



ABUNDANCE, AGE, SEX, AND SIZE COMPOSITION OF CHINOOK SALMON
(Oncorhynchus tshawytscha Walbaum) CATCHES AND ESCAPEMENTS
IN SOUTHEASTERN ALASKA, 1984

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ADF&G TECHNICAL DATA REPORTS

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Data presented in these reports is intended to be final, however, some revisions may occasionally be necessary. Minor revision will be made via errata sheets. Major revisions will be made in the form of revised reports.

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ABSTRACT

Catch statistics and escapement estimates are summarized for chinook salmon (*Oncorhynchus tshawytscha* Walbaum) in Southeastern Alaska for the 1984 season. Detailed information on catches and escapements in the Yakutat area (Districts 182, 183, 185, and 192) are reported in McBride (1986). Commercial troll, seine, and gillnet catches were apportioned by age and size based on available sample data. The age and size composition of the 1984 troll harvest was summarized by sampling period for four areas of Southeastern Alaska. Age, sex and size data are also presented for sport and Canadian transboundary river fisheries and for escapements to 14 rivers and 4 hatcheries in the region. A total of 291,685 chinook salmon were harvested in Southeastern Alaska and Yakutat during the 1983-84 winter troll fishery and the 1984 summer troll, seine, gillnet (drift and set), trap, sport, and subsistence fisheries. The summer troll fishery catch of 202,282 fish represented 69% of the total harvest and most were caught in outer coastal waters. Purse seine gear harvested 20,711 fish and drift gillnet gear harvested 10,313 fish. The Southeastern Alaska sport harvest was 22,050 fish. Small harvests were taken by the Canadian commercial gillnet fishery on the Taku River (515 fish), by the Annette Island Fishery Reserve fish traps (182 fish), by Alaskan subsistence fishermen on the Chilkat River (55 fish), and by Canadian subsistence fishermen on the Stikine (702 fish) and Alsek (200 fish) Rivers

There were differences in age compositions of commercial harvests by gear type, area, and time. Most of the fish harvested in the troll and seine fisheries had gone to sea during the first year of life (aged as 0.), (61 and 76%, respectively) while only 14% of the fish sampled from the gillnet fisheries were aged 0. The percent of fish aged 0. in the summer troll fishery was highest in the outer coastal areas. Age 0.3 and 0.4 fish predominated in the troll fishery. The percent of age 0.2 and 1.2 fish in the summer troll fishery increased through time and probably represents recruitment to the fishery. The percent of fish aged 1.3 and 1.4 decreased through time and probably represents an emigration out of the fishery and towards their spawning grounds.

Fish aged 1. predominated samples from Alaskan wild and hatchery returns. Age composition analysis reveals that virtually all the 141,534 fish aged 0. fish harvested in the summer troll and net fisheries were of non-Alaskan origin. The proportion of fish age 0. decreased in the commercial harvests by 14% between 1983 and 1984.

The accuracy of age determinations for hatchery fish was 75% based on coded microwire tag release and recovery data. Small differences in adipose fin lengths between males and females precluded its use for sex determination.

KEY WORDS: catch allocation, age composition, chinook salmon, *Oncorhynchus tshawytscha*, fishery synopsis, Southeastern Alaska, catch and escapement.

INTRODUCTION

Chinook salmon (*Oncorhynchus tshawytscha* Walbaum) are harvested in commercial, sport, and subsistence fisheries in Southeastern Alaska; however, the majority are taken by the commercial troll fleet during the summer. Annual commercial catches averaged about 320,000 fish during the 1970's and early 1980's. In the 1930's the annual harvest was approximately twice this, or 610,000 fish. Since 1980 Southeastern Alaska fisheries have been managed so that the annual catch falls within guideline harvest level established by the Alaska Board of Fisheries, the North Pacific Fisheries Management Council, and since 1985, by the Pacific Salmon Commission. In 1984 the Board of Fisheries directed that the total all gear harvest fall near the lower end of the 243,000 - 272,000 management range. This resulted in a 45 day summer troll fishery, the shortest on record, well below the 169 days fished annually prior to 1980. In spite of the short troll season, the all gear commercial catch was near the upper end of the management range at 267,663 a consequence of unexpectedly high troll catch rate the last week of the season and higher than normal incidental net catches. Alaskan hatcheries contributed an estimated 4,900 chinook salmon to commercial fisheries in 1984.

Annual sport catches have averaged an estimated 19,962 fish from 1977 to 1984 with 22,050 fish harvested in 1984. A small number of chinook salmon were harvested in subsistence fisheries on the Chilkat (Alaska) and Stikine and Alsek (Canadian) Rivers. There are 34 documented chinook salmon producing systems in Southeastern Alaska (including Yakutat) of which Stikine, Taku, and Alsek Rivers are the largest producers.

In Southeastern Alaska salmon fisheries, chinook salmon are usually the least abundant however, for the last several years they have ranked third in terms of value to the fishermen. The high value of chinook salmon is due to the fact that they have consistently been the most valuable species to the troll fishermen. Most are sold in the dressed/frozen market at an average wholesale price of \$1.06/lb for gillnet caught fish, \$2.22/lb for seine caught fish, and \$2.83/lb for troll caught fish (ADF&G 1986).

In this report we document the available data regarding the magnitudes and the composition by age, sex, and size of catches and escapements of chinook salmon in Southeastern Alaska during 1984. We also estimate the minimum number of non-Alaskan and maximum number of Alaskan origin (including transboundary stocks for which proprietorship is shared between Alaska and Canada under the U.S./Canada Pacific Salmon Treaty) chinook salmon of Alaskan origin harvested in the summer troll, seine, and gillnet fisheries based on age composition data. We also present the results of an age verification study and an investigation into sexual dimorphism of adipose fin lengths. Data pertaining to the transboundary river stocks was collected in cooperation with the Canadians.

STUDY AREA AND CONDUCT OF FISHERIES

The study area consists of the coastal waters and inland drainages of Southeastern Alaska from Cape Suckling on the North to Dixon Entrance on the south, excluding the Yakutat area inshore setnet fisheries in Districts 182, 183, 185, and 192 (Figure 1). The reader is referred to McBride (1986) for detailed data on Yakutat area catches and escapements in 1984. The region is divided into 17 coastal (101 thru 116-05 and 181) and 5 offshore (116-25, 152, 154, 157, and 189) fishing districts. The troll data was pooled into four areas since troll vessels are highly mobile and landings often include catches made in more than one district (see Methods). Chinook salmon were commercially harvested by troll gear in all districts, by seine gear in Districts 101 to 107, 109, 110, and 112 to 114, by drift gillnet gear in Districts 101, 106, 108, 111 and 115, and by set gillnet gear in Districts 182, 183, and 185. Chinook salmon were also commercially caught in the Canadian gillnet fishery on the lower Taku River and in trap gear on the Annette Island Indian Reserve. Trap catches are reported to subdistrict of District 101. Sport fishing occurs throughout the region but is concentrated around the communities. Subsistence fishing in Alaska was permitted only by Klukwan residents in the Chilkat River. Small subsistence catches were also reported from the Canadian portion of the Stikine River near Telegraph Creek and from Alsek River tributaries. The harvest of chinook salmon by troll gear was permitted from 1 October 1983 to 14 April 1984 for the winter fishery and 5 June through 30 June and 11 July through 29 July for the summer fishery. Seine fishing was permitted from 1 July to 17 October, drift gillnet fishing was permitted from 17 June to 21 October, and set gillnet fishing was permitted from 10 June to 2 October. Net fisheries are conducted only during specified weekly fishing periods and in select areas. A complete summary of regulations affecting the regions fisheries may be found in ADF&G (1984). Copies of Emergency Fishing Orders and Board Reports which summarize the troll and net fishing seasons may be obtained from Alaska Department of Fish and Game (Division of Commercial Fisheries, P.O. Box 20, Douglas, AK 99824-0020).

METHODS

Data Sources

Data from several sources on the number, weight, and age, sex, and size composition of chinook salmon catches and escapements in Southeastern Alaska in 1984 are summarized.

Catch Statistics:

Alaskan commercial catch data (number and total weight of chinook salmon sold by gear type, district, and week) was compiled by the Division of Commercial Fisheries, Alaska Department of Fish and Game. These data are based on computer tabulations of individual sales slips (fish tickets) as of 19 November 1985. Because of the possibility that all imbedded data entry or recording errors have not been corrected, later summaries may differ slightly from those used in this report. Such errors are generally too small to be of consequence to our allocations of commercial catches by gear

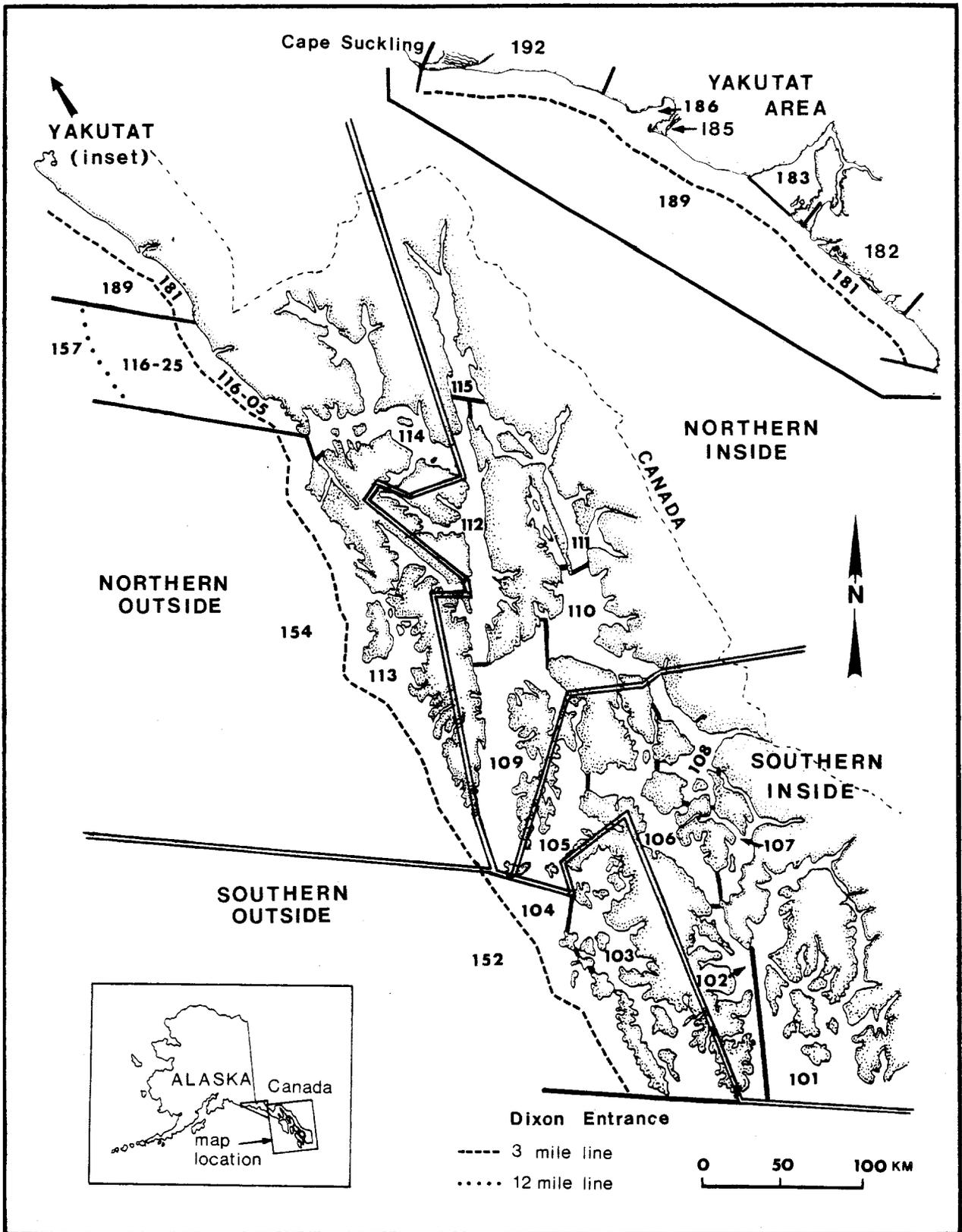


Figure 1. Map of Southeastern Alaska showing the statistical fishing districts and four areas used for analysis of the troll data.

type, area, and time. The average weights of troll caught fish is based on dressed (gilled and gutted) fish and the seine and gillnet fisheries land both dressed and round fish, so average weight might not be an accurate indicator of size by time or area.

Canadian commercial, sport, and food fishery catch statistics for the Taku, Stikine, and Alsek Rivers were obtained from Anon. (1984). Catch data provided by CDF&O were factored into two size classes, small and large fish. A small fish was defined as fish less than 5 pounds, 500 mm in fork length, and aged .2 or less. No weight data is available for the Canadian Transboundary River fisheries. Alaskan sport catch was obtained from Mills (1985) and is based on responses from a mail-out questionnaire survey of randomly selected residents holding sport fishing licenses. Alaskan subsistence catch information was tabulated from subsistence use permits returned to the Alaska Department of Fish and Game. All subsistence permits were not returned, however, so subsistence catch totals listed in this report possibly underestimate the total subsistence harvest from the region.

Escapement Counts:

Several methods were used to obtain estimates of spawning population size. Among them were counts from airplanes, helicopters, and boats, counts made on foot surveys, counts through weirs of upstream migrants and counts of carcasses which float downstream and are caught by weirs. An effort was made to survey most of the important spawning areas. For several streams, multiple surveys were made. We report only the peak count for these streams. Detailed survey data are available¹. All helicopter surveys were done by Paul Kissner². Zero, one, and two ocean "jack" chinook salmon are not counted in the aerial surveys because their small size makes them difficult to see and to distinguish from other non-chinook species.

Age, Sex, and Size:

Summer troll, seine, and gillnet catches of chinook salmon were sampled by Department employees stationed at the Southeastern ports of Craig, Ketchikan, Petersburg, Sitka, Juneau, Excursion Inlet, Pelican, Hoonah, and Yakutat. Sampling was also conducted at several smaller buying stations and aboard tenders. Sampling of winter troll catches was limited to the ports of Ketchikan, Petersburg, Sitka and Hoonah from 26 February to 14 April. Sampling was conducted on fish landed by tenders of both the net and troll fisheries and from landings of individual boats. Three scales were obtained from the preferred area (INPFC 1963) of each fish, mounted on gum cards and impressions made in cellulose acetate (Clutter and Whitesel 1956). Age was determined by visual examination of scale impressions under moderate (40X) magnification (see Van Alen and Wood 1983 for description of aging criteria and Appendix B for results of an age verification study). Ages are reported

1 Survey data are available from ADF&G, Division of Commercial Fisheries, P.O. Box 20, Douglas, AK 99824-0020.

2 ADF&G, Division of Sport Fish, Douglas, AK.

in European notation. All lengths were measured from mid-eye to fork-of-tail to the nearest half centimeter with the exception of sport caught fish which were measured from tip-of snout to fork-of-tail. Dimorphic maturation characteristics were used to determine sex of fish sampled in escapements. Sex was not determined for fish sampled from the commercial catch because secondary sexual characteristics were not present and most fish were dressed at time of delivery (see Appendix C for results of an investigation into sexual dimorphism of adipose fin lengths).

Some difficulties were encountered in representatively sampling the commercial catch because sampling occurred at processing facilities where fish were usually sorted by size (usually small [<4.1 kg (9 lb)], medium [4.1 to 5 kg (9 to 11 lb)], and large [≥ 5 kg (11 lb)] and quality (two grades) into different bins. To avoid obtaining biased samples if the entire delivery could not be sampled, we either sampled from each bin in proportion to abundance or sampled every n^{th} fish sorted.

Scale, sex, and size data was obtained from carcasses during foot surveys in all escapements except the test gillnet and fishwheel catches on the Taku and Stikine Rivers, the weir sites on Andrews Creek, King Salmon, and Little Trapper Lake, and the Fisheries Rehabilitation Enhancement and Development Division (F.R.E.D.) egg take on the Tahini River. Samples of the Nakina River escapement were obtained both at a carcass weir and by foot surveying. In the Nakina River, length and sex was recorded for all carcasses encountered and scales were subsampled from 50 fish by sex for each 25 mm length group. The subsample of aged fish was then used to estimate the age composition of all fish sampled for length and sex.

Analysis Strata

Several factors determined the development of sampling and analysis strata for age, sex, and size data. First, were the logistic and cost considerations and trade offs required to obtain samples over such a broad geographic region. Second, was the decision to treat principle gear types (troll, seine, gillnet, and sport) separately. Third, to allow examination of the data for temporal trends. Lastly, to maintain a one-in-ten chance that our estimate of the percentage of a given age class in each gear-area-time strata did not exceed plus or minus five percent (absolute) of the true value. We used the equations of Cochran (1977), corrected for finite population size as appropriate (Appendix Table A1), and assumed the presence of seven age classes to compute the desired sample size for a strata.

Troll:

While district fished is recorded on sales slips, the accuracy of this data is suspect for the summer troll fishery. The troll fleet is highly mobile and it tends to concentrate in areas of fish abundance which often cross statistical district boundaries. For example a popular troll fishing area is Cross Sound and boats fishing this area may actually fish in three districts (113, 114, and 116). Similarly, sample data for age and size composition often comes from individual vessels which have fished such areas or from a tender servicing similar fisheries. For these reasons we pooled

statistical districts into larger "areas" for the purpose of reporting harvest and for characterizing age and size compositions.

Based upon the results of skipper interviews, we identified four areas for which only minor cross-area reporting occurs during the summer fishery. The four areas (Figure 1) are: (1) Northern Outside composed of Districts 113, 114, 116, 154, 157, 181, and 189; (2) Southern Outside composed of Districts 103, 104, and 152; (3) Northern Inside composed of Districts 109, 110, 111, 112, and 115; and (4) Southern Inside composed of Districts 101, 102, 105, 106, 107, and 108. During the winter troll fishery, we included District 114 in the Northern Inside area because most of the fishing effort is concentrated well inside Icy Straits and this District is more properly an inside versus an outside fishery. We also provide catch data reported by district, but caution the reader in the use of these data. Catches by hand and power troll gear were combined for analysis of age, sex, and size data.

Whenever sample sizes permitted, the data were stratified over time into sample periods. Since the age composition of chinook salmon populations often changes systematically throughout the migratory season, from one age class to another, the grouping of samples into a sampling period was a compromise between a reasonably precise age composition and reducing the bias which results from grouping the sampling periods. Standard errors of the proportions were calculated by standard binomial formulas. The age composition and associated standard error of the total commercial catch by area was calculated by weighting the estimated sample age distribution and its standard error for each sample period by the total commercial catch reported during that same sample period. Mean length and its standard error were calculated for each area, period, and age class.

Seine, Gillnet, Trap, Sport, and Subsistence:

Sampling of chinook salmon harvested by seine and gillnet gear was intended to accurately describe the age composition of the seasons catch by gear type and district. Samples were generally obtained weekly from each open district. The seine and gillnet fleet harvests chinook salmon incidentally to other salmon species, hence individual vessel landings and season total catches were low. The low abundance of chinook salmon in catches and the tendency for vessel owners to market them separately generated logistic problems in access to fish for sampling; for this reason we occasionally obtained fewer samples than desired. We partially compensated for this deficiency in the seine fishery by combining districts into larger areas similar to those used to characterize troll fishery catches. Since the four area scheme is of little benefit in characterizing the gillnet harvests, we simply present the data by district, recognizing limitations of precision resulting from sample sizes.

Historically, Annette Island Indian Reserve trap catches of chinook salmon have been small. The high cost of obtaining samples for age and size composition in relation to harvest level precluded obtaining these data.

The definitions of the strata used to characterize the age and size composition of the sport fishery harvest were determined by available samples collected during Sport Fish Division creel sampling.

Escapement:

The high cost associated with access to spawning grounds and the low abundance of fish to sample precludes precise characterization of the age, sex, and size composition of Southeastern salmon spawning populations. Most samples on which we report were obtained opportunistically in conjunction with other studies. Often gear used to obtain samples caused bias and caution needs to be exercised in interpretation.

The total natural run escapement to eleven "index" river systems (including Yakutat) was estimated by expanding survey counts by the estimated aerial counting rates and for tributaries not surveyed. Escapement counts for returns in the Situk and Alsek Rivers near Yakutat were included since these runs were believed to contribute to the offshore troll fishery (ADF&G 1985). The Region escapement was estimated by expanding the total escapement estimate for index rivers within each of three categories (major, medium, or minor producers) by the number of rivers in that category. The expansion factors used in this report are those presented in ADF&G (1982). While accuracy of these estimates is unknown, they are useful in assessing the interannual variability of abundance and distribution of the escapement.

RESULTS AND DISCUSSION

Harvest Statistics

The reported catch in numbers and total and average weights of chinook salmon is presented for the commercial fisheries by gear type, district, and week. Actual catch was higher than reported since some were kept for personal use and some net caught fish less than 711 mm (28 in.) were delivered and reported as pink salmon (*O. gorbuscha*). Personal use retention occurs in all commercial fisheries but is considered insignificant relative to reported catches.

Numbers and Landed Weight:

A total of 291,685 chinook salmon were harvested in commercial, sport, and subsistence fisheries in 1984 (Table 1). Ocean commercial gear accounted for most (91.8%) of the harvest followed by the sport fishery (7.6%) and the Canadian Transboundary River Fisheries (.7%). Small catches were reported by domestic subsistence fisheries. Troll gear harvested 88% of the 267,663 fish harvested by U.S. commercial fishermen with smaller catches by seine, drift gillnet, set gillnet, and trap gear, respectively. Total weight and average weight data is presented in Appendix Tables A2 to A11 for the troll, seine, and gillnet catches.

Troll. The winter troll fishery (1 October 1982-14 April 1983) harvested 33,113 fish (Table 2). A high proportion of the catch occurred during the months of October, March and April in the Northern Outside and Southern Inside areas. The power troll fleet accounted for most (83%) of the harvest. Some differences are evident in the spatial distribution of power troll catches (Table 3) in relation to hand troll catches (Table 4). The most notable is that the hand troll fleet tended to concentrate in Icy

Table 1. Harvest of chinook salmon in Southeastern Alaska, 1984.

Fishery			Number	Percent
Alaskan Commercial				
Troll	Hand	Power		
Winter	5,469	27,644	33,113	11.35
Summer	28,861	173,421	202,282	69.35
Seine			20,711	7.10
Drift Gillnet			10,313	3.54
Set Gillnet (Yakutat area)			1,062	0.36
Trap			182	0.06
Subtotal			267,663	91.76
Alaskan Sport (including Yakutat)			22,050	7.56
Alaskan Subsistence			55	0.02
Canadian Transboundary				
Taku Commercial 1/			515	0.18
Stikine Commercial		fishery closed		
Stikine Subsistence			702	0.24
Alsek Subsistence			200	0.07
Alsek Sport			500	0.17
Subtotal			1,917	0.66
Total			291,685	100.00

1/ Includes 221 jacks (Anon. 1986).

Table 2. Hand and power troll harvest of chinook salmon in Southeastern Alaska by district and statistical week, 1 October 1983 to 4 August 1984.

