ABUNDANCE, AGE, SEX AND SIZE OF SOCKEYE SALMON RETURNING TO UPPER COOK INLET, ALASKA, IN 1989

By

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and

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ABSTRACT

This report supersedes Technical Fishery Report 91-17, "Abundance, Age, Sex and Size of Chinook, Sockeye, Coho, and Chum Salmon Returning to Upper Cook Inlet, Alaska in 1989" (Waltemyer 1991). In the 1989 data for sockeye salmon, there were some discrepancies, and sockeye salmon scales were therefore re-aged for the current report. Differences in age classes from the earlier report are noted. Only sockeye salmon are affected. Results for chinook, coho and chum salmon are unaffected.

The estimated total return of sockeye salmon *Oncorhynchus nerka* to Upper Cook Inlet (UCI) in 1989 was 7.5 million fish. Commercial harvests and escapements of sockeye salmon that were monitored totaled 7.1 million fish. The commercial harvest was 5.0 million fish while the escapement into six major river systems was 2.1 million fish. The difference between the estimated and monitored total return represents in part; sport, subsistence and personal use harvests and unmonitored escapements. Based on commercial harvest to total return, the exploitation rate for sockeye salmon was 66%. Age classes 1.2, 1.3, 2.2, and 2.3 comprised 98% of the combined UCI commercial sockeye salmon harvests and monitored escapements. Age class 2.3 represented 3.6 million fish or 52% of the total monitored return, while age 1.3 represented 1.8 million fish or 26% of the total monitored return. Average length for the four major age classes ranged from 479 mm for age-1.2 fish to 586 mm for age-2.3 fish. Female composition of sockeye salmon in the combined commercial harvests and escapements equaled 47%.

KEY WORDS: Sockeye salmon, *Oncorhynchus nerka*, age, length, commercial catch, escapement, exploitation rate, Upper Cook Inlet, Alaska

INTRODUCTION

This report supersedes Technical Fishery Report 91-17, "Abundance, Age, Sex and Size of Chinook, Sockeye, Coho, and Chum Salmon Returning to Upper Cook Inlet (UCI), Alaska in 1989" (Waltemyer 1991). In the 1989 data for sockeye salmon *Oncorhychus nerka,* there were some discrepancies. The Alaska Department of Fish and Game (ADF&G) office in Soldotna and in Anchorage checked scale ages, and both verified an aging error in the freshwater reading. A large number of two-year freshwater sockeye were called one-year freshwater sockeye in the initial reading. A note from a Seattle based consulting firm who had digitized Kenai River scales from 1989 also confirmed the error. In 1999, the scales were re-aged. This report documents these changes. Only sockeye salmon are affected. Results for chinook, coho and chum salmon are unaffected.

From 1964 to 1978 commercial catch and escapement data was limited. Information was published in annual technical reports from 1964 to 1978. In 1978 ADF&G initiated a comprehensive catch and escapement sampling program for sockeye salmon in Upper Cook Inlet. Davis and Tarbox (1985) produced a compendium of information for the period 1964-1981 to summarize the yearly results. The series continued with the advent of stock separation studies in 1978 and has been in existence ever since (Bethe et al. 1980; Cross et al. 1981, 1982, 1983, 1985, 1987; Cross 1985). The major emphasis has been on sampling sockeye salmon in the commercial harvests and escapements.

Age, sex and length information in conjunction with abundance data provides a basis for assessing yearly variations in production and effects of management strategies. The objectives of this report are:

1) use corrected age composition data to estimate age, sex, and length composition of sockeye salmon in selected commercial harvests and escapements
2) document number of salmon harvested in selected commercial gillnet fisheries;
3) report escapement numbers from the major river systems;
4) compare corrected age composition data to results reported in Technical Fishery Report 91-17.

Changes to age composition affect total return and brood tables. It should be noted that the corrected data was used in "An Estimate of Total Return of Sockeye Salmon To Upper Cook Inlet, Alaska, 1976-1998" (Tobias and Tarbox 1999). Regional Information Report 2A97-24 (Waltemyer 1997) which used the 1989 data in historic tables has been replaced by Regional Information Report 2A99-32 "Age and Length Composition of Sockeye, Chinook, Coho, and Chum Salmon from 1979-1999 and Sockeye Salmon Female Contribution from 1987-1999, in Selected Commercial Fisheries and River Escapements, Upper Cook Inlet, Alaska (Tobias and Tarbox 1999).

Description of Fisheries

Two primary fisheries districts and eight subdistricts are used for the regulation of Upper Cook Inlet commercial fisheries (Figures 1 and 2). The Northern District includes the waters north of the approximate latitude of Boulder Point. The Central District includes the waters south of boulder Point to the latitude of Anchor Point. The Northern district is divided into two subdistricts (General and Eastern) in which only set gill net fisheries are allowed to operate. The Central District is divided into six subdistricts (Western, Kustatan, Kalgin Island, Upper, Lower and Chinitna Bay) in which both set and drift gill net fisheries can occur. The Upper Subdistrict is further divided into three set gill net fisheries separated by the Kenai and Kasilof Rivers on the western shore of the Kenai Peninsula (Cohoe/Ninilchik beach, Kalifonsky Beach, and Salamatof Beach). In addition, a drift gill net fishery can operate in all open waters of the Central District. These districts and subdistricts were initially established in 1976. Fishing is typically open in these areas on Mondays and Fridays (12 hours) between late June and mid August.

METHODS

Numerical Data

Commercial harvest statistics were compiled from ADF&G final fish ticket information.

ADF&G-CF personnel used Bendix Corporation[1] side-scanning single transducer sonar to enumerate the adult salmon escapement in the Kenai, Kasilof, Crescent, and Yentna Rivers (B. King, ADF&G, Soldotna, personal communication). Proportions of species found in fish wheel catches were multiplied by the sonar count to estimate the counts for each species. Escapement of sockeye salmon was determined at a weir on Fish Creek (R. Chlupach, ADF&G, Big Lake, personal communication). Cook Inlet Aquaculture Association (CIAA) personnel monitored sockeye salmon escapements through weirs on Hidden, and Packers Creeks and Judd Lake.

Age, Sex, and Size Data

Fish scales were taken from the left side of the salmon approximately two rows above the lateral line on the diagonal row that extends down from the posterior insertion of the dorsal fin to the anterior insertion of the anal fin (Koo 1955). One scale was collected from each

[1] *Vendor or product names are provided to document methods and do not constitute an endorsement by ADF&G.*

sockeye salmon. Scales were mounted on gum cards and impressions made in cellulose acetate as described by Clutter and Whitesel (1956).

