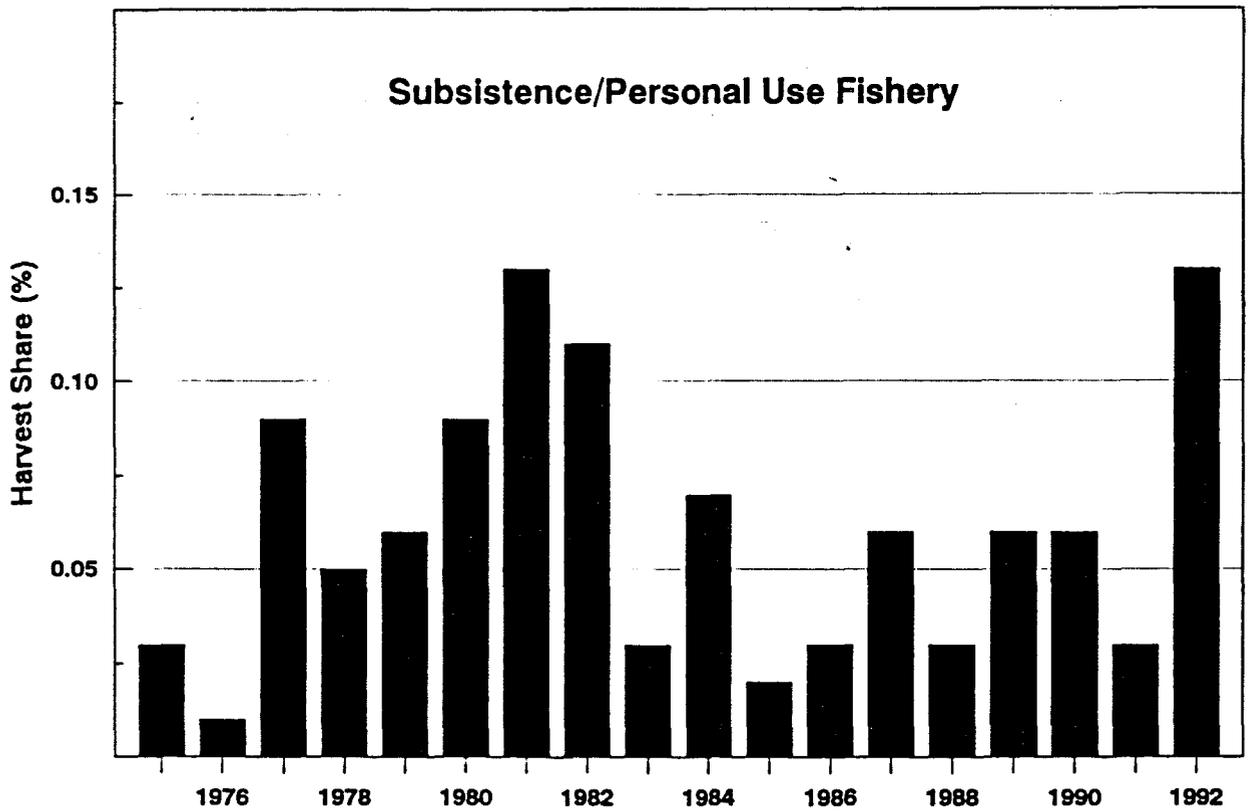
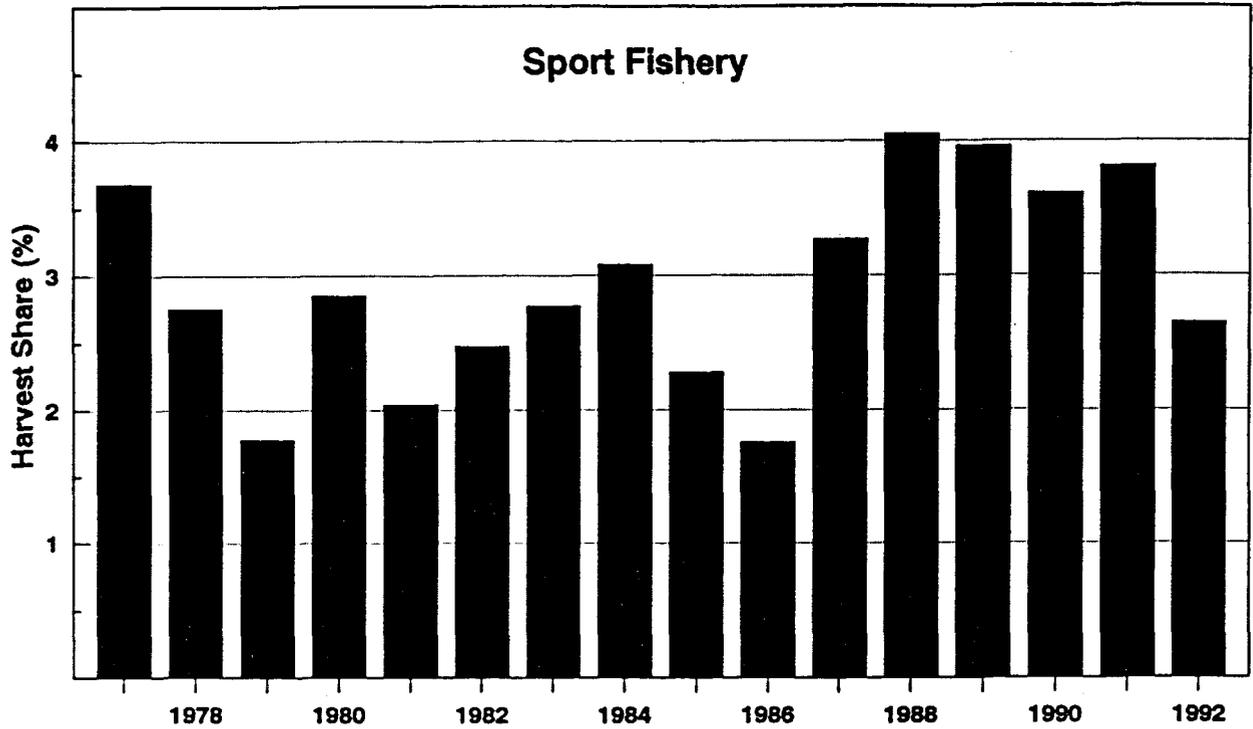


Figure 29. Harvest shares of coho salmon by the sport fishery since 1977 and the subsistence/personal use fishery since 1975, Southeastern Alaska.

Table 28. Number of limited entry permits fished in Southeast Alaska and Yakutat salmon fisheries, 1975-1992.*

Year	Number of Limited Entry Permits Fished				
	Power Troll	Hand Troll	Purse Seine	Drift Gill Net	Set Gill Net
1975	758	1,092	293	457	141
1976	746	1,235	282	442	133
1977	750	1,836	325	438	144
1978	816	2,624	376	474	155
1979	819	2,207	319	449	155
1980	842	1,667	335	445	159
1981	793	1,153	364	447	158
1982	810	1,067	370	431	147
1983	810	946	337	432	145
1984	795	860	383	437	140
1985	830	903	368	446	148
1986	827	804	368	460	154
1987	828	763	381	465	154
1988	828	777	394	470	159
1989	830	694	365	466	160
1990	839	699	360	465	158
1991	847	700	383	466	161
1992	837	645	354	467	159

* Data source: Dave Gaudet (personal communication, September 22, 1993), Alaska Department of Fish and Game, Division of Commercial Fisheries, Management, and Development, Douglas Island Center Building, 802 3rd St., P. O. Box 240020, Douglas Alaska 99824-0020; 1992 data preliminary.

The number of purse seine permits fished in Southeast Alaska since 1975 has varied from a low of 282 permits fished in 1976 to a high of 394 permits fished in 1988 (Table 28). During the 1980's and the first three years of the 1990's, annual averages of 367 and 366 commercial purse seine permits were fished in Southeast Alaska; respectively.

The number of drift gill net permits fished in Southeast Alaska since 1975 has varied from a low of 431 permits fished in 1982 to a high of 474 permits fished in 1978 (Table 28). During the 1980's and the first three years of the 1990's, annual averages of 450 and 466 commercial drift gill net permits were fished in Southeast Alaska; respectively.

The number of set gill net permits fished in Southeast Alaska since 1975 has varied from a low of 133 permits fished in 1976 to a high of 161 permits fished in 1991 (Table 28). During the 1980's and the first three years of the 1990's, annual averages of 152 and 159 commercial set gill net permits were fished in Southeast Alaska; respectively.

Sport Fishing Effort

Participation in sport fishing in Southeast Alaska is not limited so long as anglers purchase appropriate sport fishing licenses. Participation levels in the sport fishery have been annually monitored since 1984 through the statewide postal questionnaire (Mills 1985-1993). The number of sport anglers fishing in Southeast Alaska during the 9 year period of 1984-1992 has varied two-fold ranging from a low of about 50,500 anglers in 1984 to a high of about 101,500 anglers in 1990 and averaging about 80,900 anglers per year (Table 29). The number of sport fishermen fishing in Southeast Alaska annually averaged about 65,200 anglers during the 3 year period of 1984-1986, increasing by about 23% to an average level of about 80,300 anglers during the next 3 year period of 1987-1989, and further increasing by about 21% to an average level of about 97,300 during the three year period of 1990-1992 (Table 29).

Although the overall number of sport anglers fishing in Southeast Alaska has been increasing, the numbers of anglers fishing in each of the eight harvest monitoring areas (Table 29) have shown differential changes with six of the areas showing moderate to large increases, one area showing a decrease (Haines-Skagway), and one area not showing a change (Yakutat). The number of sport fishermen fishing in the Ketchikan Area averaged about 19,700 anglers during the 3 year period of 1987-1989 and then increased by about 20% to an average level of about 23,600 anglers during the next 3 year period of 1987-1989. The number of sport fishermen fishing in the Prince of Wales Area averaged about 7,100 anglers during the 3 year period of 1987-1989 and then increased by about 44% to an average level of about 10,200 anglers during the next 3 year period of 1987-1989. The number of sport fishermen fishing in the Petersburg-Wrangell Area averaged about 9,200 anglers during the 3 year period of 1987-1989 and then increased by about 25% to an average level of about 11,500 anglers during the next 3 year period of 1987-1989. The number of sport fishermen fishing in the Sitka Area averaged about 11,000 anglers during the 3 year period of 1987-1989 and then increased by about 72% to an average level of about 18,900 anglers during the next 3 year period of 1987-1989. The

Table 29. Number of sport fishermen who fished in the eight harvest monitoring areas of Southeastern Alaska, 1984-1992.*

Number of Sport Fishermen									
Year	Ketchikan	Prince of Petersburg-	Wrangell	Sitka	Juneau	Haines-	Glacier	Yakutat	Total ^b
	Area	Wales Area	Area	Area	Area	Skagway Area	Bay Area		
1984	14,339	5,750	7,973	8,085	19,642	7,941	908	2,376	50,530
1985	16,171	6,576	7,998	7,935	25,492	12,931	1,942	3,482	71,326
1986	16,366	5,109	8,248	10,373	22,427	11,213	2,209	3,493	73,670
1987	17,934	6,686	8,716	8,286	24,388	10,484	2,369	3,622	78,270
1988	21,306	5,787	9,022	12,171	22,586	10,798	2,444	3,496	80,599
1989	19,810	8,873	9,753	12,506	26,280	8,680	3,548	3,068	82,111
1990	26,158	10,498	12,452	16,706	26,830	13,720	3,069	3,440	101,499
1991	21,854	9,634	9,830	18,567	28,415	8,615	4,929	3,206	92,914
1992	22,711	10,446	12,241	21,465	30,315	4,861	4,113	3,552	97,451

* Data taken from Mills (1985-1993).

^b Total number of anglers does not equal area sums because some anglers fished in more than one area.

number of sport fishermen fishing in the Juneau Area averaged about 24,400 anglers during the 3 year period of 1987-1989 and then increased by about 17% to an average level of about 28,500 anglers during the next 3 year period of 1987-1989. The number of sport fishermen fishing in the Haines-Skagway Area averaged about 10,400 anglers during the 3 year period of 1987-1989 and then decreased by about 9% to an average level of about 9,100 anglers during the next 3 year period of 1987-1989. The number of sport fishermen fishing in the Glacier Bay Area averaged about 2,800 anglers during the 3 year period of 1987-1989 and then increased by about 43 to an average level of about 4,000 anglers during the next 3 year period of 1987-1989. The number of sport fishermen fishing in the Yakutat Area averaged about 3,400 anglers during both the 3 year period of 1987-1989 and 3 year period of 1987-1989, demonstrating no change in participation level.

Subsistence/Personal Use Fishing Effort

Subsistence and personal use fishing permits are issued by staff of the Alaska Department of Fish and Game to those residents of the State of Alaska who wish to harvest coho salmon for personal consumption. During the years 1989-1992, Alaskans who were residents of more than 60 cities and towns were issued such permits to fish in Southeast Alaska. A total of 2,563 permits were issued in 1989, a total of 2,619 permits were issued in 1990, a total of 2,653 permits were issued in 1991, and a total of 2,825 permits were issued in 1992 (Table 30).

EX-VESSEL VALUE OF COMMERCIALY CAUGHT COHO SALMON

The ex-vessel value of commercially harvested coho salmon from Southeast Alaska during the 12 year period of 1981-1992 has ranged from a low of about \$9,467,200 in 1983 to a high of about \$28,467,100 in 1992 (Figure 30). The ex-vessel value of commercially harvested coho salmon from Southeast Alaska during the 12 year period of 1981-1992 averaged about \$20,006,800 per year; averaging about \$18,228,600 per year during the period 1981-1989 and increasing by about 39% to an average level of about \$25,341,500 per year during the 1990-1992 period (Table 31). The commercially harvested average annual ex-vessel value of coho salmon from Southeast Alaska per commercial permit fished ranged from a low of \$3,546 per permit fished in 1983 to a high of \$11,563 per permit fished in 1992, almost a three-fold difference (Table 32). Ex-vessel value of commercially harvested coho salmon per permit fished annually averaged about \$6,850 during the nine year period of 1981-1989 and increased by almost 50% to an annual average of about \$10,100 per permit fished during the three year period of 1990-1992.

Ex-vessel Value of Troll Caught Coho Salmon

The ex-vessel value of power troll caught coho salmon from Southeast Alaska during the 12 year period of 1981-1992 ranged from a low of about \$5,843,700 in 1983 to a high of about \$16,002,400 in 1986 (Table 31). The ex-vessel value of power troll harvested coho salmon averaged about \$10,223,900 per year during the period 1981-1989 and increased by about 36% to an average level of about \$13,942,700 per year during the 1990-1992 period. The ex-vessel value

Table 30. Number of subsistence and personal use permits issued to fish in Southeast Alaska and Yakutat listed by permittee residence, 1989-1992.*

Residence Location	Number of Permits Issued			
	1989	1990	1991	1992
Akhiok	0	0	0	1
Ambler	0	1	0	0
Anchor Point	0	1	1	1
Anchorage/Eagle River	2	9	8	11
Angoon	30	57	30	32
Auke Bay	13	20	12	7
Barrow	1	0	0	0
Big Lake/Palmer/Saxman/Talkeetna/Wasilla/Willow	7	9	1	1
Cape Pole	2	0	0	0
Chatham	0	0	0	1
Coffman Cove	2	5	6	19
Craig	174	188	210	250
Cube Cove	0	0	1	0
Delta Junction	0	0	0	1
Douglas	42	40	32	48
Edna Bay	0	0	0	1
Elfin Cove	0	2	0	0
Excursion Inlet	1	1	1	0
Fairbanks/North Pole/Salcha	5	2	5	3
Haines	311	244	411	394
Hayward	0	1	0	0
Hollis	13	7	3	3
Homer	0	0	0	1
Hoonah	44	63	35	70
Hydaburg	64	58	52	55
Hyder	0	2	1	0
Juneau	151	148	144	174
Kake	150	103	100	155
Kasaan	15	2	0	10
Kenai/Kasilof/Soldotna	0	0	3	1
Ketchikan	506	433	498	468
Klawock	121	125	133	169
Kodiak	0	1	0	0
Klukwan	1	0	2	0
Labouchere Bay	2	0	0	0
Metlakatla	5	2	3	12
Meyers Chuck	2	1	4	4
Neets Bay	0	0	0	3
Pelican	1	3	8	12
Petersburg	40	70	62	127
Point Baker	22	21	11	15
Port Alexander	0	0	1	0
Port Protection	0	1	1	3

- continued on next page -

Table 30. Continued.*

Residence Location	Number of Permits Issued			
	1989	1990	1991	1992
Rowan Bay	0	0	1	0
Security Bay	0	2	0	0
Sitka	516	661	570	345
Skagway	4	2	5	5
Sterling	0	0	0	1
Tenakee Springs	10	11	4	5
Thorne Bay	46	77	106	108
Tokeen	0	0	1	0
Valdez	0	0	1	0
Ward Cove	63	57	64	85
Whale Pass	7	3	0	1
Wrangell	91	101	87	105
Yakutat	99	85	25	118
Yes Bay	0	0	9	0
Totals	2,563	2,619	2,653	2,825

* Data taken from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files.

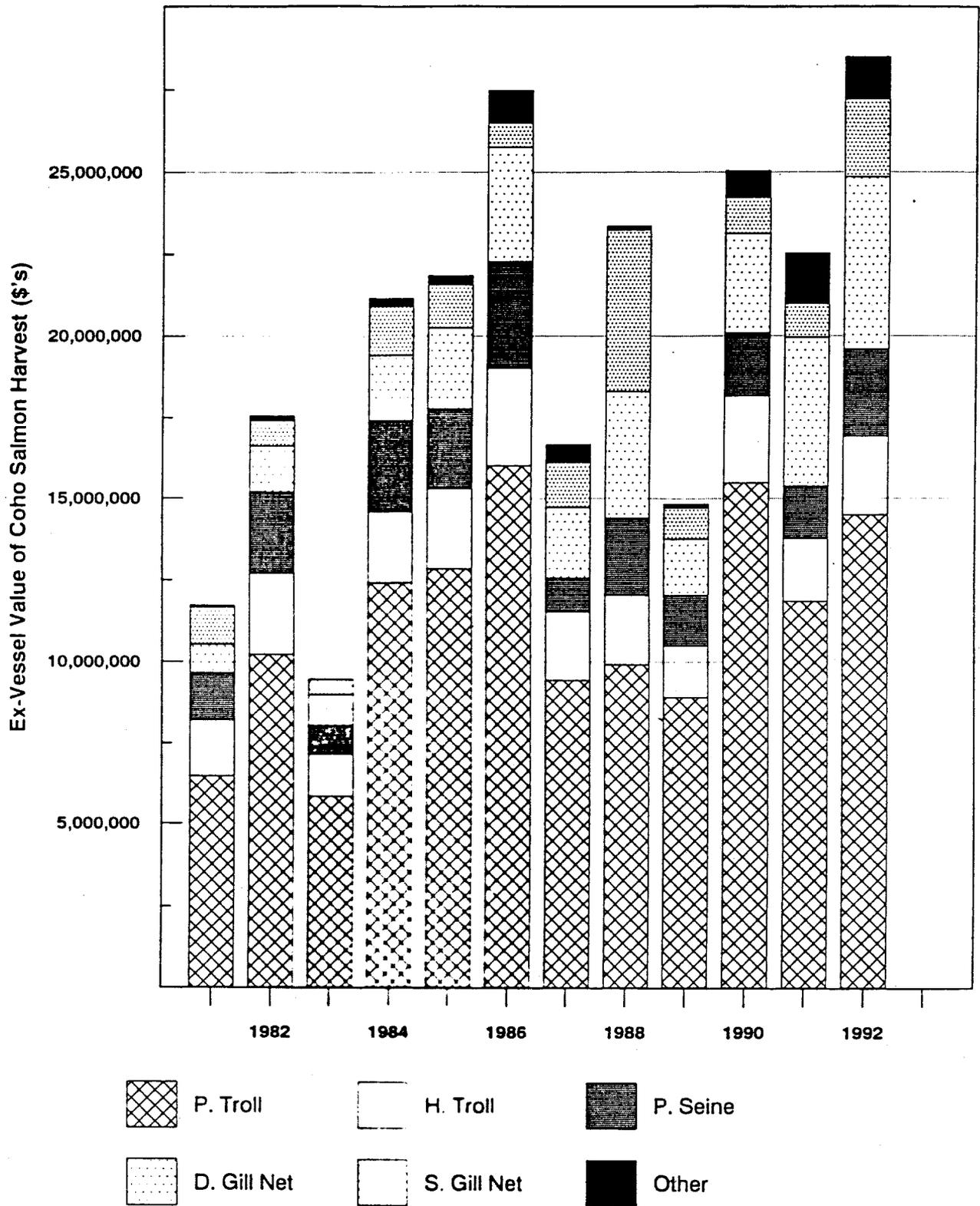


Figure 30. Ex-vessel value of coho salmon caught in the commercial fishery, Southeast Alaska, 1981-1992.