Year	Stat. Week	Inclusive Dates	Southern Inside Districts						Southern Outside			Northern Inside Districts						Northern Outside Districts						Total		
			101	102	105	106	107	108	103	104	152	109	110	111	112	114	115	113	116	154	157	181	183		189	
1983	41	10/2-10/8	318	92		90	210	121	63	-	508	261	13	9	838	41	606	-	-	-	-	-	-	3,170		
	42	10/9-10/15	541	62		65	66	51	143	-	925	184		6	184		432	-	-	-	-	-	2,659			
	43	10/16-10/22	221	29		70	38	49	54	40	370	495	47	34	165		430	-	-	-	-	-	2,042			
	44	10/23-10/29	201	62		46	2	34			90	173			77		86	-	-	-	-	-	771			
	45	10/30-11/5	73	97		78	21	131	70		332	179			58		647	-	-	-	-	-	1,686			
	46	11/6-11/12	81	172		8	17	84	72	30	216	34	5	5	141		170	-	-	-	-	-	1,035			
	47	11/13-11/19	38	130		3	11	66	81		17	38		6	179		121	-	-	-	-	-	690			
	48	11/20-11/26	71	116		96	9	31	74		39	64	10	49	25		93	-	-	-	-	-	677			
	49	11/27-12/3	34	160		315		28	111	32	36			10	26		102	-	-	-	-	-	854			
	50	12/4-12/10	75	7				18	117		35		4		27		114	-	-	-	-	-	397			
	51	12/11-12/17	16	4			22	21	30	9	4			23	10		72	-	-	-	-	-	211			
	52	12/18-12/24	53	15		21	21	3	39						7		22	-	-	-	-	-	181			
	53	12/25-12/31	27					33	20	12	1				13		10	-	-	-	-	-	116			
1984	1	1/1-1/7		6			10	18	59								4	-	-	-	-	-	97			
	2	1/8-1/14	3			20	16	22	44		14				7		5	-	-	-	-	-	131			
	3	1/15-1/21	19	18	31		30	7	48	8	2		3		26		42	-	-	-	-	-	234			
	4	1/22-1/28	12		44	70	11	14	64	1	10				15		92	5	-	-	-	-	338			
	5	1/29-2/4	13	1	30	9	18	23	40	5					25		25	-	-	-	-	-	189			
	6	2/5-2/11	8	12	60	10	13	9	67	42	19				29		325	-	-	-	-	9	603			
	7	2/12-2/18	5		19	19	31		68	23			2	5			44	-	-	-	-	24	305			
	8	2/19-2/25	18	24		7	56	1	177		89	1			70		253	-	-	-	-	20	723			
	9	2/26-3/3	83	75	7	60	29	28	149	41	23	19	20		74		193	-	-	-	-	10	811			
	10	3/4-3/10	50	55	24	60	59	6	232	69	64	13	8	11	205		307	-	-	-	-	17	1,180			
	11	3/11-3/17	31	94	5	39	61		171	38	86	6			377		482	68	-	-	-	2	1,460			
	12	3/18-3/24	110	71	132	97	24	26	175	16	153	41		12	303		381	3	-	-	-	12	1,556			
	13	3/24-3/31	66	105	19	81	67	32	96	14	212	25			505		350	-	-	-	-	4	1,576			
	14	4/1-4/7	177	56	139	206	26	94	255	145	278	36		6	980		903	37	-	-	-	9	3,347			
	15	4/8-4/14	142	114	245	328	10	171	258	182	140	77		6	1,528		1,155	69	-	-	-	18	4,453			
	16	4/15-4/21	1		247	60		26			445	174			143		504	-	-	-	-	17	1,621			
Winter	District Total		2,487	1,577	1,002	1,812	922	1,115	2,821	707	0	4,108	1,822	125	178	6,102	41	7,970	182	0	0	0	142	0	33,113	
	Area Total					8,915			3,528					12,376				8,294								
									Fishery Closed except District 183			4/15-6/4/84.														
	23	6/3-6/9	141	413	75	18	197		648	5,003		1,150	1,653		535	1,893		8,386	652	55		102	495	1,206	22,622	
	24	6/10-6/16	113	1,561	188	566	591		834	4,081		2,031	3,033		687	3,846		15,671	1,580	273	3,007	994	27	2,065	41,148	
	25	6/17-6/23	416	686	198	234	506		1,006	3,024	5	1,983	2,493		571	2,637	117	10,612	647	322	998	143	189	700	27,487	
	26	6/24-6/30	475	619	230	377	333		670	1,812	9	1,604	1,478	128	1,194	2,842	3	18,892	1,526	778	1,769	682	297	529	36,247	
	27	7/1-7/7																					36		36	
	28	7/8-7/14	118	72	18	305	33		714	881	77	505	71		137	440	60	4,254	509	10	22	15	103		8,344	
	29	7/15-7/21	514	802	313	49	17		781	1,803	25	1,497	953	46	501	1,763	336	13,201	1,001	522	316		200		24,240	
	30	7/22-7/28	219	754	158	20			587	1,624		1,059	250	77	318	1,784		13,907	1,066	502	490		61	93	22,969	
	31	7/29-8/4	138	191	106	2		15	85	322		484	372	4	41	1,038		12,615	2,140	816	548	249	23		19,189	
Summer	District Total		2,134	5,098	1,286	1,571	1,677	15	5,325	18,950	116	10,313	9,903	255	3,984	16,243	516	97,538	9,121	3,278	7,150	2,185	1,431	4,593	202,282	
	Area Total					11,781			23,991					41,214				125,296								
Season Total			4,621	6,675	2,288	3,383	2,599	1,130	8,146	19,257	116	14,421	11,725	380	4,162	22,345	557	105,508	9,303	3,278	7,150	2,185	1,573	4,593	235,395	

Note: Dash (-) indicates district closed to fishing for that particular week.

Table 3. Power troll harvest of chinook salmon in Southeastern Alaska by district and statistical week, 1 October 1983 to 4 August 1984.

Year	Stat. Week	Inclusive Dates	Southern Inside Districts						Southern Outside			Northern Inside Districts					Northern Outside Districts						Total			
			101	102	105	106	107	108	103	104	152	109	110	111	112	114	115	113	116	154	157	181		183	189	
1983	41	10/2-10/8	284	92		75	185	116				479	171	13		444	41	482	-	-	-	-	-	-	2,382	
	42	10/9-10/15	520	62		49	61	49	99			902	164		6	42		415	-	-	-	-	-	-	2,369	
	43	10/16-10/22	218	29		43	33	39	44	40		369	474	47	34	94		413	-	-	-	-	-	-	1,877	
	44	10/23-10/29	186	62			46	2	34			83	143					79	-	-	-	-	-	-	635	
	45	10/30-11/5	71	97		67	21	120	70			291	117			5		604	-	-	-	-	-	-	1,463	
	46	11/6-11/12	81	137			17	82	46			174	32	5	5	33		158	-	-	-	-	-	-	770	
	47	11/13-11/19	36	110			3	52	49			14	38	6	94		111	-	-	-	-	-	-	-	513	
	48	11/20-11/26	62	68		88	9	21	58			37	61	10	49	1		83	-	-	-	-	-	-	547	
	49	11/27-12/3	22	146		314		18	89	32		36		10		12		97	-	-	-	-	-	-	776	
	50	12/4-12/10	71	7				14	85			35		4		15		112	-	-	-	-	-	-	343	
	51	12/11-12/17	14	3			22	3	26	9		4						70	-	-	-	-	-	-	174	
	52	12/18-12/24	53	15		21	7	3	34									22	-	-	-	-	-	-	155	
	53	12/25-12/31						8	11	12								8	-	-	-	-	-	-	39	
1984	1	1/1-1/7		6			10	8	54									4	-	-	-	-	-	-	82	
	2	1/8-1/14	3			20	16	2	27			14						5	-	-	-	-	-	-	87	
	3	1/15-1/21	19	5	31		30	4	44	7		2		3		6		42	-	-	-	-	-	-	193	
	4	1/22-1/28	10		44	26	11	5	62	1		10				2		92	5	-	-	-	-	-	268	
	5	1/29-2/4	13		30	9	17	5	30	5						2		24	-	-	-	-	-	-	135	
	6	2/5-2/11	8	3	55	9	10	3	56	27		9						310	-	-	-	-	-	-	490	
	7	2/12-2/18	5		19	8	15		44	23				5		25		38	-	-	-	-	5	-	187	
	8	2/19-2/25	3	18			40	1	146			70				6		245	-	-	-	-	-	-	529	
	9	2/26-3/3	67	68	7	37	24	26	149	41		15	17	20		23		175	-	-	-	-	7	-	676	
	10	3/4-3/10	40	50	24	34	25	1	192	69		51	8	8	4	116		297	-	-	-	-	-	-	919	
	11	3/11-3/17	27	62	5	26	44		152	30		81				293		454	68	-	-	-	-	-	1,242	
	12	3/18-3/24	106	56	125	83	7	15	151	16		126	17			203		353	3	-	-	-	-	-	1,261	
	13	3/24-3/31	58	78		60	59	22	93	8		197	18			386		335	-	-	-	-	-	-	1,314	
	14	4/1-4/7	158	19	126	200	19	57	218	145		247	32			861		824	37	-	-	-	2	-	2,945	
	15	4/8-4/14	134	91	245	273	10	85	215	182		67	56			1,322		1,125	69	-	-	-	-	-	3,874	
	16	4/15-4/21	1		241		26					442	174			143		368	-	-	-	-	4	-	1,399	
Winter	District Total		2,270	1,284	952	1,442	741	787	2,278	647	0	3,755	1,522	125	127	4,128	41	7,345	182	0	0	0	18	0	27,644	
	Area Total					7,476			2,925						9,698			7,545								
									Fishery Closed except District 183 4/15-6/4/84.																	
	23	6/3-6/9	107	155	56	8	55		312	4,098		929	1,038			86	1,296	6,969	529	55	102	59	1,206	17,060		
	24	6/10-6/16	105	1,374	153	524	470		470	3,667		1,488	2,052			443	3,106	14,815	1,457	273	3,007	994	2,065	36,463		
	25	6/17-6/23	219	546	174	96	329		615	2,766	5	1,522	1,675			104	1,923	9,710	457	322	998	143	115	700	22,536	
	26	6/24-6/30	418	517	211	311	279		356	1,698	9	1,377	1,206	44		1,013	2,189	18,226	1,362	778	1,769	682	214	529	33,188	
	27	7/1-7/7																								
	28	7/8-7/14	2	8	12	299	19		400	676	76	314	12			13	175	60	3,585	368	10	5	15	63	6,112	
	29	7/15-7/21	402	707	281		5		406	1,642	25	1,244	265	31	231	1,221	248	12,390	736	522	316		132	20,804		
	30	7/22-7/28	149	627	102				275	1,243		750	101	36	89	1,227		12,786	783	499	480		19	93	19,259	
	31	7/29-8/4	118	154	77				51	239		382	331			18	778	12,175	2,044	816	548	249	19		17,999	
Summer	District Total		1,520	4,088	1,066	1,238	1,157	0	2,885	16,029	115	8,006	6,680	111	1,997	11,915	425	90,656	7,736	3,275	7,123	2,185	621	4,593	173,421	
	Area Total					9,069			19,029						29,134			116,189								
Season Total			3,790	5,372	2,018	2,680	1,898	787	5,163	16,676	115	11,761	8,202	236	2,124	16,043	466	98,001	7,918	3,275	7,123	2,185	639	4,593	201,065	

Note: Dash (-) indicates district closed to fishing for that particular week.

Table 4. Hand troll harvest of chinook salmon in Southeastern Alaska by district and statistical week, 1 October 1983 to 4 August 1984.

Year	Stat. Week	Inclusive Dates	Southern Inside Districts						Southern Outside			Northern Inside Districts					Northern Outside Districts					Total			
			101	102	105	106	107	108	103	104	152	109	110	111	112	114	115	113	116	154	157		181	183	189
1983	41	10/2-10/8	34			15	25	5	63			29	90		9	394	124							788	
	42	10/9-10/15	21			16	5	2	44			23	20		142	17								290	
	43	10/16-10/22	3			27	5	10	10			1	21		71	17								165	
	44	10/23-10/29	15									7	30		77	7								136	
	45	10/30-11/5	2			11		11				41	62		53	43								223	
	46	11/6-11/12		35		8		2	26	30		42	2		108	12								265	
	47	11/13-11/19	2	20			8	14	32			3			85	10								177	
	48	11/20-11/26	9	48		8		10	16			2	3		24	10								130	
	49	11/27-12/3	12	14		1		10	22						14	5								78	
	50	12/4-12/10	4					4	32						12	2								54	
	51	12/11-12/17	2	1				18	4						10	2								37	
	52	12/18-12/24					14		5						7									26	
	53	12/25-12/31	27					25	9			1			13	2								77	
1984	1	1/1-1/7						10	5															15	
	2	1/8-1/14						20	17						7									44	
	3	1/15-1/21		13				3	4	1					20									41	
	4	1/22-1/28	2			44		9	2						13									70	
	5	1/29-2/4		1			1	18	10						23	1								54	
	6	2/5-2/11		9	5	1	3	6	11	15		10			29	15					9			113	
	7	2/12-2/18				11	16		24				2		40	6						19		118	
	8	2/19-2/25	15	6		7	16		31			19	1		7	64	8					20		194	
	9	2/26-3/3	16	7		23	5	2				8	2		51	18						3		135	
	10	3/4-3/10	10	5		26	34	5	40			13	5		89	10						17		261	
	11	3/11-3/17	4	32		13	17		19	8		5	6		84	28						2		218	
	12	3/18-3/24	4	15	7	14	17	11	24			27	24		100	28						12		295	
	13	3/24-3/31	8	27	19	21	8	10	3	6		15	7		119	15						4		262	
	14	4/1-4/7	19	37	13	6	7	37	37			31	4		119	79						7		402	
	15	4/8-4/14	8	23		55		86	53			73	21		6	206	30					18		579	
	16	4/15-4/21			6	60						3			4		136					13		222	
Winter	District Total		217	293	50	370	181	328	543	60		353	300	0	51	1,974	0	625	0	0	0	0	124	0	5,469
	Area Total				1,439				603					2,678					749						
	23	6/3-6/9	34	258	19	10	142		336	905		221	615		449	597		1417	123			436	1/	5,562	
	24	6/10-6/16	8	187	35	42	121		364	414		543	981		244	740		856	123			27		4,685	
	25	6/17-6/23	197	140	24	138	177		391	258		461	818		467	714		902	190			74		4,951	
	26	6/24-6/30	57	102	19	66	54		314	114		227	272	84	181	653	3	666	164			83		3,059	
	27	7/1-7/7																						36	
	28	7/8-7/14	116	64	6	6	14		314	205	1	191	59		124	265		669	141		17	40		2,232	
	29	7/15-7/21	112	95	32	49	12		375	161		253	288	15	270	542	88	811	265			68		3,436	
	30	7/22-7/28	70	127	56	20			312	381		309	149	41	229	557		1121	283	3	10	42		3,710	
	31	7/29-8/4	20	37	29	2		15	34	83		102	41	4	23	260		440	96			4		1,190	
Summer	District Total		614	1,010	220	333	520	15	2,440	2,521	1	2,307	3,223	144	1,987	4,328	91	6,882	1,385	3	27	0	810	0	28,861
	Area Total				2,712				4,962					12,080					9,107						
Season Total			831	1,303	270	703	701	343	2,983	2,981	1	2,660	3,523	144	2,038	6,302	91	7,507	1,385	3	27	0	934	0	34,330

Note: Dash (-) indicates district closed to fishing for that particular week.

1/ District 183 catches for wk. 17=67, wk. 18=47, wk. 19=66, wk. 20=71, wk. 21=3, wk. 22=54, the total 308 is included with wk. 23.

Straits (District 114) while the power troll fleet reported most of the catches from the outer coast of Baranof and Chichagof Islands (District 113).

The summer troll fishery harvested 202,282 fish (Table 2). The majority were harvested in the Northern Outside area by the power troll fleet (Table 3). The hand troll fleet also reported most of its catch from this area (Table 4). Fish caught in the Northern Outside area had the largest average weight and those in the Southern Inside area had the smallest average weight (Appendix Tables A7 to A9). Average weights increased slightly through the reporting year.

Seine. The majority of the purse seine catch of 20,711 fish (Table 5) occurred in District 104 (the Noyes Island fishery) but significant catches also occurred in District 101. Catches were highest during the first half of the seine fishery in District 104. The 1984 harvest was 66% of the 1982 record high catch but approximately 8,000 above the 1971-1982 average catch of 12,407. The catches of chinook salmon by the seine fleet is strongly related to catches of pink salmon (ADF&G 1986). Average weight of fish tended to be highest in the outside districts and lowest in the inside districts (See Appendix Table A10).

Drift Gillnet. The drift gillnet catch of 10,313 fish (Table 6) was reported primarily from Districts 115. Regardless of district, more fish were caught during the first half of the season. Catches were below the long term average (1961-1979) in Districts 106, 108, and 111, about average in District 101, and about three times the average in District 115 (McBride and Wilcock 1983). Note that directed chinook salmon gillnet fisheries were eliminated after 1975 (except for limited set gillnet fisheries in Yakutat). Average weights varied considerably between weeks and districts (Appendix Table A11). The average weights were highest in District 101. A seasonal decline in average weights is observed in District 101 with the opposite trend seen in District 115.

Set Gillnet. The set gillnet catch was 1,062 fish (McBride 1986). Chinook salmon were harvested in all Yakutat area fisheries except Tsiu and Kaliakh. Approximately half, 512 fish, were harvested in the Situk fishery.

Trap. The four fish traps operating in the Annette Island Fishery Reserve caught 182 chinook salmon (Table 7). The highest catches occurred in July.

Subsistence. The Chilkat River set net catch of 55 fish (ADF&G 1985) was the only reported domestic subsistence harvest in Southeastern Alaska. Canadian subsistence (Indian food fishery) harvests on the upper Stikine River totaled 702 fish and on tributaries of the Alsek River totaled 200 fish (Anon. 1984).

Canadian In-River Gillnet. The harvest of 515 fish in the Taku River (Table 8) accounted for the entire Canadian commercial in-river harvest since no commercial fishing occurred in the Stikine River. Significant catches occurred the last two weeks of June and the first week of July.

Sport. The Alaskan sport catch was an estimated 21,483 large fish and 567 small fish, Table 9, (See Mills 1985). The largest catches occurred near

Table 5. Purse seine harvest of chinook salmon in Southeastern Alaska by district and statistical week, 1984. (Note: dash (-) indicates fishery open with no catch).

Stat Week	Date 1/	Districts												Total
		101	102	103	104	105	106	107	109	110	112	113	114	
27	7/1-7/7				182						102		31	315
28	7/8-7/14	86	6		440						176		71	779
29	7/15-7/21	221	73		487					35	134	5	28	983
30	7/22-7/28	192	110		2,342			14	57	151	-			2,866
31	7/29-8/4	215	15		4,273			273	214	47	22			5,059
32	8/5-8/11	300	167		4,214			123	13	71	3			4,891
33	8/12-8/18	266	84	2	3,031	2		7	42	-	28	31	-	3,493
34	8/19-8/25	184	124	70	1,672	22	4	2	40		9	29	7	2,163
35	8/26-9/1	57	5	8	27	3			9			4	24	137
36	9/2-9/8	2	5			1						1	11	20
37	9/9-9/15	1	1										3	5
District	Totals	1,524	590	80	16,668	28	4	9	501	319	718	95	175	20,711

1/ Inclusive dates of statistical week, not of fishing dates, which are usually 2 to 4 days in duration.

Table 6. Gillnet harvest of chinook salmon in Southeastern Alaska by district and statistical week, 1984. (Note: dash (-) indicates fishery open with no catch).

Stat Week	Date 1/	District					Total
		101	106	108	111	115	
25	6/17-6/23	281	42		347	303	973
26	6/24-6/30	377	43		345	574	1,339
27	7/1-7/7	322	125		177	828	1,452
28	7/8-7/14	168	46		92	1,086	1,392
29	7/15-7/21	172	180		56	904	1,312
30	7/22-7/28	91	148		194	726	1,159
31	7/29-8/4	41	104	13	175	487	820
32	8/5-8/11	19	69	1	104	329	522
33	8/12-8/18	13	52		63	286	414
34	8/19-8/25	25	45		94	79	243
35	8/26-9/1	8	9		68	71	156
36	9/2-9/8	7	7		20	56	90
37	9/9-9/15	8	25		37	159	229
38	9/16-9/22	-	-		1	70	71
39	9/23-9/29					101	101
40	9/30-10/6					34	34
41	10/7-10/13					6	6
Total		1,532	895	14	1,773	6,099	10,313

1/ Inclusive dates of statistical week, not of fishing dates, which are usually 2 to 4 days in duration.

Table 7. Commercial trap harvest of chinook salmon on the Annette Island Indian Fishery Reserve, Southeastern Alaska, District 101-28, 1984.

Stat. Week	Inclusive Dates	Catch	Poundage	Average Weight
28	08 Jul-14 Jul	85	1,520	17.9
29	15 Jul-21 Jul	43	746	17.3
30	22 Jul-28 Jul	9	157	17.4
31	29 Jul-04 Aug	38	642	16.9
32	05 Aug-11 Aug	6	85	14.2
33	12 Aug-18 Aug	1	24	24.0
Total		182	3,174	18.0

Table 8. Canadian in-river harvest of chinook salmon from the Taku River, 1984.
 (Data from Canadian Dept. of Fisheries and Oceans, Whitehorse).

Stat. Week	Week Ending Date	Boats	Days	Small	Large	Total
25	June 23	5	2	105	69	174
26	30	7	2	61	64	125
27	July 07	12	3	27	80	107
28	14	12	3	19	48	67
29	21	12	3	8	23	31
30	28	12	2	0	8	8
31	Aug 04	11	2	1	0	1
32	11	14	2	0	1	1
33	18	12	2	0	0	0
34	25	10	2	0	1	1
35	Sept 01 1/	8	2	0	0	0
36	08	6	2	0	0	0
37	15	4	1	0	0	0
38	22	3	2	0	0	0
Totals			30	221	294	515

1/ Flood conditions were present.

Table 9. Sport harvest of chinook salmon in Southeastern Alaska, 1984. (Data from Mills 1985).

Area	Small <711mm	Large >711mm	Total
Ketchikan	80	4,983	5,063
Prince of Wales Island	10	1,085	1,095
Petersburg-Wrangell	310	2,757	3,067
Sitka	33	2,218	2,251
Juneau	121	8,827	8,948
Haines-Skagway	8	1,305	1,313
Glacier Bay	0	129	129
Yakutat	5	179	184
Total	567	21,483	22,050

Ketchikan and Juneau. Salmon derbies held in May and June in Haines, Petersburg, Wrangell, Sitka, and Ketchikan target on chinook salmon. Canadian sport fishermen caught approximately 300 fish in the Alsek River and an unknown, but presumably small, number in the Taku and Stikine Rivers (Anon. 1984).

Age, Sex, and Size Data:

Age and size statistics are presented by area and period for the troll fishery (Tables 10 thru 13) and by district for the seine (Tables 14 and 15) and drift gillnet (Tables 16 and 17) fisheries. Age, size, and sex statistics are also presented for the Canadian Taku River fishery (Table 18) and each sport fishery (Tables 19 and 20) sampled. Age, sex, and size composition data for Yakutat area set gillnet catches are reported in McBride (1986).