Ages of salmon were determined by visual examination of scale impressions under moderate magnification (50X) using a microfiche viewer. Age was determined based upon criteria established by Mosher (1969) and Tobias et al. (1994). Ages were recorded in European notation (Koo 1962).

Sex and length information was recorded for all specimens sampled. Sex of the fish was determined by morphological characteristics. Length in millimeters was measured from mid-eye to fork-of-tail. Weights taken in the 1989 season were not recalculated with the new age composition results.

Age, sex and length compositions of the commercial catches were estimated using a stratified systematic random sampling design (Cochran 1977). A minimum sample size of 403 readable scales was defined for each species and strata to estimate simultaneously the proportion of each major age class in the harvest within five percent of the true proportion 90% of the time (Thompson 1987). A sample size of 600 fish per strata for sockeye salmon harvested in the commercial fisheries sampling was set to account for unreadable scales. For escapement samples, 600 fish were sampled from one to three times over the season to account for differences in age composition over time.

Commercial fishery harvests were stratified by date and area. Salmon were sampled from each of seven commercial fishing districts and subdistricts from one to five times during the season. Frequency and priority of sampling was based on the historical harvest contribution of a fishery to the total UCI commercial harvest and, in some cases, defined by the current management strategy. In order to detect changes in seasonal age composition, sampling dates were selected based on historic data such as run timing for each species throughout the season.

RESULTS AND DISCUSSION

A total 24,370 sockeye salmon were sampled in selected UCI commercial gillnet harvests and escapements in 1989 (Table 1). Age, sex and length data along with harvest and escapement information are presented below.

Sockeye Salmon

Total Return

The monitored sockeye salmon total return was 7,094,876 fish represented by a commercial harvest of 5,010,698 fish, and an escapement of 2,084,178 fish (Table 2). There were sport, personal use, and subsistence harvests and "Other" unmonitored escapements

(approximately 15% of the total monitored escapement) that occurred in UCI and totaled approximately 453,802 fish. These factors combined with the monitored commercial harvests and escapements yielded a total return of 7.5 million fish in 1989.

The following four major age classes made up 98% of the monitored sockeye salmon commercial harvests and escapements (Table 3):

Age Class	%	Escapement & Commercial Harvest	Mean Length
1.2	6.3	439,769	479 mm
1.3	26.4	1,845,255	569 mm
2.2	13.6	949,154	497 mm
2.3	51.8	3,617,273	586 mm

The 1989 commercial harvest of 5.0 million sockeye was double the average historic harvest (1966-1988) of 2.4 million fish. The predominant age class percentages, numbers and mean lengths of sockeye salmon in the UCI commercial harvest were:

Age Class	%	Harvested	Mean Length
1.2	5.3	265,092	486 mm
1.3	25.4	1,263,907	567 mm
2.2	15.1	748,454	498 mm
2.3	52.9	2,625,721	586 mm

The predominant age class percentages, numbers and mean lengths in the monitored UCI escapements were:

Age Class	%	Escapement	Mean Length
1.2	8.7	174,677	470 mm
1.3	28.9	581,348	573 mm
2.2	10.0	200,700	495 mm
2.3	49.2	991,552	589 mm

Female contributions among the major age classes ranged from 39% (Cohoe/Ninilchik Beach) to 60% (Eastern Subdistrict) in the commercial harvests and from 43% (Crescent River) to 54% (Kasilof River and Fish Creek) in the escapements (Table 3).

Commercial Harvest by Fishery

There was no 1989 Central District sockeye drift gillnet harvest due to the Exxon Valdez oil spill. This resulted in additional fishing time and above average harvests for the Upper Subdistrict beaches.

The Cohoe/Ninilchik Beach set gillnet harvest was 938,550 fish and represented 19% of the total UCI sockeye salmon harvest. Historically (1966-1988) the Cohoe/Ninilchik fishery

harvest averaged 13%. The major age class percentages, number of fish, and mean lengths were (Tables 3 and 4):

Age Class	%	Harvest	Mean Length
1.2	3.7	34,894	482 mm
1.3	22.9	214,517	561 mm
2.2	13.5	126,731	494 mm
2.3	58.9	552,662	581 mm

Female composition in the Cohoe/Ninilchik Beach sockeye harvest ranged from 37% (7-13 July) to 46% (14-20 July); Table 4).

The Kalifonsky Beach set gillnet harvest, which historically (1966-1988) averaged 10% of the total UCI sockeye salmon harvest, represented 36% or 1,796,976 fish in 1989. The four major age class percentages, number of fish, and mean lengths in the harvest were (Tables 3 and 5):

Age Class	%	Harvest	Mean Length
1.2	5.3	94,315	483 mm
1.3	24.6	441,856	557 mm
2.2	22.0	394,523	493 mm
2.3	47.7	856,363	582 mm

Female composition in the Kalifonsky Beach harvest ranged from 28% (11-17 July) to 51% (18-24 July; Table 5).

The Salamatof Beach set gillnet harvest, which historically (1966-1988) averaged 9% of the total UCI sockeye salmon harvest, represented 36% or 1,807,540 fish in 1989. The four major age class percentages, number of fish, and mean lengths were (Tables 3 and 6):

Age Class	%	Harvest	Mean Length
1.2	4.4	80,020	485 mm
1.3	24.6	444,365	579 mm
2.2	9.9	178,374	508 mm
2.3	60.1	1,086,975	593 mm

Female composition in the Salamatof Beach harvest ranged from 43% (3-13 July) to 50% (14-20 July; Table 6).

Of the three Upper Subdistrict beach fisheries, sockeye harvested in the Kalifonsky Beach harvest were smallest in total mean length (551 mm) while sockeye in the Salamatof Beach harvest were the largest (577 mm). Cohoe/Ninilchik sockeye salmon mean length was 561 mm.

In the Upper Subdistrict (Salamatof, Kalifonsky, and Cohoe/Ninilchik Beaches) set gillnet harvests, age-2.3 fish were the predominant age class (Table 3; Figures 3-6).

The Eastern Subdistrict sockeye salmon set gillnet harvest of 79,533 fish, which historically (1966-1988) averaged 1.9% of the total UCI sockeye salmon harvest, represented 1.6% in 1989. The major age class percentages, number of fish, and mean lengths were (Tables 3 and 7):

Age Class	%	Harvest	Mean Length
1.2	35.2	28,024	489 mm
1.3	31.1	24,748	566 mm
2.2	10.8	8,601	507 mm
2.3	14.0	11,167	579 mm

Female composition in the harvest was 60%.