Table 31. Ex-vessel value of coho salmon harvested in the commercial fishery, Southeast Alaska, 1981-1992.*

Ex-vessel Value of Coho Salmon in Commercial Harvest						
Year	Power Troll	Hand Troll	Purse Seine	Drift Gill Net	Set Gill Net	Total
1981	\$ 6,462,400	\$1,726,500	\$1,470,000	\$ 870,000	\$1,128,400	\$11,725,500
1982	\$10,223,200	\$2,463,700	\$2,501,600	\$1,416,100	\$ 787,400	\$17,556,900
1983	\$ 5,843,700	\$1,297,400	\$ 896,000	\$ 950,100	\$ 453,800	\$ 9,467,200
1984	\$12,413,300	\$2,179,000	\$2,811,400	\$1,999,200	\$1,502,000	\$21,154,900
1985	\$12,835,800	\$2,465,600	\$2,453,800	\$2,495,100	\$1,305,300	\$21,858,400
1986	\$16,002,400	\$3,006,100	\$3,277,000	\$3,481,100	\$ 727,100	\$27,465,300
1987	\$ 9,427,300	\$2,093,700	\$1,039,100	\$2,168,100	\$1,380,100	\$16,652,900
1988	\$ 9,902,800	\$2,125,000	\$2,369,400	\$3,893,500	\$4,933,700	\$23,345,600
1989	\$ 8,904,400	\$1,592,700	\$1,534,500	\$1,719,200	\$ 967,300	\$14,830,400
1990	\$15,475,300	\$2,681,000	\$1,923,800	\$3,037,600	\$1,113,200	\$25,045,200
1991	\$11,857,700	\$1,904,300	\$1,612,800	\$4,569,900	\$1,037,300	\$22,512,200
1992	\$14,495,100	\$2,410,100	\$2,674,200	\$5,277,700	\$2,337,600	\$28,467,100

* Data provided by Elaine Dinneford (personal communication), Commercial Fisheries Entry Commission, 8800 Glacier Highway, Juneau Alaska. The 1992 data is considered preliminary. The total column includes other gear categories such as the ex-vessel value of trap caught fish; the ex-vessel values associated with this column range from \$68,200 in 1981 to \$1,530,200 in 1991; see Figure 30).

Table 32. Commercial ex-vessel value of coho salmon harvested in the commercial fishery per commercial fishing permit fished, Southeast Alaska, 1981-1992.*

Year	Average Ex-Vessel Value for Coho Salmon Per Fishing Permit Fished					Total
	Power Troll	Hand Troll	Purse Seine	Drift Gill Net	Set Gill Net	
1981	\$ 8,149	\$1,497	\$4,038	\$ 1,946	\$ 7,142	\$ 4,022
1982	\$12,621	\$2,309	\$6,761	\$ 3,286	\$ 5,356	\$ 6,215
1983	\$ 7,214	\$1,371	\$2,659	\$ 2,199	\$ 3,130	\$ 3,546
1984	\$15,614	\$2,534	\$7,340	\$ 4,575	\$10,729	\$ 8,090
1985	\$15,465	\$2,730	\$6,668	\$ 5,594	\$ 8,820	\$ 8,111
1986	\$19,350	\$3,739	\$8,905	\$ 7,568	\$ 4,721	\$10,511
1987	\$11,386	\$2,744	\$2,727	\$ 4,663	\$ 8,962	\$ 6,427
1988	\$11,960	\$2,735	\$6,014	\$ 8,284	\$31,030	\$ 8,883
1989	\$10,728	\$2,295	\$4,204	\$ 3,689	\$ 6,046	\$ 5,897
1990	\$18,445	\$3,835	\$5,344	\$ 6,532	\$ 7,046	\$ 9,935
1991	\$14,000	\$2,720	\$4,211	\$ 9,807	\$ 6,443	\$ 8,804
1992	\$17,318	\$3,737	\$7,554	\$11,301	\$14,702	\$11,563

* Data analysis based upon information presented in Tables 28 and 31.

of coho salmon harvested with power troll gear from Southeast Alaska per commercial permit fished ranged from a low of \$7,214 per permit fished in 1983 to a high of \$19,350 per permit fished in 1986, almost a three-fold difference (Table 32). Ex-vessel value of power troll harvested coho salmon per permit fished annually averaged about \$12,500 during the nine year period of 1981-1989 and increased by about 33% to an annual average of about \$16,588 per permit fished during the three year period of 1990-1992 (Figure 31).

The ex-vessel value of hand troll caught coho salmon from Southeast Alaska during the 12 year period of 1981-1992 ranged from a low of about \$1,297,400 in 1983 to a high of about \$2,681,000 in 1990 (Table 31). The ex-vessel value of hand troll harvested coho salmon averaged about \$2,105,500 per year during the period 1981-1989 and increased by about 11% to an average level of about \$2,331,800 per year during the 1990-1992 period. The ex-vessel value of coho salmon harvested with hand troll gear from Southeast Alaska per commercial permit fished ranged from a low of \$1,371 per permit fished in 1983 to a high of \$3,835 per permit fished in 1990, almost a three-fold difference (Table 32). Ex-vessel value of hand troll harvested coho salmon per permit fished annually averaged about \$2,400 during the nine year period of 1981-1989 and increased by about 40% to an annual average of about \$3,400 per permit fished during the three year period of 1990-1992 (Figure 31).

Ex-vessel Value of Purse Seine Caught Coho Salmon

The ex-vessel value of purse seine caught coho salmon from Southeast Alaska during the 12 year period of 1981-1992 ranged from a low of about \$896,000 in 1983 to a high of about \$3,277,000 in 1986 (Table 31). The ex-vessel value of coho salmon harvested with purse seines averaged about \$2,039,100 per year during the period 1981-1989 and increased by about 2% to an average level of about \$2,070,300 per year during the 1990-1992 period. The ex-vessel value of coho salmon harvested with purse seine gear from Southeast Alaska per commercial permit fished ranged from a low of \$2,659 per permit fished in 1983 to a high of \$8,905 per permit fished in 1986, almost a three-fold difference (Table 32). Ex-vessel value of purse seine harvested coho salmon per permit fished annually averaged about \$5,500 during the nine year period of 1981-1989 and increased by about 4% to an annual average of about \$5,700 per permit fished during the three year period of 1990-1992 (Figure 32).

Ex-vessel Value of Gill Net Caught Coho Salmon

The ex-vessel value of drift gill net caught coho salmon from Southeast Alaska during the 12 year period of 1981-1992 ranged from a low of about \$870,000 in 1981 to a high of about \$5,277,700 in 1992, a six-fold difference (Table 31). The ex-vessel value of coho salmon harvested with drift gill nets averaged about \$2,110,200 per year during the period 1981-1989 and increased by about two-fold to an average level of about \$4,278,400 per year during the 1990-1992 period. The ex-vessel value of coho salmon harvested with drift gill net gear from Southeast Alaska per commercial permit fished ranged from a low of \$1,946 per permit fished in 1981 to a high of \$11,300 per permit fished in 1992, almost a six-fold difference (Table 32). Ex-vessel value of drift gill net harvested coho salmon per permit fished annually averaged about \$4,650 during the nine year period of 1981-1989 and increased by about two-fold to an annual

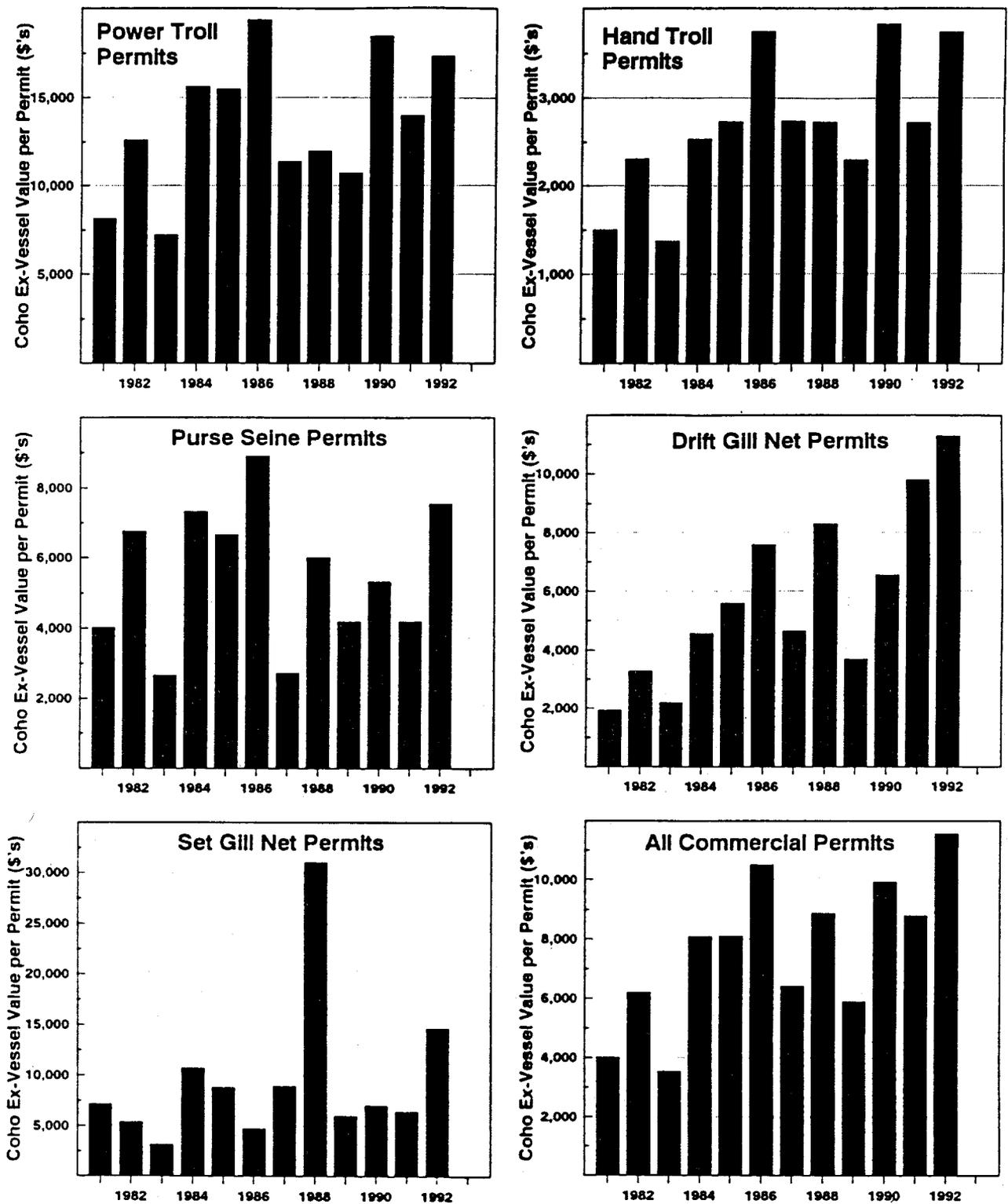


Figure 31. Ex-vessel value of harvested coho salmon per commercial fishing permit fished, Southeast Alaska, 1981-1992.

average of about \$9,200 per permit fished during the three year period of 1990-1992 (Figure 32).

The ex-vessel value of set gill net caught coho salmon from Southeast Alaska during the 12 year period of 1981-1992 ranged from a low of about \$453,800 in 1983 to a high of about \$4,933,700 in 1988, a ten-fold difference (Table 31). The ex-vessel value of coho salmon harvested with set gill nets averaged about \$1,465,000 per year during the period 1981-1989 and increased by about 2% to an average level of about \$1,496,000 per year during the 1990-1992 period. The ex-vessel value of coho salmon harvested with set gill net gear from Southeast Alaska per commercial permit fished ranged from a low of \$3,130 per permit fished in 1983 to a high of \$31,030 per permit fished in 1988, almost a ten-fold difference (Table 32). Ex-vessel value of set gill net harvested coho salmon per permit fished annually averaged about \$9,550 during the nine year period of 1981-1989 and decreased by about 2% to an annual average of about \$9,400 per permit fished during the three year period of 1990-1992 (Figure 32).

HARVEST RATES

The Alaska Department of Fish and Game has conducted long-term micro-wire tag studies of coho salmon at: (1) Auke Lake located near Juneau; (2) Berners River located northwest of Juneau; (3) Ford Arm Lake located on Chichagof Island southeast of Pelican; and, (4) Hugh Smith Lake located east of Ketchikan. These long-term studies have provided information needed to estimate contributions of these four wild stocks of coho salmon to various fisheries and gear groups as well as information needed to estimate total returns and harvest rates. Short term micro-wire tag studies of coho salmon have also been conducted at 19 other sites between 1981 and 1986 and Shaul, Gray, and Koerner (1991) provide a summary of information gleaned from this research. Also available is seven years of data for micro-wire tagging studies of Salmon Lake coho salmon (Schmidt 1985, 1986, 1987, 1988, 1990; Elliot, Schmidt, and Sterritt 1989; and, Schmidt and DerHovanisian 1991) and a shorter term series of data for micro-wire tagging studies of coho salmon rearing in Taku River tributaries (Elliot and Kuntz 1988; Elliot, Schmidt, and Sterritt 1989; and, Elliot and Sterritt 1990 and 1991).

Annual average harvest rates exerted on the Auke Lake and Berners River stocks of coho salmon have decreased whereas harvest rates exerted on the Ford Arm Lake and Hugh Smith Lake stocks of coho salmon have increased (Figure 32). Between the 1980's and the first three years of the 1990's, average annual harvest rate exerted on the Auke Lake stock of coho salmon decreased by 6.7%. Between the 1980's and the first three years of the 1990's, average annual harvest rate exerted on the Berners River stock of coho salmon decreased by 9.4%. Between the 1980's and the first three years of the 1990's, average annual harvest rate exerted on the Ford Arm Lake stock of coho salmon increased by 1.9%. Between the 1980's and the first three years of the 1990's, average annual harvest rate exerted on the Hugh Smith Lake stock of coho salmon increased by 9.0%.

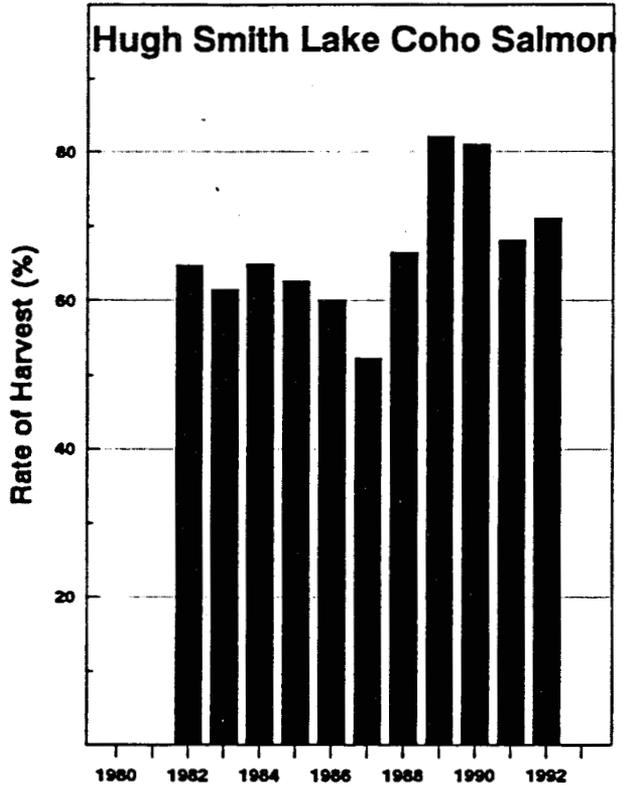
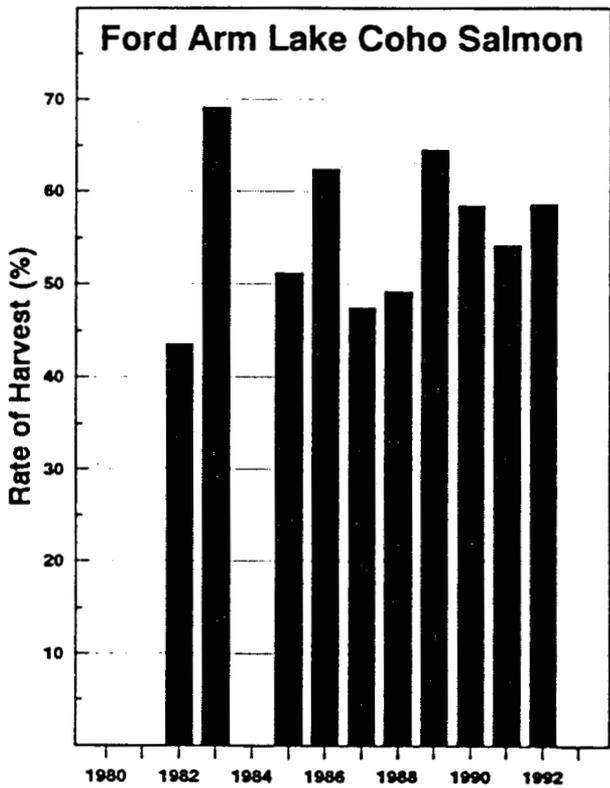
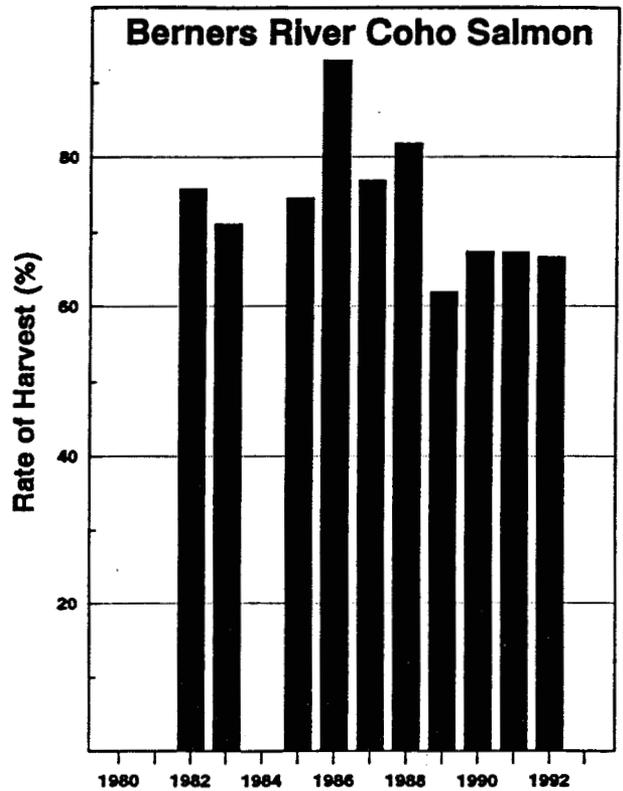
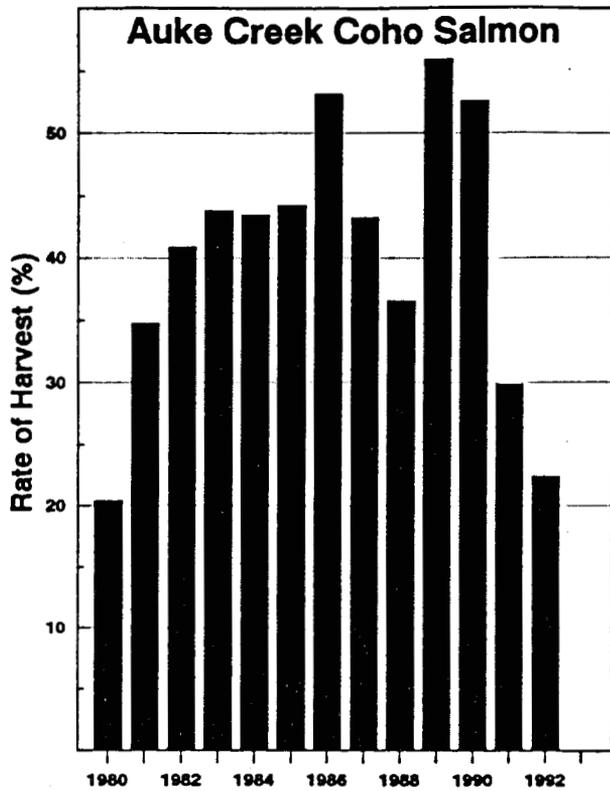


Figure 32. Estimated harvest rates inflicted upon four monitored stocks of coho salmon returning to Southeastern Alaska.