Troll. Most (57%) of the fish harvested during the 26 February to 14 April period of the winter troll fishery were age 0. (Table 10, Figure 2). Fish aged 0. were present in higher proportions in outside versus inside areas. Fish aged 1.3 were harvested in the highest proportion in the Southern Inside area while fish aged 1.4 were harvested in the highest proportion in the Northern Inside area. Fish harvested in the northern areas tended to be older than those harvested in southern area.

The summer troll catches were predominated by fish aged 0.3, which comprised 46% and 48% of the Northern and Southern Outside area catches and 30% and 28%, respectively, of the Northern and Southern Inside area catches (Table 11). Fish aged 0.4, 1.2, and 1.3 also comprised a substantial proportion of the harvest. As for the winter fishery samples, the incidence of fish aged 0. was higher in outside area (>69%) than in the inside areas (<40%) (Figure 2).

In the summer troll fishery, sufficient samples were available to examine the data for temporal trends only in the outside areas. The incidence of two-ocean age fish tended to increase through time while the incidence of fish aged 1.3 and 1.4 decreased through time. No consistent temporal trends were evident for fish aged 0.3 and 0.4.

Examination of average length by age data reveals little consistent size differences between areas or through time (Tables 12 and 13). In-season growth of two-ocean age fish is evident in the outside areas, however. For fish of a given ocean age, those aged 1. were usually larger than those aged 0.

Seine. Small sample sizes of seine caught fish precludes making an indepth evaluation of age and length compositions by area. One, two, and three-ocean age fish dominated catches in all areas, however, fish aged 0.4 did comprise 23% of the harvest in the Southern Outside area (Table 14). Fish aged 0. were harvested in the highest proportion in the Southern Outside area (82%) and the lowest proportion in the Northern Inside area (44%) (Figure 2). In total fish aged 0. comprised 76% of the harvest. The mean length of fish aged 1. tended to be larger than fish aged 0. for a given ocean age (Table 15). Fish aged 0.2 were smaller in inside versus outside districts.

Table 10. Age composition of the winter troll harvest of chinook salmon by area, 1984^{1/}.

		Brood Year and Age Class									
		1981	1980	1980	1979	1979	1978	1978	1978	1977	
Area	Statistic	0.2	0.3	1.2	0.4	1.3	0.5	1.4	2.3	1.5	Total
Northern Outside	Sample Number	3	204	19	238	111	6	45	1	5	632
	Percent	0.5	32.3	3.0	37.7	17.6	0.9	7.1	0.2	0.8	100.0
	Std. Error	0.3	1.9	0.7	1.9	1.5	0.4	1.0		0.4	
	Number Fish	22	1,466	137	1,709	798	43	323	7	36	4,541
Southern Outside	Sample Number	2	146	5	44	70	2	10			279
	Percent	0.7	52.3	1.8	15.8	25.1	0.7	3.6			100.0
	Std. Error	0.5	3.0	0.8	2.2	2.6	0.5	1.1			
	Number Fish	13	970	33	292	464	13	66			1,851
Northern 2/ Inside	Sample Number	1	213	16	143	253	7	133	2	7	775
	Percent	0.1	27.5	2.1	18.5	32.6	0.9	17.2	0.3	0.9	100.0
	Std. Error		1.6	0.5	1.4	1.7	0.3	1.4	0.2	0.3	
	Number Fish	8	1,642	123	1,102	1,951	54	1,025	15	54	5,974
Southern Inside	Sample Number	3	274	25	136	357	5	60		2	862
	Percent	0.3	31.8	2.9	15.8	41.4	0.6	7.0		0.2	100.0
	Std. Error	0.2	1.6	0.6	1.2	1.7	0.3	0.9		0.2	
	Number Fish	13	1,156	106	574	1,507	21	253		8	3,638
All Districts	Sample Number	9	837	65	561	791	20	248	3	14	2,548
	Percent	0.3	32.7	2.5	23.0	29.4	0.8	10.4	0.1	0.6	100.0
	Std. Error	0.6	4.2	1.3	3.4	3.8	0.8	2.2	0.2	0.5	
	Number Fish	56	5,234	399	3,677	4,720	131	1,667	22	98	16,004

1/ Includes catches from 26 February to 14 April only.

2/ District 114 is included in the Northern Inside area.

Table 11. Age composition of the summer troll fishery harvest of chinook salmon by area and period, 1984.

		Brood Year and Age Class									
Area	Statistic	1981	1980	1980	1979	1979	1978	1978	1977	Total	
Northern Outside	Statistical Weeks	23	- 24	(June 3 - 16)							
	Sample Number	23	452	89	170	242	13	37	1	1,027	
	Percent	2.2	44.0	8.7	16.6	23.6	1.3	3.6	0.1	100.0	
	Std. Error	0.5	1.5	0.9	1.2	1.3	0.3	0.6			
	Number Fish	773	15,189	2,991	5,713	8,133	437	1,243	34	34,513	
	Statistical Week	25	(June 17 - 23)								
	Sample Number	38	312	86	80	185	3	17	1	722	
	Percent	5.3	43.2	11.9	11.1	25.6	0.4	2.4	0.1	100.0	
	Std. Error	0.8	1.8	1.2	1.2	1.6	0.2	0.6			
	Number Fish	716	5,882	1,621	1,508	3,488	57	320	19	13,611	
Northern Outside	Statistical Week	26	(June 24 - 30)								
	Sample Number	37	352	69	115	157	4	20	3	757	
	Percent	4.9	46.5	9.1	15.2	20.7	0.5	2.6	0.4	100.0	
	Std. Error	0.8	1.8	1.0	1.3	1.5	0.3	0.6	0.2		
	Number Fish	1,196	11,379	2,231	3,718	5,076	129	647	97	24,473	
	Statistical Weeks	28	- 29	(July 8 - 21)							
	Sample Number	53	376	99	152	159	4	10		853	
	Percent	6.2	44.1	11.6	17.8	18.6	0.5	1.2		100.0	
	Std. Error	0.8	1.7	1.1	1.3	1.3	0.2	0.4			
	Number Fish	1,254	8,899	2,343	3,598	3,763	95	237		20,189	
Northern Outside	Statistical Week	30	(July 22 - 28)								
	Sample Number	63	407	59	130	81	3	14	1	758	
	Percent	8.3	53.7	7.8	17.2	10.7	0.4	1.8	0.1	100.0	
	Std. Error	1.0	1.8	1.0	1.4	1.1	0.2	0.5			
	Number Fish	1,340	8,655	1,255	2,764	1,722	64	298	21	16,119	
	Statistical Week	31	(July 29 - August 4)								
	Sample Number	43	236	39	102	44	3	10		477	
	Percent	9.0	49.5	8.2	21.4	9.2	0.6	2.1		100.0	
	Std. Error	1.3	2.3	1.3	1.9	1.3	0.4	0.7			
	Number Fish	1,478	8,109	1,340	3,505	1,512	103	344		16,391	
Combined Periods (Percentages are weighted by period catches)											
Sample Number	257	2,135	441	749	868	30	108	6		4,594	
Percent	5.4	46.4	9.4	16.6	18.9	0.7	2.5	0.1		100.0	
Std. Error	0.3	0.8	0.4	0.6	0.6	0.1	0.2	0.1			
Number Fish	6,757	58,113	11,781	20,806	23,694	885	3,089	171		125,296	

-Continued-

Table 11. Age composition of the summer troll fishery harvest of chinook salmon by area and period, 1984 (continued).

		Brood Year and Age Class								
Area	Statistic	1981	1980	1980	1979	1979	1978	1978	1977	Total
Southern Outside	Statistical Weeks	23	- 28	(June 3 - July 14)						
	Sample Number	10	193	15	67	80	1	20	2	388
	Percent	2.6	49.7	3.9	17.3	20.6	0.3	5.2	0.5	100.0
	Std. Error	0.8	2.5	1.0	1.9	2.1		1.1	0.4	
	Number Fish	484	9,334	725	3,240	3,869	48	967	97	18,764
	Statistical Weeks	29	- 31	(July 15 - August 4)						
	Sample Number	70	206	66	82	61	2	7		494
	Percent	14.2	41.7	13.4	16.6	12.3	0.4	1.4		100.0
	Std. Error	1.6	2.2	1.5	1.7	1.5	0.3	0.5		
	Number Fish	741	2,180	698	868	645	21	74		5,227

Combined Periods (Percentages are weighted by period catches)										
	Sample Number	80	399	81	149	141	3	27	2	882
	Percent	5.1	48.0	5.9	17.1	18.8	0.3	4.3	0.4	100.0
	Std. Error	0.7	2.0	0.8	1.5	1.6	0.2	0.9	0.3	
	Number Fish	1,225	11,514	1,423	4,108	4,514	69	1,041	97	23,991
Northern Inside	Statistical Weeks	23	- 31	(June 3 - August 4)						
	Sample Number	10	203	71	51	283	2	45	2	667
	Percent	1.5	30.4	10.6	7.6	42.4	0.3	6.7	0.3	100.0
	Std. Error	0.5	1.8	1.2	1.0	1.9	0.2	1.0	0.2	
	Number Fish	618	12,543	4,387	3,151	17,486	124	2,781	124	41,214
Southern Inside	Statistical Weeks	24	- 31	(June 10 - August 4)						
	Sample Number	28	144	141	23	165		23		524
	Percent	5.3	27.5	26.9	4.4	31.5		4.4		100.0
	Std. Error	1.0	2.0	1.9	0.9	2.0		0.9		
	Number Fish	630	3,238	3,170	517	3,709		517		11,781

Table 12. Length at age for chinook salmon caught in the winter troll fishery, by area and period, 1984^{1/}.

		Brood Year and Age Class								
Area	Statistic	1981	1980	1980	1979	1979	1978	1978	1978	1977
		0.2	0.3	1.2	0.4	1.3	0.5	1.4	2.3	1.5
Northern Outside	Avg. Length	661.7	723.8	680.0	831.3	751.8	878.3	888.9	835.0	978.0
	Std. Error	4.4	3.7	10.3	3.5	5.6	19.1	11.5		31.2
	Sample Size	3	204	19	238	111	6	45	1	5
Southern Outside	Avg. Length	604.5	698.8	652.4	801.3	735.3	952.5	870.3		
	Std. Error	10.5	3.7	9.3	8.1	6.5	29.5	30.1		
	Sample Size	2	146	5	43	69	2	10		
Northern Inside 2/	Avg. Length	620.0	707.8	666.6	820.8	745.4	900.0	845.0	765.0	860.7
	Std. Error		3.1	11.1	4.5	3.9	29.1	5.8	10.0	18.2
	Sample Size	1	213	16	143	253	7	133	2	7
Southern Inside	Avg. Length	664.3	698.4	651.7	797.5	748.3	881.0	845.4		950.0
	Std. Error	38.0	3.0	8.5	4.5	3.1	27.2	9.5		70.0
	Sample Size	3	274	25	136	356	5	60		2

1/ Includes catches from 24 February to 14 April only.

2/ District 114 is included in the Northern Inside area.

Table 13. Length at age for chinook salmon caught in the summer troll fishery, by area and period, 1984.

		Brood Year and Age Class								
		1981	1980	1980	1979	1979	1978	1978	1977	
Area	Statistic	0.2	0.3	1.2	0.4	1.3	0.5	1.4	1.5	
Northern Outside	Statistical Weeks	23	- 24	(June 3 - 16)						
	Avg. Length	652.8	718.8	669.1	846.1	747.2	921.2	871.8	860.0	
	Std. Error	6.3	3.3	8.7	5.1	4.5	11.1	10.2		
	Sample Size	23	451	88	170	238	13	37	1	
	Statistical Week	25	(June 17 - 23)							
	Avg. Length	645.4	722.4	671.6	830.7	742.6	901.7	907.4	920.0	
	Std. Error	5.1	3.3	5.3	7.7	5.9	39.2	27.0		
	Sample Size	38	312	86	80	185	3	17	1	
	Statistical Week	26	(June 24 - 30)							
	Avg. Length	666.2	741.5	670.3	860.6	766.9	913.8	924.7	948.3	
	Std. Error	7.0	3.2	10.7	4.9	6.8	19.5	17.1	16.9	
	Sample Size	37	352	69	115	157	4	19	3	
	Statistical Weeks	28	- 29	(July 8 - 21)						
	Avg. Length	671.5	759.0	677.9	864.8	762.7	912.5	904.5		
	Std. Error	4.5	2.8	5.7	4.7	5.2	17.6	21.3		
	Sample Size	53	376	99	152	159	4	10		
	Statistical Week	30	(July 22 - 28)							
	Avg. Length	667.9	763.7	702.5	873.8	792.7	941.7	890.0	940.0	
	Std. Error	5.5	2.9	8.4	6.1	7.9	34.4	24.3		
	Sample Size	63	407	59	130	81	3	14	1	
	Statistical Week	31	(July 29 - August 4)							
	Avg. Length	676.0	782.4	730.5	873.0	820.2	916.7	869.0		
	Std. Error	7.6	3.7	7.0	6.6	8.1	7.3	12.0		
	Sample Size	43	236	39	102	44	3	10		
Combined Periods (Unweighted)										
Avg. Length	665.1	745.8	681.7	858.9	760.7	918.7	892.0	927.5		
Std. Error	2.5	1.4	3.3	2.4	2.6	7.3	7.5	16.1		
Sample Size	257	2134	440	749	864	30	107	6		

-Continued-

Table 13. Length at age for chinook salmon caught in the summer troll fishery, by area and period, 1984 (continued).

		Brood Year and Age Class								
		1981	1980	1980	1979	1979	1978	1978	1977	
Area	Statistic	0.2	0.3	1.2	0.4	1.3	0.5	1.4	1.5	
Southern Outside	Statistical Weeks	23	- 28	(June 3 - 14)						
	Avg. Length	660.2	742.5	669.1	850.0	787.1	870.0	910.8	1017.5	
	Std. Error	6.4	5.2	8.3	7.7	6.9		19.4	102.5	
	Sample Size	10	192	15	67	80	1	20	2	
	Statistical Weeks	29	- 31	(July 15 - August 4)						
	Avg. Length	675.3	774.0	693.5	865.0	808.5	827.5	915.0		
	Std. Error	7.7	4.4	7.7	8.2	8.2	39.5	19.2		
	Sample Size	70	206	66	82	61	2	7		
	Combined Periods (Unweighted)									
		Avg. Length	673.4	758.8	689.0	858.3	796.3	841.7	911.9	1017.5
	Std. Error	6.8	3.5	6.5	5.7	5.4	26.8	15.0	102.5	
	Sample Size	80	398	81	149	141	3	27	2	
Northern Inside	Statistical Weeks	23	- 31	(June 3 - August 4)						
	Avg. Length	646.0	721.0	676.5	850.5	735.7	959.5	850.1	960.5	
	Std. Error	10.8	4.6	7.0	14.1	4.1	74.5	9.5	12.5	
	Sample Size	10	202	70	51	279	2	45	2	
Southern Inside	Statistical Weeks	23	- 31	(June 3 - August 4)						
	Avg. Length	652.5	722.1	647.6	834.9	767.8		892.4		
	Std. Error	7.7	6.6	3.0	13.8	5.1		12.8		
	Sample Size	28	141	141	23	165		23		

Table 14. Age composition of the purse seine harvest of chinook salmon by area, 1984.

		Brood Year and Age Class																
		1983	1982	1982	1981	1981	1980	1980	1979	1979	Total							
Area	Statistic	0.1	0.2	1.1	0.3	1.2	0.4	1.3	0.5	1.4								
Northern Outside 1/	Statistical Weeks	27 - 37 (June 30 - Sept. 14)																
	Sample Number	5		5		5		2		1		18						
	Percent	27.8		27.8		27.8		11.1		5.6		100.0						
	Std. Error	10.9		10.9		10.9		7.6										
	Number	75		75		75		30		15		270						
Southern Outside 2/	Statistical Weeks	27 - 35 (June 30 - August 31)																
	Sample Number	78		214		24		111		59		2	5	493				
	Percent	15.8		43.4		4.9		22.5		12.0		0.4	1.0	100.0				
	Std. Error	1.6		2.2		1.0		1.9		1.5		0.3	0.5					
	Number	2,650		7,270		815		3,771		2,004		68	170	16,748				
Northern Inside 3/	Statistical Weeks	27 - 35 (June 30 - August 31)																
	Sample Number	4		8		9		5		11		1		39				
	Percent	10.3		20.5		23.1		12.8		28.2		2.6		100.0				
	Std. Error	4.9		6.6		6.8		5.4		7.3								
	Number	158		315		355		197		434		39		39	1,538			
Southern Inside	Statistical Weeks	28 - 37 (July 7 - Sept. 14)																
	Sample Number	9		32		19		15		19		3		6	1	1	105	
	Percent	8.6		30.5		18.1		14.3		18.1		2.9		5.7		1.0	1.0	100.0
	Std. Error	2.7		4.5		3.8		3.4		3.8		1.6		2.3				
	Number	185		657		390		308		390		62		123		21	21	2,155

1/ Includes one fish from District 113 and 17 fish from District 114.

2/ Includes one fish from District 103 and 491 fish from District 104.

3/ Includes four fish from District 110 and 35 fish from District 112.

Table 15. Length at age for chinook salmon caught in the purse seine fishery by area, 1984.

		Brood Year and Age Class								
		1982	1981	1981	1980	1980	1979	1979	1978	1978
Area		0.1	0.2	1.1	0.3	1.2	0.4	1.3	0.5	1.4
Southern 1/ Outside	Statistical Weeks	27	- 35	(July 1 - Sept. 1)						
	Avg. Length		664.0		790.5	692.3	885.3	812.2	930.0	924.0
	Std. Error		7.7		4.3	13.4	6.2	9.1	35.0	35.3
	Sample Size		77		213	24	111	59	2	5
Northern 2/ Inside	Statistical Weeks	27	- 30	(July 1 - July 28)						
	Avg. Length	354.0	511.5	376.6	710.5	576.4		723.3		877.5
	Std. Error	12.3	23.9	17.1	24.4	24.3		66.5		47.5
	Sample Size	4	12	9	10	16		3		2
Southern 3/ Inside	Statistical Weeks	28	- 37	(July 8 - Sept. 15)						
	Avg. Length	357.8	563.3	423.4	734.7	600.0	923.3	825.0	955.0	875.0
	Std. Error	18.3	8.5	10.1	23.5	19.5	52.4	17.6		
	Sample Size	9	32	19	15	19	3	6	1	1

- 1/ Includes catches in Districts 103 and 104. Samples consist of one fish from District 103 and 490 fish from District 104.
- 2/ Includes catches in Districts 109, 110, 112, 113, and 114. Samples consist of four fish from District 110, 35 fish from District 112, and 17 fish from District 114.
- 3/ Includes catches in Districts 101, 102, 105, 106, and 107. Samples consist of 41 fish from District 101, 19 fish from District 102, one fish from District 105, and 44 fish from mixed Southern Inside area districts.

Table 16. Age composition of the gillnet harvest of chinook salmon by district, 1984.

Area	Statistic	Brood Year and Age Class							Total
		1982 0.2	1982 1.1	1981 0.3	1981 1.2	1980 0.4	1980 1.3	1979 1.4	
District 101	Statistical Weeks	25	- 38	(June 16 - Sept. 21)					
	Sample Number	20	5	7	27	2	23	5	89
	Percent	22.5	5.6	7.9	30.3	2.2	25.8	5.6	100.0
	Std. Error	4.4	2.5	2.9	4.9	1.6	4.7	2.5	
	Number	344	86	120	465	34	396	86	1,532
District 106	Statistical Weeks	25	- 38	(June 16 - Sept. 21)					
	Sample Number	16	5	4	29	2	7	1	64
	Percent	25.0	7.8	6.3	45.3	3.1	10.9	1.6	100.0
	Std. Error	5.5	3.4	3.0	6.3	2.2	3.9		
	Number	224	70	56	406	28	98	14	895
District 111	Statistical Weeks	25	- 38	(June 16 - Sept. 21)					
	Sample Number	8	5	3	84		68	8	176
	Percent	4.5	2.8	1.7	47.7		38.6	4.5	100.0
	Std. Error	1.6	1.3	1.0	3.8		3.7	1.6	
	Number	81	50	30	846		685	81	1,773
District 115	Statistical Weeks	25	- 41	(June 16 - Oct. 12)					
	Sample Number	49	10	9	563	1	90	8	730
	Percent	6.7	1.4	1.2	77.1	0.1	12.3	1.1	100.0
	Std. Error	0.9	0.4	0.4	1.6		1.2	0.4	
	Number	409	84	75	4,704	8	752	67	6,099

Table 17. Length at age for chinook salmon caught in the gillnet fisheries by district, 1984.

		Brood Year and Age Class						
Area	Statistic	1982	1982	1981	1981	1980	1980	1979
		0.2	1.1	0.3	1.2	0.4	1.3	1.4
	Statistical Weeks	25	- 38	(June 16 - Sept. 21)				
District 101	Avg. Length	578.6	479.6	692.3	586.3	914.0	786.6	895.0
	Std. Error	13.8	12.1	27.6	13.5	79.0	18.2	16.2
	Sample Size	20	5	7	27	2	23	5
	Statistical Weeks	25	- 38	(June 16 - Sept. 21)				
District 106	Avg. Length	570.1	471.2	729.0	592.6	723.0	717.9	855.0
	Std. Error	13.5	14.8	61.2	10.4	25.0	23.2	
	Sample Size	16	5	4	29	2	7	1
	Statistical Weeks	25	- 38	(June 16 - Sept. 21)				
District 111	Avg. Length	544.0	421.8	659.7	583.8		723.1	858.6
	Std. Error	8.9	18.6	20.5	7.6		8.0	37.7
	Sample Size	8	5	3	84		68	8
	Statistical Weeks	25	- 41	(June 16 - Oct. 12)				
District 115	Avg. Length	550.2	457.0	618.9	566.4	890.0	690.8	890.6
	Std. Error	5.5	17.4	24.7	2.2		8.3	19.3
	Sample Size	49	10	9	563	1	90	8

Table 18. Age and length composition of the Canadian commercial gillnet harvest of chinook salmon on the Taku River, 1984.

	Brood Year and Age Class				Total
	1981	1980	1979	1978	
	1.1	1.2	1.3	1.4	
Statistical Weeks	25	- 27	(June 17 - July 7)		
Male					
Sample Number	1	16	7		24
Percent	2.9	47.1	20.6		70.6
Std. Error		8.7	7.0		7.9
Number	15	241	106		364
Avg. Length	364.0	552.7	720.1		
Std. Error		14.8	22.0		
Female					
Sample Number		2	7	1	10
Percent		5.9	20.6	2.9	29.4
Std. Error		4.1	7.0		7.9
Number		30	106	15	151
Avg. Length		711.5	768.7	833.0	
Std. Error		5.5	22.0		
All Fish					
Sample Number	1	18	14	1	34
Percent	2.9	52.9	41.2	2.9	100.0
Std. Error		8.7	8.6		
Number	15	273	212	15	515
Avg. Length	364.0	570.3	744.4	833.0	
Std. Error		17.9	16.4		

Table 19. Age composition of chinook salmon from select Southeastern Alaska sport fisheries, 1984.