The General Subdistrict set gillnet harvest of 201,268 which historically (1966-1988) averaged 2.9% of the total UCI sockeye salmon harvest, represented 4.0% in 1989. The major age class percentages, number of fish, and mean lengths were (Tables 3 and 8):

Age Class	%	Harvest	Mean Length
0.3	5.3	10,568	571 mm
1.2	10.6	21,399	500 mm
1.3	53.4	107,525	572 mm
2.2	4.2	8,380	502 mm
2.3	25.5	51,301	570 mm

Females represented 37% of the harvest.

The Kalgin Island commercial set gillnet harvest of 87,650 represented 1.7% of the total UCI sockeye harvest. Historically (1966-1988) the Kalgin Island harvest represents 1.8% of the total sockeye harvest. The major age class percentages, number of fish, and mean lengths were (Tables 3 and 9):

Age Class	%	Harvest	Mean Length
1.2	5.5	4,827	486 mm
1.3	6.4	5,599	572 mm
2.2	33.0	28,959	516 mm
2.3	47.6	41,702	574 mm

Females represented 56% of the harvest.

The Western Subdistrict set gillnet harvest of 55,856 represented 1.1% of the total UCI sockeye harvest. Historically (1966-1988) the Western Subdistrict harvests 8.3% of the total sockeye harvest. The major age class percentages, number of fish, and mean lengths were (Tables 3 and 10):

Age Class	%	Harvest	Mean Length
1.2	2.9	1,613	480 mm
1.3	45.3	25,297	565 mm
2.2	5.2	2,886	510 mm
2.3	45.7	25,551	566 mm

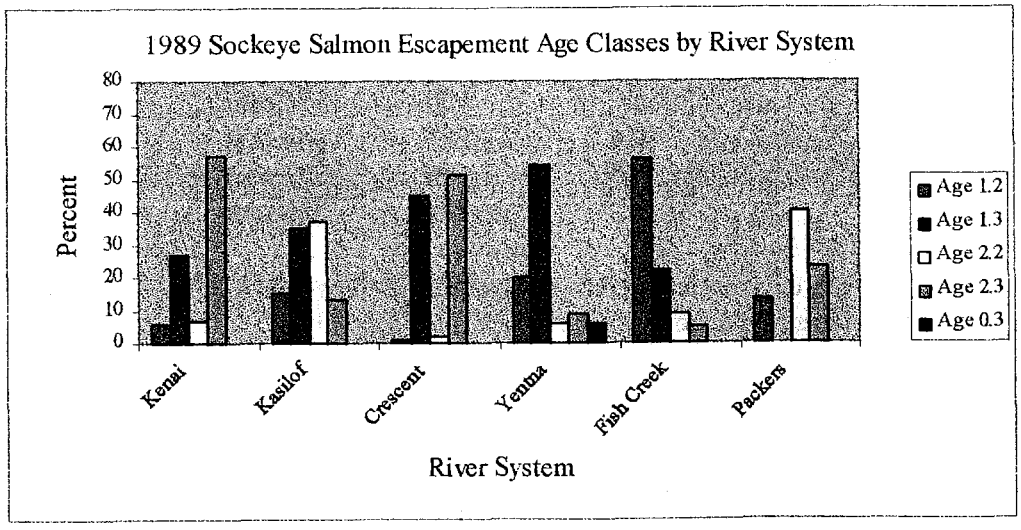
Females represented 54% of the Western Subdistrict harvest.

Escapement

A minimum of 2,396,804 sockeye salmon escaped the commercial fishery and entered the major rivers and streams of UCI (Tables 2, 3 and 11-19). Sockeye salmon escapements in descending order of abundance from the five major rivers of UCI were 1,599,959 fish in Kenai River, 158,206 fish in Kasilof River, 187,725 fish in Susitna River, 71,064 fish in Crescent River, 67,224 fish in Fish Creek. Packers Creek escapement of 22,318, and 290,309 "other" unmonitored escapements complete the escapement total. The estimate of total Susitna River escapement represents the combined escapement at Yentna River sonar site plus an estimate of the mainstem Susitna River based on the historical relation of Yentna River (x) to Sunshine Station (y) from 1981-85 (the only years of comparison) which yielded the following function:

$y = 0.95 * x.$

The predominant age classes in the total UCI sockeye escapement were age 1.2 (9%), age 1.3 (29%), age 2.2 (10%) and age 2.3 (49%, Table 3). Individual age class composition by river is presented below:



Major age class percentages, number of fish, and mean lengths in the Kenai River sockeye escapement were:

Age Class	%	Escapement	Mean Length
1.2	5.6	90,195	463 mm
1.3	26.7	426,876	578 mm
2.2	7.6	121,060	503 mm
2.3	57.4	919,003	591 mm

The overall mean length of Kenai River sockeye was 571 mm. Females comprised 53% of the Kenai River escapement (Tables 3 and 11).

Hidden Creek, a tributary of the Kenai River, had an escapement of 7,770 sockeye represented by age-1.2 (32%), age-1.3 (49%), age-2.2 (16%) and age-2.3 (3%) fish. Female composition in Hidden Creek was 42% (Table 12).

Kasilof River escapement was 158,206 sockeye salmon with the following major age class percentages, number of fish and mean lengths:

Age Class	%	Escapement	Mean Length
1.2	14.9	23,598	476 mm
1.3	35.4	55,926	547 mm
2.2	36.6	57,846	479 mm
2.3	13.0	20,622	536 mm

The overall mean length of Kasilof River escapement sockeye was 510 mm. Females comprised 54% of the Kasilof River escapement (Tables 3 and 13).

Crescent River escapement was 71,064 sockeye salmon with the following major age class percentages, number of fish and mean lengths:

Age Class	%	Escapement	Mean Length
1.2	0.7	500	477 mm
1.3	45.4	32,283	580 mm
2.2	2.0	1,400	525 mm
2.3	51.2	36,381	580 mm

The overall mean length of Crescent River escapement sockeye was 578 mm. Females comprised 43% of the Crescent River escapement (Tables 3 and 14).

Packers Creek sockeye salmon escapement was 22,318 fish. The major age class percentages, number of fish, and mean lengths were:

Age Class	%	Escapement	Mean Length
1.2	13.4	2,997	475 mm
2.1	20.9	4,655	357 mm
2.2	39.2	8,756	497 mm
2.3	17.2	3,831	561 mm

The overall mean length of Packers Creek sockeye was 474 mm. Females comprised 47% of the total escapement (Tables 3 and 15).

The Yentna River, a tributary of the Susitna River, had an escapement of 96,269 sockeye salmon. The major age class percentages, number of fish and mean lengths were:

Age Class	%	Escapement	Mean Length
0.3	6.2	6,004	568 mm
1.2	20.3	19,546	461 mm
1.3	53.7	51,723	565 mm
2.2	5.5	5,331	485 mm
2.3	8.6	8,275	557 mm

The overall mean length of Yentna River sockeye was 532 mm. Female composition in the escapement was 46% (Tables 3 and 16).