Estimated total returns of the Auke Lake stock of coho salmon have ranged from 756 fish in 1982 to 1,689 fish in 1985 and have annually averaged about 1,200 fish during the 13 year period of 1980-1992 (Table 33). Annual harvest rate exerted on this stock is estimated to have varied between about 20% in 1980 and almost 56% in 1989 with the average annual rate of harvest estimated to have been 40.1% (Figure 32). Annual harvest rates exerted on the Auke Lake stock of coho salmon averaged 41.6% and 34.9% during the 1980's and the first three years of the 1990's; respectively. The majority of the harvested coho salmon from Auke Lake have been taken in the commercial troll fishery followed by the commercial drift gill net fishery, the sport fishery, and the commercial purse seine fishery (Table 33).

Estimated total returns of the Berners River stock of coho salmon have ranged from 14,058 fish in 1987 to 45,858 fish in 1992 and have annually averaged about 27,700 fish during the 10 years of 1982-1983 and 1985-1992 (Table 34). Annual harvest rate exerted on the Berners River stock of coho salmon is estimated to have varied between about 62% in 1989 and almost 93% in 1986 with the average annual rate of harvest estimated to have been 73.6% (Figure 32). Annual harvest rates exerted on the Berners River stock of coho salmon averaged 76.4% and 67.0% during the 1980's and the first three years of the 1990's; respectively. The majority of the harvested coho salmon from the Berners River have been taken in the commercial troll fishery followed by the commercial drift gill net fishery, the sport fishery, and the commercial purse seine fishery (Table 34).

Estimated total returns of the Ford Arm Lake stock of coho salmon have ranged from 3,229 fish in 1987 to 9,303 fish in 1992 and have annually averaged about 5,600 fish during the 10 years of 1982-1983 and 1985-1992 (Table 35). Annual harvest rate exerted on the Ford Arm Lake stock of coho salmon is estimated to have varied between about 44% in 1982 and about 69% in 1983 with the average annual rate of harvest estimated to have been 55.9% (Figure 32). Annual harvest rates exerted on the Ford Arm Lake stock of coho salmon averaged 55.4% and 57.1% during the 1980's and the first three years of the 1990's; respectively. The majority of the harvested coho salmon from Ford Arm Lake have been taken in the commercial troll fishery followed by the commercial purse seine fishery (Table 35).

Estimated total returns of the Hugh Smith Lake stock of coho salmon have ranged from 1,530 fish in 1988 to 6,096 fish in 1982 and have annually averaged about 3,900 fish during the 11 year period of 1982-1992 (Table 36). Annual harvest rate exerted on the Hugh Smith Lake stock of coho salmon is estimated to have varied between about 52% in 1987 to about 82% in 1989 with the average annual rate of harvest estimated to have been 66.8% (Figure 32). Annual harvest rates exerted on the Hugh Smith Lake stock of coho salmon averaged 64.4% and 73.4% during the 1980's and the first three years of the 1990's; respectively. The majority of the harvested coho salmon from Hugh Smith Lake have been taken in the Alaskan commercial troll fishery followed by Alaska commercial purse seine fishery, the Alaskan commercial drift gill net fishery, the British Columbia commercial troll fishery, the British Columbia commercial net fisheries, the Annette Island commercial trap fishery, and the Alaskan sport fishery (Table 36).

Table 33. Estimated harvest, estimated escapement, and estimated total return of coho salmon returning to Auke Lake, 1980-1992.*

Year	Number of Coho Salmon (percent data provided below)						
	Estimated Harvest by Gear Type				Estimated Total Harvest	Estimated Escapement	Estimated Total Return
	Hand & Power Troll	Purse Seine	Drift Gill Net	Sport			
1980	123 14.0%	0 -	30 3.4%	26 3.0%	179 20.4%	698 79.6%	877 100.0%
1981	295 ^b 29.8%	2 0.2%	32 3.2%	15 1.5%	344 34.7%	647 65.3%	991 100.0%
1982	152 20.1%	132 17.5%	24 3.2%	1 0.1%	309 40.9%	447 59.1%	756 100.0%
1983	402 32.6%	10 0.8%	30 2.4%	98 8.0%	540 43.8%	694 56.2%	1,234 100.0%
1984	372 32.3%	0 -	85 7.4%	43 3.7%	500 43.4%	651 56.6%	1,151 100.0%
1985	594 35.1%	3 0.2%	71 4.2%	79 4.7%	747 44.2%	942 55.8%	1,689 100.0%
1986	415 43.0%	0 -	60 6.2%	38 3.9%	513 53.1%	453 46.9%	966 100.0%
1987	438 37.2%	0 -	47 4.0%	24 2.0%	509 43.2%	668 56.8%	1,177 100.0%
1988	302 25.4%	9 0.7%	72 6.0%	52 4.4%	435 36.5%	756 63.5%	1,191 100.0%
1989	565 49.6%	7 0.6%	11 1.0%	54 4.7%	637 55.9%	502 44.1%	1,139 100.0%
1990	633 43.1%	14 1.0%	57 3.9%	68 4.6%	772 52.6%	697 47.4%	1,469 100.0%
1991	172 15.0%	8 0.7%	153 13.4%	8 0.7%	341 29.8%	804 70.2%	1,145 100.0%
1992	207 15.8%	4 0.3%	67 5.1%	16 1.2%	294 22.4%	1,020 77.6%	1,314 100.0%

* Data provided by Leon Shaul, Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Douglas, Alaska.

^b Estimated troll harvest in 1981 includes 6 fish (0.6%) harvested in the northern British Columbia commercial troll fishery.

Table 34. Estimated harvest, estimated escapement, and estimated total return of coho salmon returning to Berners River, 1982, 1983, and 1985-1992.*

Year	Number of Coho Salmon (percent data provided below)						
	Estimated Harvest by Gear Type				Estimated Total Harvest	Estimated Escapement	Estimated Total Return
	Hand & Power Troll	Purse Seine	Drift Gill Net	Sport			
1982	12,887 41.6%	0 -	10,568 34.1%	0 -	23,455 75.7%	7,505 24.3%	30,960 100.0%
1983	17,153 50.4%	0 -	6,978 20.5%	65 0.2%	24,196 71.1%	9,840 28.9%	34,036 100.0%
1985	10,865 44.8%	198 0.8%	7,015 28.9%	0 -	18,078 74.5%	6,169 25.5%	24,247 100.0%
1986	13,560 55.1%	0 -	8,928 36.2%	395 1.6%	22,883 92.9%	1,752 7.1%	24,635 100.0%
1987	7,448 ^b 53.0%	0 -	3,301 23.5%	48 0.3%	10,798 76.8%	3,260 23.2%	14,058 100.0%
1988	5,926 39.6%	181 1.2%	6,141 41.0%	0 -	12,248 81.8%	2,724 18.2%	14,972 100.0%
1989	10,515 53.4%	0 -	1,664 8.5%	0 -	12,179 61.9%	7,509 38.1%	19,688 100.0%
1990	14,751 43.6%	149 0.4%	7,339 21.7%	525 1.6%	22,764 67.3%	11,050 32.7%	33,814 100.0%
1991	6,416 18.3%	578 1.6%	16,518 47.0%	117 0.3%	23,629 67.2%	11,530 32.8%	35,159 100.0%
1992	15,336 33.4%	344 0.8%	14,686 32.0%	192 0.4%	30,558 66.6%	15,300 33.4%	45,858 100.0%

* Data provided by Leon Shaul, Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Douglas, Alaska.

^b Estimated troll harvest in 1987 includes 242 fish (1.7%) harvested in the northern British Columbia commercial troll fishery; the estimated harvest in the Southeast commercial troll fishery in 1987 was 7,206 fish (51.3%).

Table 35. Estimated harvest, estimated escapement, and estimated total return of coho salmon returning to Ford Arm Lake, 1982, 1983, and 1985-1992.*

Year	Number of Coho Salmon (percent data provided below)					
	Est. Harvest by Gear Type			Estimated Total Harvest	Estimated Escapement	Estimated Total Return
	Hand & Power Troll	Purse Seine	Drift Gill Net			
1982	1,948 41.3%	106 2.3%	0 -	2,054 43.6%	2,662 56.4%	4,716 100.0%
1983	3,412 54.3%	931 14.8%	0 -	4,343 69.1%	1,944 30.9%	6,287 100.0%
1985	2,438 51.2%	0 -	0 -	2,438 51.2%	2,324 48.8%	4,762 100.0%
1986	2,500 60.9%	62 1.5%	0 -	2,562 62.4%	1,546 37.6%	4,108 100.0%
1987	1,456 45.1%	79 2.4%	0 -	1,535 47.5%	1,694 52.5%	3,229 100.0%
1988	2,887 ^b 48.4%	46 0.8%	0 -	2,933 49.2%	3,028 50.8%	5,961 100.0%
1989	3,777 61.5%	185 3.0%	0 -	3,962 64.5%	2,177 35.5%	6,139 100.0%
1990	2,979 56.5%	108 2.0%	0 -	3,087 58.5%	2,190 41.5%	5,277 100.0%
1991	3,208 53.3%	44 0.7%	10 0.2%	3,262 54.2%	2,761 45.8%	6,023 100.0%
1992	5,248 56.4%	208 2.2%	0 -	5,456 58.6%	3,847 41.4%	9,303 100.0%

* Data provided by Leon Shaul, Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Douglas, Alaska.

^b Estimated troll harvest in 1988 includes 30 fish (0.5%) harvested in the northern British Columbia commercial troll fishery; the estimated harvest in the Southeast commercial troll fishery in 1988 was 2,857 fish (47.9%).

Table 36. Estimated harvest, estimated escapement, and estimated total return of coho salmon returning to Hugh Smith Lake, 1982-1992.*

Year	Number of Coho Salmon (percent data provided below)									
	Estimated Harvest by Gear Type					Total Catch	Estimated Escapement	Total Return		
	Alaska								B.C.	
Troll	Seine	G Net	Trap	Sport	Troll	Net				
1982	2,780	627	203	0	0	264	78	3,952	2,144	6,096
	45.6%	10.3%	3.3%	-	-	4.3%	1.3%	64.8%	35.2%	100.0%
1983	1,373	424	277	49	0	211	51	2,385	1,490	3,875
	35.4%	10.9%	7.2%	1.3%	-	5.4%	1.3%	61.5%	38.5%	100.0%
1984	1,260	501	470	18	0	325	28	2,602	1,408	4,010
	31.4%	12.5%	11.7%	0.5%	-	8.1%	0.7%	64.9%	35.1%	100.0%
1985	868	287	137	5	0	199	13	1,509	903	2,412
	36.0%	11.9%	5.7%	0.2%	-	8.3%	0.5%	62.6%	37.4%	100.0%
1986	1,585	515	315	2	14	234	26	2,691	1,783	4,474
	35.4%	11.5%	7.0%	0.1%	0.3%	5.2%	0.6%	60.1%	39.9%	100.0%
1987	656	95	249	0	23	153	50	1,226	1,118	2,344
	28.0%	4.1%	10.6%	-	1.0%	6.5%	2.1%	52.3%	47.7%	100.0%
1988	408	230	122	0	0	234	23	1,017	513	1,530
	26.7%	15.0%	8.0%	-	-	15.3%	1.5%	66.5%	33.5%	100.0%
1989	1,213	375	237	0	41	105	20	1,991	433	2,424
	50.0%	15.5%	9.8%	-	1.7%	4.3%	0.8%	82.1%	17.9%	100.0%
1990	1,810	538	504	24	0	794	53	3,723	870	4,593
	39.4%	11.7%	11.0%	0.5%	-	17.3%	1.2%	81.1%	18.9%	100.0%
1991	2,102	195	881	0	54	630	43	3,905	1,826	5,731
	36.7%	3.4%	15.4%	-	0.9%	11.0%	0.7%	68.1%	31.9%	100.0%
1992	1,852	674	634	0	42	283	9	3,494	1,426	4,920
	37.6%	13.7%	12.9%	-	0.9%	5.7%	0.2%	71.0%	29.0%	100.0%

* Data provided by Leon Shaul, Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Douglas, Alaska.

ESCAPEMENT TRENDS

Coho salmon spawn in a variety of streams in Southeast Alaska. Streams used by coho salmon for spawning vary from large glacial rivers such as the Alsek River to lake fed streams such as Auke Creek to small clear-water creeks that empty directly into seawater such as Jordan Creek. It is likely that coho salmon spawning streams in Southeast Alaska number in the thousands. Escapement of coho salmon into a couple of hundred of spawning streams in Southeast Alaska is monitored by a combination of aerial and ground surveys coupled with a few weir counting projects.

Surveyed streams represent only a small fraction of the coho salmon producing streams. Counts of spawning coho are made several times during the fall in some streams whereas for other streams, only single counts of spawning coho salmon are made. The data base is limited due to storm and high water events which are prevalent during the fall spawning season leading to the inability of staff to conduct spawner counts. Unfavorable weather and stream conditions often result in annual spawner counts being compromised. Although there are at least periodic counts of spawning coho salmon for several hundred streams in Southeast Alaska, the data base for most of these streams is limited to only a single or a few years or the surveys took place well before or after what was believed to have been the appropriate time to obtain a peak spawner count. A review of the available coho salmon spawner counts in the IFDB data base led to identification of 69 streams for which a "reasonable" record of spawner abundance was available and upon which escapement trends during the 1980's and early 1990's could be documented.

The 69 streams chosen to document escapement trends for coho salmon spawning in Southeast Alaska were distributed as follows: (1) 11 streams from the northern outside area (Area 1; Yakutat Area); (2) 8 streams from the central outside area (Area 2); (3) 1 stream from the southern outside area (Area 3); (4) 21 streams from the northern inside area (Area 4); (5) 7 streams from the central inside area (Area 5); and, (6) 21 streams from the southern inside area (Area 6). Average annual counts of spawning coho salmon during the 1980-1989 period as compared to the 1990-1992 period increased in 39 of the 69 streams (57%) and decreased in the other 30 streams (43%). Average counts in the 69 streams during the 1980's totaled about 91,200 spawning coho salmon whereas during the first three years of the 1990's, average counts in the 69 streams decreased by about 4% to a total of about 87,700 spawning coho salmon. The following sections provide escapement trends for coho salmon in various areas of Southeast Alaska.

Escapement Trends in the Yakutat Area

The Tsiu River supports the largest spawning population of coho salmon in the Yakutat Area and annual counts since 1973 have ranged from a low of about 8,150 spawners counted in 1975 to a high of about 52,350 spawners counted in 1985 (Table 37). The average annual count of spawning coho salmon in the Tsiu River during the 1980's was about 25,350 fish whereas, the average annual count during the first three years of the 1990's, was about 22,000 fish, a reduction of about 13% (Figure 33). Annual counts of spawning coho salmon in

Table 37. Peak escapement survey counts of coho salmon from three streams in the Yakutat area west of Ocean Cape, 1973-1992.*

Year	Number of Coho Salmon Counted		
	Tsiu River 192-42-020	Kaliakh River 192-41-010	Yahtse River 185-10-010
1973	30,000	8,000	NS ^b
1974	15,000	NS	NS
1975	8,150	3,500	NS
1976	30,000	8,000	NS
1977	25,000	NS	NS
1978	40,000	25,000	NS
1979	25,000	NS	NS
1980	18,000	3,000	NS
1981	20,000	5,000	NS
1982	40,000	8,000	NS
1983	16,500	6,000	NS
1984	30,000	3,500	NS
1985	52,350	37,500	3,000
1986	14,100	5,200	75
1987	8,500	NS	300
1988	16,000	2,500	NS
1989	38,000	1,000	800
1990	16,800	3,450	1,200
1991	16,600	600	675
1992	32,700	1,500	500

* Data from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files.

^b NS means no survey during the peak period.

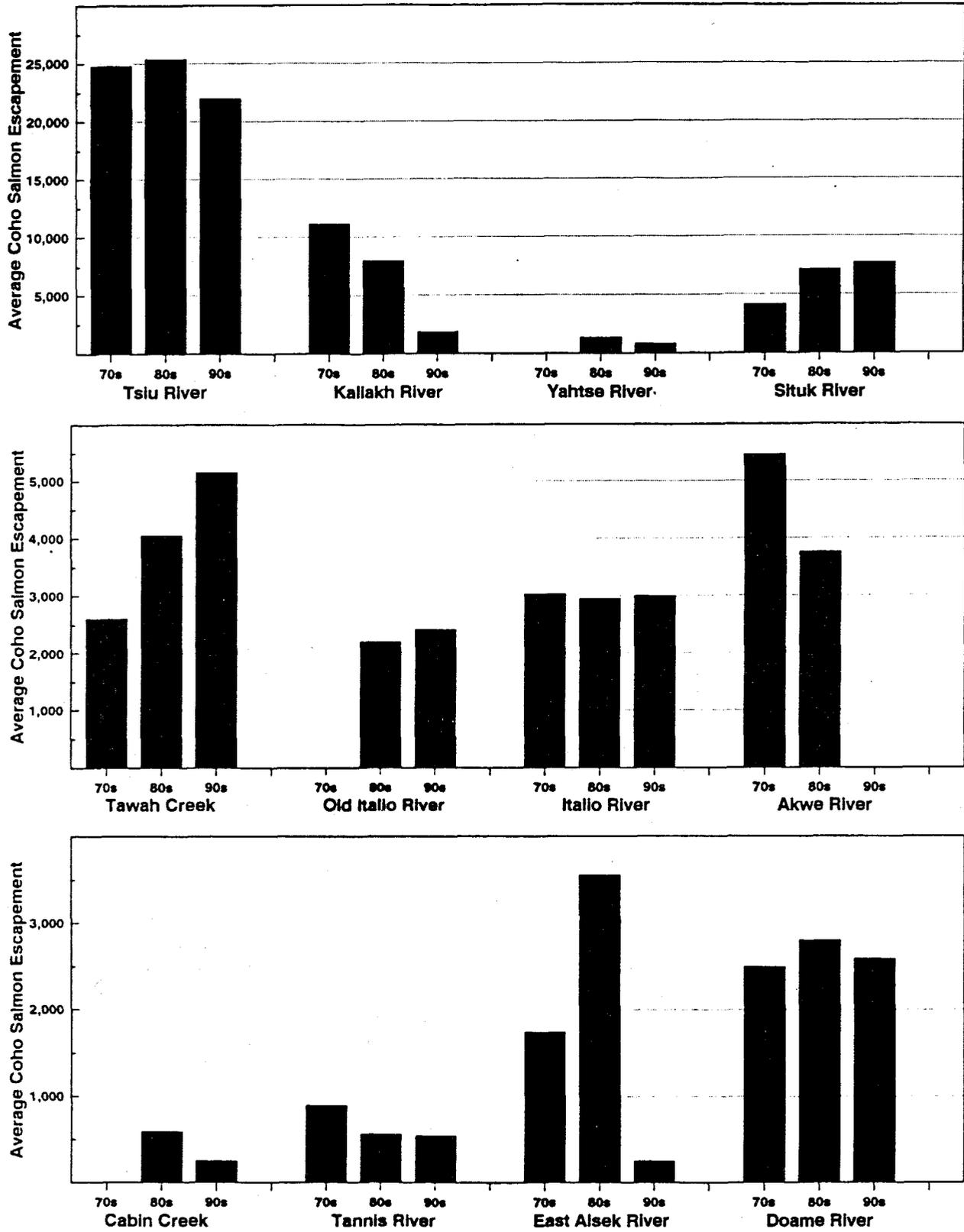


Figure 33. Average abundances of coho salmon in escapements returning to various rivers in the 1970's, 1980's and 1990's, Yakutat Area.

the Kaliakh River since 1973 range from a low of about 600 fish counted in 1991 to a high of about 37,500 fish counted in 1985 (Table 37). The average annual counts of spawning coho salmon in the Kaliakh River during the 1980's and the first three years of the 1990's were about 8,000 and 2,000 fish; respectively (Figure 33). Annual counts of spawning coho salmon in the Yahtse River since 1985 range from a low of 75 fish counted in 1986 to a high of about 3,000 fish counted in 1985 (Table 37). The average annual counts of spawning coho salmon in the Yahtse River during the latter part of the 1980's and the first three years of the 1990's were about 1,000 and 800 fish; respectively (Figure 33).