Fishery (Sampling Dates)	Brood Year and Age Class										
	1981		1980		1979		1978		1977	Total	
	0.2	1.1	0.3	1.2	0.4	1.3	0.5	1.4	1.5		
Haines Derby and Creel 6 May-30 June	Males	Sample Number			2	1	50		34	3	90
		Percent			2.2	1.1	55.6		37.8	3.3	
		Std. Error			1.0	0.7	3.4		3.4	1.2	
	Females	Sample Number		1	1		18		54	2	76
		Percent		1.3	1.3		23.7		71.1	2.6	
		Std. Error		0.8	0.8		2.9		3.1	1.1	
	Total	Sample Number		1	4	1	62		114	7	209
		Percent		0.5	1.9	0.5	39.2		54.5	3.3	
		Std. Error		0.5	0.9	0.5	3.4		3.4	1.2	
Sitka Derby 26 May-3 June	Males	Sample Number	6	42	10	29	19	2	4		112
		Percent	5.4	37.5	8.9	25.9	17.0	1.8	3.6		
		Std. Error	1.4	3.1	1.8	2.8	2.4	0.8	1.2		
	Females	Sample Number		51	2	33	38	2	9	1	136
		Percent		37.5	1.5	24.3	27.9	1.5	6.6	0.7	
		Std. Error		3.1	0.8	2.7	2.8	0.8	1.6	0.5	
	Total	Sample Number	6	93	12	63	57	4	13	1	249
		Percent	2.4	37.3	4.8	25.3	22.9	1.6	5.2	0.4	
		Std. Error	1.0	3.1	1.4	2.8	2.7	0.8	1.4	0.4	
Juneau Derby 3 Aug-15 Aug	Males	Sample Number	2	13	32	1	25				73
		Percent	2.7	17.8	43.8	1.4	34.2				
		Std. Error	1.0	2.4	3.1	0.7	3.0				
	Females	Sample Number		26	32	1	64				123
		Percent		21.1	26.0	0.8	52.0				
		Std. Error		2.6	2.8	0.6	3.1				
	Total	Sample Number	3	45	80	3	120		1		252
		Percent	1.2	17.9	31.7	1.2	47.6		0.4		
		Std. Error	0.7	2.4	2.9	0.7	3.1		0.4		
Juneau Creel 29 April-29 Sept	Males	Sample Number	3	1	14	29	1	67	7	1	123
		Percent	2.4	0.8	11.4	23.6	0.8	54.5	5.7	0.8	
		Std. Error	0.8	0.5	1.7	2.3	0.5	2.7	1.3	0.5	
	Females	Sample Number		35	39	1	115		22		212
		Percent		16.5	18.4	0.5	54.2		10.4		
		Std. Error		2.0	2.1	0.4	2.7		1.7		
	Total	Sample Number	3	1	49	68	2	182	29	1	335
		Percent	0.9	0.3	14.6	20.3	0.6	54.3	8.7	0.3	
		Std. Error	0.5	0.3	1.9	2.2	0.4	2.7	1.5	0.3	

-Continued-

Table 19. Age composition of chinook salmon from select Southeastern Alaska sport fisheries, 1984 (continued).

Fishery (Sampling Dates)	Brood Year and Age Class											
	1981		1980		1979		1978		1977	Total		
	0.2	1.1	0.3	1.2	0.4	1.3	0.5	1.4	1.5			
Ketchikan Creel 29 April-29 Sept	Males	Sample Number		2	5		14	1	4	1	27	
		Percent		7.4	18.5		51.9	3.7	14.8	3.7		
		Std. Error		3.2	4.8		6.2	2.3	4.4	2.3		
	Females	Sample Number		2	2	2	19		12		37	
		Percent		5.4	5.4	5.4	51.4		32.4			
		Std. Error		2.8	2.8	2.8	6.2		5.8			
	Total	Sample Number		4	7	2	35	1	16	1	66	
		Percent		6.1	10.6	3.0	53.0	1.5	24.2	1.5		
		Std. Error		2.9	3.8	2.1	6.1	1.5	5.3	1.5		
Petersberg Creel 29 April-14 July	Males	Sample Number		5	1	1	25		14		46	
		Percent		10.9	2.2	2.2	54.3		30.4			
		Std. Error		3.0	1.4	1.4	4.8		4.4			
	Females	Sample Number	1		1	2	6	34		12	1	57
		Percent	1.8		1.8	3.5	10.5	59.6		21.1	1.8	
		Std. Error	1.3		1.3	1.8	2.9	4.7		3.9	1.3	
	Total	Sample Number	1		7	3	8	61		28	1	109
		Percent	0.9		6.4	2.8	7.3	56.0		25.7	0.9	
		Std. Error	0.9		2.3	1.6	2.5	4.8		4.2	0.9	
Wrangel Creel 15 April-30 June	Males	Sample Number		8	4	5	40		10	1	68	
		Percent		11.8	5.9	7.4	58.8		14.7	1.5		
		Std. Error		2.7	1.9	2.2	4.1		2.9			
	Females	Sample Number		5	1	8	39		14	6	73	
		Percent		6.8	1.4	11.0	53.4		19.2	8.2		
		Std. Error		2.1	1.0	2.6	4.1		3.3	2.3		
	Total	Sample Number		15	5	13	79		27	7	146	
		Percent		10.3	3.4	8.9	54.1		18.5	4.8		
		Std. Error		2.5	1.5	2.4	4.1		3.2	1.8		

Table 20. Size at age (by sex) for chinook salmon from select Southeastern Alaska sport fisheries, 1984^{1/}.

Fishery (Sampling Dates)			Brood Year and Age Class							Total		
			1982		1981		1980		1979		1978	
			0.2	1.1	0.3	1.2	0.4	1.3	0.5		1.4	1.5
Haines Derby and Creel 6 May-30 June	Males	Avg. Length			700.0	997.0	828.8		986.5	1,090.0		
		Std. Error			20.0		11.0		13.8	28.1		
		Sample Size			2	1	50		34	3	90	
	Females	Avg. Length		710.0	640.0		833.4		944.2	1,043.5		
		Std. Error					22.4		11.7	28.5		
		Sample Size		1	1		18		54	2	76	
Total	Avg. Length		710.0	685.5	997.0	825.3		959.9	1,055.1			
	Std. Error			17.2		9.2		7.4	22.1			
	Sample Size		1	4	1	82		114	7	209		
Sitka Derby 25 May-3 June	Males	Avg. Length	656.0		799.5	714.1	916.4	856.2	1,030.0	1,007.5		
		Std. Error	41.6		9.5	15.1	17.4	17.1	32.0	81.3		
		Sample Size	6		42	10	29	19	2	4	112	
	Females	Avg. Length		783.9	771.5	907.5	832.3	1,025.0	954.2	1,060.0		
		Std. Error		6.0	3.5	11.0	7.9	35.0	25.4			
		Sample Size		51	2	33	38	2	9	1	136	
Total	Avg. Length	656.0		791.0	723.7	912.0	840.2	1,027.5	995.2	1,060.0		
	Std. Error	41.6		5.5	14.0	9.8	7.8	19.4	33.5			
	Sample Size	6		93	12	63	57	4	13	1	249	
Juneau Derby 3 Aug-15 Aug	Males	Avg. Length	701.5		783.1	734.1		839.4				
		Std. Error	16.5		21.1	0.6		16.0				
		Sample Size	2		13	32		25			72	
	Females	Avg. Length		734.8	711.9	854.0	821.8					
		Std. Error		20.4	7.4		9.1					
		Sample Size		26	32	1	64				123	
Total	Avg. Length	688.7		753.9	721.5	676.0	825.6		918.0			
	Std. Error	16.0		13.8	5.1	122.2	6.5					
	Sample Size	3		45	80	3	120		1	252		
Juneau Creel 29 April-29 Sept	Males	Avg. Length	726.3	451.0	768.6	741.3	830.0	810.2	995.6	1,042.0		
		Std. Error	24.3		14.8	8.0		9.1		20.9		
		Sample Size	3	1	14	29	1	67		7	1	123
	Females	Avg. Length		753.3	714.0	762.0	813.4		898.9			
		Std. Error		9.3	9.6		6.2		15.2			
		Sample Size		35	39	1	115		22		212	
Total	Avg. Length	726.3	451.0	757.7	725.7	800.0	812.3	922.2	1,042.0			
	Std. Error	24.3		7.9	6.7	30.0	5.2	14.6				
	Sample Size	3	1	49	68	2	182		29	1	335	

-Continued-

Table 20. Size at age (by sex) for chinook salmon from select Southeastern Alaska sport fisheries, 1984 (continued)1/.

Fishery (Sampling Dates)	Brood Year and Age Class										
	1982		1981		1980		1979		1978	Total	
	0.2	1.1	0.3	1.2	0.4	1.3	0.5	1.4	1.5		
Ketchikan Creel 29 April-29 Sept	Males			818.0	765.4		903.6	1,040.0	1,000.0	1,250.0	
				67.0	17.2		22.0		34.1		
				2	5		14	1	4	1	27
	Females			817.5	700.5	830.5	886.3		1,022.0		
				7.5	14.5	0.5	19.1		23.0		
				2	2	2	19		12		37
Total			813.8	746.9	830.5	896.5	1,040.0	1,036.7	1,250.0		
			27.6	17.1	0.5	13.8		19.8			
			4	7	2	35	1	16	1	66	
Wrangell Creel 15 April-30 June	Males			792.8	738.0	1100.0	884.8		987.1		
				48.6			13.3		23.1		
				5	1	1	25		14		46
	Females	821.0		825.0	780.5	919.3	865.3		983.3	914.0	
					42.5	18.2	13.6		18.0		
		1		1	2	6	34		12	1	57
Total	821.0		802.0	766.3	961.0	871.3		991.6	914.0		
			34.1	28.3	30.5	9.7		14.3			
	1		7	3	8	61		28	1	109	
Petersburg Creel 29 April-14 July	Males			782.6	715.0	915.4	905.0		993.7	1,150.0	
				18.2	20.2	41.5	18.0		29.5		
				8	4	5	40		10	1	68
	Females			824.2	790.0	858.0	870.4		955.0	998.0	
				45.1		23.9	12.2		20.0	23.7	
				5	1	8	39		14	6	73
Total			785.9	730.0	880.1	888.3		975.0	1,019.7		
			19.5	21.7	22.2	11.0		16.0	29.5		
			15	5	13	79		27	7	146	

1/ Measurements for Haines Derby and creel caught fish were made from mid-eye to fork-of-tail, all other fish were measured from tip-of-snout to fork-of-tail.

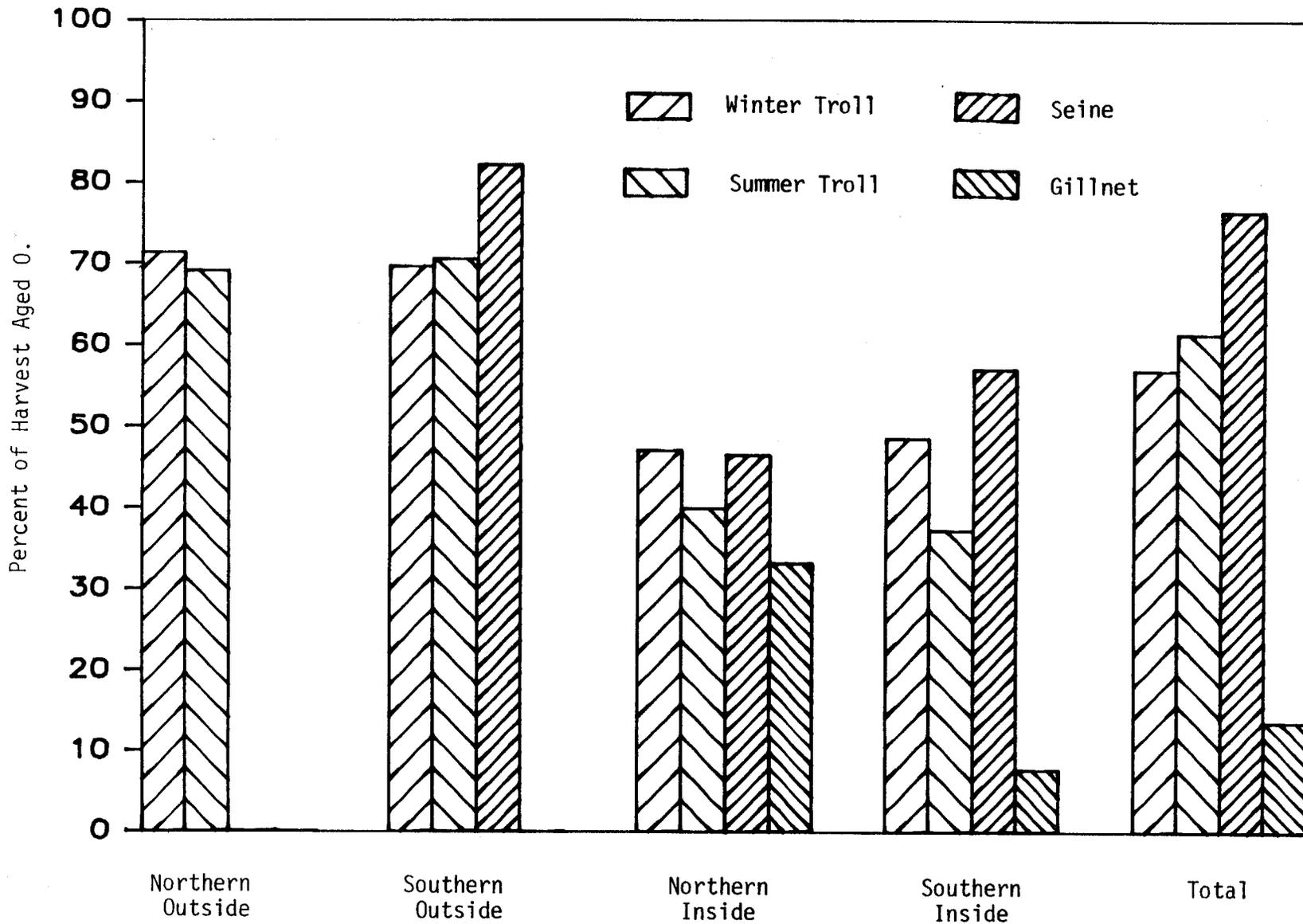


Figure 2. Percent fish aged 0. in the Southeastern Alaska troll, seine, and gillnet harvests, 1984.

Drift Gillnet. Fish aged 1.2 were the principal age class in the gillnet harvests, ranging from 30% in District 101 to 77% in District 115 (Table 16). Harvests of fish aged 0.2 and 1.3 were also substantial. Zero-check fish were more prevalent in District 101 and 106 than District 111 and 115 harvests (Figure 2). The mean length of fish aged 0.2, 1.1, 0.3, and 1.2 caught in Districts 111 and 115 were consistently smaller than fish of the same age caught in Districts 101 and 106 (Table 17).

Canadian In-River Gillnet. All chinook salmon sampled from the Taku River were aged 1. (Table 18). Males comprised 71% of the sample. Males were predominantly aged 1.2 while females were predominantly aged 1.3. Females were larger than males at each age.

Sport. One-check fish dominated all sampled sport fisheries except the Sitka derby samples (Table 19). Females tended to dominate catches of age 1.4 fish while males dominated catches of age 1.2 fish. Few age 1.4 fish were harvested in the Juneau area. Males tended to be longer, at a given age, than females (Table 20).

Escapement Statistics

There are 34 known chinook salmon producing rivers in Southeastern Alaska, three are considered major producers with a current or potential production of 10,000 or more fish in the run, 9 are considered medium producers (1,500 to 10,000 fish), and 22 are considered minor producers (less than 1,500 fish) (ADF&G 1982). Eleven index rivers are surveyed annually (ADF&G Sport Fish Division) to obtain peak escapement estimates of two-ocean or older fish. The eleven index systems include the three major producers (Alsek, Taku, and Stikine), seven medium producers (Situk, Chilkat, Andrews, Unuk, Chickamin, Blossom, Keta), and one minor producer (King Salmon).

Peak escapement counts for all rivers surveyed are presented along with estimates of the total escapement to the eleven index systems and the entire region. Age, sex, and size composition data for 14 wild stock samples and 4 hatchery runs is presented.

Numbers of Fish:

Surveys by aerial (fixed wing and helicopter), foot, boat, and weir provided indices of peak escapement for 56 spawning areas (Table 21). Weirs were used to count the escapements to five natural runs (Andrew Creek, King Salmon River, Crescent Lake, Kluckshu River, and Situk River) (Appendix Tables A12 to A15) and all four hatcheries [Deer Mountain (Ketchikan Creek), Crystal Lake (Crystal Creek) (Appendix Table A16), Little Port Walter (Sashin Creek), and Snettisham]. The survey data for un-weired systems must be used with caution since the proportion of the total run observed within each river varies and is not known; nor is the contribution of "jacks" (0, 1, or 2-ocean age fish), which are not counted.

Dates of peak escapement counts indicate a slightly later date of spawning for inland versus coastal runs and for southern versus northern runs (Table 21). Escapements typically peaked in the upper Alsek, Taku, and Stikine Rivers in late July to early August while escapements to the shorter coastal

Table 21. Peak escapement estimates and weir counts for chinook salmon in Southeastern Alaska and transboundary rivers, 1984. Abbreviations for types of surveys are: (A) aerial (fixed wing), (B) boat, (F) foot, (h) helicopter, and (W) weir.

Stream Name	Stream Number	Count	Method	Date	Organization
Willard Creek	101-11-065	8	(F)	9/9	ADF&G 1/
Keta River	101-30-030	610	(H)	8/14	ADF&G
Martin River	101-30-060	100	(A)	7/13	ADF&G
Carroll Creek	101-45-078	1	(F)	9/13	ADF&G
Ketchikan Creek	101-47-025	1,050	(F)	7/25	ADF&G
Wilson River	101-55-020	133	(F)	9/6	ADF&G
Blossom River	101-55-040	508	(H)	8/14	ADF&G
Big Goat Creek	101-60-030	22	(F)	8/12	ADF&G
Chickamin River:					
Chickamin River	101-71-004	503	(H)	8/7	ADF&G
Humpy Creek	101-71-008	88	(F)	9/7	ADF&G
King Creek	101-71-014	438	(F)	9/7	ADF&G
Choca Creek	101-71-016	16	(F)	9/7	ADF&G
Portage Creek	101-71-063	21	(F)	9/7	ADF&G
Herman Creek	101-75-005	3	(F)	9/8	ADF&G
Grant Creek	101-75-010	124	(F)	9/8	ADF&G
Unuk River:					
Genes Lake	101-75-	647	(F)	8/6	ADF&G
Eulachon River	101-75-015	350	(H)	8/14	ADF&G
Sawmill Slough	101-75-016	51	(H)	8/7	ADF&G
Clear Creek	101-75-017	113	(H)	8/7	ADF&G
Gripple Creek	101-75-300	644	(F)	8/6	ADF&G
Klahini River	101-75-050	54	(F)	9/8	ADF&G
Crystal Creek	106-44-031	2,572	(W)	9/5	ADF&G
Oerns Creek	107-40-025	5	(A)	7/23	ADF&G
Tom Lake Creek	107-40-047	2	(F)	8/23	ADF&G
Harding River	107-40-049	35	(B)	8/23	ADF&G
Eagle River	107-40-055	1	(A)	7/23	ADF&G
Stikine River:					
North Arm Creek	108-40-010	31	(F)	8/7	ADF&G
Goat Creek	108-40-017	1	(F)	8/29	ADF&G
Andrews Creek	108-40-020	555	(W)	8/24	ADF&G
Little Tahltan River	108-80-120	1,294	(H)	7/31	ADF&G
Beatty River	108-80-115	126	(H)	7/31	ADF&G
Government Creek	108-40-024	3	(A)	8/1	ADF&G
Iskut River	108-70-003	30	(H)	9/7	ADF&G
Craig	108-70-075	6	(H)	9/7	ADF&G
Farragut River	110-14-007	79	(F)	8/15	ADF&G
Chuck River	110-32-009	12	(A)	8/5	ADF&G
King Salmon River	111-17-010	181	(W)	7/24	ADF&G
Taku River:					
Tatsamenie River	111-32-255	616	(H)	8/17	CDFO 2/
Nakina River	111-32-220	1,887	(H)	7/31	ADF&G
Nahlin River	111-31-270	951	(H)	7/31	ADF&G
Tseta River	111-32-275	176	(H)	7/31	ADF&G
Kowatua River	111-32-240	279	(H)	8/17	CDFO
Crescent Lake outlet	111-35-006	4	(W)	9/12	ADF&G
Chilkat River:					
Big Boulder Creek	115-32-054	229	(F)	8/8	ADF&G
Tahini River	115-32-068	6	(A)	9/7	ADF&G
Little Boulder Creek	115-32-055	81	(F)	8/15	ADF&G
31 Mile Creek	115-32-057	7	(F)	8/14	ADF&G
Nataga Creek	115-32-066	5	(F)	8/14	ADF&G
Alsek River:					
Blanchard River	182-30-050	304	(H)	8/3	CDFO
Takhnanne River	182-30-043	158	(H)	8/3	CDFO
Kluchshu River	182-30-010	1,672	(W)	10/18	CDFO
Goat Creek	182-30-045	28	(A)	8/3	CDFO
Stanley Creek	182-30-	8	(A)	8/3	CDFO
Akwe River	182-40-010	150	(A)	8/14	ADF&G
Dangerous River	182-60-010	40	(A)	8/14	ADF&G
Situk River /3	182-70-010	1,726	(W)	8/18	ADF&G

1/ ADF&G- Alaska Department of Fish and Game.

2/ CDFO- Canadian Department of Fisheries and Oceans.

3/ Does not include 475 jacks.

rivers in the Behm Canal and Boca de Quadra region (District 101) tended to peak in mid-August or later.

The total estimated chinook salmon escapement to all Southeastern Alaska natural runs was 36,096 fish (Table 22), a 24% decrease from the 1982 estimated total escapement of 47,437 fish (Van Alen and Wood 1983) but a 26% increase from the 26,817 fish estimated in 1983 (Van Alen et. al. 1986). The estimated total escapement to the medium systems at 10,500 fish was twice that of the past two years.

Age, Sex, and Size:

Fish aged 1. dominated the escapements of natural runs (Table 23). Fish aged 0. were sampled only from Andrews Creek (3 age 0.3 fish of 184 sampled) and Nakina River (expanded estimate of 44 age 0.1 fish of 5,130 sampled). Males were predominately aged 1.1, 1.2, and 1.3 and females were predominantly aged 1.3 and 1.4. Males outnumbered females in 11 of the 14 samples. The reader is cautioned, however, that sampling may not be random with respect to size (and sex) of fish except for Nakina River returns, where one and two-ocean fish (jacks) were sampled in proportion to their return. In the Nakina River males comprised 86% of the run, of which 24% were aged 1.1 and 48% were aged 1.2. Fifty-nine percent of the females were aged 1.3 and 40% were aged 1.4. In 1983 most (89%) of the females were aged 1.4.

Fish aged 1. also dominated the hatchery returns (Table 23). From 1980 to 1983 there were no Alaskan hatchery releases of age 0. fish. Males were predominately age 1.2 and 1.3 and females age 1.3 and 1.4. Mean length of fish varied considerably between ages, sexes, and samples (Table 24).