Judd Lake, a drainage of Talachilitna and Yentna Rivers, had an estimated escapement of 12,792 sockeye (Table 17). The major age classes, number of fish, and mean lengths were:

Age Class	%	Escapement	Mean Length
1.2	19.3	2,473	491 mm
1.3	47.3	6,055	572 mm
2.2	15.3	1,961	510 mm
2.3	18.0	2,303	583 mm

The overall mean length of Judd Lake sockeye was 549mm. Females comprised 47% of the escapement (Table 17).

Susitna River sockeye were sampled by fishwheel at River mile 80, in the vicinity of Sunshine Station. Age class percentages, number of fish, and mean lengths were:

Age Class	%	Mean Length
1.2	19.9	496 mm
1.3	62.1	577 mm
2.2	6.8	505 mm
2.3	9.5	579 mm

The overall mean length of mainstream Susitna sockeye was 555 mm. Females comprised 51% of the sample (Table 18).

Fish Creek had an estimated escapement of 67,224. Fish Creek sockeye age class percentages, number of fish, and mean lengths were:

Age Class	%	Escapement	Mean Length
1.2	56.3	37,841	487 mm
1.3	21.5	14,477	547 mm
2.2	9.4	6,307	492 mm
2.3	5.1	3,440	547 mm

The overall mean length of Fish Creek sockeye was 494 mm. Females comprised 54% of the escapement (Tables 3 and 19).

COMPARISON

The re-aging of the sockeye scales in 1989 produced notable differences in age composition in all the escapement and commercial harvest areas (Table 20). The corrected data resulted in a decrease of age 1.2 sockeye in all escapements and harvests except Crescent River. All age class 1.3 percentages were significantly lower, except Packer's Creek which increased by 26%. There were a higher number of ages 2.2 in all areas except the General Subdistrict Harvest, which dropped by 2%. Age 2.3 sockeye were affected the most, with increases in percentages in all areas, with an overall increase of 38%.

The Upper Cook Inlet total escapement and total harvest overall had an increase in age 2.3 and 2.2 sockeye, with a decrease in ages 1.3 and 1.2.

Variations occurred in average lengths between fishery and escapement age classes in the initial and re-aged data. Generally, average length of ages 1.2, 1.3 and 2.2 decreased while the age 2.3 increased (Figure 7). This probably occurred because the larger age 1.3 fish were re-aged 2.3, which increased the average size of the age class.

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Table 1. Number of sockeye salmon sampled from selected commercial gillnet harvests and escapements in Upper Cook Inlet, Alaska, in 1989.

Location[a]	Species: Sockeye
Commercial Catch:	
Central District	
Drift	0
Upper Subdistrict	
Cohoe/Ninilchik Beach	2,979
Kalifonsky Beach	3,000
Salamatof Beach	2,320
Western Subdistrict	782
Kalgin Island	541
Northern District	
Eastern Subdistrict	1,438
General Subdistrict	1,781
Subtotal	12,841
Escapement:	
Central District	
Kenai River	
Mainstem late run	2,721
Hidden Creek[b]	644
Kasilof River	
Mainstem	1,592
Crescent River	1,178
Packers Creek[b]	887
Northern District	
Susitna River Mainstream Test Fish	1,419
Yentna River	1,988
Judd Lake[b]	179
Chelatna Lake (Lake Creek)[b]	349
Fish Creek[c]	572
Subtotal	11,529
Total	24,370

[a] Specific locations not footnoted were sampled by Commercial Fisheries Division personnel, Alaska Department of Fish and Game (ADF&G).
[b] Samples collected by Cook Inlet Aquaculture Association (CIAA) personnel.
[c] Samples collected by FRED Division, Alaska Department of Fish and Game.

Table 2. Number of salmon commercially harvested and sockeye salmon escapements into the major river systems of Upper Cook Inlet, Alaska, in 1989.

Fishery		CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL
Commercial Harvest:							
A. Northern District Total		12,731	280,801	175,710	23,878	81,948	575,068
1. Northern District West		10,333	201,268	133,952	20,731	64,042	430,326
a. Trading Bay	247-10	3,257	33,755	16,420	2,725	1,852	58,009
b. Tyonek	247-20	2,024	34,213	27,151	3,903	6,225	73,516
c. Beluga	247-30	3,663	53,739	57,473	11,127	30,054	156,056
d. Susitna Flat	247-41	615	6,891	5,774	738	4,593	18,611
e. Pt. Mackenzie	247-42	154	8,627	4,402	273	2,578	16,034
f. Fire Island	247-43	616	16,118	16,657	1,420	13,761	48,572
g. Knik Arm	247-50	4	47,925	6,075	545	4,979	59,528
2. Northern District East		2,398	79,533	41,758	3,147	17,906	144,742
a. Pt. Possession	247-70	1,395	54,966	17,311	1,812	17,082	92,566
b. Birch Hill	247-80	618	17,754	10,638	815	706	30,531
c. Number 3 Bay	247-90	385	6,813	13,809	520	118	21,645
B. Central District Total		14,011	4,729,897	163,491	43,552	40,079	4,991,030
1. East Side Set Total		10,919	4,543,066	81,744	37,971	12,302	4,686,002
a. Salamatof	244-40	2,465	1,807,540	43,941	11,573	9,528	1,875,047
b. Kalifonsky Beach	244-30	3,509	1,796,976	12,850	4,066	336	1,817,737
d. Cohoe/Ninilchik		4,945	938,550	24,953	22,332	2,438	993,218
1. Cohoe	244-22	1,689	698,075	15,935	8,166	1,977	725,842
2. Ninilchik	244-21	3,256	240,475	9,018	14,166	461	267,376
2. West Side Set Total		1,272	55,856	23,342	1,899	17,797	100,166
a. Little Jack Slough	245-50	153	7,412	6,052	253	612	14,482
b. Polly Creek	245-40	457	16,184	3,491	311	3,692	24,135
c. Tuxedni Bay	245-30	581	28,390	6,188	900	12,770	48,829
d. Silver Salmon	245-20	81	3,870	7,611	435	723	12,720
3. Kustatan Total		1,144	40,256	17,468	587	194	59,649
a. Big River	245-55	1,012	8,059	6,145	139	81	15,436
b. West Foreland	245-60	132	32,197	11,323	448	113	44,213
4. Kalgin Island Total		664	87,650	36,660	2,633	1,718	129,325
a. West Side	246-10	514	52,567	25,268	1,844	1,472	81,665
b. East Side	246-20	150	35,083	11,392	789	246	47,660
5. Chinitna Bay Total		12	3,069	4,277	462	8,068	15,888
a. Set	245-10	12	3,066	3,534	461	7,996	15,069
b. Drift	245-10	0	3	743	1	72	819
6. Central District Set Total		14,011	4,729,894	162,748	43,551	40,007	4,990,211
7. Central District Drift Total		0	3	743	1	72	819
c. Chinitna Bay	245-10	0	3	743	1	72	819
Commercial Harvest Total		26,742	5,010,698	339,201	67,430	122,027	5,566,098
Escapement:							
Kenai River			1,599,959				
Kasilof River			158,206				
Crescent River			71,064				
Packers Creek[a]							
Susitna River[b]			187,725				
Fish Creek			67,224				
Escapement Total[c]			2,084,178				
Upper Cook Inlet Total[d]			7,094,876				