The Situk River supports the largest spawning population of coho salmon in the Yakutat Area east of Ocean Cape and annual counts since 1972 have ranged from a low of about 1,600 spawners counted in 1990 to a high of about 14,000 spawners counted in 1984 (Table 38). The average annual count of spawning coho salmon in the Situk River during the 1980's was about 7,200 fish whereas, the average annual count during two of the first three years of the 1990's, was about 7,800 fish (Figure 33). Annual counts of spawning coho salmon in the Tawah Creek since 1972 range from a low of about 1,300 fish counted in 1989 to a high of about 14,000 fish counted in 1984 (Table 38). The average annual counts of spawning coho salmon in Tawah Creek during the 1980's and the first three years of the 1990's were about 4,100 and 5,200 fish; respectively (Figure 33). Annual counts of spawning coho salmon in the Old Italo River since 1984 range from a low of about 1,000 fish counted in 1987 to a high of about 3,000 fish counted in 1988, 1989, and 1991 (Table 38). The average annual counts of spawning coho salmon in the Old Italo River during the latter part of the 1980's and the first three years of the 1990's were about 2,200 and 2,400 fish; respectively (Figure 33). Annual counts of spawning coho salmon in the Italo River since 1972 range from a low of about 800 fish counted in 1973 to a high of about 8,000 fish counted in 1977 (Table 38). The average annual counts of spawning coho salmon in the Italo River during the 1980's and the first three years of the 1990's were both about 3,000 fish (Figure 33). Annual counts of spawning coho salmon in Cabin Creek since 1981 range from a low of about 100 fish counted in 1991 to a high of about 1,000 fish counted in 1988 (Table 38). The average annual counts of spawning coho salmon in Cabin Creek during the 1980's and the first three years of the 1990's were about 600 and 250 fish; respectively (Figure 33). Annual counts of spawning coho salmon in the Tannis River since 1975 range from a low of about 300 fish counted in 1979 and 1980 to a high of about 1,500 fish counted in 1975 (Table 38). The average annual counts of spawning coho salmon in the Tannis River during the 1980's and the first three years of the 1990's were both about 600 fish (Figure 33). Annual counts of spawning coho salmon in the East Alsek River since 1972 range from a low of about 200 fish counted in 1991 to a high of about 8,000 fish counted in 1984 and 1985 (Table 38). The average annual counts of spawning coho salmon in the East Alsek River during the 1980's and during two of the first three years of the 1990's were about 3,600 and 250 fish; respectively (Figure 33). Annual counts of spawning coho salmon in the Doame River since 1978 range from a low of about 800 fish counted in 1986 to a high of about 5,700 fish counted in 1981 (Table 38). The average annual counts of spawning coho salmon in the Doame River during the 1980's and the first three years of the 1990's were about 2,800 and 2,600 fish; respectively (Figure 33).

Table 38. Peak escapement survey counts of coho salmon from eight streams in the Yakutat area east of Ocean Cape, 1972-1992.*

Year	Number of Coho Salmon Counted			
	Situk River 182-70-010	Tawah Creek 182-80-030	Old Italo River 182-55-015	Italo River 182-50-010
1972	5,100	3,000	NS ^b	4,000
1973	1,719	1,978	NS	800
1974	4,260	2,500	NS	3,000
1975	4,500	2,100	NS	1,450
1976	3,280	2,000	NS	1,000
1977	3,750	3,000	NS	8,000
1978	3,850	2,200	NS	3,000
1979	7,000	4,050	NS	NS
1980	8,100	3,200	NS	3,000
1981	8,430	7,183	NS	5,500
1982	9,180	2,500	NS	5,000
1983	5,300	6,730	NS	NS
1984	14,000	6,500	1,700	2,750
1985	6,490	3,300	2,500	3,000
1986	3,162	3,300	NS	2,650
1987	2,000	5,000	1,000	2,500
1988	11,000	1,600	3,000	1,000
1989	3,900	1,300	3,000	1,200
1990	1,630	9,460	2,500	3,200
1991	NS	1,786	3,000	2,000
1992	13,820	4,235	1,750	3,800

- Continued on next page -

Table 38. Continued.

Year	Number of Coho Salmon Counted			
	Cabin Creek 182-30-015	Tannis River 182-30-011	East Alsek River 182-20-010	Doame River 182-10-010
1972	NS ^b	NS	1,500	NS
1973	NS	NS	300	NS
1974	NS	NS	3,000	NS
1975	NS	1,500	1,500	NS
1976	NS	NS	2,200	NS
1977	NS	NS	2,000	NS
1978	NS	NS	2,000	2,500
1979	NS	300	1,500	NS
1980	NS	300	2,000	NS
1981	500	1,000	1,500	5,700
1982	450	400	NS	3,200
1983	750	NS	NS	3,000
1984	NS	NS	8,000	NS
1985	NS	400	8,000	5,000
1986	400	NS	1,400	800
1987	NS	NS	NS	1,300
1988	1,000	NS	3,000	2,500
1989	410	750	1,000	1,000
1990	300	600	300	2,500
1991	100	NS	200	1,600
1992	350	500	NS	3,700

* Data from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files.

^b NS means no survey during the peak period.

Average annual counts of spawning coho salmon during the 1980-1989 period as compared to the 1990-1992 period increased in 4 of the 11 Yakutat Area streams (36%) and decreased in the other 7 streams (64%). Average annual counts of coho salmon in the 11 streams chosen to represent the Yakutat Area totaled about 58,300 spawners during the 1980's. During the first three years of the 1990's, average annual counts in these 11 streams decreased by about 26% to a level of about 43,400 spawning coho salmon. This reduction of about 15,000 spawners in the overall coho salmon escapement to Yakutat Area streams is primarily the result of reduced escapements to three streams: (1) the Tsiu River (reduction of about 6,500 spawners or about 25%); (2) the Kaliakh River (reduction of about 6,000 spawners or about 75%); and, (3) the East Alsek River (reduction of about 3,300 spawners or about 90%). Commensurate with the reductions in abundance of coho salmon spawners in these three rivers were changes in the average in-river harvests by commercial set gill net fishermen between the 1980's and 1990's of: (1) Tsiu River - increased average annual harvests of about 14,000 coho salmon, more than two-fold the escapement reduction; (2) Kaliakh River - decreased average annual harvests of about 5,000 coho salmon; and (3) East Alsek River - increased average annual harvests of about 4,000 coho salmon, approximately the level of the escapement reduction.

Escapement Trends in the Northern Inside Area of Southeast Alaska

Twenty-one streams were selected to identify trends in coho salmon escapements for the northern inside area of Southeast Alaska. These streams drain into Lynn Canal (6 streams), are located along the Juneau road system (6 streams), are tributaries to the Taku River (6 streams), or drain into District 112 (3 streams).

The Berners River which drains into Lynn Canal supports a fairly large spawning population of coho salmon and annual counts since 1980 have ranged from a low of about 1,750 spawners counted in 1986 to a high of about 15,300 spawners counted in 1992 (Table 39). The average annual count of spawning coho salmon in the Berners River during the 1980's was about 4,900 fish; whereas, the average annual count during the first three years of the 1990's, was about 12,600 fish, more than a 2.5-fold increase (Figure 34). Annual counts of spawning coho salmon in the Chilkoot River since 1983 range from a low of about 1,700 fish counted in 1983 to a high of about 3,800 fish counted in 1989 (Table 39). The average annual count of spawning coho salmon in the Chilkoot River during the 1980's was about 2,400 fish; in 1991, almost 4,000 coho were counted in the Chilkoot River (Figure 34). Annual counts of spawning coho salmon in the Tahini River since 1980 range from a low of about 30 fish counted in 1980 to a high of about 1,700 fish counted in 1991 (Table 39). The average annual counts of spawning coho salmon in the Tahini River during the 1980's and the first three years of the 1990's were about 400 and 1,250 fish; respectively (Figure 34). Annual counts of spawning coho salmon in the Kellsall River since 1980 range from a low of about 70 fish counted in 1986 to a high of about 6500 fish counted in 1989 (Table 39). The average annual counts of spawning coho salmon in the Kellsall River during the 1980's and the first three years of the 1990's were about 200 and 300 fish; respectively (Figure 34). Annual counts of spawning coho salmon in Chilkat

Table 39. Peak escapement survey and weir counts of coho salmon from six streams in Lynn Canal, District 115, 1980-1992.*

Year	Number of Coho Salmon Counted		
	Berners River 115-20-010 (Survey)	Chilkoot River 115-33-030 (Weir)	Tahini River 115-32-068 (Survey)
1980	2,820	NS ^b	30
1981	4,420	NS	700
1982	7,505	NS	130
1983	9,840	1,740	NS
1984	2,825	NS	NS
1985	6,169	2,184	268
1986	1,752	1,951	120
1987	3,260	NS	696
1988	2,724	NS	539
1989	7,509	3,830	987
1990	11,050	NS	900
1991	11,530	3,974	1,715
1992	15,300	NS	1,143

Year	Number of Coho Salmon Counted		
	Kelsall River 115-32-064 (Survey)	Chilkat Lake 115-32-032 (Weir)	Takhin River 115-32-064 (Survey)
1980	110	NS	NS
1981	176	1,150	325
1982	161	NS	NS
1983	NS	1,133	350
1984	NS	NS	181
1985	132	409	NS
1986	70	635	NS
1987	184	938	130
1988	152	1,317	1,200
1989	650	1,258	970
1990	300	630	45
1991	395	1,312	950
1992	271	962	NS

* Data from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files.

^b NS means no survey during the peak period or weir was not operated throughout the migration.

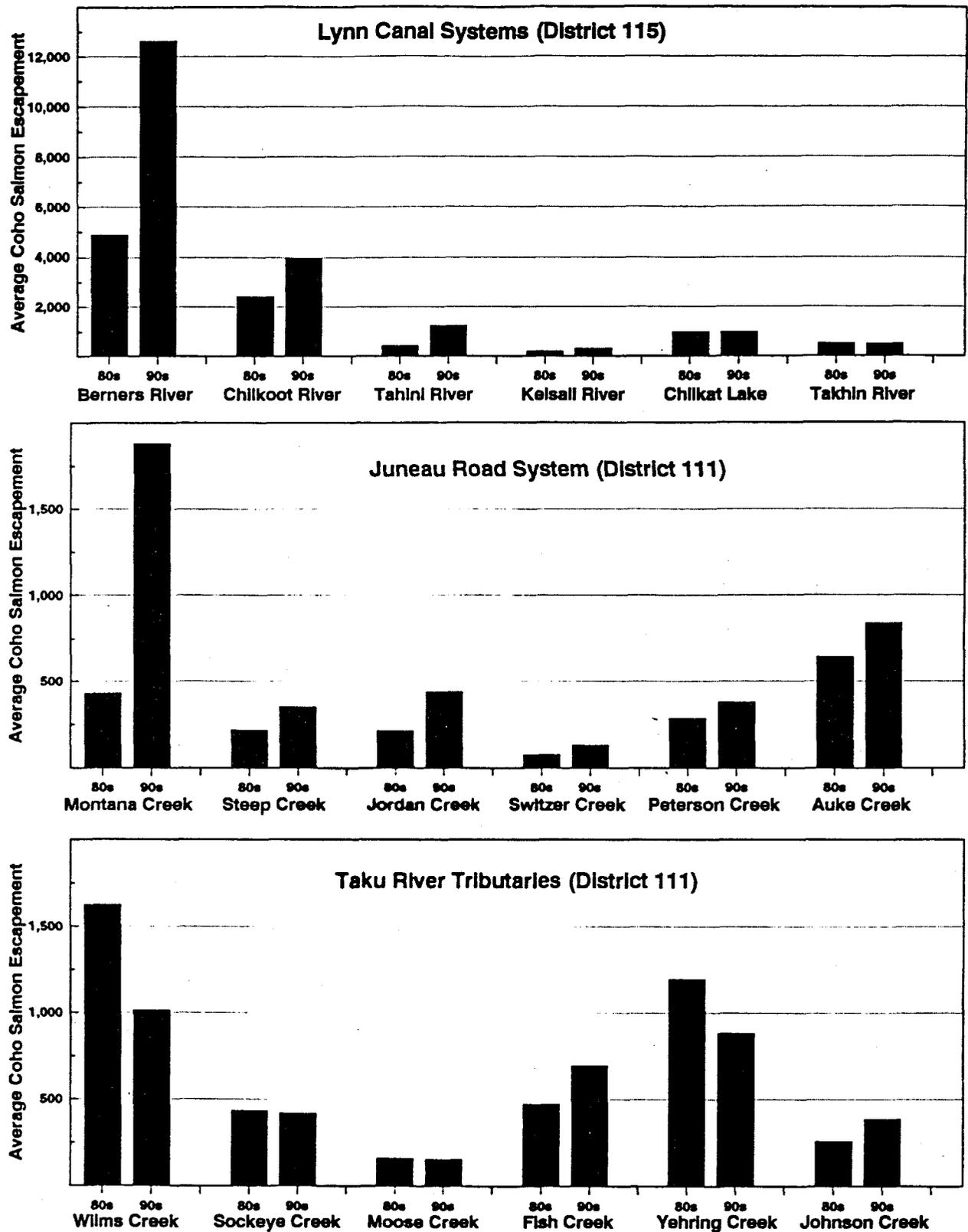


Figure 34. Average abundances of coho salmon in escapements returning to various systems in Lynn Canal, the Juneau road system, and tributaries of the Taku River during the 1980's and 1990's.

Lake since 1981 range from a low of about 400 fish counted in 1985 to a high of about 1,300 fish counted in 1988 (Table 39). The average annual counts of spawning coho salmon in Chilkat Lake during the 1980's and the first three years of the 1990's were both just under 1,000 fish (Figure 34). Annual counts of spawning coho salmon in the Takhin River since 1981 range from a low of 45 fish counted in 1990 to a high of about 1,200 fish counted in 1988 (Table 39). The average annual counts of spawning coho salmon in the Takhin River during the 1980's and during two of the first three years of the 1990's were both about 500 fish (Figure 34).

A series of streams located along the Juneau road system are ground surveyed annually to enumerate spawning coho salmon. Annual counts of spawning coho salmon in Montana Creek since 1981 range from a low of 60 fish counted in 1986 to a high of about 2,500 fish counted in 1992 (Table 40). The average annual counts of spawning coho salmon in Montana Creek during the 1980's and the first three years of the 1990's were about 400 and 1,900 fish; respectively (Figure 34). Annual counts of spawning coho salmon in Steep Creek since 1980 range from a low of about 130 fish counted in 1987 to a high of about 600 fish counted in 1992 (Table 40). The average annual counts of spawning coho salmon in Steep Creek during the 1980's and the first three years of the 1990's were about 200 and 350 fish; respectively (Figure 34). Annual counts of spawning coho salmon in Jordan Creek since 1980 range from a low of about 30 fish counted in 1980 to a high of about 800 fish counted in 1992 (Table 40). The average annual counts of spawning coho salmon in Jordan Creek during the 1980's and the first three years of the 1990's were about 200 and 450 fish; respectively (Figure 34). Annual counts of spawning coho salmon in Switzer Creek since 1980 range from a low of about 10 fish counted in 1980 to a high of about 225 fish counted in 1991 (Table 40). The average annual counts of spawning coho salmon in Switzer Creek during the 1980's and the first three years of the 1990's were about 75 and 130 fish; respectively (Figure 34). Annual counts of spawning coho salmon in Peterson Creek since 1981 range from a low of about 200 fish counted in 1984 to a high of about 550 fish counted in 1988 (Table 40). The average annual counts of spawning coho salmon in Peterson Creek during the 1980's and the first three years of the 1990's were about 300 and 400 fish; respectively (Figure 34). Annual counts of spawning coho salmon across the Auke Creek weir since 1980 range from a low of about 450 fish counted in 1982 to a high of about 1,000 fish counted in 1992 (Table 40). The average annual counts of spawning coho salmon returning to Auke Creek during the 1980's and the first three years of the 1990's were about 650 and 850 fish; respectively (Figure 34).

Coho salmon spawning in streams tributary to the Taku River are annually counted. Annual counts of spawning coho salmon in Wilms Creek since 1984 range from a low of about 400 fish counted in 1990 to a high of about 2,300 fish counted in 1985 (Table 40). The average annual counts of spawning coho salmon in Wilms Creek during the 1980's and the first three years of the 1990's were about 1,600 and 1,000 fish; respectively (Figure 34). Annual counts of spawning coho salmon in Sockeye Creek since 1981 range from a low of about 70 fish counted in 1983 to a high of about 1,000 fish counted in 1987 (Table 40). The average annual counts of spawning coho salmon in Sockeye Creek during the 1980's and the first three years of the 1990's were both about 400 fish (Figure 34). Annual counts of spawning coho salmon in Moose

Table 40. Peak escapement survey and weir counts of coho salmon from six Juneau roadside streams and from six Taku River tributaries, District 111, 1980-1992.*

Number of Coho Salmon Counted in Juneau Roadside Streams						
Year	Montana Cr 111-50-052 (Survey)	Steep Cr 111-50-056 (Survey)	Jordan Cr 111-50-062 (Survey)	Switzer Cr 111-40-007 (Survey)	Peterson Cr 111-50-010 (Survey)	Auke Cr 111-50-042 (Weir)
1980	NS ^b	147	31	7	NS	698
1981	227	515	482	109	219	647
1982	545	232	368	80	320	447
1983	636	171	184	77	219	694
1984	581	168	251	123	189	651
1985	810	186	72	122	276	942
1986	60	247	163	54	363	453
1987	314	128	251	48	204	668
1988	164	155	215	51	542	756
1989	566	222	133	78	242	502
1990	1,711	185	216	82	324	697
1991	1,415	267	322	227	410	804
1992	2,512	612	785	93	403	1,020

Number of Coho Salmon Counted in Taku Tributaries						
Year	Wilms Creek 111-50-052 (Survey)	Sockeye Creek 111-50-056 (Survey)	Moose Creek 111-50-062 (Survey)	Fish Creek 111-40-007 (Survey)	Yehring Creek 111-50-010 (Survey)	Johnson Creek 111-50-042 (Survey)-
1980	NS	NS	40	NS	20	NS
1981	NS	100	19	50	350	150
1982	NS	NS	32	30	353	130
1983	NS	73	329	150	3,000	545
1984	1,480	275	500	700	2,900	235
1985	2,320	740	NS	1,000	560	150
1986	1,095	183	50	65	2,116 ^c	70
1987	2,100	1,040	NS	250	1,513 ^c	150
1988	1,307	660	NS	1,280	1,423 ^c	500
1989	1,464	400	NS	760	2,376 ^c	400
1990	414	230	NS	250	1,260 ^c	NS
1991	1,348	437	NS	460	500	120
1992	1,288	594	158	1,378	1,267	654

* Data from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files.