Stock Composition

A minimum estimate of the harvest of non-Alaskan chinook salmon can be made based on age composition analysis and coded microwire tag analysis. Results of this and previous studies (Kissner 1973 and 1980; McBride and Wilcock 1983; Van Alen and Marshall 1983; Van Alen et. al 1986) has shown that virtually all wild run chinook salmon originating in Southeastern Alaska smolt during their second (age 1.) year. While we recognize that Alaska's wild stocks contributed some age 0. fish to the 1984 harvest, the low incidence of this age class in the escapement samples, coupled with relatively low abundance of spawners lead us to conclude that ignoring the contribution of these fish will result in insignificant bias. We can also assume that there was a negligible contribution of age 0. fish from Alaska hatcheries since all two-ocean or older fish returning to Alaskan hatcheries are aged 1. (Johnson 1986). Therefore, virtually all the 141,534 age 0. fish harvested in Alaskan commercial summer troll, seine, and drift gillnet fisheries (Table 25) were of non-Alaskan origin. Non-Alaskan fish, therefore, comprised a minimum of 60.7% of the chinook salmon harvested in domestic commercial fisheries the summer of 1984, 14.3% less than in 1983 and 5.0% more than in 1982 (Figure 3). In addition, age composition data (Rogers et. al. 1983) indicates that most of the age 1.4 and 1.5 fish harvested originated from Alaskan or British Columbia runs north of the Fraser River. Scale pattern analysis of Alaskan versus non-Alaskan fish aged 1. in 1982 catches (Van Alen (in prep.)) found that non-Alaska fish accounted for approximately half of the age 1. fish. If we assume that the stock

Table 22. Estimated total escapement of chinook salmon to Southeastern Alaska and transboundary river natural runs, 1984 1/.

System/ Tributary	Index Escapement	Tributary Expansion Factor	Aerial Survey Expansion Factor	System Total Escapement	Category Expansion Factor	Total Escapement
Major Systems (3 Total)						
Aleek (Klukshu)	1,660	1.56	1.00	2,594		
Taku (Nakina, Nahlin)	2,838	1.67	1.33	6,307		
Stikine (Little Tahltan)	1,294	4.00	1.60	8,282		
Major Systems Subtotal:				17,182	1	17,182
Medium Systems (9 Total)						
Situk	1,726	1.00	1.00	1,726		
Chilkat/Big Boulder	229	7.14	1.25	2,045		
Andrews Creek	355	1.00	1.00	355		
Behm Canal Systems						
Chickamin	1,014	1.00	1.60	1,622		
Blossom	508	1.00	1.60	813		
Keta	610	1.00	1.60	976		
Unuk 2/	1,837	1.00	1.60	2,939		
Medium Systems Subtotal:				10,476	9/7	13,469
Minor Systems (22 Total)						
King Salmon	198	1.00	1.25	248		
Minor Systems Subtotal:				248	22/1	5,445
Total All Systems:						36,096

1/ All counts exclude 0, 1, and 2-ocean age fish (jacks) except Klukshu R. weir counts.

2/ Unuk total includes counts from Cripple Creek, Genes Lake, Eulachon Creek, Clear Creek, Lake Creek, and Sawmill Creek.

Table 23. Sample age composition of chinook salmon from escapements to South-eastern Alaska and transboundary river runs, 1984.

System (Stream Number)	Brood Year and Age Class							Total
	1982	1981	1980		1979	1978	1977	
	0.1	1.1	0.3	1.2	1.3	1.4	1.5	
Wild Runs								
Keta River 101-30-030	Males	N		1	4	2		7
		%		14.3	57.1	28.6		
	Females	N			3	7		10
		%			30.0	70.0		
Cripple Creek 101-75-300	Total 1/	N		1	7	9	1	18
		%		5.6	38.9	50.0	5.6	
	Males	N		5	18	15		38
		%		13.2	47.4	39.5		
Genes Lake Creek 101-75-	Females	N		1	26	8		35
		%		2.9	74.3	22.9		
	Total	N		6	44	23		73
		%		8.2	60.3	31.5		
Stikine River 2/ 108-40-015	Males	N	2	5	5	3		15
		%	13.3	33.3	33.3	20.0		
	Females	N		1	8	4		13
		%		7.7	61.5	30.8		
Andrews Creek 108-40-020	Total	N	2	6	14	7		29
		%	6.9	20.7	48.3	24.1		
	Males	N	10	32	8	7	1	58
		%	17.2	55.2	13.8	12.1	1.7	
Keta River 101-30-030	Females	N		4	7	7		18
		%		22.2	38.9	38.9		
	Total	N	10	36	15	14	1	76
		%	13.2	47.4	19.7	18.4	1.3	
Keta River 101-30-030	Males	N	28	3	111	24	4	170
		%	16.5	1.8	65.3	14.1	2.4	
	Females	N			4	8	2	14
		%			28.6	57.1	14.3	
Keta River 101-30-030	Total	N	28	3	111	28	12	184
		%	15.2	1.6	60.3	15.2	6.5	
		%						

-Continued-

Table 23. Sample age composition of chinook salmon from escapements to South-eastern Alaska and transboundary river runs, 1984 (continued).

System (Stream Number)	Brood Year and Age Class							Total	
	1982	1981	1980		1979	1978	1977		
	0.1	1.1	0.3	1.2	1.3	1.4	1.5		
Wild Runs									
Tahltan River 108-80-100	Males	N				2			2
		%				100.0			
	Females	N				11	2		13
%					84.6	15.4			
Total	N				13	4		17	
	%				76.5	23.5			
Little Tahltan River 108-80-120	Males	N	3		19	37	3		62
		%	4.8		30.6	58.7	4.8		
	Females	N			4	119	18	1	142
%				2.8	83.8	12.7	0.7		
Total	N	3		24	164	21	1	213	
	%	1.4		11.2	76.6	9.8	0.5		
Farragut River 110-14-007	Males	N			17	13	3	2	35
		%			48.6	37.1	8.6	5.7	
	Females	N			1	8	5	1	15
%				6.7	53.3	33.3	6.7		
Total	N			18	21	8	3	50	
	%			36.0	42.0	16.0	6.0		
Taku River (Canyon Island) 111-32-032	Males	N	38		23	8	1		70
		%	54.3		32.9	11.4	1.4		
	Females	N			3	23	1		27
%				11.1	85.2	3.7			
Total	N	38		26	31	2		97	
	%	39.2		26.8	32.0	2.1			
Nakina River 3/ 111-32-220	Males	N	44	1,058	2,141	1,094	95		4,432
		%	1.0	23.9	48.3	24.7	2.1		
	Females	N				409	274	15	698
%					58.6	39.3	2.1		
Total	N	44	1,058	2,141	1,503	369	15	5,130	
	%	0.9	20.6	41.7	29.3	7.2	0.3		

-Continued-

Table 23. Sample age composition of chinook salmon from escapements to South-eastern Alaska and transboundary river runs, 1984 (continued).

System (Stream Number)	Brood Year and Age Class									
	1982		1981		1980		1979	1978	1977	Total
	0.1	1.1	0.3	1.2	1.3	1.4	1.5			
Wild Runs										
Tatsamenie River 3/ 111-32-255	Males	N		1	5	4				10
		%		10.0	50.0	40.0				
	Females	N			5	4				9
		%			55.6	44.4				
	Total	N		1	10	8				19
		%		5.3	52.6	42.1				
Nahlin River 111-32-270	Males	N			4	4				8
		%			50.0	50.0				
	Females	N					4			4
		%					100.0			
	Total	N			4	8				12
		%			33.3	66.7				
King Salmon River 111-17-010	Males	N			15	10	12			37
		%			40.5	27.0	32.4			
	Females	N					1	21	2	24
		%					4.2	87.5	8.3	
	Total	N			15	11	33	2		61
		%			24.6	18.0	54.1	3.3		
Tahini River 115-32-066	Males	N			27	47	15	1		90
		%			30.0	52.2	16.7	1.1		
	Females	N					11	13	1	25
		%					44.0	52.0	4.0	
	Total	N			28	60	29	2		119
		%			23.5	50.4	24.4	1.7		
Number Males		44	1,140	3	2,405	1,278	160	4	5,034	
Percent		0.9	22.6	0.1	47.8	25.4	3.2	0.1	100.0	
Number Females					19	638	368	22	1,047	
Percent					1.8	60.9	35.1	2.1	100.0	
Total Number		44	1,140	3	2,426	1,927	531	27	6,098	
Total Percent		0.7	18.7	0.1	39.8	31.6	8.7	0.4	100.1	

-Continued-

Table 23. Sample age composition of chinook salmon from escapements to South-eastern Alaska and transboundary river runs, 1984 (continued).

System (Stream Number)	Brood Year and Age Class								Total				
	1982		1981		1980		1979			1978		1977	
	1.0	0.1	1.1	0.3	1.2	1.3	1.4	1.5					
Hatchery Runs													
Ketchikan Creek 101-47-025	Males	N		80		240		264		108		694	
		%		11.5		34.6		38.0		15.6			
Deer Mountain Hatchery	Females	N				13		260		142		415	
		%				3.1		62.7		34.2			
	Total	N		80		254		527		255		1,116	
		%		7.2		22.8		47.2		22.8			
Crystal Creek 106-44-031	Males	N		15		52		33				100	
		%		15.0		52.0		33.0					
	Females	N				4		36		1		41	
		%				9.8		87.8		2.4			
	Total	N		15		56		69		1		141	
		%		10.6		39.7		48.9		0.7			
Sashin Creek 109-10-006	Males	N				28		28		9		65	
		%				43.1		43.1		13.8			
	Females	N						21		36		57	
		%						36.8		63.2			
	Total 4/	N	615	203		104		478		480		1,880	
		%	32.7	10.8		5.5		25.4		25.5			
Shettisham Hatchery	Males	N		2		1		11				14	
		%		14.3		7.1		78.6					
	Females	N						2				2	
		%						100.0					
	Total	N		2		1		13				16	
		%		12.5		6.3		81.3					
Number Males				97		321		336		117		873	
Percent				11.1		36.8		38.5		13.4		100.0	
Number Females						17		319		179		515	
Percent						3.3		61.9		34.8		100.0	
Total Number			615	300		415		1,087		736		3,153	
Total Percent			19.5	9.5		13.2		34.5		23.3		100.0	

- 1/ Totals include unsexed fish.
- 2/ Stikine River samples are from three lower river ADF&G test fish sites combined.
- 3/ Samples collected by Canadian Dept. of Fisheries and Oceans personnel.
- 4/ Sashin Creek total is from recoveries of coded microwire tagged fish.

Table 24. Size at age (by sex) for chinook salmon from escapements to South-eastern Alaska and transboundary rivers, 1984.

System (Stream Number)	Brood Year and Age Class											
	1982		1981		1980		1979		1978		1977	
	0.1	1.1	0.3	1.2	1.3	1.4	1.5					
Wild Runs												
Keta River 101-30-030	Males	Ave.			610.0	860.0	942.5					
		S.E.			0.00	35.00	12.50					
		N			1	3	2					
	Females	Ave.				841.7	881.7					
		S.E.				17.64	26.67					
		N				3	6					
Total	Ave.			610.0	850.8	896.9						
	S.E.			0.00	18.00	22.04						
	N			1	6	8						
Cripple Creek 101-75-300	Males	Ave.			673.3	850.4	950.0					
		S.E.			6.01	13.59	23.36					
		N			3	13	12					
	Females	Ave.			575.0	808.2	879.4					
		S.E.			0.00	12.82	19.60					
		N			1	25	8					
Total	Ave.			648.8	822.6	921.6						
	S.E.			24.95	10.07	17.59						
	N			4	38	20						
Genes Lake Creek 101-75-	Males	Ave.	590.0		598.0	710.3	855.0					
		S.E.	235.00		37.03	83.47	55.00					
		N	2		5	4	2					
	Females	Ave.				723.8	891.7					
		S.E.				39.01	17.64					
		N				8	3					
Total	Ave.	590.0		598.0	719.3	877.0						
	S.E.	235.00		37.03	35.82	21.83						
	N	2		5	12	5						
Stikine River 108-40-015	Males	Ave.	419.0		503.6	732.5	895.0	705.0				
		S.E.	19.59		7.09	36.58	24.86	0.00				
		N	9		32	8	7	1				
	Females	Ave.			508.8	796.1	843.4					
		S.E.			32.94	33.47	13.40					
		N			4	7	7					
Total	Ave.	419.7		504.1	762.2	869.2	705.0					
	S.E.	19.59		7.07	25.55	15.34	0.00					
	N	9		36	15	14	1					

-Continued-

Table 24. Size at age (by sex) for chinook salmon from escapements to South-eastern Alaska and transboundary rivers, 1984 (continued).

System (Stream Number)	Brood Year and Age Class						
	1982	1981	1980	1979	1978	1977	
	0.1	1.1	0.3	1.2	1.3	1.4	1.5
Wild Runs							
Andrews Creek 108-40-020	Males	Ave.	346.6	665.0	519.2	616.5	821.3
		S.E.	5.89	44.44	5.75	14.12	46.65
		N	28	3	111	24	4
	Females	Ave.			711.3	866.9	802.5
		S.E.			22.21	19.84	2.50
		N			4	8	2
	Total	Ave.	346.6	665.0	519.2	630.0	851.7
		S.E.	5.89	44.44	5.75	13.94	20.17
		N	28	3	111	28	12
Tahltan River 108-80-100	Males	Ave.			710.0		
		S.E.			5.00		
		N			2		
	Females	Ave.			645.5	807.5	
		S.E.			96.37	7.50	
		N			10	2	
	Total	Ave.			656.3	843.8	
		S.E.			79.90	38.91	
		N			12	4	
Little Tahltan River 108-80-120	Males	Ave.	383.0		571.3	824.0	800.0
		S.E.	28.70		32.22	12.65	0.00
		N	5		8	34	1
	Females	Ave.		662.1	782.0	856.1	
		S.E.		52.43	9.43	16.89	
		N		7	50	9	
	Total	Ave.	383.0		613.7	799.0	850.5
		S.E.	28.70		31.20	7.84	16.01
		N	5		15	84	10
Farragut River 110-14-007	Males	Ave.		567.6	785.0	1035.0	925.0
		S.E.		14.98	22.03	43.30	15.00
		N		17	12	3	2
	Females	Ave.		710.0	815.7	894.0	930
		S.E.		0.00	14.12	28.39	0.00
		N		1	7	5	1
	Total	Ave.		575.6	796.6	946.9	926.7
		S.E.		16.19	14.97	33.98	8.82
		N		18	19	8	3
King Salmon River 111-17-101	Males	Ave.		629.6	766.4	939.1	
		S.E.		7.71	31.83	12.66	
		N		15	10	12	
	Females	Ave.		793.0	793.0	869.1	890.0
		S.E.		0.00	0.00	8.78	20.00
		N		1	1	21	2
	Total	Ave.		629.6	768.8	894.5	890.0
		S.E.		7.71	28.88	9.28	20.00
		N		15	11	33	2

-Continued-

Table 24. Size at age (by sex) for chinook salmon from escapements to South-eastern Alaska and transboundary rivers, 1984 (continued).

System (Stream Number)	Brood Year and Age Class								
	1982		1981		1980		1979	1978	1977
	0.1	1.1	0.3	1.2	1.3	1.4	1.5		
Wild Runs									
Nahlin River	Males	Ave.			627.3	779.3			
		S.E.			44.10	34.33			
		N			4	4			
	Females	Ave.				682.5			
		S.E.				14.19			
		N				4			
	Total	Ave.			627.3	730.9			
		S.E.			44.10	25.10			
		N			4	8			
Taku River (Canyon Is.) 111-32-032	Males	Ave.	370.6		499.9	676.3	900.0		
		S.E.	8.61		14.12	55.90	0.00		
		N	37		22	8	1		
	Females	Ave.			626.7	728.1	920.0		
		S.E.			63.33	15.23	0.00		
		N			3	23	1		
	Total	Ave.	370.6		515.1	714.7	910.0		
		S.E.	8.61		16.26	18.21	10.00		
		N	37		25	31	2		
Tatsamenie River 111-32-255	Males	Ave.	340.0		726.0	860.0			
		S.E.	0.00		26.90	15.28			
		N	1		5	3			
	Females	Ave.			643.0	743.3			
		S.E.			28.04	24.04			
		N			5	3			
	Total	Ave.	340.0		684.5	801.7			
		S.E.	0.00		22.95	29.03			
		N	1		10	6			
Nakina River 111-32-220	Males	Ave.	337.8		533.5	706.3	869.3	1000.0	
		S.E.	2.63		3.55	3.25	53.91	0.00	
		N	162		334	281	22	1	
	Females	Ave.				758.9	836.8	862.5	
		S.E.				4.81	6.26	29.76	
		N				112	74	4	
	Total	Ave.							
		S.E.							
		N							
Tahini River 115-32-066	Males	Ave.			662.0	747.8	877.0	740.0	
		S.E.			13.52	12.63	16.39	0.00	
		N			27	46	15	1	
	Females	Ave.				815.9	870.8	880.0	
		S.E.				16.35	12.36	0.00	
		N				11	13	1	
	Total	Ave.			660.0	757.3	876.2	810.0	
		S.E.			13.19	11.14	10.18	70.00	
		N			28	59	29	2	

-Continued-

Table 24. Size at age (by sex) for chinook salmon from escapements to South-eastern Alaska and transboundary rivers, 1984 (continued).

System (Stream Number)		Brood Year and Age Class						
		1982	1981	1980		1979	1978	1977
		0.1	1.1	0.3	1.2	1.3	1.4	1.5
Hatchery Runs								
Ketchikan Creek 101-47-025 Deer Mountain Hatchery	Males	Ave.	419.0		657.0	816.4	954.8	
		S.E.	36.00		60.10	71.30	61.70	
		N	75		228	247	97	
	Females	Ave.	418.5		713.3	822.4	913.5	
		S.E.	2.50		32.60	51.90	123.10	
		N	2		10	221	132	
Total	Ave.		419.0		659.4	819.1	931.2	
		S.E.	2.50		60.10	63.00	103.60	
		N	77		239	470	230	
Crystal River 106-44-031 Crystal Lake Hatchery	Males	Ave.	488.3		602.6	729.1		
		S.E.	22.67		10.31	13.92		
		N	15		52	33		
	Females	Ave.			715.0	780.6	845.0	
		S.E.			20.41	6.03	0.00	
		N			4	36	1	
Total	Ave.		488.3		610.6	755.9	845	
		S.E.	22.67		10.41	7.94	0.00	
		N	15		56	69	1	
Sashin Creek 109-10-006 Little Port Walter Hatchery	Males	Ave.			617.9	771.2	922.7	
		S.E.			8.86	11.25	12.81	
		N			28	28	9	
	Females	Ave.				849.8	889.1	
		S.E.				7.05	6.70	
		N				21	36	
Total	Ave.				617.9	804.9	895.8	
		S.E.			8.86	9.01	6.22	
		N			28	49	45	
Snettisham Hatchery	Males	Ave.	381.5		645.0	737.3		
		S.E.	23.50		0.00	18.51		
		N	2		1	11		
	Females	Ave.				819.0		
		S.E.				25.00		
		N				2		
Total	Ave.		381.5		645.0	749.8		
		S.E.	23.50		0.00	17.95		
		N	2		1	13		

Table 25. Southeastern Alaska commercial troll, seine, and gillnet harvest of chinook salmon aged 0., 1984.

Fishery		Area				Total
		Northern Outside	Southern Outside	Northern Inside	Southern Inside	
Winter Troll 1/	Number	3,240	1,288	2,806	1,764	9,098
	Percent	71.4	69.6	47.0	48.5	56.9
Summer Troll	Number	86,561	16,916	16,436	4,385	124,298
	Percent	69.1	70.5	39.9	37.2	61.4
Seine	Number	-	13,759	839	1,229	15,827
	Percent	-	82.2	46.4	57.0	76.4
Gillnet	Number	-	-	806	603	1,409
	Percent	-	-	33.2	7.7	13.7

1/ Winter troll includes only the catches made from 26 February to 14 April 1984.

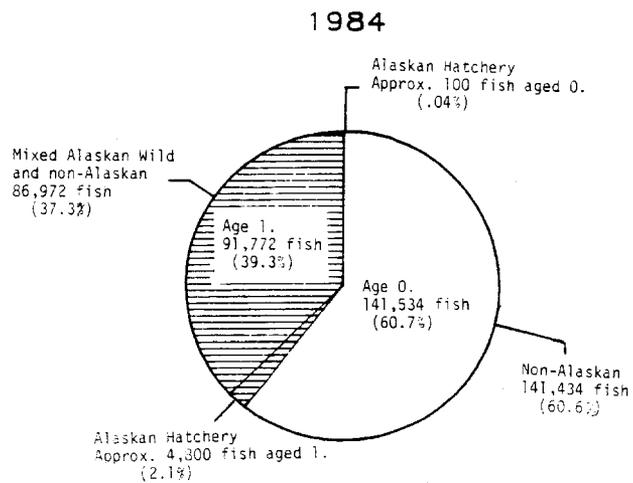
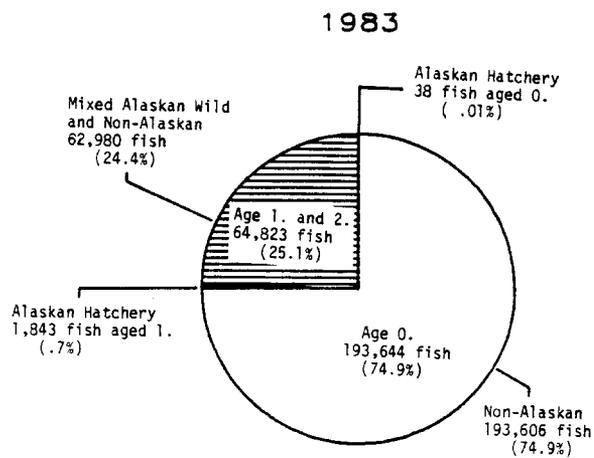
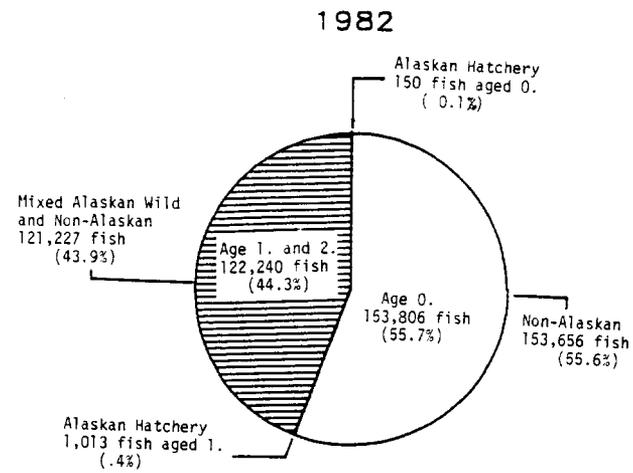


Figure 3. Age composition and coded microwire tag based estimate of the minimum number of non-Alaskan chinook salmon harvested in Southeastern Alaska commercial troll, seine, and gillnet fisheries in 1982, 1983, and 1984.

for approximately half of the age 1. fish. If we assume that the stock composition of age 1. fish is similar between years 1982 and 1984 then about 43,500 of the approximately 87,000 age 1. fish (not of Alaska hatchery origin) caught in the 1984 summer fishery were of non-Alaskan origin. Therefore, the total estimated contribution of non-Alaskan fish to the 1984 summer troll, seine, and drift gillnet harvest was approximately 185,000 fish, or 79%.