[a] Packers Creek escapement total of 22,271 sockeye is included with "other" unmonitored systems.

[b] Susitna River sockeye escapement comprises the Yentna River escapement of 96,269 plus an estimate of Susitna mainstem escapement Based on the relation: Sunshine equals 95% of the Yentna escapement developed using comparative data from 1981-85. Combining Yentna and Sunshine equals the total Susitna escapement.

[c] An additional 312,627 fish represent "other" unmonitored escapements and bring the total escapement to 2,396,805.

[d] Total does not account for other unmonitored escapements, sport, personal use and subsistence harvest that were estimated at 453,802 for an estimated return of 7.5 million sockeye salmon.

Table 3. Age, sex and length composition of sockeye salmon in selected commercial gillnet harvests and river escapements, Upper Cook Inlet, Alaska in 1989.

	Age Group													
Fishery	0.2	1.1	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total
COMMERCIAL HARVEST														
Central District														
Cohoe/Ninilchik Beach														
Number			992	34,894		214,517	126,731		5,714	552,662			3,040	938,550
Percent			.11	3.72		22.86	13.50		.61	58.88			.32	100.00
Sample Size			1	89		679	312		11	1,078			5	2,175
Mean Length[a]			616	482		561	494		607	581			605	561
Sample Size			1	89		679	312		11	1,078			5	2,175
% Female				33		42	37		17	39				39
Kalifonsky Beach														
Number	51		57	94,315		441,856	394,523		9,760	856,363		51		1,796,976
Percent	.00		.00	5.25		24.59	21.95		.54	47.66		.00		100.00
Sample Size	1		3	116		792	424		8	857		1		2,202
Mean Length	481		547	483		557	493		580	582		574		551
Sample Size	1		3	116		792	424		8	857		1		2,202
% Female			67	24		46	37		47	44		100		42
Salamatof Beach														
Number			2,210	80,020		444,365	178,374		11,940	1,086,975		1,721	1,935	1,807,540
Percent			.12	4.43		24.58	9.87		.66	60.14		.10	.11	100.00
Sample Size			3	82		501	164		12	964		2	2	1,730
Mean Length			585	485		579	508		626	593		609	581	577
Sample Size			3	82		501	164		12	964		2	2	1,730
% Female				23		53	46		16	49			75	48
Western														
Number				1,613		25,297	2,886		424	25,551			85	55,856
Percent				2.89		45.29	5.17		.76	45.74			.15	100.00
Sample Size				19		298	34		5	301			1	658
Mean Length				480		565	510		619	566			556	560
Sample Size				19		298	34		5	301			1	658
% Female				21		57	41			55			100	54
Kalgin Island														
Number		193		4,827	1,544	5,599	28,959		193	41,702	3,861	193	579	87,650
Percent		.22		5.51	1.76	6.39	33.04		.22	47.58	4.41	.22	.66	100.00
Sample Size		1		25	8	29	150		1	216	20	1	3	454
Mean Length		325		486	353	572	516		634	574	517	650	584	543
Sample Size		1		25	8	29	150		1	216	20	1	3	454
% Female				48		66	53			58	90		33	56

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Table 3. (Page 3 of 4)

Fishery	Age Group 0.2	1.1	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total
ESCAPEMENT (continued)														
Kasilof River														
Number				23,598	117	55,926	57,846		97	20,622				158,206
Percent				14.92	.07	35.35	36.56		.06	13.03				100.00
Sample Size				184	1	486	453		1	176				1,301
Mean Length				476	357	547	479		570	536				510
Sample Size				184	1	486	453		1	176				1,301
% Female				58		53	56		100	46				54
Crescent River														
Number			100	500		32,283	1,400		100	36,381	100	100	100	71,064
Percent			.14	.70		45.43	1.97		.14	51.19	.14	.14	.14	100.00
Sample Size			1	5		323	14		1	364	1	1	1	711
Mean Length			595	477		580	525		575	580	555	615	575	578
Sample Size			1	5		323	14		1	364	1	1	1	711
% Female				60		46	57		100	39			100	43
Packers Creek														
Number		346		2,997	4,655	63	8,756	32		3,831	1,480	32	126	22,318
Percent		1.55		13.43	20.86	.28	39.23	.14		17.17	6.63	.14	.56	100.00
Sample Size		11		96	148	2	279	1		122	47	1	4	711
Mean Length		332		475	357	583	497	345		561	495	600	524	474
Sample Size		11		96	148	2	279	1		122	47	1	4	711
% Female				49	2	100	64			57	74		75	47
Northern District														
Yentna River[c]														
Number	3,987	650	6,004	19,546	459	51,723	5,331		294	8,275				96,269
Percent	4.14	.68	6.24	20.30	.48	53.73	5.54		.31	8.60				100.00
Sample Size	68	13	102	328	9	842	93		4	143				1,602
Mean Length	442	347	568	461	340	565	485		593	557				532
Sample Size	68	13	102	328	9	842	93		4	143				1,602
% Female	9	27	53	28	28	53	54		16	53				46
Fish Creek														
Number		2,580		37,841	2,436	14,477	6,307			3,440	143			67,224
Percent		3.84		56.29	3.62	21.54	9.38			5.12	.21			100.00
Sample Size		18		264	17	101	44			24	1			469
Mean Length		362		487	362	547	492			547	443			494
Sample Size		18		264	17	101	44			24	1			469
% Female		6		53	6	70	52			83				54

-continued-

Table 3. (Page 2 of 4)