^b NS means no survey during the peak period or weir was not operated throughout the migration.

^c Weir count.

Creek since 1980 range from a low of about 20 fish counted in 1981 to a high of about 500 fish counted in 1984 (Table 40). The average annual counts of spawning coho salmon in Moose Creek during the 1980's and during two of the first three years of the 1990's were both about 150 fish (Figure 34). Annual counts of spawning coho salmon in Fish Creek since 1981 range from a low of about 30 fish counted in 1982 to a high of about 1,400 fish counted in 1992 (Table 40). The average annual counts of spawning coho salmon in Fish Creek during the 1980's and the first three years of the 1990's were about 500 and 700 fish; respectively (Figure 34). Annual survey counts of spawning coho salmon in Yehring Creek in the period 1980-1985 and 1991-1992 range from a low of about 20 fish counted in 1980 to a high of about 3,000 fish counted in 1983 (Table 40). The average annual survey counts of spawning coho salmon in Yehring Creek during the 1980's and during two of the first three years of the 1990's were about 1,200 and 900 fish; respectively (Figure 34). Annual counts of spawning coho salmon in Johnson Creek since 1981 range from a low of 70 fish counted in 1986 to a high of about 650 fish counted in 1992 (Table 40). The average annual counts of spawning coho salmon in Johnson Creek during the 1980's and during two of the first three years of the 1990's were about 250 and 400 fish; respectively (Figure 34).

Coho salmon spawning in three streams that empty into District 112 are annually counted. Annual counts of spawning coho salmon in the Hasselborg River since 1981 range from a low of about 200 fish counted in 1982 to a high of about 2,300 fish counted in 1988 (Table 41). The average annual counts of spawning coho salmon in the Hasselborg River during the 1980's and the first three years of the 1990's were about 1,200 and 1,400 fish; respectively (Figure 35). Annual counts of spawning coho salmon in Jims Creek since 1981 range from a low of about 20 fish counted in both 1991 and 1992 to a high of about 1,100 fish counted in 1981 (Table 41). The average annual counts of spawning coho salmon in Jims Creek during the 1980's and the first three years of the 1990's were about 300 and 30 fish; respectively (Figure 35). Annual counts of spawning coho salmon in Chaik Bay Creek since 1980 range from a low of 50 fish counted in 1986 to a high of about 1,250 fish counted in 1983 (Table 41). The average annual counts of spawning coho salmon in Chaik Bay Creek during the 1980's and the first three years of the 1990's were about 450 and 600 fish; respectively (Figure 35).

Average annual counts of spawning coho salmon during the 1980-1989 period as compared to the 1990-1992 period increased in 14 of the 21 streams (67%) located in the northern inside area of Southeast Alaska and decreased in the other 7 streams (33%). Average annual counts of coho salmon in the 21 streams chosen to represent the northern inside area of Southeast Alaska totaled about 17,400 spawners during the 1980's. During the first three years of the 1990's, average annual counts in these 21 streams increased by about 11,900 spawners or 68% to a level of about 29,300 spawning coho salmon. The roughly 2.6-fold increase in the average annual escapement of coho salmon during the 1990's into the Berners River accounted for about 65% (7,750 fish) of the overall increase in escapement level for the 21 streams in the northern inside area, although increases in escapement levels occurred in most Lynn Canal and Juneau road system streams.

Table 41. Peak escapement survey counts of coho salmon from three streams in District 112, 1980-1992.*

Year	Number of Coho Salmon Counted		
	Hasselborg River 112-67-035	Jims Creek 112-67-040	Chaik Bay Creek 112-80-028
1980	NS ^b	NS	126
1981	2,000	1,075	860
1982	208	189	433
1983	1,800	100	1,260
1984	700	183	415
1985	550	156	104
1986	1,100	NS	50
1987	1,300	NS	486
1988	2,300	120	301
1989	600	200	409
1990	2,000	48	900
1991	1,000	20	200
1992	1,300	20	700

* Data from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files.

^b NS means no survey.

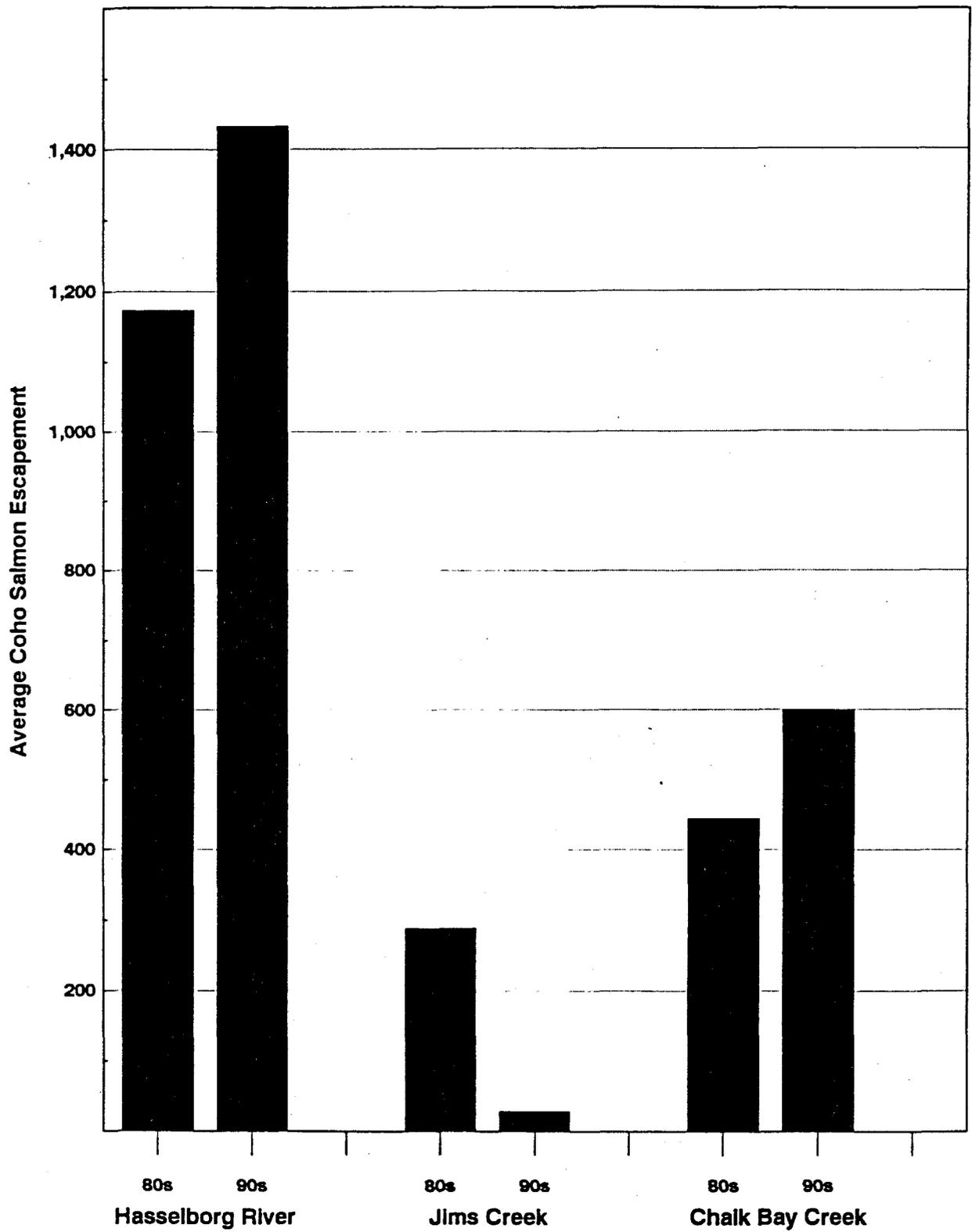


Figure 35. Average abundances of coho salmon in escapements returning to various systems in District 112 during the 1980's and 1990's.

Escapement Trends in the Central Outside Area of Southeast Alaska

Eight streams were selected to identify trends in coho salmon escapements for the central outside area of Southeast Alaska. Annual counts of spawning coho salmon in Starrigavan Creek since 1980 range from a low of about 40 fish counted in 1987 to a high of about 2,000 fish counted in 1980 (Table 42). The average annual counts of spawning coho salmon in Starrigavan Creek during the 1980's and the first three years of the 1990's were about 350 and 150 fish; respectively (Figure 36). Annual counts of spawning coho salmon in Sinitsin Creek since 1980 range from a low of about 20 fish counted in 1987 to a high of 2650 fish counted in 1992 (Table 42). The average annual counts of spawning coho salmon in Sinitsin Creek during the 1980's and the first three years of the 1990's were about 75 and 180 fish; respectively (Figure 36). Annual counts of spawning coho salmon in St. John's Creek since 1980 range from a low of 12 fish counted in 1983 to a high of about 150 fish counted in 1984 (Table 42). The average annual counts of spawning coho salmon in St. John's Creek during the 1980's and the first three years of the 1990's were about 75 and 85 fish; respectively (Figure 36). Annual counts of spawning coho salmon in the Nakwasina River since 1980 range from a low of about 50 fish counted in 1987 to a high of about 800 fish counted in 1981 (Table 42). The average annual counts of spawning coho salmon in the Nakwasina River during the 1980's and the first three years of the 1990's were about 300 and 500 fish; respectively (Figure 36). Annual counts of spawning coho salmon past the weir at Salmon Lake since 1984 range from a low of about 200 fish counted in 1990 to a high of about 1,500 fish counted in 1984 (Table 42). The average annual count of spawning coho salmon at the Salmon Lake weir during the 1980's was about 900 fish; in 1990, the count past the weir was 204 fish (Figure 36). Annual counts of spawning coho salmon past the weir at Ford Arm Lake since 1982 range from a low of about 1,500 fish counted in 1986 to a high of about 3,800 fish counted in 1992 (Table 42). The average annual counts of spawning coho salmon past the Ford Arm Lake weir during the 1980's and the first three years of the 1990's were about 2,200 and 2,900 fish; respectively (Figure 36). Annual counts of spawning coho salmon at Krestof Sukoi since 1981 range from a low of about 30 fish counted in 1981 to a high of about 600 fish counted in 1992 (Table 42). The average annual counts of spawning coho salmon at Krestof Sukoi during the 1980's and the first three years of the 1990's were about 180 and 430 fish; respectively (Figure 36). Annual counts of spawning coho salmon in the Black River since 1980 range from a low of about 180 fish counted in 1989 to a high of about 1,600 fish counted in 1985 (Table 42). The average annual counts of spawning coho salmon in the Black River during the 1980's and the first three years of the 1990's were about 500 and 800 fish; respectively (Figure 36).

Average annual counts of spawning coho salmon during the 1980-1989 period as compared to the 1990-1992 period increased in 6 of the 8 streams (75%) located in the central outside area of Southeast Alaska and decreased in the other 2 streams (25%). Average annual counts of coho salmon in the 8 streams chosen to represent the central outside area of Southeast Alaska totaled about 4,500 spawners during the 1980's. During the first three years of the 1990's, average annual counts in these 8 streams increased by about 800 spawners or 18% to a level of about 5,300 spawning coho salmon. The 33% increase in the average annual escapement of coho salmon during the 1990's into Ford Arm Lake

Table 42. Peak escapement survey and weir counts of coho salmon from eight streams located on the central outside coast of Southeast Alaska near Sitka (District 113), 1980-1992.*

Year	Number of Coho Salmon Counted			
	Starrigavan Creek 113-41-015 (Survey)	Sinitsin Creek 113-62-008 (Survey)	St. John's Creek 113-81-011 (Survey)	Nakwasina River 113-43-002 (Survey)
1980	2,000	39	26	70
1981	170	85	51	780
1982	317	46	NS	NS
1983	45	31	12	217
1984	385	160	154	715
1985	193	144	109	408
1986	57	NS	NS	275
1987	36	21	NS	47
1988	45	56	71	104
1989	101	76	89	129
1990	39	80	38	195
1991	142	186	107	621
1992	241	265	110	654

Year	Number of Coho Salmon Counted			
	Ford Arm Lake 113-73-003 (Weir)	Salmon Lake 113-41-032 (Weir)	Krestof Sukoi 113-62-005 (Survey)	Black River 113-81-011 (Survey)
1980	NS	NS ^b	NS	328
1981	NS	NS	28	NS
1982	2,662	NS	NS	NS
1983	1,944	NS	NS	NS
1984	NS	1,514	NS	425
1985	2,324	1,388	NS	1,628
1986	1,546	837	245	312
1987	1,694	616	167	262
1988	3,028	680	NS	280
1989	2,177	210	131	181
1990	2,190	204	214	842
1991	2,761	NS	454	690
1992	3,847	NS	629	866

* Data from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files.

^b NS means no survey during the peak period or weir was not operated throughout the migration.

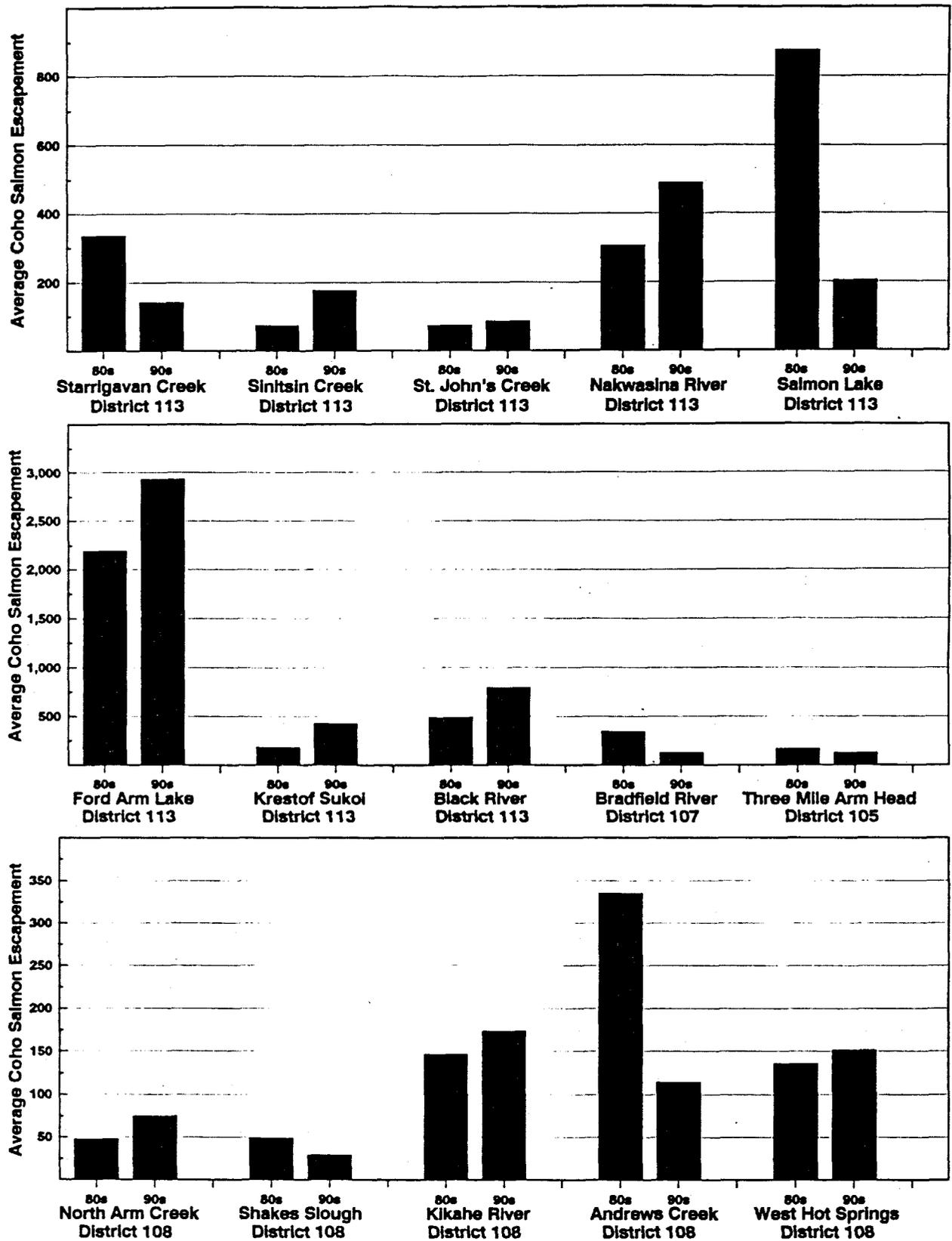


Figure 36. Average abundances of coho salmon in escapements returning to central Southeast Alaska during the 1980's and 1990's.

accounted for about 90% (about 700 fish) of the overall increase in escapement level for the 8 streams in the central outside area, although moderate increases in escapement also occurred in five other streams.

Escapement Trends in the Central Inside Area of Southeast Alaska

Seven streams were selected to identify trends in coho salmon escapements for the central inside area of Southeast Alaska. One of these streams drains into District 105, one stream drains into District 107, and the remaining five streams drain into District 108. Annual counts of spawning coho salmon in the Bradfield River since 1981 range from a low of 25 fish counted in 1982 to a high of 460 fish counted in 1989 (Table 43). The average annual count of spawning coho salmon in the Bradfield River during the 1980's was about 350 fish; in 1990, 127 spawning coho salmon were counted (Figure 36). Annual counts of spawning coho salmon in North Arm Creek since 1980 range from a low of about 10 fish counted in 1980 to a high of about 100 fish counted in 1986 (Table 43). The average annual count of spawning coho salmon in North Arm Creek during the 1980's was about 50 fish; in 1990, 75 spawning coho salmon were counted (Figure 36). Annual counts of spawning coho salmon in Shakes Slough since 1982 range from a low of about 10 fish counted in 1987 to a high of about 80 fish counted in 1983 (Table 43). The average annual count of spawning coho salmon in the Shakes Slough during the 1980's was about 50 fish; in 1990, 30 spawning coho salmon were counted (Figure 36). Annual counts of spawning coho salmon in the Kikahe River since 1981 range from a low of about 80 fish counted in 1988 to a high of 290 fish counted in 1986 (Table 43). The average annual count of spawning coho salmon in the Kikahe River during the 1980's was about 150 fish; in 1990, 174 spawning coho salmon were counted (Figure 36). Annual counts of spawning coho salmon in Andrews Creek since 1981 range from a low of 115 fish counted in 1990 to a high of 570 fish counted in 1989 (Table 43). The average annual count of spawning coho salmon in Andrews Creek during the 1980's was 335 fish; in 1990, 115 spawning coho salmon were counted (Figure 36). Annual counts of spawning coho salmon in West Hot Springs since 1982 range from a low of about 40 fish counted in 1984 to a high of about 270 fish counted in 1982 (Table 43). The average annual count of spawning coho salmon in West Hot Springs during the 1980's was about 140 fish; in 1990, 152 spawning coho salmon were counted (Figure 36). Annual counts of spawning coho salmon in Three Mile Arm Head since 1988 range from a low of about 100 fish counted in 1990 to a high of about 180 fish counted in 1989 (Table 43). The average annual counts of spawning coho salmon in Three Mile Arm Head during the 1980's and during two of the first three years of the 1990's were about 170 and 130 fish; respectively (Figure 36).