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APPENDIX A - Abundance, Age, Sex, and Size Data

Appendix Table A1. Sample size needed to describe the age composition of a seven-age class population of increasing size with an accuracy of +5% and a precision of 0.10.

Population Size	Number Needed in Sample 1/
500	273
1,000	376
1,500	429
2,000	462
2,500	485
3,000	501
3,500	513
4,000	523
4,500	530
5,000	537
6,000	546
7,000	554
8,000	559
9,000	563
10,000	567
15,000	578
20,000	583
25,000	587
30,000	589
35,000	591
40,000	592
45,000	593
50,000	594
60,000	595
70,000	596
80,000	597
90,000	597
100,000	597
infinite	601

1/ Based on Cochran (1977) using the following formula:

$$n = \frac{no}{1 + \frac{(no - 1)}{N}}$$

Where: n = adjusted sample size
no = 601 (sample size needed for an infinitely large population)
N = population size

Appendix Table A2. Hand and power troll harvest of chinook salmon in pounds by district and statistical week, 1 October 1983 to 4 August 1984.

Year	Stat. Week	Inclusive Dates	Southern Inside Districts						Southern Outside			Northern Inside Districts					Northern Outside Districts						Total			
			101	102	105	106	107	108	103	104	152	109	110	111	112	114	115	113	116	154	157	181		183	189	
1983	41	10/2-10/8	3,450	1,077		1,103	2,350	1,399	761	-	7,688	3,594	159	118	11,180	554	8,253	-	-	-	-	-	-	-	41,686	
	42	10/9-10/15	6,213	689		853	774	648	1,690	-	14,309	2,800	100	2,750		6,128	-	-	-	-	-	-	-	36,954		
	43	10/16-10/22	2,345	273		761	435	622	697	475	5,561	7,165	691	449	2,539	6,157	-	-	-	-	-	-	-	28,170		
	44	10/23-10/29	2,171	694			500	21	442	-	1,136	2,382			1,195	1,446	-	-	-	-	-	-	-	9,987		
	45	10/30-11/5	869	1,132		984	267	1,527	807	-	4,774	2,224			819	10,539	-	-	-	-	-	-	-	23,942		
	46	11/6-11/12	971	1,786		173	200	1,007	917	344	3,192	478	75	59	1,771	2,786	-	-	-	-	-	-	-	13,759		
	47	11/13-11/19	448	1,524		43	139	744	980	-	253	534		64	2,141	1,748	-	-	-	-	-	-	-	8,618		
	48	11/20-11/26	805	1,215		1,138	155	386	899	-	695	956	151	651	357	1,165	-	-	-	-	-	-	-	8,573		
	49	11/27-12/3	422	1,754		332		335	1,473	353	466		145		379	1,474	-	-	-	-	-	-	-	7,133		
	50	12/4-12/10		68				191	1,448		485		48		435	1,433	-	-	-	-	-	-	-	5,060		
	51	12/11-12/17	267	41			308	229	352	106	78			318	149	1,027	-	-	-	-	-	-	-	2,875		
	52	12/18-12/24	846	175		266	231	47	471						148	326	-	-	-	-	-	-	-	2,510		
	53	12/25-12/31	279					404	248	163	14				253	148	-	-	-	-	-	-	-	1,509		
1984	1	1/1-1/7		73			97	218	792							56	-	-	-	-	-	-	-	1,236		
	2	1/8-1/14	32			282	154	262	514		209				118	98	-	-	-	-	-	-	-	1,669		
	3	1/15-1/21	242	211	366		350	71	529	140	36		45		406	698	-	-	-	-	-	-	-	3,094		
	4	1/22-1/28	150		470	761	145	148	758	14	130				240	1,331	86	-	-	-	-	-	-	4,233		
	5	1/29-2/4	129	11	418	88	214	224	399	58					402	410	-	-	-	-	-	-	-	2,353		
	6	2/5-2/11	93	143	791	148	170	95	782	606	332					5,716	-	-	-	-	-	95	-	9,429		
	7	2/12-2/18	46		286	279	362		759	319		26	95		1,170	667	-	-	-	-	-	194	-	4,203		
	8	2/19-2/25	207	256		152	735	10	2,009		1,326	8		189	1,089	4,131	-	-	-	-	-	254	-	10,366		
	9	2/26-3/3	1,066	1,004	70	825	382	443	1,879	660	302	273	419		1,345	2,698	-	-	-	-	-	79	-	11,445		
	10	3/4-3/10	682	879	320	918	745	90	2,785	952	1,026	248	90	232	3,019	5,074	-	-	-	-	-	208	-	17,268		
	11	3/11-3/17	433	1,135	52	578	755		2,369	508	1,397	92			5,420	8,202	910	-	-	-	-	23	-	21,874		
	12	3/18-3/24	1,466	1,012	1,648	1,577	260	296	2,318	237	2,245	695		277	4,824	6,015	44	-	-	-	-	189	-	23,103		
	13	3/24-3/31	854	1,381	247	1,051	860	435	1,314	194	3,359	341			7,906	5,269	-	-	-	-	-	58	-	23,269		
	14	4/1-4/7	1,915	699	1,822	2,797	312	1,248	3,211	1,840	3,948	431		142	15,363	13,280	486	-	-	-	-	93	-	47,587		
	15	4/8-4/14	2,016	1,545	3,427	4,622	154	2,287	3,498	2,492	2,118	1,132		132	23,719	19,214	785	-	-	-	-	250	-	67,391		
	16	4/15-4/21	16		3,130	801		354			5,699	2,301		96	2,275	7,963	-	-	-	-	-	163	-	22,798		
Winter	District Total		29,385	18,777	13,047	20,532	11,054	13,741	35,101	9,461	60,778	25,680	1,918	2,827	91,870	554	123,452	2,311	0	0	0	1,606	0	462,094		
	Area Total				106,536				44,562					183,627			127,369									
									Fishery Closed except District 183 4/15-6/4/84.																	
	23	6/3-6/9	1,967	5,580	1,336	342	2,964		9,003	74,932	16,567	22,596		8,254	25,320	143,324	9,312	839		1,302	6,257	19,367		349,262		
	24	6/10-6/16	1,447	20,193	2,916	8,328	8,951		12,731	65,083	29,218	41,064		9,865	51,802	271,139	20,440	4,856		46,390	10,924	455	31,139	636,941		
	25	6/17-6/23	5,924	9,716	2,946	3,644	7,563		16,509	47,756	88	28,873	34,158		8,902	35,651	2,100		189,767	6,349	6,228	16,937	1,733	2,470	9,304	436,618
	26	6/24-6/30	6,381	8,416	3,409	4,781	4,678		10,771	31,359	171	23,083	21,686	1,705	15,793	37,115	42		338,421	19,745	14,701	29,006	9,895	4,425	8,172	593,725
	27	7/1-7/7							Fishery Closed																	
	28	7/8-7/14	1,851	863	239	3,377	475		11,361	15,614	1,526	7,865	916		1,899	7,518	670		81,834	7,976	177	386	234	1,448	146,229	
	29	7/15-7/21	6,864	9,529	5,103	622	221		11,986	33,654	438	24,129	6,281	599	6,295	27,594	3,608		261,024	14,462	9,627	6,780		2,868	431,684	
	30	7/22-7/28	2,983	9,117	2,435	240			9,267	29,882		17,139	2,932	910	4,102	29,367			267,777	18,469	10,302	11,228		807	1,452	418,409
	31	7/29-8/4	1,958	2,399	1,625	22		165	1,060	6,213		7,466	4,749	52	491	17,709			244,912	29,822	16,011	9,756	4,347	309	349,066	
Summer	District Total		29,375	65,813	20,009	21,356	24,852	165	82,688	304,493	2,223	154,340	134,382	3,266	55,601	232,076	6,420	1,798,198	126,575	62,741	120,483	28,435	19,039	69,434	3,361,964	
	Area Total				161,570				389,404					586,085			2,224,905									
Season Total			58,760	84,590	33,056	41,888	35,906	13,906	117,789	313,954	2,223	215,118	160,062	5,184	58,428	323,946	6,974	1,921,650	128,886	62,741	120,483	28,435	20,645	69,434	3,824,058	

Note: Dash (-) indicates district closed to fishing for that particular week.

Appendix Table A3. Power troll harvest of chinook salmon in pounds by district and statistical week, 1 October 1983 to 4 August 1984.

Year	Stat. Week	Inclusive Dates	Southern Inside Districts						Southern Outside			Northern Inside Districts						Northern Outside Districts						Total		
			101	102	105	106	107	108	103	104	152	109	110	111	112	114	115	113	116	154	157	181	183		189	
1983	41	10/2-10/8	3,049	1,077		918	2,046	1,332				7,184	2,416	159		5,803	554	6,508	-	-	-	-	-	-	31,046	
	42	10/9-10/15	5,941	689		626	715	622	1,158			13,972	2,509		100	631		5,876	-	-	-	-	-	-	32,839	
	43	10/16-10/22	2,312	273		463	368	487	558	475		5,536	6,837	691	449	1,344		5,937	-	-	-	-	-	-	25,730	
	44	10/23-10/29	2,013	694			500	21	442			1,052	1,934					1,326	-	-	-	-	-	-	7,982	
	45	10/30-11/5	851	1,132		848	267	1,404	807			4,129	1,558			68		9,837	-	-	-	-	-	-	20,901	
	46	11/6-11/12	971	1,407			200	969	556			2,418	441	75	59	369		2,581	-	-	-	-	-	-	10,046	
	47	11/13-11/19	421	1,314			43	588	603			204	534		64	1,009		1,598	-	-	-	-	-	-	6,378	
	48	11/20-11/26	714	682		1,033	106	244	702			663	909	151	651	12		1,048	-	-	-	-	-	-	6,915	
	49	11/27-12/3	252	1,600		314		197	1,188	353		466		145		151		1,397	-	-	-	-	-	-	6,063	
	50	12/4-12/10	909	68				151	1,057			485		48		281		1,392	-	-	-	-	-	-	4,391	
	51	12/11-12/17	239	32			308	44	304	106		78			318			1,000	-	-	-	-	-	-	2,429	
	52	12/18-12/24	846	175		266	86	47	419									326	-	-	-	-	-	-	2,165	
	53	12/25-12/31					86	161	163									111	-	-	-	-	-	-	521	
1984	1	1/1-1/7		73			97	106	740								56	-	-	-	-	-	-	-	1,072	
	2	1/8-1/14	32			282	154	27	340			209					98	-	-	-	-	-	-	-	1,142	
	3	1/15-1/21	242	60	366		350	47	485	132		36		45		107		698	-	-	-	-	-	-	2,568	
	4	1/22-1/28	115		470	298	145	48	741	14		130				25		1,331	86	-	-	-	-	-	3,403	
	5	1/29-2/4	129		418	88	206	45	291	58						33		379	-	-	-	-	-	-	1,647	
	6	2/5-2/11	93	26	743	130	130	29	675	379		134						5,408	-	-	-	-	-	-	7,747	
	7	2/12-2/18	46		286	110	186		524	319				95		513		584	-	-	-	-	54	-	2,717	
	8	2/19-2/25	36	185			557	10	1,694			989				88		3,948	-	-	-	-	-	-	7,507	
	9	2/26-3/3	859	930	70	477	329	404	1,879	660		184	238	419		342		2,452	-	-	-	-	57	-	9,300	
	10	3/4-3/10	550	819	320	525	303	14	2,401	952		797	160	90	63	1,622		4,916	-	-	-	-	-	-	13,532	
	11	3/11-3/17	392	746	52	316	544		2,117	444		1,294				4,106		7,766	910	-	-	-	-	-	18,687	
	12	3/18-3/24	1,399	835	1,566	1,371	59	171	2,027	237		1,849	335			3,075		5,525	44	-	-	-	-	-	18,493	
	13	3/24-3/31	718	1,038		751	763	295	1,260	131		3,118	248			5,788		5,061	-	-	-	-	-	-	19,171	
	14	4/1-4/7	1,662	223	1,677	2,676	219	743	2,802	1,840		3,455	364			13,370		12,154	486	-	-	-	19	-	41,690	
	15	4/8-4/14	1,895	1,259	3,427	3,945	130	1,189	2,671	2,492		952	829			19,166		18,621	785	-	-	-	-	-	57,361	
	16	4/15-4/21	16		3,020			354				5,656	2,301			2,275		5,640	-	-	-	-	32	-	19,294	
Winter	District Total		26,702	15,337	12,415	15,437	8,811	9,674	28,602	8,755	0	54,990	21,613	1,918	1,704	60,178	554	113,574	2,311	0	0	0	162	0	382,737	
	Area Total				88,376				37,357					140,957				116,047								
									Fishery Closed except District 183 4/15-6/4/84.																	
	23	6/3-6/9	1,440	2,042	941	151	785	4,280	61,331		13,045	14,232			1,189	16,242	120,300	7,246	839		1,302	699	19,367	265,431		
	24	6/10-6/16	1,321	17,339	2,312	7,586	6,932	7,136	58,357		20,802	29,379			5,917	42,022	256,744	18,441	4,856	46,390	10,924		31,139	567,597		
	25	6/17-6/23	3,237	7,542	2,603	1,367	4,572	10,186	43,181	88	22,273	22,928			1,390	25,589	2,100	174,334	3,540	6,228	16,937	1,733	1,415	9,304	360,547	
	26	6/24-6/30	5,515	6,912	3,154	3,722	3,880	5,723	29,452	171	19,509	18,093	570		12,947	28,974	327,161	17,195	14,701	29,006	9,895	2,819	8,172	547,571		
	27	7/1-7/7						Fishery Closed																		
	28	7/8-7/14	36	96	158	3,297	257	6,173	11,711	1,509	4,530	125			211	4,027	670	69,034	5,538	177	98	234	837	108,718		
	29	7/15-7/21	5,209	8,366	4,676	103		6,413	30,504	438	19,988	2,961	417		2,818	19,703	2,600	244,941	9,078	9,627	6,780		1,953	376,575		
	30	7/22-7/28	1,920	7,510	1,664			3,997	22,500		12,198	1,312	407		1,331	21,692	244,956	13,391	10,235	11,037		237	1,452	355,839		
	31	7/29-8/4	1,717	2,026	1,060			708	4,476		5,982	4,312			208	13,946	236,302	27,843	16,011	9,756	4,347	261		328,955		
Summer	District Total		20,395	51,833	16,568	16,123	16,529	0	44,616	261,512	2,206	118,327	93,342	1,394	26,011	172,195	5,370	1,673,772	102,272	62,674	120,004	28,435	8,221	69,434	2,911,233	
	Area Total				121,448				308,334					416,639				2,064,812								
Season Total			47,097	67,170	28,983	31,560	25,340	9,674	73,218	270,267	2,206	173,317	114,955	3,312	27,715	232,373	5,924	1,787,346	104,583	62,674	120,004	28,435	8,383	69,434	3,293,970	

Note: Dash (-) indicates district closed to fishing for that particular week.

Appendix Table A5. Purse seine harvest of chinook salmon in pounds by district and statistical week, 1984.

Stat Week	Date	Districts												Total
		101	102	103	104	105	106	107	109	110	112	113	114	
27	7/1-7/7				2,960						786		287	4,033
28	7/8-7/14	1,192	54		8,032						1,827		726	11,831
29	7/15-7/21	3,096	1,105		9,669					336	1,111	14	281	15,612
30	7/22-7/28	2,714	1,421		46,948				178	458	1,383			53,102
31	7/29-8/4	2,541	223		85,081				1,993	1,777	670	133		92,418
32	8/5-8/11	4,145	2,004		88,082				1,064	123	677	57		96,152
33	8/12-8/18	4,931	1,368	33	69,733	51		92	518		149	676		77,551
34	8/19-8/25	2,513	1,679	1,482	30,853	389	42	38	332		66	658	15	38,067
35	8/26-9/1	699	42	105	565	21			78			17	110	1,637
36	9/2-9/8	11	67			11						12	63	164
37	9/9-9/15	23	3										24	50
District	Totals	21,865	7,966	1,620	341,923	472	42	130	4,163	2,694	6,669	1,567	1,506	390,617

Appendix Table A6. Gillnet harvest of chinook salmon in pounds by district and statistical week, 1984.

Stat Week	Date	District					Total
		101	106	108	111	115	
25	6/17-6/23	3,480	323		2,853	2,345	9,001
26	6/24-6/30	3,761	322		3,476	3,895	11,454
27	7/1-7/7	3,448	1,016		1,827	5,573	11,864
28	7/8-7/14	1,708	375		829	7,271	10,183
29	7/15-7/21	1,632	1,484		449	5,991	9,556
30	7/22-7/28	1,005	1,053		1,669	4,810	8,537
31	7/29-8/4	413	733	74	1,146	3,069	5,435
32	8/5-8/11	149	433	6	868	2,199	3,655
33	8/12-8/18	127	383		448	1,871	2,829
34	8/19-8/25	201	340		672	571	1,784
35	8/26-9/1	109	78		598	491	1,276
36	9/2-9/8	76	67		164	582	889
37	9/9-9/15	75	252		244	1,615	2,186
38	9/16-9/22	-	-		11	711	722
39	9/23-9/29					999	999
40	9/30-10/6					340	340
41	10/7-10/13					70	70
Total		16,184	6,859	80	15,254	42,403	80,780

Note: Dash (-) indicates fishery open with no catch.

Appendix Table A7. Average weight (lb) of chinook salmon harvested by hand and power troll by district and statistical week, 1 October 1983 to 4 August 1984.

Year	Stat. Week	Inclusive Dates	Southern Inside Districts					Southern Outside			Northern Inside Districts					Northern Outside Districts					Total					
			101	102	105	106	107	108	103	104	152	109	110	111	112	114	115	113	116	154		157	161	163	169	
1983	41	10/2-10/8	10.8	11.7		12.3	11.2	11.6	12.1		-	15.1	13.8	12.2	13.1	13.3	13.5	13.6	-	-	-	-	-	-	13.2	
	42	10/9-10/15	11.5	11.1		13.1	11.7	12.7	11.8		-	15.5	15.2		16.7	14.9		14.2	-	-	-	-	-	-	13.9	
	43	10/16-10/22	10.6	9.4		10.9	11.4	12.7	12.9	11.9	-	15.0	14.5	14.7	13.2	15.4		14.3	-	-	-	-	-	-	13.8	
	44	10/23-10/29	10.8	11.2			10.9	10.5			-	12.6	13.8			15.5		16.8	-	-	-	-	-	-	13.6	
	45	10/30-11/5	11.9	11.7		12.6	12.7	11.7	11.5		-	14.4	12.4			14.1		16.3	-	-	-	-	-	-	14.2	
	46	11/6-11/12	12.0	10.4		21.6	11.8	12.0	12.7	11.5	-	14.8	14.1	15.0	11.8	12.6		16.4	-	-	-	-	-	-	13.3	
	47	11/13-11/19	11.8	11.7		14.3	12.6	11.3	12.1		-	14.9	14.1		10.7	12.0		14.4	-	-	-	-	-	-	12.5	
	48	11/20-11/26	11.3	10.5		11.9	17.2	12.5	12.1		-	17.8	14.9	15.1	13.3	14.3		12.5	-	-	-	-	-	-	12.7	
	49	11/27-12/3	12.4	11.0		11.4		12.0	13.3	11.0	-	12.9		14.5		14.6		14.5	-	-	-	-	-	-	12.6	
	50	12/4-12/10	12.7	9.7			10.6	12.4			-	13.9		12.0		16.1		12.6	-	-	-	-	-	-	12.7	
	51	12/11-12/17	16.7	10.3			14.0	10.9	11.7	11.8	-	19.5			13.8	14.9		14.3	-	-	-	-	-	-	13.6	
	52	12/18-12/24	16.0	11.7		12.7	11.0	15.7	12.1		-					21.1			-	-	-	-	-	-	15.8	
	53	12/25-12/31	10.3					12.2	12.4	13.6	-	14.0				19.5		14.8	-	-	-	-	-	-	13.0	
1984	1	1/1-1/7		12.2			9.7	12.1	13.4		-						14.0	-	-	-	-	-	-	-	12.7	
	2	1/8-1/14	10.7			14.1	9.6	11.9	11.7		-	14.9				16.9		19.6	-	-	-	-	-	-	12.7	
	3	1/15-1/21	12.7	11.7	11.8		11.7	10.1	11.0	17.5	-	18.0		15.0		15.6		16.6	-	-	-	-	-	-	13.2	
	4	1/22-1/28	12.5		10.7	10.9	13.2	10.6	11.8	14.0	-	13.0			16.0		14.5	17.2	-	-	-	-	-	-	12.5	
	5	1/29-2/4	9.9	11.0	13.9	9.8	11.9	9.7	10.0	11.6	-				16.1		16.4	-	-	-	-	-	-	-	12.4	
	6	2/5-2/11	11.6	11.9	13.2	14.8	13.1	10.6	11.7	14.4	-	17.5			15.8		17.6	-	-	-	-	10.6	-	15.6		
	7	2/12-2/18	9.2		15.1	14.7	11.7		11.2	13.9	-		13.0	19.0		18.0		15.2	-	-	-	-	8.1	-	13.8	
	8	2/19-2/25	11.5	10.7		21.7	13.1		11.4		-	14.9	8.0		27.0	15.6		16.3	-	-	-	-	12.7	-	14.4	
	9	2/26-2/3	12.8	13.4	10.0	13.8	13.2	15.8		16.1	-	13.1	14.4	21.0		18.2		14.0	-	-	-	-	7.9	-	17.3	
	10	3/4-3/10	13.6	16.0	13.3	15.3	12.6	15.0	12.0	13.8	-	16.0	19.1	11.3	21.1	14.7		16.5	-	-	-	-	12.2	-	14.6	
	11	3/11-3/17	14.0	12.1	10.4	14.8	12.4		13.9	13.4	-	16.2	15.3		14.4		17.0	13.4	-	-	-	-	11.5	-	15.0	
	12	3/18-3/24	13.3	14.3	12.5	16.3	10.8	11.4	13.2	14.8	-	14.7	17.0		23.1	15.9		15.8	14.7	-	-	-	15.8	-	14.8	
	13	3/24-3/31	12.9	13.2	13.0	13.0	12.8	13.6	13.7	13.9	-	15.8	13.6		15.7		15.1	-	-	-	-	-	14.5	-	14.8	
	14	4/1-4/7	10.8	12.5	13.1	13.6	12.0	13.3	12.6	12.7	-	14.2	12.0		23.7	15.7		14.7	13.1	-	-	-	10.3	-	14.2	
	15	4/8-4/14	14.2	13.6		14.1	15.4	14.3	13.1	13.7	-	15.1	14.7		22.0	15.5		16.6	11.4	-	-	-	13.9	-	16.1	
	16	4/15-4/21	16.0		12.7	13.4		13.6			-	12.8	13.0		24.0	10.4		15.8	-	-	-	-	9.6	-	13.4	
Winter	District Total		11.8	11.9	17.3	13.5	12.0	12.5	13.3	13.4		14.8	14.1	15.3	15.9	14.9	13.5	15.5	12.7				11.3		14.2	
	Area Total					12.7			13.3					14.7				15.4								
	23	6/3-6/9	14.0	13.5	17.8	19.0	15.0		13.9	15.0		14.4	13.7		15.4	13.4		17.1	14.3	15.3		12.8	12.6	16.1	15.4	
	24	6/10-6/16	12.8	12.9	15.5	14.7	15.1		15.3	15.9		14.4	13.5		14.4	13.5		17.3	12.9	17.8		15.4	11.0	16.9	15.1	
	25	6/17-6/23	14.2	14.2	14.9	15.6	14.9		16.4	15.8	17.6	14.6	13.7		15.6	13.5	17.9	17.9	9.8	19.3		17.0	12.1	13.1	13.3	
	26	6/24-6/30	13.4	13.6	14.8	12.7	14.0		16.1	17.3	19.0	14.4	14.7	13.3	13.2	13.1	14.0	17.9	11.7	18.9		16.4	14.5	14.9	15.4	
	27	7/1-7/7																								
	28	7/8-7/14	15.7	12.0	13.3	11.1	14.4		15.9	17.7	19.8	15.6	12.9		13.9	17.1	11.2	19.2	12.4	17.7		17.5	15.6	14.1	17.3	
	29	7/15-7/21	13.4	11.9	16.3	12.7	13.0		15.3	18.7	17.5	16.1	11.4	13.0	12.6	15.7	10.7	19.8	13.9	18.4		21.5		14.3	17.8	
	30	7/22-7/28	13.6	12.1	15.4	12.0		15.8	18.4		16.2	11.7	11.8	12.9	16.5		19.3	20.9	20.5		22.9		13.2	15.6	18.4	
	31	7/29-8/4	14.2	12.6	15.3	11.0	11.0		12.5	19.3		15.4	12.8	13.0	12.0	17.1		19.4	14.6	19.6		17.8	17.5	13.4	18.3	
Summer	District Total		13.8	12.9	15.6	13.6	14.8	11.0	15.5	16.4	19.2	15.0	13.6	12.8	14.0	14.3	12.4	18.4	13.8	19.1		16.9	13.0	13.3	15.1	16.6
	Area Total					13.7			16.2					14.2				17.7								
Season Total			12.7	12.7	16.2	12.4	13.8	12.4	14.8	16.3	19.2	14.9	13.6	13.6	14.0	14.4	12.5	18.2	13.8	19.1		16.9	13.0	13.1	15.1	16.3

Note: Dash (-) indicates district closed to fishing for that particular week.