Fishery	Age Group 0.2	1.1	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total
COMMERCIAL HARVEST (continued)														
Northern District														
Eastern Subdistrict														
Number	521	4,043	1,079	28,024	1,176	24,748	8,601			11,167	174			79,533
Percent	.66	5.08	1.36	35.24	1.48	31.12	10.81			14.04	.22			100.00
Sample Size	6	33	13	343	10	340	126			152	2			1,025
Mean Length	460	363	574	489	384	566	507			579	488			521
Sample Size	6	33	13	343	10	340	126			152	2			1,025
% Female	26	82	42	62	94	57	58			51	21			60
General Subdistrict														
Number	1,620		10,568	21,399		107,525	8,380		201	51,301		274		201,268
Percent	.80		5.25	10.63		53.42	4.16		.10	25.49		.14		100.00
Sample Size	8		53	164		624	70		1	359		2		1,281
Mean Length	481		571	500		572	502		610	570		591		560
Sample Size	8		53	164		624	70		1	359		2		1,281
% Female	12		32	27		39	31			39		100		37
Commercial Harvest Total[b]														
Number	2,192	4,236	14,906	265,092	2,720	1,263,907	748,454		28,232	2,625,721	4,035	2,239	5,639	4,967,373
Percent	.04	.09	.30	5.34	.05	25.44	15.07		.57	52.86	.08	.05	.11	100.00
Sample Size	15	34	73	838	18	3,263	1,280		38	3,927	22	6	11	9,525
Mean Length	476	361	576	486	366	567	498		606	586	515	609	594	562
Sample Size	15	34	73	838	18	3,263	1,280		38	3,927	22	6	11	9,525
% Female	15	78	26	30	41	48	40		27	45	87	15	31	44
ESCAPEMENT														
Central District														
Kenai River														
Number	1,111	3,225	1,002	90,195	13,022	426,876	121,060	5,008	14,565	919,003		4,892		1,599,959
Percent	.07	.20	.06	5.64	.81	26.68	7.57	.31	.91	57.44		.31		100.00
Sample Size	1	3	1	91	13	431	120	5	14	903		5		1,587
Mean Length	405	352	560	463	401	578	503	407	606	591		610		571
Sample Size	1	3	1	91	13	431	120	5	14	903		5		1,587
% Female	100		100	44	46	51	61	40	44	55		39		53

-continued-

Table 3. (Page 4 of 4)

Fishery	Age Group 0.2	1.1	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total
Escapement Total[d]														
Number	5,098	6,801	7,106	174,677	20,689	581,348	200,700	5,040	15,056	991,552	1,723	5,024	226	2,015,040
Percent	.25	.34	.35	8.67	1.03	28.85	9.96	.25	.75	49.21	.09	.25	.01	100.00
Sample Size	69	45	104	968	188	2,185	1,003	6	20	1,732	49	7	5	6,381
Mean Length	434	354	567	470	385	573	495	407	605	589	494	610	546	561
Sample Size	69	45	104	968	188	2,185	1,003	6	20	1,732	49	7	5	6,381
% Female	29	5	59	46	31	51	59	40	44	54	64	38	86	53
Upper Cook Inlet Total[e]														
Number	7,290	11,037	22,012	439,769	23,409	1,845,255	949,154	5,040	43,288	3,617,273	5,758	7,263	5,865	6,982,413
Percent	.10	.16	.32	6.30	.34	26.43	13.59	.07	.62	51.81	.08	.10	.08	100.00
Sample Size	84	79	177	1,806	206	5,448	2,283	6	58	5,659	71	13	16	15,906
Mean Length	447	357	573	479	383	569	497	407	606	586	509	610	592	562
Sample Size	84	79	177	1,806	206	5,448	2,283	6	58	5,659	71	13	16	15,906
% Female	25	33	37	36	32	49	44	40	33	48	80	31	33	47

[a] Mean length in mm.
[b] Total does not include Kustatan and Chinitna Bay commercial harvest of 43,325.
[c] Yentna River represents 51% of the Susitna River total escapement based on the relation: Sunshine equals 95% of the Yentna. This relation Was developed from the years of comparable data 198-85 when the Yentna and Sunshine sites were operating. Therefore, the total Susitna River escapement estimate for 1989 is 187,725.
[d] An additional 91,456 fish from Susitna, and 290,309 fish from "other" systems bring the escapement total to 2,396,804 sockeye salmon
[e] Total does not account for other unmonitored escapements, sport, personal use and subsistence harvest that were estimated at 453,802 For an estimated total return of 7.5 million sockeye salmon.

Table 4. Age, sex and length composition of sockeye salmon in the Cohoe/Ninilchik Beach commercial set gillnet harvest, Upper Cook Inlet, Alaska, in 1989.

	Age Group							
	0.3	1.2	1.3	2.2	1.4	2.3	3.3	Total
Sample Period 1: 3 - 6 July								
Males		300	6,133	1,330	86	3,088	43	10,980
Percent		1.62	33.02	7.16	0.46	16.63	0.23	59.12
Sample Size		7	143	31	2	72	1	256
Mean Length[a]		485	544	483	530	547	594	536
Std. Error		9	2	5	5	4		2
Sample Size		7	143	31	2	72	1	256
Females		43	4,460	1,072		2,016		7,591
Percent		0.23	24.02	5.77		10.86		40.88
Sample Size		1	104	25		47		177
Mean Length		495	542	498		544		536
Std. Error			2	6		5		2
Sample Size		1	104	25		47		177
Both Sexes		343	10,593	2,402	86	5,104	43	18,571
Percent		1.85	57.04	12.93	0.46	27.48	0.23	100.00
Sample Size		8	247	56	2	119	1	433
Mean Length		487	543	490	530	546	594	536
Std. Error		9	2	4	5	3		1
Sample Size		8	247	56	2	119	1	433

-Continued-

Table 4. (page 2 of 6)

	Age Group							
	0.3	1.2	1.3	2.2	1.4	2.3	3.3	Total
Sample Period 2: 7 - 13 July								
Males		6,019	18,258	13,844		21,870		59,991
Percent		6.33	19.20	14.56		23.00		63.08
Sample Size		30	91	69		109		299
Mean Length		469	553	486		578		538
Std. Error		5	4	4		4		2
Sample Size		30	91	69		109		299
Females		2,809	10,834	7,825		13,643		35,111
Percent		2.95	11.39	8.23		14.35		36.92
Sample Size		14	54	39		68		175
Mean Length		474	550	487		562		534
Std. Error		10	3	4		4		2
Sample Size		14	54	39		68		175
Both Sexes		8,828	29,092	21,669		35,513		95,102
Percent		9.28	30.59	22.79		37.34		100.00
Sample Size		44	145	108		177		474
Mean Length		470	552	486		572		537
Std. Error		5	3	3		3		2
Sample Size		44	145	108		177		474

-Continued-

Table 4. (page 3 of 6)