Average annual counts of spawning coho salmon during the 1980-1989 period as compared to the 1990-1992 period increased in 3 of the 7 streams (43%) located in the central inside area of Southeast Alaska and decreased in the other 4 streams (57%). Average annual counts of coho salmon in the 7 streams chosen to represent the central inside area of Southeast Alaska totaled about 1,200 spawners during the 1980's and about 800 spawners during the 1990's. The drop of about 200 spawners each from the Bradfield River and from Andrews Creek accounted for the major difference in counts between the 1980's and 1990's. However, knowledge of escapement patterns in the central inside area during the 1990's is weak in that few streams were surveyed, only one escapement

Table 43. Peak escapement survey counts of coho salmon from seven streams located in Districts 105, 107, and 108 of Southeast Alaska, 1980-1992.*

Year	Number of Coho Salmon Counted			
	Bradfield River 107-40-052 (Survey)	North Arm Creek 108-40-010 (Survey)	Shakes Slough 108-40-013 (Survey)	Kikahe River 108-40-016 (Survey)
1980	NS ^b	13	NS	NS
1981	258	NS	NS	80
1982	25	94	73	201
1983	NS	30	80	120
1984	NS	NS	NS	NS
1985	NS	NS	NS	NS
1986	NS	95	55	290
1987	NS	23	7	142
1988	315	41	23	77
1989	460	40	55	120
1990	127	75	30	174
1991	NS	NS	NS	NS
1992	NS	NS	NS	NS

Year	Number of Coho Salmon Counted		
	Andrews Creek 108-40-020 (Survey)	W Hot Springs 108-40-13A (Survey)	Three Mile Arm Head 105-32-073 (Survey)
1980	NS	NS	NS
1981	186	NS	NS
1982	382	268	NS
1983	180	200	NS
1984	NS	37	NS
1985	NS	NS	NS
1986	320	110	NS
1987	275	83	NS
1988	435	85	158
1989	570	175	182
1990	115	152	103
1991	NS	NS	157
1992	NS	NS	NS

* Data from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files.

^b NS means no survey during the peak period or weir was not operated throughout the migration.

count was successfully made in 1991, and no counts of spawners were made in 1992.

Escapement Trends in Southern Southeast Alaska

A total of 22 streams were selected to identify trends in coho salmon escapements for the southern portion of Southeast Alaska; only one of these streams is in the southern outside area (District 103), whereas, the remaining 21 streams are in the southern inside area (17 streams drain into District 101 and 4 streams drain into District 102). Annual counts of spawning coho salmon since 1982 at Port Saint Nickolas Head which is located in District 103 of the southern outside area range from a low of half a dozen spawning coho salmon counted in 1988 to a high of about 200 fish counted in 1982 (Table 44). The average annual counts of spawning coho salmon at Port Saint Nickolas Head during the 1980's and during two of the first three years of the 1990's were 51 and 63 fish; respectively (Figure 37).

Counts of coho salmon spawners are available for four streams in District 102 of the southern inside area. Annual counts of spawning coho salmon in Lagoon Creek since 1981 range from a low of about 30 fish counted in 1986 to a high of about 750 fish counted in 1981 (Table 44). The average annual counts of spawning coho salmon in Lagoon Creek during the 1980's and the first three years of the 1990's were about 360 and 310 fish; respectively (Figure 37). Annual counts of spawning coho salmon in Twelve Mile Creek since 1982 range from a low of about 30 fish counted in 1984 to a high of 575 fish counted in 1992 (Table 44). The average annual counts of spawning coho salmon in Twelve Mile Creek during the 1980's and the first three years of the 1990's were about 150 and 250 fish; respectively (Figure 37). Annual counts of spawning coho salmon in the Harris River since 1982 range from a low of 12 fish counted in 1984 and again in 1988 to a high of 885 fish counted in 1992 (Table 44). The average annual counts of spawning coho salmon in the Harris River during the 1980's and the first three years of the 1990's were about 130 and 400 fish; respectively (Figure 37). Annual counts of spawning coho salmon in Maybeso Creek since 1982 range from a low of 6 fish counted in 1988 to a high of 210 fish counted in 1992 (Table 44). The average annual counts of spawning coho salmon in Maybeso Creek during the 1980's and the first three years of the 1990's were 16 and 115 fish; respectively (Figure 37).

Counts of coho salmon spawners are available for 17 streams in District 101 of the southern inside area. Annual counts of spawning coho salmon in Carroll Creek since 1981 range from a low of 70 fish counted in 1989 to a high of 1,550 fish counted in 1985 (Table 45). The average annual counts of spawning coho salmon in Carroll Creek during the 1980's and during two of the first three years of the 1990's were 504 and 368 fish; respectively (Figure 38). Annual counts of spawning coho salmon in Indian Creek since 1983 range from a low of about 150 fish counted in 1987 to a high of 925 fish counted in 1989 (Table 45). The average annual counts of spawning coho salmon in Indian Creek during the 1980's and during two of the first three years of the 1990's were both about 600 fish (Figure 38). Annual counts of spawning coho salmon in Eulachon Creek since 1983 range from a low of about 150 fish counted in 1987 to a high of about 1,900 fish counted in 1985 (Table 45). The average annual counts of spawning coho salmon in Eulachon Creek during the 1980's and the

Table 44. Peak escapement survey counts of coho salmon from five streams located in Districts 102 and 103 of southern Southeast Alaska, 1980-1992.*

Year	Number of Coho Salmon Counted				
	Lagoon Creek 102-40-060 (Survey)	Twelve Mile Creek 102-60-072 (Survey)	Harris River 102-60-082 (Survey)	Maybeso Creek 102-60-084 (Survey)	Port Saint Nickolas Hd 103-60-059 (Survey)
1980	NS ^b	NS	NS	NS	NS
1981	750	NS	NS	NS	NS
1982	225	50	38	26	200
1983	660	NS	NS	NS	NS
1984	600	31	12	NS	10
1985	283	51	NS	NS	NS
1986	31	562	450	NS	10
1987	289	NS	NS	NS	30
1988	70	43	12	6	6
1989	325	NS	NS	NS	NS
1990	150	127	155	83	50
1991	180	69	148	53	NS
1992	600	575	885	210	76

* Data from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files.

^b NS means no survey during the peak period or weir was not operated throughout the migration.

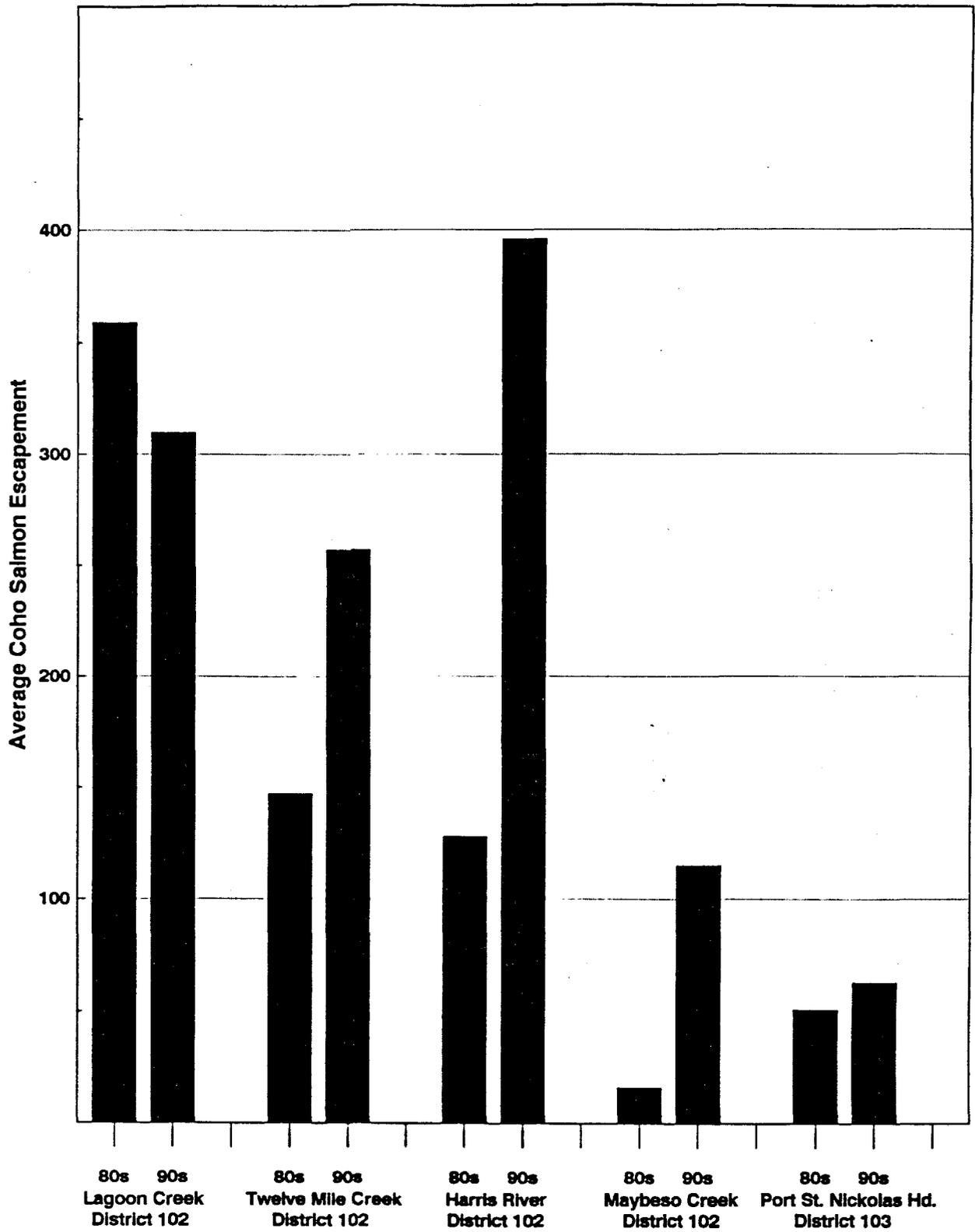


Figure 37. Average abundances of coho salmon in escapements returning to Districts 102 and 103 during the 1980's and 1990's.

Table 45. Peak escapement survey and weir counts of coho salmon from seventeen streams located in District 101 of southern Southeast Alaska, 1980-1992.*

Year	Number of Coho Salmon Counted					
	Carroll Creek	Indian River	Eulachon River	Hugh Smith Lake	Tombstone River	Keta River
	101-45-078 (Survey)	101-71-04I (Survey)	101-75-015 (Survey)	101-30-075 (Weir)	101-15-019 (Survey)	101-30-103 Survey)
1980	NS ^b	NS	NS	NS	NS	NS
1981	600	NS	NS	NS	NS	1,150
1982	NS	NS	NS	2,144	NS	725
1983	524	828	387	1,490	NS	NS
1984	411	601	1,211	1,408	NS	NS
1985	1,550	812	1,880	903	NS	NS
1986	NS	NS	865	1,783	NS	NS
1987	180	154	154	1,118	532	800
1988	193	300	205	513	1,400	850
1989	70	925	290	433	950	650
1990	NS	NS	235	870	275	550
1991	375	550	285	1,826	775	800
1992	360	675	860	1,426	1,035	627

Year	Number of Coho Salmon Counted					
	Marten River	Humpback Creek	Choca Creek	Blossom River	King Creek	Hatchery Cr Yes Bay
	101-30-060 (Survey)	101-30-083 (Survey)	101-71-04E (Survey)	101-55-040 (Survey)	101-15-04K (Survey)	101-30-103 Survey)
1980	NS	NS	NS	NS	NS	NS
1981	NS	580	NS	1,150	NS	NS
1982	115	596	NS	1,350	14	NS
1983	NS	674	NS	NS	3,500	NS
1984	NS	NS	NS	NS	NS	NS
1985	NS	372	NS	NS	31	NS
1986	NS	NS	NS	NS	NS	NS
1987	740	650	NS	700	NS	450
1988	600	52	150	790	175	800
1989	1,175	350	200	1,000	510	562
1990	575	135	NS	800	35	500
1991	575	671	220	725	300	705
1992	1,285	550	150	650	250	850

- Continued on next page -

Table 45. Continued.

Year	Number of Coho Salmon Counted				
	Herman Creek 101-75-005 (Survey)	Grant Creek 101-75-010 (Survey)	Klahini River 101-75-050 (Survey)	Barrier Creek 101-71-04A (Survey)	Humpy Creek 101-71-04H (Survey)
1980	NS	NS	NS	NS	NS
1981	NS	NS	NS	NS	NS
1982	NS	NS	NS	NS	NS
1983	NS	NS	NS	NS	NS
1984	NS	NS	NS	NS	NS
1985	NS	NS	NS	NS	NS
1986	NS	NS	NS	NS	NS
1987	92	NS	NS	NS	NS
1988	72	150	20	50	20
1989	75	101	15	450	10
1990	150	30	150	NS	NS
1991	245	50	50	100	75
1992	115	270	90	100	90

* Data from the Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Region I, IFDB computer files.

° NS means no survey during the peak period or weir was not operated throughout the migration.

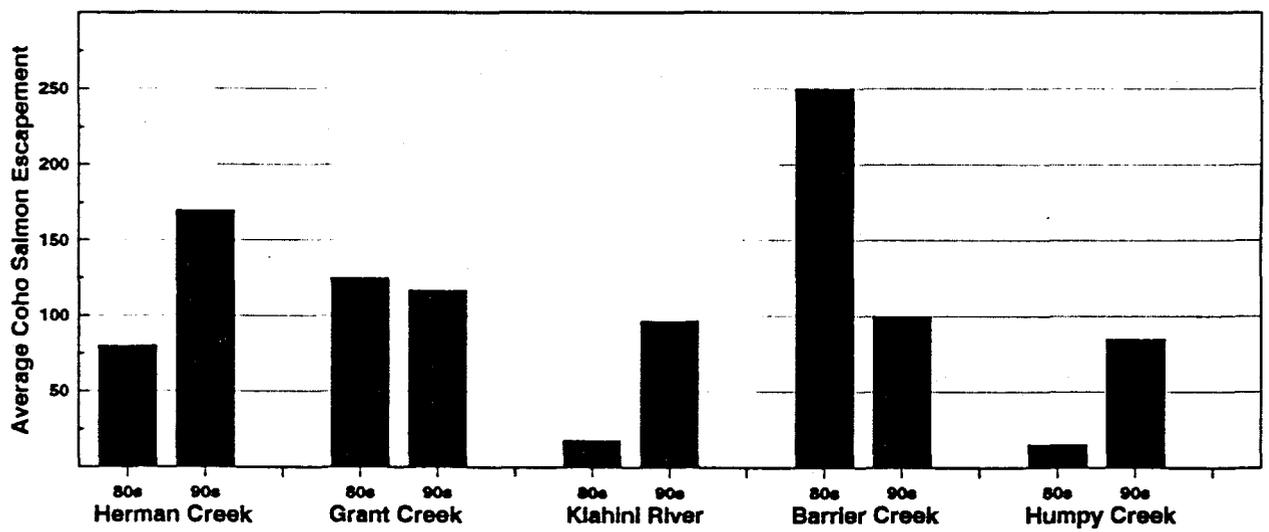
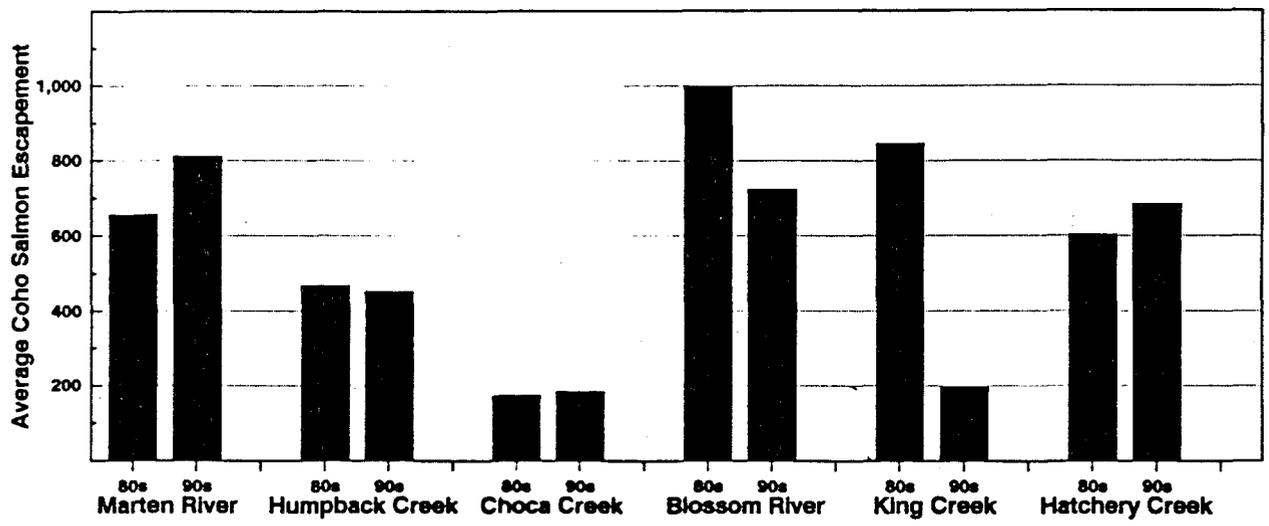
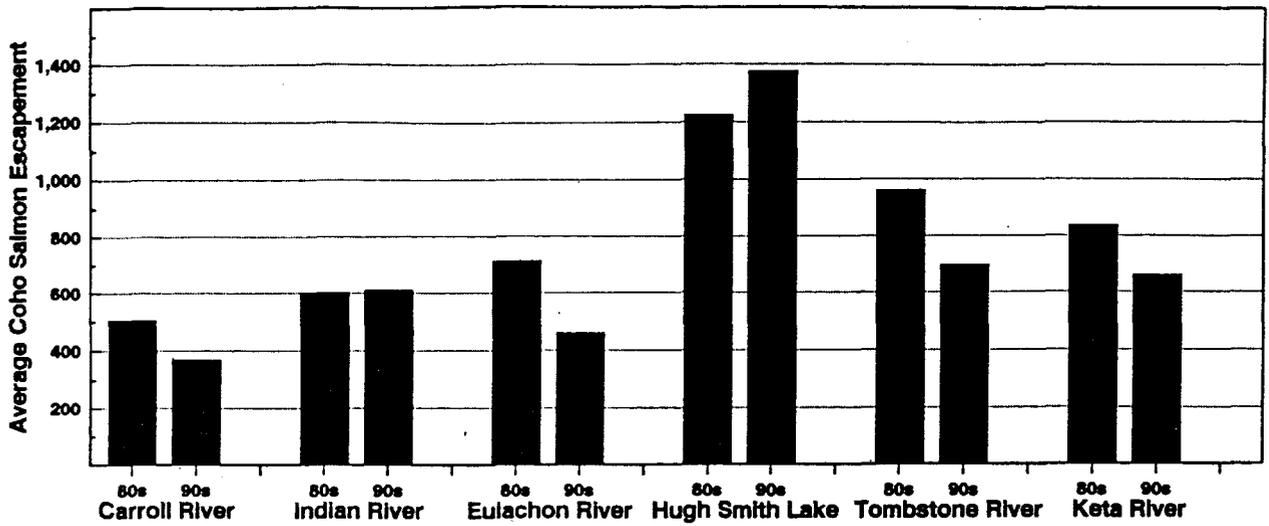


Figure 38. Average abundances of coho salmon in escapements returning to District 101 during the 1980's and 1990's.