Appendix Table A8. Average weight (lb) of chinook salmon harvested by power troll by district and statistical week, 1 October 1983 to 4 August 1984.

Year	Stat. Week	Inclusive Dates	Southern Inside Districts						Southern Outside			Northern Inside Districts					Northern Outside Districts						Total			
			101	102	105	106	107	108	103	104	152	109	110	111	112	114	115	113	116	154	157	181		183	189	
1983	41	10/2-10/8	10.7	11.7		12.2	11.1	11.5			-	15.0	14.1	12.2		13.1	13.5	13.5	-	-	-	-	-	-	13.0	
	42	10/9-10/15	11.4	11.1		12.8	11.7	12.7	11.7		-	15.5	15.3		16.7	15.0	14.2	-	-	-	-	-	-	13.9		
	43	10/16-10/22	10.6	9.4		10.8	11.2	12.5	12.7	11.9	-	15.0	14.4	14.7	13.2	14.3	14.4	-	-	-	-	-	-	13.7		
	44	10/23-10/29	10.8	11.2			10.9	10.5	13.0		-	12.7	13.5				16.8	-	-	-	-	-	-	12.6		
	45	10/30-11/5	12.0	11.7		12.7	12.7	11.7	11.5		-	14.2	13.3			13.6	16.3	-	-	-	-	-	-	14.3		
	46	11/6-11/12	12.0	10.3			11.8	11.8	12.1		-	13.9	13.8	15.0	11.8	11.2	16.3	-	-	-	-	-	-	13.0		
	47	11/13-11/19	11.7	11.9			14.3	11.3	12.3		-	14.6	14.1		10.7	10.7	14.4	-	-	-	-	-	-	12.4		
	48	11/20-11/26	11.5	10.0		11.7	11.8	11.6	12.1		-	17.9	14.9	15.1	13.3	12.0	12.6	-	-	-	-	-	-	12.6		
	49	11/27-12/3	11.5	11.0		1.0		10.9	13.3	11.0	-	12.9		14.5		12.6	14.4	-	-	-	-	-	-	7.8		
	50	12/4-12/10	12.8	9.7				10.8	12.4		-	13.9		12.0		18.7	12.4	-	-	-	-	-	-	12.8		
	51	12/11-12/17	17.1	10.7			14.0	14.7	11.7	11.8	-	19.5				13.8	14.3	-	-	-	-	-	-	14.0		
	52	12/18-12/24	16.0	11.7		12.7	12.3	15.7	12.3		-						14.8	-	-	-	-	-	-	14.0		
	53	12/25-12/31					10.8	14.6	13.6		-						13.9	-	-	-	-	-	-	13.4		
1984	1	1/1-1/7		12.2			9.7	13.3	13.7		-						14.0	-	-	-	-	-	-	13.1		
	2	1/8-1/14	10.7			14.1	9.6	13.5	12.6		-	14.9					19.6	-	-	-	-	-	-	13.1		
	3	1/15-1/21	12.7	12.0	11.8		11.7	11.8	11.0	18.9	-	18.0		15.0		17.8	16.6	-	-	-	-	-	-	13.3		
	4	1/22-1/28	11.5		10.7	11.5	13.2	9.6	12.0	14.0	-	13.0				12.5	14.5	17.2	-	-	-	-	-	12.7		
	5	1/29-2/4	9.9		13.9	9.8	12.1	9.0	9.7	11.6	-					16.5	15.8	-	-	-	-	-	-	12.2		
	6	2/5-2/11	11.6	8.7	13.5	14.4	13.0	9.7	12.1	14.0	-	14.9				17.4	17.4	-	-	-	-	-	-	15.8		
	7	2/12-2/18	9.2		15.1	13.8	12.4		11.9	13.9	-			19.0		20.5	15.4	-	-	-	-	10.8	-	14.5		
	8	2/19-2/25	12.0	10.3			13.9	10.0	11.6		-	14.1				14.7	16.1	-	-	-	-	-	-	14.2		
	9	2/26-3/3	12.8	13.7	10.0	12.9	13.7	15.5	12.6	16.1	-	12.3	14.0	21.0		14.9	14.0	-	-	-	-	8.1	-	13.8		
	10	3/4-3/10	13.8	16.4	13.3	15.4	12.1	14.0	12.5	13.8	-	15.6	20.0	11.3	15.8	14.0	16.6	-	-	-	-	-	-	14.5		
	11	3/11-3/17	14.5	12.0	10.4	12.2	12.4		13.9	14.8	-	16.0				14.0	17.1	13.4	-	-	-	-	-	15.0		
	12	3/18-3/24	13.2	14.9	12.5	16.5	8.4	11.4	13.4	14.8	-	14.7	19.7		15.1	15.7	14.7	-	-	-	-	-	-	14.7		
	13	3/24-3/31	12.4	13.3		12.5	12.9	13.4	13.5	16.4	-	15.8	13.8		15.0	15.1	15.1	-	-	-	-	-	-	14.6		
	14	4/1-4/7	10.5	11.7	13.3	13.4	11.5	13.0	12.9	12.7	-	14.0	11.4		15.5	14.8	13.1	-	-	-	-	9.5	-	14.2		
	15	4/8-4/14	14.1	13.8	14.0	14.5	13.0	14.0	12.4	13.7	-	14.2	14.8		14.5	16.6	11.4	-	-	-	-	-	-	15.0		
	16	4/15-4/21	16.0		12.5			8.9			-	12.8	13.2		15.9	15.3		-	-	-	-	8.0	-	13.1		
Winter	District Total		11.8	11.9	13.0	10.7	11.9	11.9	12.6	13.5		14.6	14.2	15.3	13.4	14.6	13.5	15.5	12.7				9.0	13.8		
	Area Total					11.8			12.8					14.5				15.4								
									Fishery Closed except District 183 4/15-6/4/84.																	
	23	6/3-6/9	13.5	13.2	16.8	18.9	14.3		13.7	15.0		14.0	13.7		13.8	12.5	17.3	13.7	15.3		12.8	11.8	16.1	15.6		
	24	6/10-6/16	12.6	12.6	15.1	14.5	14.7		15.2	15.9		14.0	14.3		13.4	13.5	17.3	12.7	17.8	15.4	11.0	11.8	15.1	15.6		
	25	6/17-6/23	14.8	13.8	15.0	14.2	13.9		16.6	15.6	17.6	14.6	13.7		13.4	13.3	17.9	18.0	7.7	19.3	17.0	12.1	12.3	16.0		
	26	6/24-6/30	13.2	13.4	14.9	12.0	13.9		16.1	17.3	19.0	14.2	15.0	13.0	12.8	13.2	18.0	12.6	18.9	16.4	14.5	13.2	15.4	16.5		
	27	7/1-7/7							Fishery Closed																	
	28	7/8-7/14	18.0	12.0	13.2	11.0	13.5		15.4	17.3	19.9	14.4	10.4		16.2	23.0	11.2	19.3	15.0	17.7	19.6	15.6	13.3	17.8		
	29	7/15-7/21	13.0	11.8	16.6		20.6		15.8	18.6	17.5	16.1	11.2	13.5	12.2	16.1	10.5	19.8	12.3	18.4	21.5		14.8	18.1		
	30	7/22-7/28	12.9	12.0	16.3				14.5	18.1		16.3	13.0	11.3	15.0	17.7	19.2	17.1	20.5	23.0		12.5	15.6	18.5		
	31	7/29-8/4	14.6	13.2	13.8				13.9	18.7		15.7	13.0		11.6	17.9	19.4	13.6	19.6	17.8	17.5	13.7		18.3		
Summer	District Total		14.1	12.7	15.2	14.1	15.2		15.1	15.2	18.5	14.9	13.0	12.6	13.5	15.9	13.2	18.5	13.1	18.4	18.7	13.9	13.1	15.1	17.0	
	Area Total					13.4			16.2					14.3				17.8								
Season Total			12.4	12.5	14.4	11.8	13.4	11.9	14.2	16.2	19.2	14.7	14.0	14.0	13.0	14.5	12.7	18.2	13.2	19.1	16.8	13.0	13.1	15.1	16.4	

Note: Dash (-) indicates district closed to fishing for that week.

Appendix Table A10. Average weight (lb) of chinook salmon harvested by purse seine gear by district and statistical week, 1984.

Stat Week	Date	Districts											Total	
		101	102	103	104	105	106	107	109	110	112	113		114
27	7/1-7/7				16.3						7.7		9.3	12.8
28	7/8-7/14	13.9	9.0		18.3						10.4		10.2	15.2
29	7/15-7/21	14.0	15.1		19.9					9.6	8.3	2.8	10.0	15.9
30	7/22-7/28	14.1	12.9		20.0				12.7	8.0	9.2			18.5
31	7/29-8/4	11.8	14.9		19.9				7.3	8.3	14.3	6.0		18.3
32	8/5-8/11	13.8	12.0		20.9				8.7	9.5	9.5	19.0		19.7
33	8/12-8/18	18.5	16.3	16.5	23.0	25.5		13.1	12.3		5.3	21.8		22.2
34	8/19-8/25	13.7	13.5	21.2	18.5	17.7	10.5	19.0	8.3		7.3	22.7	2.1	17.6
35	8/26-9/1	12.3	8.4	13.1	20.9	7.0			8.7			4.3	4.6	11.9
36	9/2-9/8	5.5	13.4			11.0						12.0	5.7	8.2
37	9/9-9/15	23.0	3.0										8.0	10.0
District	Totals	14.3	13.5	20.3	20.5	16.9	10.5	14.4	8.3	8.4	9.3	16.5	8.6	18.9

Appendix Table A11. Average weight (lb) of chinook salmon harvested by gillnet gear by district and statistical week, 1984.

Stat Week	Date	District					Total
		101	106	108	111	115	
25	6/17-6/23	12.4	7.7		8.2	7.7	9.3
26	6/24-6/30	10.0	7.5		10.1	6.8	8.6
27	7/1-7/7	10.7	8.1		10.3	6.7	8.2
28	7/8-7/14	10.2	8.2		9.0	6.7	7.3
29	7/15-7/21	9.5	8.2		8.0	6.6	7.3
30	7/22-7/28	11.0	7.1		8.6	6.6	7.4
31	7/29-8/4	10.1	7.0	5.7	6.5	6.3	6.6
32	8/5-8/11	7.8	6.3	6.0	8.3	6.7	7.0
33	8/12-8/18	9.8	7.4		7.1	6.5	6.8
34	8/19-8/25	8.0	7.6		7.1	7.2	7.3
35	8/26-9/1	13.6	8.7		8.8	6.9	8.2
36	9/2-9/8	10.9	9.6		8.2	10.4	9.9
37	9/9-9/15	9.4	10.1		6.6	10.2	9.5
38	9/16-9/22	-	-		11.0	10.2	10.2
39	9/23-9/29					9.9	9.9
40	9/30-10/6					10.0	10.0
41	10/7-10/13					11.7	11.7
Total		10.6	7.7	5.7	8.6	7.0	7.8

Note: Dash (-) indicates fishery open with no catch.

Appendix Table A12. Andrews Creek (108-40-020) weir count for chinook salmon, 1984.

Date	Number				Proportions		
	Females	Large Males	Small Males	Daily Total	Cumulative	Daily	Cumulative
July 7	1	1	1	3	3	0.00583	0.00583
8			1	1	4	0.00194	0.00777
9		1	1	2	6	0.00388	0.01165
10			3	3	9	0.00583	0.01748
11	2	4	1	7	16	0.01359	0.03107
12		1		1	17	0.00194	0.03301
13				0	17	0.00000	0.03301
14			3	3	20	0.00583	0.03883
15		2	3	5	25	0.00971	0.04854
16	1	4	1	6	31	0.01165	0.06019
17		1	1	2	33	0.00388	0.06408
18	3	6	3	12	45	0.02330	0.08738
19	7	7	9	23	68	0.04466	0.13204
20	2	4	9	15	83	0.02913	0.16117
21	4	9	11	24	107	0.04660	0.20777
22	3		2	5	112	0.00971	0.21748
23	5	3	3	11	123	0.02136	0.23883
24	7	4	5	16	139	0.03107	0.26990
25	9	2	3	14	153	0.02718	0.29709
26	4	6	9	19	172	0.03689	0.33398
27	7	6	10	23	195	0.04466	0.37864
28	3		1	4	199	0.00777	0.38641
29	2	4	3	9	208	0.01748	0.40388
30	5	3	4	12	220	0.02330	0.42718
31	12	10	1	23	243	0.04466	0.47184
Aug 1	12	6	6	24	267	0.04660	0.51845
2	3	1	2	6	273	0.01165	0.53010
3				0	273	0.00000	0.53010
4	7		6	13	286	0.02524	0.55534
5	5	1	3	9	295	0.01748	0.57282
6	7	3	3	13	308	0.02524	0.59806
7	1	2	3	6	314	0.01165	0.60971
8	13	5	9	27	341	0.05243	0.66214
9	26	12	28	66	407	0.12816	0.79029
10	10	7	12	29	436	0.05631	0.84660
11	11	2	7	20	456	0.03883	0.88544
12	1	1	2	4	460	0.00777	0.89320
13	3	1	2	6	466	0.01165	0.90485
14	1		1	2	468	0.00388	0.90874
15				0	468	0.00000	0.90874
16	5	1	4	10	478	0.01942	0.92816
17	1		4	5	483	0.00971	0.93786
18	1		5	6	489	0.01165	0.94951
19	1			1	490	0.00194	0.95146
20			2	2	492	0.00388	0.95534
21	3	2	7	12	504	0.02330	0.97864
22	2	2	2	6	510	0.01165	0.99029
23	1		4	5	515	0.00971	1.00000
24				0	515	0.00000	1.00000

Mean Date of Run = Aug. 1; Variance (Days Squared) = 214.0.

Appendix Table A13. King Salmon River (111-17-010) weir count for chinook salmon, 1984.

Date	Number				Proportions		
	Females	Large Males	Small Males	Daily Total	Cumulative	Daily	Cumulative
June 30				0	0	0.00000	0.00000
July 1		1	1	2	2	0.00509	0.00509
2	7	7		14	16	0.03562	0.04071
3	3	5		8	24	0.02036	0.06107
4	7	2		9	33	0.02290	0.08397
5	7	8	4	19	52	0.04835	0.13232
6	11	8	4	23	75	0.05852	0.19084
7	4	6	3	13	88	0.03308	0.22392
8	14	11	8	33	121	0.08397	0.30789
9	16	14	10	40	161	0.10178	0.40967
10	10	8	2	20	181	0.05089	0.46056
11	14	7	2	23	204	0.05852	0.51908
12	21	12	4	37	241	0.09415	0.61323
13	3	4	1	8	249	0.02036	0.63359
14	4	4	3	11	260	0.02799	0.66158
15	8	1	3	12	272	0.03053	0.69211
16	1	3	4	8	280	0.02036	0.71247
17	2	1	4	7	287	0.01781	0.73028
18	2			2	289	0.00509	0.73537
19	6	3	1	10	299	0.02545	0.76081
20	12	4	5	21	320	0.05344	0.81425
21	1	2	5	8	328	0.02036	0.83461
22	4		1	5	333	0.01272	0.84733
23	5	1		6	339	0.01527	0.86260
24	4	2	1	7	346	0.01781	0.88041
25	2	1	5	8	354	0.02036	0.90076
26	2	2	2	6	360	0.01527	0.91603
27	1	3	3	7	367	0.01781	0.93384
28	1	2	1	4	371	0.01018	0.94402
29	1		3	4	375	0.01018	0.95420
30	2	1	2	5	380	0.01272	0.96692
31	6 1/	7 1/		13	393	0.03308	1.00000

Mean Date of Run = July 13; Variance (Days Squared) = 185.6.

1/ Downstream estimate and weir counts.

Appendix Table A14. Klukshu River (183-30-200) weir count for chinook salmon, 1984.

Date	Number		Proportions		Date	Number		Proportions	
	Daily Total 1/	Cumulative	Daily	Cumulative		Daily Total	Cumulative	Daily	Cumulative
June 6	1	1	0.00060	0.00060	July 27	8	1,523	0.00478	0.91089
7	1	2	0.00060	0.00120	28	14	1,537	0.00837	0.91926
8	8	10	0.00478	0.00598	29	11	1,548	0.00658	0.92584
9		10	0.00000	0.00598	30	12	1,560	0.00718	0.93301
10	2	12	0.00120	0.00718	31	10	1,570	0.00598	0.93900
11	1	13	0.00060	0.00778	Aug 1	10	1,580	0.00598	0.94498
12	2	15	0.00120	0.00897	2	20	1,600	0.01196	0.95694
13	3	18	0.00179	0.01077	3	10	1,610	0.00598	0.96292
14	2	20	0.00120	0.01196	4	1	1,611	0.00060	0.96352
15		20	0.00000	0.01196	5	10	1,621	0.00598	0.96950
16	3	23	0.00179	0.01376	6	10	1,631	0.00598	0.97548
17	1	24	0.00060	0.01435	7		1,631	0.00000	0.97548
18	16	40	0.00957	0.02392	8	9	1,640	0.00538	0.98086
19	1	41	0.00060	0.02452	9		1,640	0.00000	0.98086
20	16	57	0.00957	0.03409	10	1	1,641	0.00060	0.98146
21	5	62	0.00299	0.03708	11	3	1,644	0.00179	0.98325
22	6	68	0.00359	0.04067	12		1,644	0.00000	0.98325
23		68	0.00000	0.04067	13	4	1,648	0.00239	0.98565
24		68	0.00000	0.04067	14	2	1,650	0.00120	0.98684
25		68	0.00000	0.04067	15	5	1,655	0.00299	0.98983
26	3	71	0.00179	0.04246	16	1	1,656	0.00060	0.99043
27	11	82	0.00658	0.04904	17		1,656	0.00000	0.99043
28	9	91	0.00538	0.05443	18	2	1,658	0.00120	0.99163
29	10	101	0.00598	0.06041	19		1,658	0.00000	0.99163
30	6	107	0.00359	0.06400	20		1,658	0.00000	0.99163
July 1	2	109	0.00120	0.06519	21		1,658	0.00000	0.99163
2	2	111	0.00120	0.06639	22	2	1,660	0.00120	0.99282
3	4	115	0.00239	0.06878	23		1,660	0.00000	0.99282
4	30	145	0.01794	0.08672	24		1,660	0.00000	0.99282
5	140	285	0.08373	0.17045	25	5	1,665	0.00299	0.99581
6	137	422	0.08194	0.25239	26	2	1,667	0.00120	0.99701
7	41	463	0.02452	0.27691	27	2	1,669	0.00120	0.99821
8	3	466	0.00179	0.27871	28		1,669	0.00000	0.99821
9	48	514	0.02871	0.30742	29		1,669	0.00000	0.99821
10	107	621	0.06400	0.37141	30		1,669	0.00000	0.99821
11	189	810	0.11304	0.48445	31		1,669	0.00000	0.99821
12	165	975	0.09868	0.58313	Sept 1		1,669	0.00000	0.99821
13	8	983	0.00478	0.58792	2		1,669	0.00000	0.99821
14	8	991	0.00478	0.59270	3	1	1,670	0.00060	0.99880
15	1	992	0.00060	0.59330	4		1,670	0.00000	0.99880
16	25	1,017	0.01495	0.60825	5		1,670	0.00000	0.99880
17	69	1,086	0.04127	0.64952	6		1,670	0.00000	0.99880
18	95	1,181	0.05682	0.70634	7	1	1,671	0.00060	0.99940
19	15	1,196	0.00897	0.71531	8		1,671	0.00000	0.99940
20	20	1,216	0.01196	0.72727	9		1,671	0.00000	0.99940
21		1,216	0.00000	0.72727	10		1,671	0.00000	0.99940
22	12	1,228	0.00718	0.73445	11		1,671	0.00000	0.99940
23	112	1,340	0.06699	0.80144	12		1,671	0.00000	0.99940
24	36	1,376	0.02153	0.82297	13		1,671	0.00000	0.99940
25	117	1,493	0.06998	0.89294	14		1,671	0.00000	0.99940
26	22	1,515	0.01316	0.90610	15	1	1,672	0.00060	1.00000

Mean Date of Run = July 14; Variance (Days Squared) = 185.3.

1/ Includes jacks.

Appendix Table A15. Situk River (182-70-010) weir count for chinook salmon, 1984.