	Age Group							
	0.3	1.2	1.3	2.2	1.4	2.3	3.3	Total
Sample Period 3: 14 - 20 July								
Males		1,692	14,948	8,179		40,330		65,149
Percent		1.41	12.50	6.84		33.73		54.48
Sample Size		6	53	29		143		231
Mean Length		496	564	484		587		567
Std. Error		17	5	5		3		2
Sample Size		6	53	29		143		231
Females		1,128	14,948	5,641	282	32,433		54,432
Percent		0.94	12.50	4.72	0.24	27.12		45.52
Sample Size		4	53	20	1	115		193
Mean Length		499	542	484	624	568		551
Std. Error		16	4	6		2		2
Sample Size		4	53	20	1	115		193
Both Sexes		2,820	29,896	13,820	282	72,763		119,581
Percent		2.36	25.00	11.56	0.24	60.85		100.00
Sample Size		10	106	49	1	258		424
Mean Length		497	553	484	624	579		559
Std. Error		12	3	4		2		1
Sample Size		10	106	49	1	258		424

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Table 4. (page 4 of 6)

	Age Group							
	0.3	1.2	1.3	2.2	1.4	2.3	3.3	Total
Sample Period 4: 21 - 27 July								
Males	992	9,923	42,668	47,629		167,694	992	269,898
Percent	0.23	2.29	9.86	11.01		38.76	0.23	62.39
Sample Size	1	10	43	48		169	1	272
Mean Length	616	491	576	498		587	594	566
Std. Error		13	11	5		3		3
Sample Size	1	10	43	48		169	1	272
Females		4,961	30,760	21,830		105,181		162,732
Percent		1.15	7.11	5.05		24.31		37.61
Sample Size		5	31	22		106		164
Mean Length		484	555	495		570		554
Std. Error		24	5	7		2		2
Sample Size		5	31	22		106		164
Both Sexes	992	14,884	73,428	69,459		272,875	992	432,630
Percent	0.23	3.44	16.97	16.06		63.07	0.23	100.00
Sample Size	1	15	74	70		275	1	436
Mean Length	616	489	567	497		580	594	562
Std. Error		12	7	4		2		2
Sample Size	1	15	74	70		275	1	436

-Continued-

Table 4. (page 5 of 6)

	Age Group							
	0.3	1.2	1.3	2.2	1.4	2.3	3.3	Total
Sample Period 5: 28 July - 14 August								
Males		5,346	41,435	8,688	4,678	106,259	2,005	168,411
Percent		1.96	15.20	3.19	1.72	38.97	0.74	61.76
Sample Size		8	62	13	7	159	3	252
Mean Length		466	574	506	610	595	610	582
Std. Error		14	4	6	10	3	18	2
Sample Size		8	62	13	7	159	3	252
Females		2,673	30,073	10,693	668	60,148		104,255
Percent		0.98	11.03	3.92	0.24	22.06		38.24
Sample Size		4	45	16	1	90		156
Mean Length		495	550	499	583	569		555
Std. Error		23	4	8		3		2
Sample Size		4	45	16	1	90		156
Both Sexes		8,019	71,508	19,381	5,346	166,407	2,005	272,666
Percent		2.94	26.23	7.11	1.96	61.03	0.74	100.00
Sample Size		12	107	29	8	249	3	408
Mean Length		476	564	502	607	586	610	571
Std. Error		12	3	5	10	2	18	2
Sample Size		12	107	29	8	249	3	408

-Continued-

Table 4. (page 6 of 6)

	Age Group							
	0.3	1.2	1.3	2.2	1.4	2.3	3.3	Total
All Periods Combined:								
Males	992	23,280	123,442	79,670	4,764	339,241	3,040	574,429
Percent	0.11	2.48	13.15	8.49	0.51	36.15	0.32	61.20
Sample Size	1	61	392	190	9	652	5	1,310
Mean Length	616	480	569	495	609	589	605	567
Std. Error		7	4	3	10	2	18	1
Sample Size	1	61	392	190	9	652	5	1,310
Females		11,614	91,075	47,061	950	213,421		364,121
Percent		1.24	9.70	5.01	0.10	22.74		38.80
Sample Size		28	287	122	2	426		865
Mean Length		485	550	493	595	568		551
Std. Error		12	2	4		1		1
Sample Size		28	287	122	2	426		865
Both Sexes	992	34,894	214,517	126,731	5,714	552,662	3,040	938,550
Percent	0.11	3.72	22.86	13.50	0.61	58.88	0.32	100.00
Sample Size	1	89	679	312	11	1,078	5	2,175
Mean Length	616	482	561	494	607	581	605	561
Std. Error		6	3	2	10	1	18	1
Sample Size	1	89	679	312	11	1,078	5	2,175

[a] Mean length in mm.

Table 5. Age, sex and length composition of sockeye salmon in the Kalifonsky Beach commercial set gillnet harvest, Upper Cook Inlet, Alaska, in 1989.

	Age Group								
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 1: 3 - 5 July									
Males		19	282	2,687	488		958		4,434
Percent		0.23	3.44	32.80	5.96		11.70		54.13
Sample Size		1	15	143	26		51		236
Mean Length[a]		567	473	558	480		560		544
Std. Error			6	3	6		5		3
Sample Size		1	15	143	26		51		236
Females		38	225	2,160	244	19	1,071		3,757
Percent		0.46	2.75	26.37	2.98	0.23	13.08		45.87
Sample Size		2	12	115	13	1	57		200
Mean Length		537	486	550	489	593	545		541
Std. Error		1	8	2	16		4		2
Sample Size		2	12	115	13	1	57		200
Both Sexes		57	507	4,847	732	19	2,029		8,191
Percent		0.70	6.19	59.17	8.94	0.23	24.77		100.00
Sample Size		3	27	258	39	1	108		436
Mean Length		547	479	554	483	593	552		543
Std. Error		1	5	2	7		3		2
Sample Size		3	27	258	39	1	108		436

-Continued-

Table 5. (page 2 of 6)

	Age Group								
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 2: 6 - 10 July									
Males	51		463	5,709	3,034		3,857		13,114
Percent	0.22		1.99	24.51	13.02		16.56		56.29
Sample Size	1		9	111	59		75		255
Mean Length	481		492	543	494		545		530
Std. Error			7	2	4		4		2
Sample Size	1		9	111	59		75		255
Females			514	5,247	1,594		2,777	51	10,183
Percent			2.21	22.52	6.84		11.92	0.22	43.71
Sample Size			10	102	31		54	1	198
Mean Length			478	545	503		550	574	536
Std. Error			9	2	5		5		2
Sample Size			10	102	31		54	1	198
Both Sexes	51		977	10,956	4,628		6,634	51	23,297
Percent	0.22		4.19	47.03	19.87		28.48	0.22	100.00
Sample Size	1		19	213	90		129	1	453
Mean Length	481		485	544	497		547	574	533
Std. Error			6	2	3		3		1
Sample Size	1		19	213	90		129	1	453