first three years of the 1990's were about 700 and 500 fish; respectively (Figure 38). Annual counts of spawning coho salmon past the weir at Hugh Smith Lake since 1982 range from a low of about 400 fish counted in 1989 to a high of 2,144 fish counted in 1982 (Table 45). The average annual weir counts of spawning coho salmon at Hugh Smith Lake during the 1980's and the first three years of the 1990's were 1,224 and 1,374 fish; respectively (Figure 38). Annual counts of spawning coho salmon in the Tombstone River since 1987 range from a low of 275 fish counted in 1990 to a high of 1,400 fish counted in 1988 (Table 45). The average annual counts of spawning coho salmon in the Tombstone River during the 1980's and the first three years of the 1990's were 960 and 695 fish; respectively (Figure 38). Annual counts of spawning coho salmon in the Keta River since 1981 range from a low of 550 fish counted in 1990 to a high of 850 fish counted in 1988 (Table 45). The average annual counts of spawning coho salmon in the Keta River during the 1980's and the first three years of the 1990's were about 830 and 660 fish; respectively (Figure 38). Annual counts of spawning coho salmon in the Marten River since 1982 range from a low of 115 fish counted in 1982 to a high of 1,285 fish counted in 1992 (Table 45). The average annual counts of spawning coho salmon in the Marten River during the 1980's and the first three years of the 1990's were about 660 and 800 fish; respectively (Figure 38). Annual counts of spawning coho salmon in Humpback Creek since 1981 range from a low of about 50 fish counted in 1988 to a high of about 675 fish counted in 1983 (Table 45). The average annual counts of spawning coho salmon in Humpback Creek during the 1980's and the first three years of the 1990's were 468 and 452 fish; respectively (Figure 38). Annual counts of spawning coho salmon in Choca Creek since 1988 range from a low of 150 fish counted in both 1988 and in 1992 to a high of 220 fish counted in 1991 (Table 45). The average annual counts of spawning coho salmon in Choca Creek during the 1980's and the first three years of the 1990's were 175 and 185 fish; respectively (Figure 38). Annual counts of spawning coho salmon in the Blossom River since 1981 range from a low of 650 fish counted in 1992 to a high of 1,350 fish counted in 1982 (Table 45). The average annual counts of spawning coho salmon in the Blossom River during the 1980's and the first three years of the 1990's were about 1,000 and 725 fish; respectively (Figure 38). Annual counts of spawning coho salmon in King Creek since 1982 range from a low of 14 fish counted in 1982 to a high of about 3,500 fish counted in 1983 (Table 45). The average annual counts of spawning coho salmon in King Creek during the 1980's and the first three years of the 1990's were 846 and 195 fish; respectively (Figure 38). Annual counts of spawning coho salmon in Hatchery Creek since 1987 range from a low of about 450 fish counted in 1987 to a high of about 850 fish counted in 1992 (Table 45). The average annual counts of spawning coho salmon in Hatchery Creek during the 1980's and the first three years of the 1990's were 604 and 685 fish; respectively (Figure 38). Annual counts of spawning coho salmon in Herman Creek since 1987 range from a low of about 70 fish counted in 1988 to a high of 245 fish counted in 1991 (Table 45). The average annual counts of spawning coho salmon in Herman Creek during the 1980's and the first three years of the 1990's were about 80 and 170 fish; respectively (Figure 38). Annual counts of spawning coho salmon in Grant Creek since 1988 range from a low of 30 fish counted in 1990 to a high of 270 fish counted in 1992 (Table 45). The average annual counts of spawning coho salmon in Grant Creek during the 1980's and the first three years of the 1990's were 125 and 117 fish; respectively (Figure 38). Annual counts of spawning coho salmon in the

Klahini River since 1988 range from a low of 15 fish counted in 1989 to a high of 150 fish counted in 1990 (Table 45). The average annual counts of spawning coho salmon in the Klahini River during the 1980's and the first three years of the 1990's were 18 and 97 fish; respectively (Figure 38). Annual counts of spawning coho salmon in Barrier Creek since 1988 range from a low of 50 fish counted in 1988 to a high of 450 fish counted in 1989 (Table 45). The average annual counts of spawning coho salmon in Barrier Creek during the 1980's and during two of the first three years of the 1990's were about 250 and 100 fish; respectively (Figure 38). Annual counts of spawning coho salmon in Humpy Creek since 1988 range from a low of 10 fish counted in 1989 to a high of 90 fish counted in 1992 (Table 45). The average annual counts of spawning coho salmon in Humpy Creek during the 1980's and during two of the first three years of the 1990's were 15 and 85 fish; respectively (Figure 38).

Average annual counts of spawning coho salmon during the 1980-1989 period as compared to the 1990-1992 period increased in 11 of the 21 streams (52%) located in the southern inside area of Southeast Alaska and decreased in the other 10 streams (48%). Average annual counts of coho salmon in the 21 streams chosen to represent the southern inside area of Southeast Alaska totaled about 9,800 spawners during the 1980's. During the first three years of the 1990's, average annual counts in these 21 streams decreased by about 900 spawners or 9% to a level of about 8,900 spawning coho salmon. King Creek showed the largest reduction in coho salmon spawning escapement, however the Carroll River, the Eulachon River, the Tombstone River, the Keta River, the Blossom River, and Barrier Creek all had from 150-250 fewer spawners during the 1990's than during the 1980's (Figure 38).

ALASKA HATCHERY PROGRAM AND HATCHERY CONTRIBUTIONS TO HARVESTS

A number of hatcheries have been constructed in Southeast Alaska and significant hatchery production of coho salmon was underway by the latter part of the 1970's (Figure 39). During the 1970's, most of the coho salmon production in Southeast Alaska was from State of Alaska hatcheries operated by the Fisheries Rehabilitation, Enhancement, and Development Division (FRED) Division. Private non-profit (PNP) hatcheries were built and developed during the latter part of the 1970's and the development of these types of facilities continued into the 1980's. By the mid-1980's most of the hatchery production of coho salmon in Southeast Alaska was from PNP facilities. Further, most of the State of Alaska owned hatcheries were turned over to PNP operators by the early 1990's.

Hatchery egg takes of coho salmon in Southeast Alaska have been as high as almost 4.3 million eggs per year (Table 46). During the 1980's, annual coho salmon egg takes in Southeast Alaska ranged from a low of about 1 million eggs in 1980 to a high of about 16.8 million eggs in 1989 and averaged about 9,815,000 eggs per year (Figure 40). The FRED Division component ranged from about 350,000 eggs taken in 1980 to about 4,269,000 eggs taken in 1985 and averaged about 3,058,000 eggs taken per year during the 1980's (Table 46). The PNP component ranged from about 666,500 eggs taken in 1980 to about 13,740,000 eggs taken in 1989 and averaged about 6,757,000 eggs taken per year during the 1980's (Table 46). During the first three years of the 1990's,

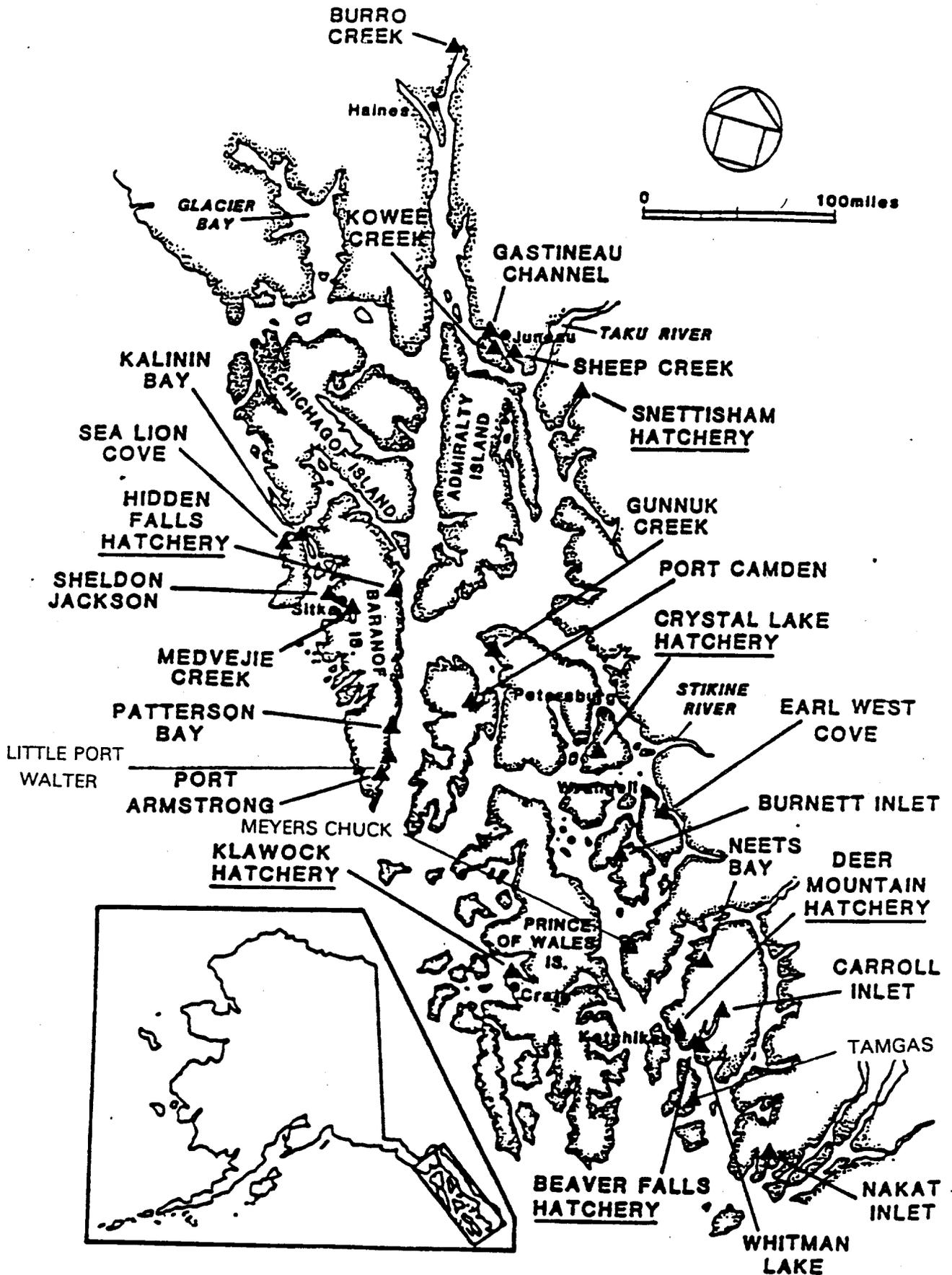


Figure 39. Location of salmon hatcheries in Southeast Alaska.

Table 46. Number of eggs taken from coho salmon for hatchery incubation and number of coho salmon released from hatcheries, Southeast Alaska, 1980-1992.*

Year	No. of Coho Eggs Taken			No. of Coho Released		
	FRED	PNP	Total	FRED	PNP	Total
1975		12,000		1,609,000	0	1,609,000
1976		24,150		1,037,000	8,000	1,045,000
1977		10,500		3,153,000	3,000	3,156,000
1978		809,430		1,299,000	0	1,299,000
1979		931,000		449,000	3,000	452,000
1980	346,860	666,500	1,013,360	308,092	557,000	865,092
1981	1,711,685	2,800,000	4,511,685	772,082	900,000	1,672,082
1982	4,072,350	2,870,000	6,942,350	558,626	700,000	1,258,626
1983	3,438,500	6,200,000	9,638,500	3,414,000	1,570,000	4,984,000
1984	3,733,000	6,300,000	10,033,000	3,019,400	3,230,000	6,249,400
1985	4,269,000	4,100,000	8,369,000	3,338,800	4,220,000	7,558,800
1986	4,163,000	8,300,000	12,463,000	2,404,010	4,280,000	6,684,010
1987	2,501,000	9,280,000	11,781,000	2,849,400	5,440,000	8,289,400
1988	3,297,800	13,310,000	16,607,800	3,654,690	4,720,000	8,374,690
1989	3,051,600	13,740,000	16,791,600	3,884,400	9,040,000	12,924,400
1990	2,223,000	14,470,000	16,707,000	2,631,294	10,730,000	13,361,294
1991	1,090,000	16,120,000	17,210,000	2,218,300	11,500,000	13,718,300
1992	1,274,000	10,880,000	12,154,000	1,619,600	6,840,000	8,459,600

* Data source: FRED annual reports to legislature all PNP data and for FRED data for the years 1980-1992 (Hansen 1985, 1986, 1987; Holland 1988, 1989, and 1990; Holland & McKean 1992; McKean 1991; McMullen & Kissel 1981 and 1982; McMullen & Hansen 1984; McMullen, Hansen, & Kissel 1983; and, McNair & Holland 1993); and, Marianne McNair, personal communication, for FRED releases for the years 1975-1979.

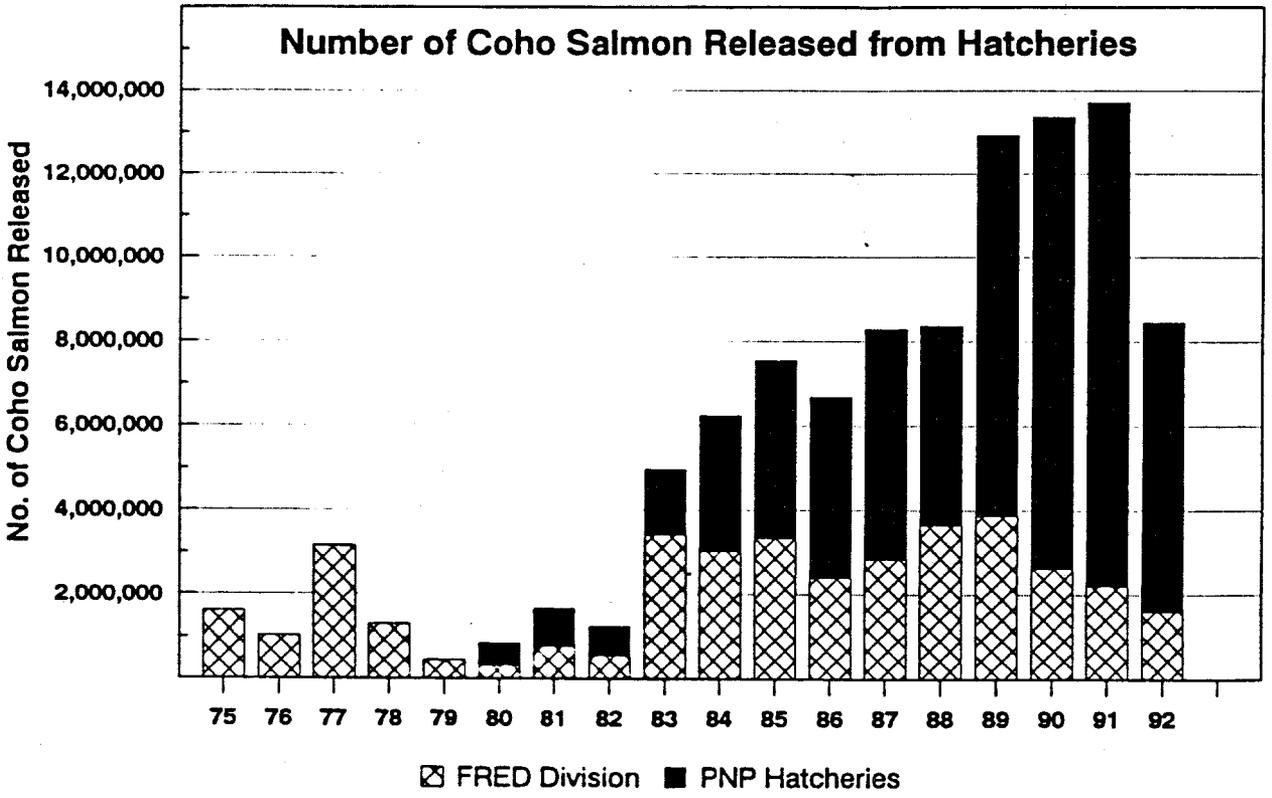
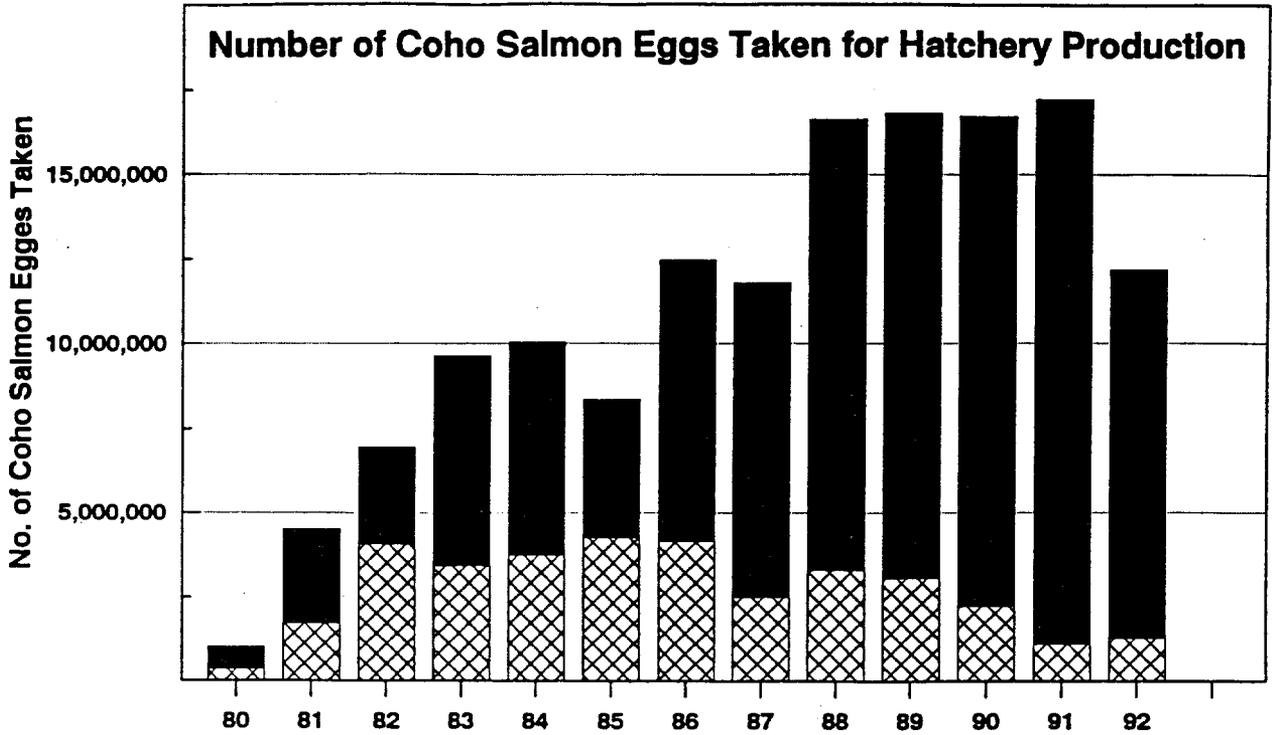


Figure 40. Number of coho salmon eggs taken for hatchery incubation and number of coho salmon released from hatcheries, Southeast Alaska, 1975-1992.

FRED Division has taken about 1,529,000 eggs per year and PNP hatchery operators have taken about 13,823,000 eggs per year for a combined annual average of about 15,352,000 eggs per year being taken for hatchery production in Southeast Alaska (Figure 40).

Hatchery releases of juvenile coho salmon have ranged from a low of about 450,000 fish in 1979 to a high of about 13.7 million fish in 1991 during the 18 year period of 1975-1992 (Figure 40). Fred Division hatchery releases of juvenile coho salmon peaked in 1989 when about 3.9 million fish were released (Table 46). PNP hatchery releases of juvenile coho salmon peaked in 1991 when about 11.5 million fish were released (Table 46). During the 1980's, FRED Division hatcheries released an average of about 2,420,000 juvenile coho salmon per year while PNP hatcheries released an average of about 3,466,000 juvenile coho salmon per year bringing the total average releases to about 5,886,000 juveniles per year. During the first three years of the 1990's, total releases of juvenile coho salmon in Southeast Alaska averaged about 11,846,000 fish per year; on average, 2,156,000 of this total was released from FRED Division hatcheries while on average, 9,690,000 juvenile coho salmon per year were released from PNP hatcheries.

Many hatchery produced coho salmon are marked with micro-wire tags to distinguish them from wild fish. The widespread hatchery juvenile marking program coupled with a port sampling program to recover micro-wire tags from harvested adults has allowed fishery scientists to estimate contributions of hatchery fish to various fisheries. Based upon these estimates, the hatchery produced component of the coho salmon harvest in Southeast Alaska has increased substantially since the early 1980's. The hatchery produced component of the commercial harvest of coho salmon in Southeast Alaska has ranged from about 5,000 fish in 1980 to about 745,000 fish in 1992 (Table 47). During the 1980's and the first three years of the 1990's, the hatchery produced component of the commercial harvest of coho salmon in Southeast Alaska averaged about 121,000 and 596,000 fish; respectively (Figure 41). The hatchery produced component of the commercial coho salmon harvest in Southeast averaged about 5.5% during the 1980's and averaged about 19.6% during the first three years of the 1990's (Figure 41).