Date	Number			Proportions		
	Small 1/	Large 2/	Daily Total	Daily Cumulative	Daily Proportions	Cumulative Proportions
June 6			0	0	0.00000	0.00000
7			0	0	0.00000	0.00000
8		2	2	2	0.00091	0.00091
9			0	2	0.00000	0.00091
10			0	2	0.00000	0.00091
11			0	2	0.00000	0.00091
12			0	2	0.00000	0.00091
13			0	2	0.00000	0.00091
14			0	2	0.00000	0.00091
15			0	2	0.00000	0.00091
16			0	2	0.00000	0.00091
17			0	2	0.00000	0.00091
18			0	2	0.00000	0.00091
19			0	2	0.00000	0.00091
20			0	2	0.00000	0.00091
21		5	5	7	0.00227	0.00318
22				7	0.00000	0.00318
23	2	2	4	11	0.00182	0.00500
24		1	1	12	0.00045	0.00545
25			0	12	0.00000	0.00545
26			0	12	0.00000	0.00545
27	1	11	12	24	0.00545	0.01090
28		1	1	25	0.00045	0.01136
29	2	21	23	48	0.01045	0.02181
30		3	3	51	0.00136	0.02317
July 1		1	1	52	0.00045	0.02363
2			0	52	0.00000	0.02363
3	3	22	25	77	0.01136	0.03498
4	1	29	30	107	0.01363	0.04861
5		7	7	114	0.00318	0.05179
6	3	6	9	123	0.00409	0.05588
7	2	11	13	136	0.00591	0.06179
8		3	3	139	0.00136	0.06315
9	17	254	271	410	0.12313	0.18628
10	1	21	22	432	0.01000	0.19627
11	1	33	34	466	0.01545	0.21172
12		1	1	467	0.00045	0.21218
13		15	15	482	0.00682	0.21899
14	1	12	13	495	0.00591	0.22490
15	1	1	2	497	0.00091	0.22581
16	2	6	8	505	0.00363	0.22944
17	3	17	20	525	0.00909	0.23853
18	1	13	14	539	0.00636	0.24489
19	3	2	5	544	0.00227	0.24716
20	2	32	34	578	0.01545	0.26261
21	7	18	25	603	0.01136	0.27397
22		5	5	608	0.00227	0.27624
23	6	11	17	625	0.00772	0.28396
24	6	55	61	686	0.02771	0.31168
25	26	50	76	762	0.03453	0.34621
26	2	21	23	785	0.01045	0.35666
27	18	18	36	821	0.01636	0.37301
28	18	95	113	934	0.05134	0.42435
29	25	51	76	1,010	0.03453	0.45888
30	18	52	70	1,080	0.03180	0.49069
31	27	29	56	1,136	0.02544	0.51613
Aug 1	5	126	131	1,267	0.05952	0.57565
2	14	9	23	1,290	0.01045	0.58610
3	17	34	51	1,341	0.02317	0.60927
4	69	114	183	1,524	0.08314	0.69241
5	26	37	63	1,587	0.02862	0.72104
6	39	74	113	1,700	0.05134	0.77238
7	14	20	34	1,734	0.01545	0.78782
8	11	23	34	1,768	0.01545	0.80327
9	38	155	193	1,961	0.08769	0.89096
10	17	20	37	1,998	0.01681	0.90777
11	8	156	164	2,162	0.07451	0.98228
12	1	9	10	2,172	0.00454	0.98682
13	5	4	9	2,181	0.00409	0.99091
14	4		4	2,185	0.00182	0.99273
15	6		6	2,191	0.00273	0.99546
16	2	2	4	2,195	0.00182	0.99727
17		3	3	2,198	0.00136	0.99864
18		3	3	2,201	0.00136	1.00000

Mean Date of Run = July 27; Variance (Days Squared) = 198.8.

Appendix Table A16. Crystal Creek (106-44-031) weir count for chinook salmon, 1984.

Date	Number				Proportions	
	Females	Males	Daily Total	Cumulative	Daily	Cumulative
July 30	4	56	60	60	0.02333	0.02333
31	43	248	291	351	0.11314	0.13647
Aug 1			0	351	0.00000	0.13647
2			0	351	0.00000	0.13647
3			0	351	0.00000	0.13647
4			0	351	0.00000	0.13647
5			0	351	0.00000	0.13647
6	39	299	338	689	0.13142	0.26788
7			0	689	0.00000	0.26788
8			0	689	0.00000	0.26788
9			0	689	0.00000	0.26788
10			0	689	0.00000	0.26788
11			0	689	0.00000	0.26788
12			0	689	0.00000	0.26788
13	128	218	346	1035	0.13453	0.40241
14			0	1035	0.00000	0.40241
15			0	1035	0.00000	0.40241
16			0	1035	0.00000	0.40241
17			0	1035	0.00000	0.40241
18			0	1035	0.00000	0.40241
19			0	1035	0.00000	0.40241
20	22	20	42	1077	0.01633	0.41874
21	76	142	218	1295	0.08476	0.50350
22			0	1295	0.00000	0.50350
23			0	1295	0.00000	0.50350
24	62	49	111	1406	0.04316	0.54666
25			0	1406	0.00000	0.54666
26			0	1406	0.00000	0.54666
27	37	91	128	1534	0.04977	0.59642
28	144	494	638	2172	0.24806	0.84448
29			0	2172	0.00000	0.84448
30			0	2172	0.00000	0.84448
31			0	2172	0.00000	0.84448
Sept 1			0	2172	0.00000	0.84448
2			0	2172	0.00000	0.84448
3			0	2172	0.00000	0.84448
4	16	272	288	2460	0.11198	0.95645
5	12	100	112	2572	0.04355	1.00000

Mean Date of Run = Aug. 19: Variance (Days Squared) = 201.3

APPENDIX B - Age Verification

Appendix B - Verification

We evaluated our accuracy of aging hatchery fish by comparing our scale age designations with the actual age from coded microwire tag (CWT) data. Scales from 323 tagged chinook salmon taken in conjunction with our catch sampling project in 1983 were aged by a technician without knowledge of the fishes origin, true age, or this study. The technician accurately aged 76% of the fish and recorded the correct life span on 91% (Appendix Table B1). Freshwater age was incorrectly recorded for 27% of the fish aged 1. but only 17% of the fish aged 0., indicating a tendency to misage fish aged 1. as 0. rather than 0. as 1. Only nine fish, 5 age 0. and 4 age 1., had correct freshwater age but incorrect marine age. Correctly assigning freshwater age in these hatchery was, obviously, our biggest problem.

A comparison of age compositions (Appendix Table B2) shows too many fish aged 0.3 and too few aged 1.2. The scale age composition was significantly different from the true, CWT based, age composition ($G = 18.16$, $df = 6$, $.05 < P < .005$).

We consider hatchery fish harvested in a highly mixed stock fishery, as these troll samples were, the most difficult to age. Scale patterns of hatchery fish tend to vary considerably between release groups and hatcheries due to wide differences in rearing and release strategies. Hatchery fish tend to have more disruptions (checks) in the freshwater growth zone and less distinction between summer and winter growth. There is, however, high agreement (>95%) between Alaska Department of Fish and Game readers in ages of wild stock Alaskan fish. This close agreement indicates high accuracy in aging these wild stock fish. More work is needed on verifying the ages of these wild stock fish.

Appendix Table B1. Aging check by CWT comparison, 1983 data.

Sample Size =	323
Number Fish Aged 0. =	179
Number Fish Aged 1. =	144

Aging Category	Number	Percent
Correct Age	244	75.5 (of total)
Correct Lifespan	293	90.7 (of total)
Incorrect Freshwater Age	70	21.7 (of total)
Incorrect Marine Age	61	18.9 (of total)
Age 0. Incorrectly Aged 1.	31	17.3 (of no. age 0.)
Age 1. Incorrectly Aged 0.	39	27.1 (of no. age 1.)
Correct Age 0. But Incorrect Marine Age	5	1.5 (of total)
Correct Age 1. But Incorrect Marine Age	4	1.2 (of total)
Correct Marine Age But Incorrect Freshwater Age	18	5.6 (of total)

Appendix Table B2. Comparison of the scale based age composition estimate with the true, CWT based, age composition.

Aging Method	Age Composition									
	0.1	0.2	0.3	0.4	1.1	1.2	1.3	1.4	Total	
CWT Data (True Age)	Number	3	25	123	28	0	75	68	1	323
	Percent	0.9	7.7	38.1	8.7	0.0	23.2	21.1	0.3	100.0
Scales (Estimated Age)	Number	2	20	145	20	3	60	71	2	323
	Percent	0.6	6.2	44.9	6.2	0.9	18.6	22.0	0.6	100.0
Percent Difference	0.3	1.5	6.8	2.5	0.9	4.6	0.9	0.3		

Calculation of the G statistic for the log-likelihood ratio goodness of fit test.
(From: Zar (1974) pp. 53 - 54)

Ho: Scale age composition is the same as the CWT (true) age data.

Ha: Scale age composition is different.

f_i = CWT age data as listed above.

F_i = Scale age data as listed above.

$v = k - 1 = 7 - 1 = 6$ (note age 1.1 fish were excluded)

$G = 4.60517[\sum(f_i \cdot \log f_i) - \sum(f_i \cdot \log F_i)]$

$G = 4.60517[599.19881 - 595.25388] = 18.16^*$

G test statistic from chi-square table = 12.592 ($\alpha = .05$, $df = 6$)

Therefore, reject Ho.

APPENDIX C - Sexual Dimorphism in Adipose Fin Length

Appendix C - Sexual Dimorphism in Adipose Fin Length

The absence of obvious external secondary sexual characteristics in ocean-bright chinook salmon has precluded determining sex of this species from commercial catches since most are gutted prior to delivery. In 1984 we measured adipose fin lengths after Beacham and Murray (1983) reported the sexual dimorphism of adipose fin lengths should allow for accurate sex determinations of ocean-bright salmon (*Oncorhynchus* spp.). Beacham and Murray reported better than 87% accuracy in determining the sex of chinook salmon sampled from escapements based solely on standardized adipose fin length data. In relation to body size, males tended to have longer adipose fins than females.

With the help of cooperative fishermen in Sitka, Pelican, and Petersburg we sampled 371 troll caught chinook salmon from Districts 110 and 113 during June and July for sex, fish length, adipose length, and age data (scales). Fish lengths were measured from mid-eye to fork-of-tail. Adipose measurements were made from the anterior end of the fin base to the tip with the aid of calipers, as described by Beacham and Murray. All measurements were recorded to the nearest millimeter. Valid sex determination was made possible by the fishermen flagging the females with a rubber band around the head at time of gutting. We standardized the adipose fin measurements two ways: (1) using the allometric standardization procedure described by Beacham and Murray; and (2) by dividing fish length into adipose length. We used the two standardization methods to see which one maximized between sex differences. The allometric standardization procedure of Beacham and Murray involved standardizing fin measurements for males and females separately to the overall mean length of all individuals according to the following formula:

$$M_t = M_o \frac{\bar{L}^b}{L_o}$$

where M_t = transformed adipose fin length,

M_o = observed adipose fin length,

\bar{L} = overall mean length for males and females combined,

L_o = observed length, and

b = regression coefficient by sex of $\log(M_o)$ on $\log(L_o)$.

The constants \bar{L} and b were calculated as follows:

$$\begin{aligned}\bar{L} &= 790 \\ b &= 1.191918 \text{ for males, and} \\ b &= 0.966522 \text{ for females.}\end{aligned}$$

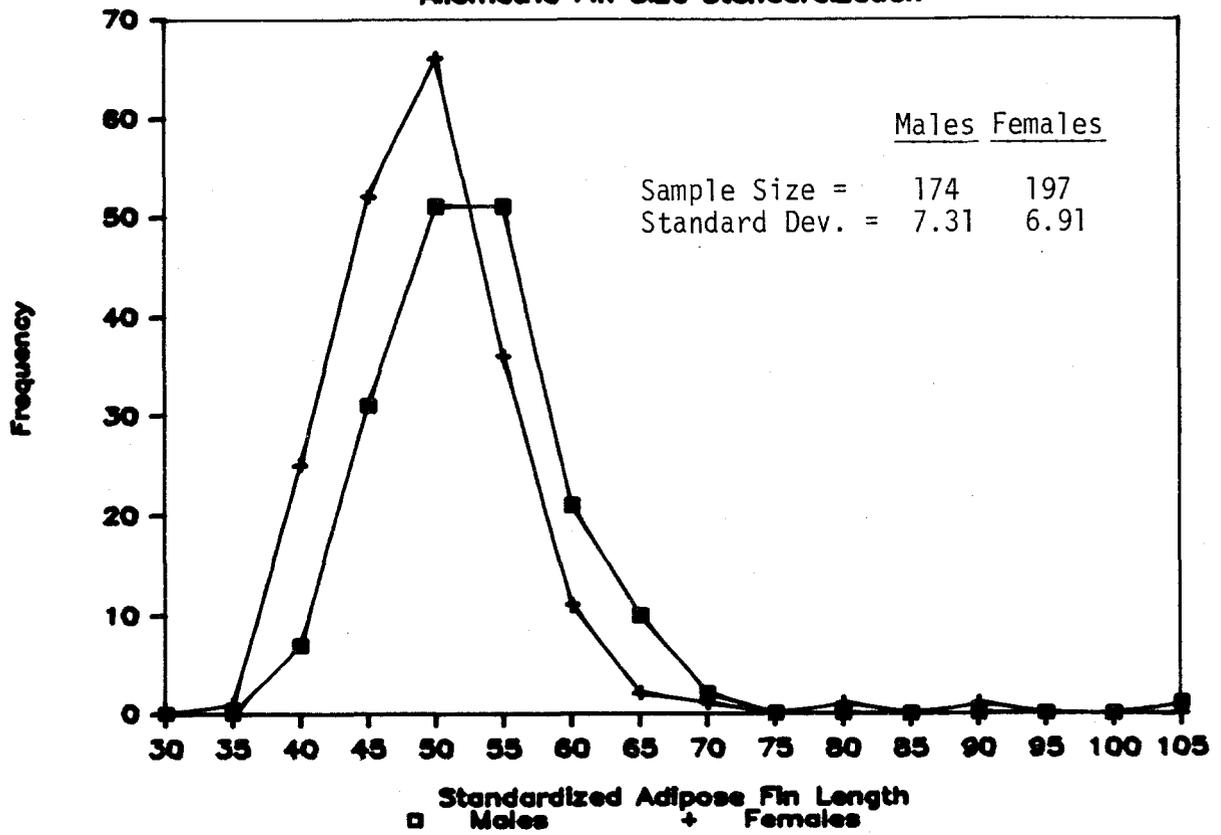
There was considerable overlap between sexes in the distributions of standardized adipose fin length with both standardization procedures, Appendix Figure C1 and C2. Linear discriminant function analysis (Fisher 1936) correctly classified sex, using the leaving-one-out procedure of Lachenbruch (1967), in 63.9% of the fish when the allometric standardization procedure was used and 61.2% of the fish with the adipose length divided by fish length standardization (Appendix Table C1). Small males had the highest misclassification than the 87% reported by Beacham and Murray. Differences in adipose fin size between sexes is apparently not as great in these bright fish as in the mature fish that Beacham and Murray sampled from rivers.

To determine if the adipose fin size is affected by the fishes state of maturity, we compared this catch data with that from post-spawned chinook salmon in the Little Tahltan River (Appendix Figure C3). The mean standardized adipose fin length was significantly greater in the escapement samples for both males ($t = 12.96$; $df = 221$; $P < .01$) and females ($t = 7.74$; $df = 271$; $P < .01$). We conclude that the relative size of the adipose fin increases as the fish matures, with the adipose fins of males growing the fastest.

We do not consider the degree of sexual dimorphism in adipose fin length great enough to use this method for sexing ocean-bright chinook salmon. The added sampling and data processing time does not warrant continued use of this method which is dependent upon the fishes maturity state and predicts sex only 14% better than random chance alone.

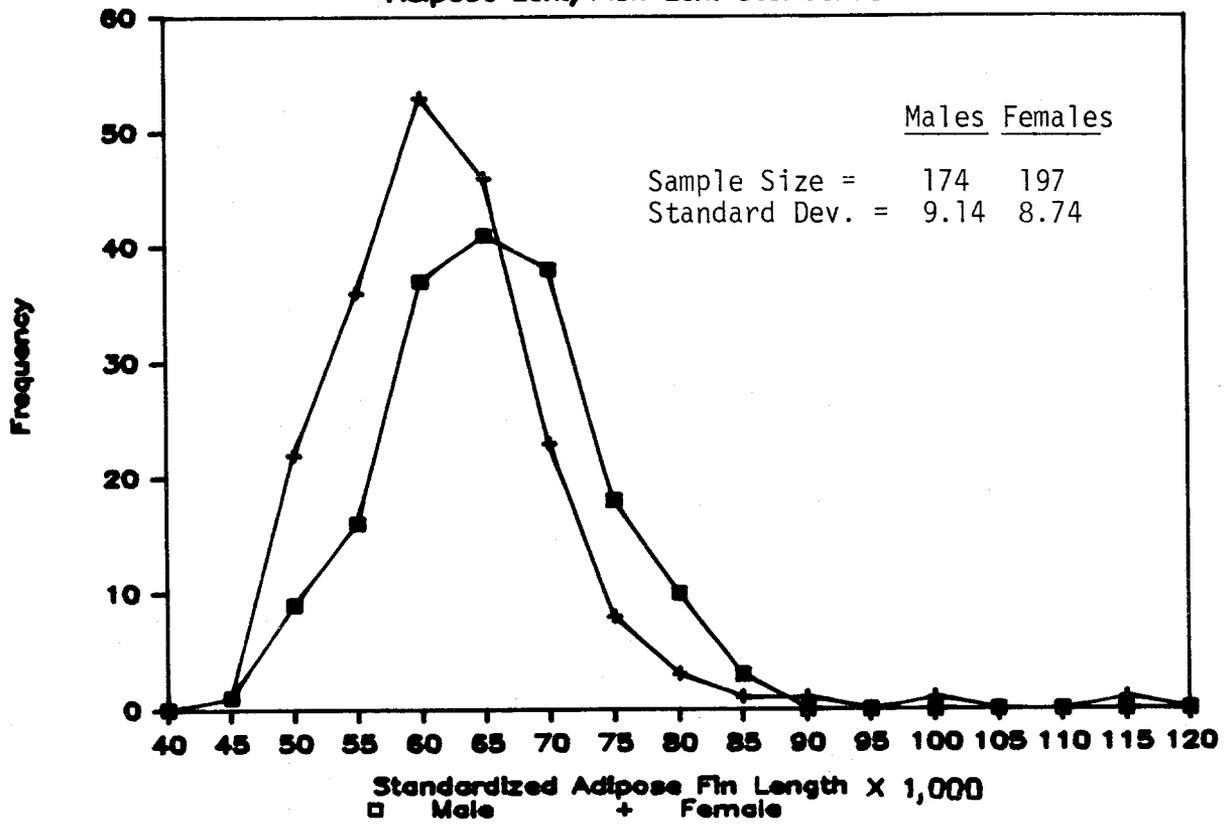
1984 S.E. Ak. Troll

Allometric Fin Size Standardization



Appendix Figure C1. Frequency distribution of adipose fin length measurements from troll caught chinook salmon standardized by the method Beacham and Murray (1983) used.

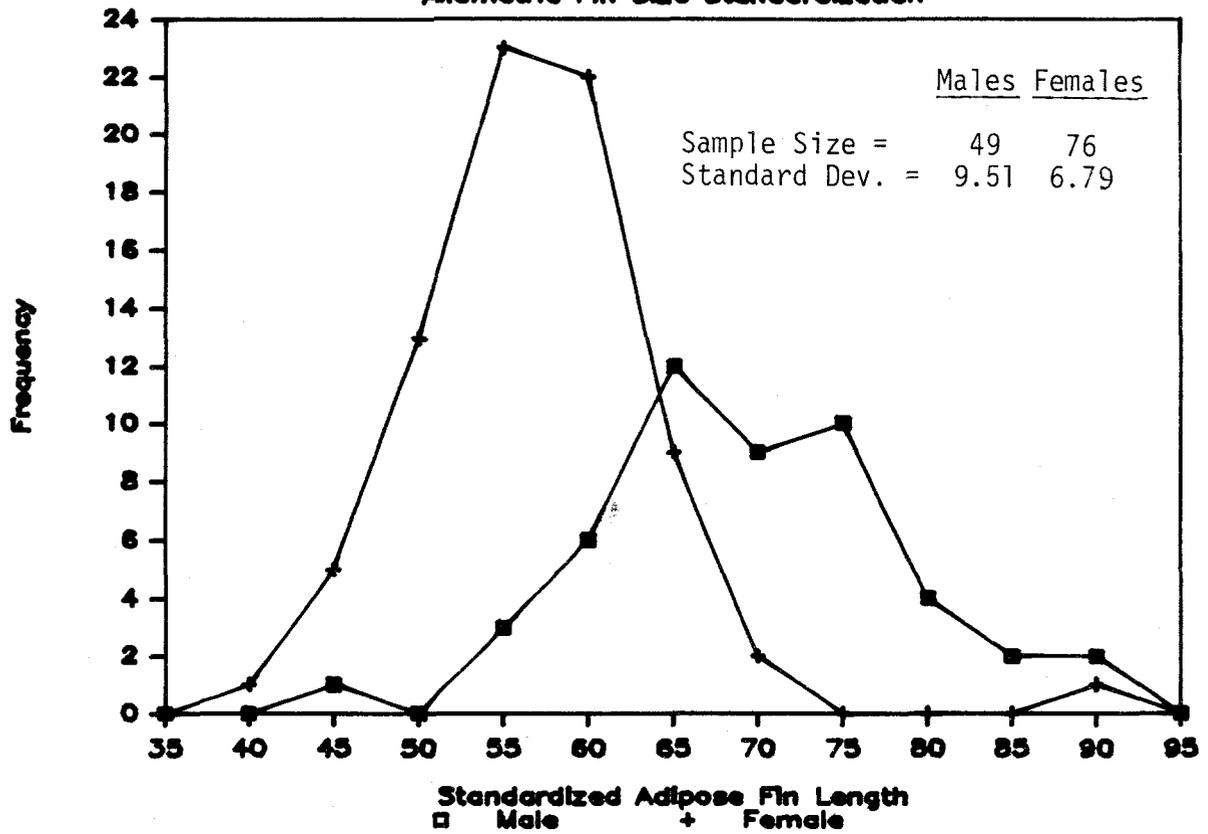
1984 S.E. Ak. Troll
 Adipose Len./Fish Len. Standardization



Appendix Figure C2. Frequency distribution of adipose fin length measurements from troll caught chinook salmon standardized by dividing fish length into adipose length.

1984 L. Tahltan R. Esc.

Allometric Fin Size Standardization



Appendix Figure C3. Frequency distribution of adipose fin length measurements from Little Tahltan River chinook salmon standardized by the method Beacham and Murray (1983) used.

Appendix Table C1. Classification matrices for linear discriminant function analysis of adipose fin length data.

 Allometric Fin Size Standardization

True Sex	Sample Size	Classified Sex	
		Male	Female
Male	174	<u>.603</u>	.397
Female	197	.330	<u>.670</u>

 Mean Proportion Correctly Classified = .639

 Adipose Length/Fish Length Standardization

True Sex	Sample Size	Classified Sex	
		Male	Female
Male	174	<u>.563</u>	.437
Female	197	.345	<u>.655</u>

 Mean Proportion Correctly Classified = .612

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