The micro-wire tag and recovery program provides estimates of the number of coho salmon harvested which were produced at hatcheries located in Alaska, British Columbia and the State of Washington. In 1991 and 1992, more than 96% of the hatchery coho salmon harvested in commercial troll, purse seine, and drift gill net fisheries of Southeast Alaska were produced from Alaska hatcheries (Figure 42). British Columbia hatcheries produced 20,150 (3.32%) and 21,421 (2.90%) of the coho salmon harvested in Alaskan commercial troll, purse seine, and drift gill net fisheries in 1991 and 1992; respectively (Figure 42). Hatcheries located in the State of Washington produced 452 (0.07%) and 1,013 (0.14%) of the coho salmon harvested in Alaskan commercial troll, purse seine, and drift gill net fisheries in 1991 and 1992; respectively (Figure 42).

The micro-wire tag and recovery program also provides estimates of the number of coho salmon harvested which were produced by individual hatcheries. Twenty-two different hatcheries in Alaska produced coho salmon that were

Table 47. Estimated harvest of hatchery produced coho salmon by commercial fisheries in Southeast Alaska, 1980-1992.*

Year	Estimated Harvest of Hatchery Produced Coho Salmon in the Commercial Fishery	Percent of Total Commercial Harvest Composed of Hatchery Coho Salmon
1980	5,000	0.4%
1981	19,000	1.4%
1982	61,000	2.9%
1983	74,000	3.8%
1984	118,000	6.3%
1985	177,000	6.9%
1986	426,000	13.1%
1987	123,000	8.3%
1988	53,000	5.2%
1989	149,000	6.8%
1990	421,000	15.4%
1991	622,000	21.5%
1992	745,000	21.8%

* Data source: Leon Shaul (personal communication, April 20, 1993), Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Douglas Island Center Building, 802 3rd Street, Douglas, Alaska 99824-0020.

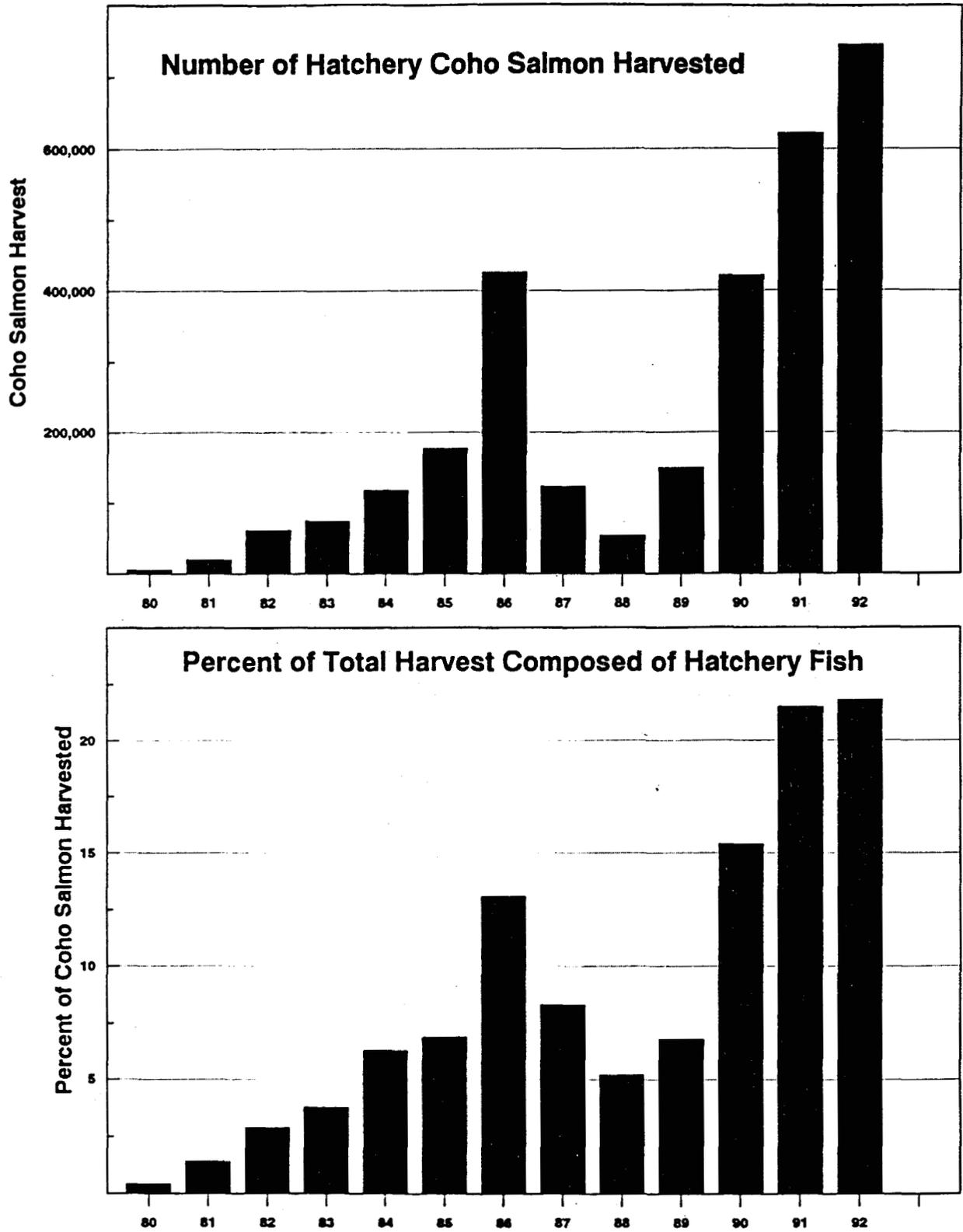


Figure 41. Estimated number of hatchery produced coho salmon caught in commercial fisheries and proportion of total harvest composed of hatchery fish, Southeast Alaska, 1980-1992.

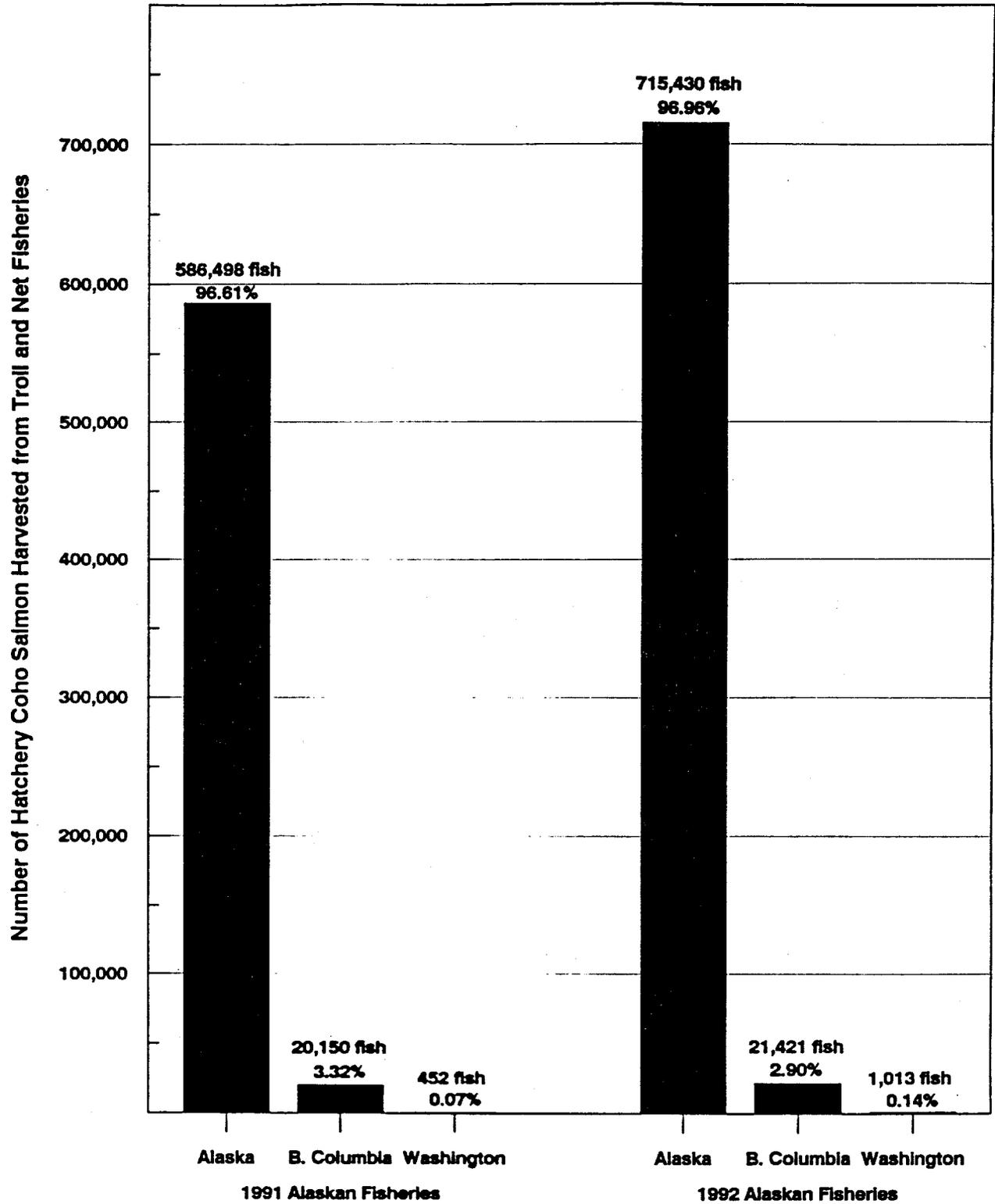


Figure 42. Number of coho salmon produced from Alaska, British Columbia, and Washington hatcheries that were harvested in Alaskan commercial troll and net fisheries in 1991 and 1992.

harvested by commercial troll, purse seine, and drift gill net fisheries in Southeast Alaska during 1991 and 1992. These 22 Alaskan hatcheries produced about 367,000 and 402,000 coho salmon to the commercial troll fisheries in 1991 and 1992; respectively (Table 48). Approximately 53,000 and 109,000 coho salmon harvested by purse seine fishermen were produced by Alaskan hatcheries in 1991 and 1992; respectively (Table 48). Alaskan hatcheries produced about 167,000 and 204,000 coho salmon for commercial drift gill net fishermen in Southeast Alaska during 1991 and 1992; respectively (Table 48). Whitman Lake, Earl West Cove, Port Armstrong, Klawock, Tamgas, Gastineau, Medvejie, and Neets Bay hatcheries were the eight largest contributors to the commercial troll, purse seine and drift gill net fisheries of Southeast Alaska during 1991 and 1992 (Figure 43).

Future trends in hatchery production are difficult to predict because of variable marine survival rates for hatchery juvenile coho salmon releases as well as dependence of hatchery production on decisions of private and government aquaculture groups. Current State and PNP plans for coho salmon releases suggest that hatchery smolt production in the next several years will show a relatively stable trend. Coded-wire tagging of hatchery releases and continued sampling of fishery harvests is expected to continue as the primary technique used to evaluate hatchery programs and to distinguish wild and hatchery components of the harvests.

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Table 48. Harvests of coho salmon by commercial troll, purse seine, and drift gill net fisheries from fish released by various hatcheries in 1991 and 1992.*

Hatchery	Estimated Harvest by Year and Gear					
	1991			1992		
	Troll	Seine	Gillnet	Troll	Seine	Gillnet
Alaskan Hatcheries:						
Burnett Inlet	2,317	62	2,096	682	48	771
Burro Creek	219	45	534	122	0	108
Crystal Lake	1,586	413	619	1,179	641	579
Deer Mountain	1,825	1,556	4,112	2,152	1,230	5,474
Earl West Cove	10,957	402	7,143	16,635	590	15,608
Elmendorf (CI)	75	0	0	38	9	0
Fort Richardson (CI)	191	0	0	0	0	0
Gastineau	40,370	1,372	48,552	40,957	2,828	51,177
Hidden Falls	3,632	1,142	109	6,044	2,790	161
Jerry Meyers	143	8	277	28	0	11
Klawock	43,651	16,970	94	38,169	8,354	572
Medvejie	74,690	13,996	52	58,423	52,530	0
Nakat Inlet	7,322	658	6,999	9,356	1,853	6,252
Neets Bay	111,747	6,462	58,520	152,542	13,678	75,855
Port Armstrong	12,294	1,097	0	18,732	4,402	0
Shelton Jackson	1,017	7	0	1,252	15	0
Snettisham	1,136	124	896	248	37	127
Solomon Gulch (PWS)	364	0	0	0	0	0
Tamgas Creek	38,207	6,201	27,714	43,030	18,110	40,090
Trail Lakes (CI)	18	0	0	37	0	0
Wally Norenburg (PWS)	369	0	0	391	0	0
Whitman Lake	14,747	1,775	9,614	12,430	1,749	7,334
Alaskan						
Hatchery Totals	366,877	52,290	167,331	402,447	108,864	204,119
British Columbia						
Hatchery Totals	15,591	3,605	954	16,790	4,102	529
Washington State						
Hatchery Totals	413	39	0	729	284	0
Totals	382,881	55,934	168,285	419,966	113,250	204,648

* Data source: Karen Crandall (personal communication, August 25, 1993), Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Support Building, Whittier Street, Juneau, Alaska 99802-5526; excludes terminal fisheries.

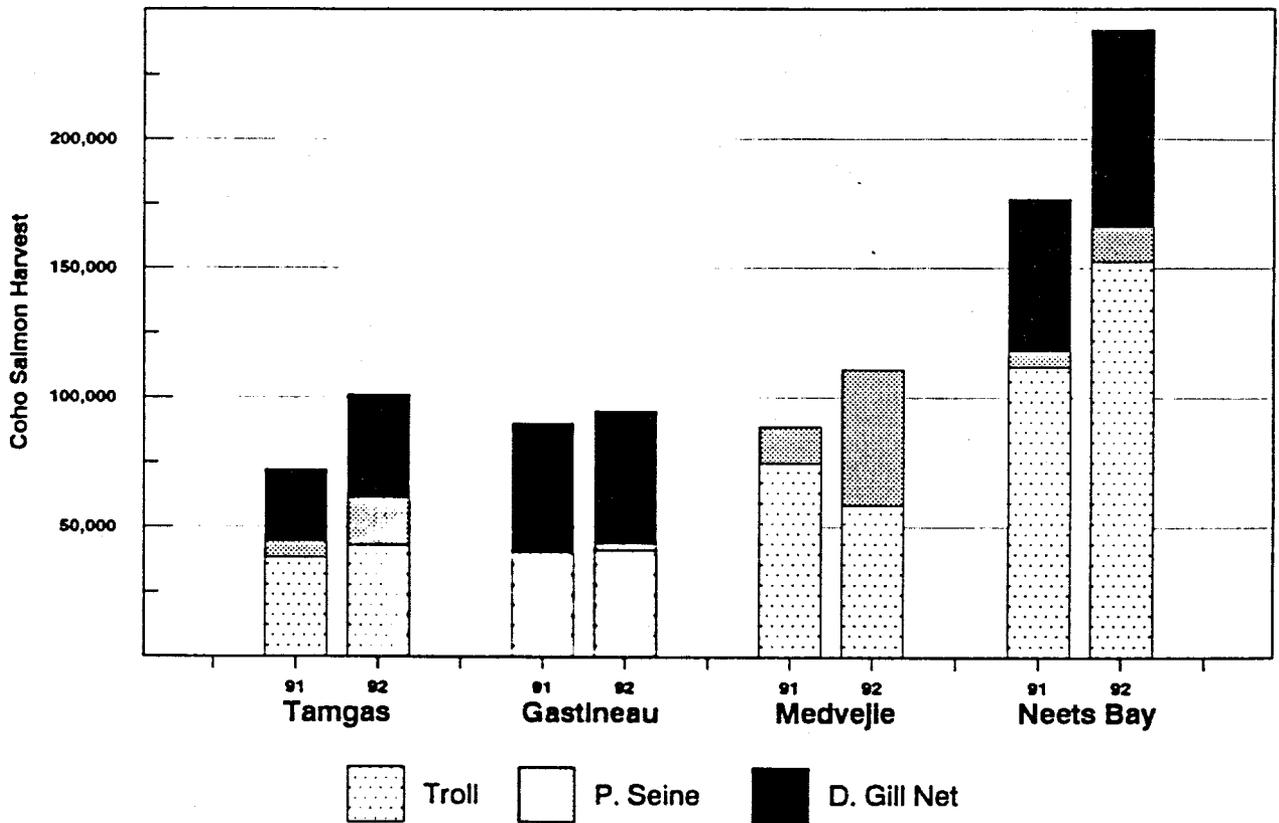
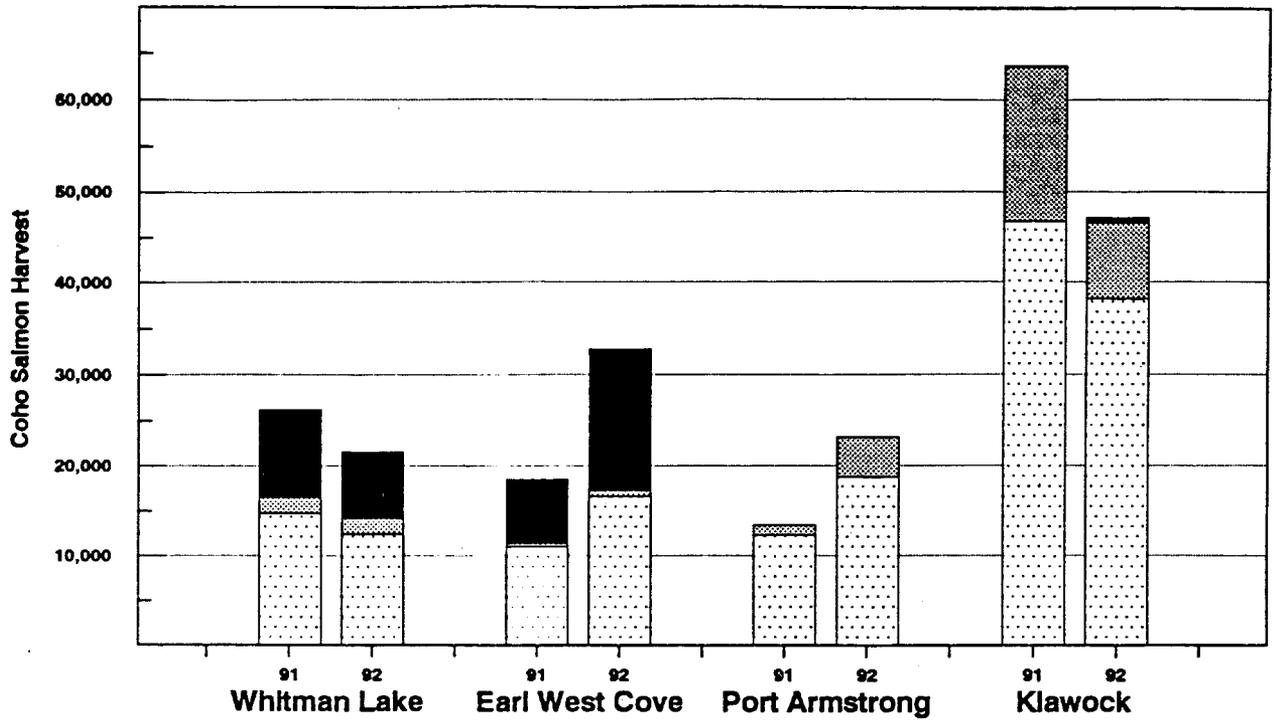


Figure 43. Harvests of coho salmon in 1991 and 1992 by commercial troll, purse seine, and drift gill net fisheries from fish released by various hatcheries in Southeast Alaska.

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