-Continued-

Table 5. (page 3 of 6)

	Age Group								
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 3: 11 - 17 July									
Males			24,171	120,857	96,685		137,776		379,489
Percent			4.58	22.88	18.31		26.09		71.85
Sample Size			20	100	80		114		314
Mean Length			484	544	493		577		539
Std. Error			6	6	3		4		3
Sample Size			20	100	80		114		314
Females			12,086	49,551	29,006		58,011		148,654
Percent			2.29	9.38	5.49		10.98		28.15
Sample Size			10	41	24		48		123
Mean Length			487	556	487		572		543
Std. Error			6	5	6		4		3
Sample Size			10	41	24		48		123
Both Sexes			36,257	170,408	125,691		195,787		528,143
Percent			6.86	32.27	23.80		37.07		100.00
Sample Size			30	141	104		162		437
Mean Length			485	547	492		575		540
Std. Error			4	5	3		3		2
Sample Size			30	141	104		162		437

-Continued-

Table 5. (page 4 of 6)

	Age Group								
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 4: 18 - 24 July									
Males			29,001	56,476	56,476		195,378		337,331
Percent			4.19	8.17	8.17		28.26		48.79
Sample Size			19	37	37		128		221
Mean Length			484	571	500		601		569
Std. Error			7	7	4		3		2
Sample Size			19	37	37		128		221
Females			3,053	94,636	53,424	4,579	198,430		354,122
Percent			0.44	13.69	7.73	0.66	28.70		51.21
Sample Size			2	62	35	3	130		232
Mean Length			509	569	520	576	574		564
Std. Error			29	4	6	33	3		2
Sample Size			2	62	35	3	130		232
Both Sexes			32,054	151,112	109,900	4,579	393,808		691,453
Percent			4.64	21.85	15.89	0.66	56.95		100.00
Sample Size			21	99	72	3	258		453
Mean Length			487	570	510	576	587		567
Std. Error			7	4	4	33	2		2
Sample Size			21	99	72	3	258		453

-Continued-

Table 5. (page 5 of 6)

	Age Group								
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 5: 25 July - 14 August									
Males			18,067	52,912	91,627	5,162	144,539		312,307
Percent			3.31	9.69	16.78	0.95	26.48		57.21
Sample Size			14	41	71	4	112		242
Mean Length			470	566	480	583	591		547
Std. Error			7	6	4	15	4		2
Sample Size			14	41	71	4	112		242
Females			6,453	51,621	61,945		113,566		233,585
Percent			1.18	9.46	11.35		20.80		42.79
Sample Size			5	40	48		88		181
Mean Length			487	545	482		564		536
Std. Error			16	4	4		3		2
Sample Size			5	40	48		88		181
Both Sexes			24,520	104,533	153,572	5,162	258,105		545,892
Percent			4.49	19.15	28.13	0.95	47.28		100.00
Sample Size			19	81	119	4	200		423
Mean Length			475	556	481	583	579		542
Std. Error			6	4	3	15	2		2
Sample Size			19	81	119	4	200		423

-Continued-

Table 5. (page 6 of 6)

	Age Group								
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	2.4	Total
All Periods Combined:									
Males	51	19	71,984	238,641	248,310	5,162	482,508		1,046,675
Percent	0.00	0.00	4.01	13.28	13.82	0.29	26.85		58.25
Sample Size	1	1	77	432	273	4	480		1,268
Mean Length	481	567	481	555	490	583	591		551
Std. Error			4	4	2	15	2		1
Sample Size	1	1	77	432	273	4	480		1,268
Females		38	22,331	203,215	146,213	4,598	373,855	51	750,301
Percent		0.00	1.24	11.31	8.14	0.26	20.80	0.00	41.75
Sample Size		2	39	360	151	4	377	1	934
Mean Length		537	490	559	497	576	570	574	551
Std. Error		1	7	2	3	33	2		1
Sample Size		2	39	360	151	4	377	1	934
Both Sexes	51	57	94,315	441,856	394,523	9,760	856,363	51	1,796,976
Percent	0.00	0.00	5.25	24.59	21.95	0.54	47.66	0.00	100.00
Sample Size	1	3	116	792	424	8	857	1	2,202
Mean Length	481	547	483	557	493	580	582	574	551
Std. Error		1	3	2	2	17	1		1
Sample Size	1	3	116	792	424	8	857	1	2,202

[a] Mean length in mm.

Table 6. Age, sex and length composition of sockeye salmon in the Salamatof Beach commercial set gillnet harvest, Upper Cook Inlet, Alaska, in 1989.

	Age Group								
	0.3	1.2	1.3	2.2	1.4	2.3	2.4	3.3	Total
Sample Period 1: 3 - 13 July									
Males	275	5,495	25,279	6,320	550	32,697	275		70,891
Percent	0.22	4.40	20.22	5.06	0.44	26.15	0.22		56.70
Sample Size	1	20	92	23	2	119	1		258
Mean Length[a]	546	479	594	501	626	606	640		583
Std. Error		9	3	8	20	3			2
Sample Size	1	20	92	23	2	119	1		258
Females		1,923	21,157	2,748		28,302			54,130
Percent		1.54	16.92	2.20		22.64			43.30
Sample Size		7	77	10		103			197
Mean Length		504	565	500		586			570
Std. Error		15	3	11		3			2
Sample Size		7	77	10		103			197
Both Sexes	275	7,418	46,436	9,068	550	60,999	275		125,021
Percent	0.22	5.93	37.14	7.25	0.44	48.79	0.22		100.00
Sample Size	1	27	169	33	2	222	1		455
Mean Length	546	485	580	500	626	597	640		577
Std. Error		8	2	7	20	2			1
Sample Size	1	27	169	33	2	222	1		455

-Continued-

Table 6. (page 2 of 5)

	Age Group								
	0.3	1.2	1.3	2.2	1.4	2.3	2.4	3.3	Total
Sample Period 2: 14 - 20 July									
Males		30,270	92,827	28,252	6,054	278,479			435,882
Percent		3.44	10.55	3.21	0.69	31.65			49.54
Sample Size		15	46	14	3	138			216
Mean Length		490	591	517	629	606			589
Std. Error		10	4	8	12	2			2
Sample Size		15	46	14	3	138			216
Females		6,054	106,953	12,108		318,839			443,954
Percent		0.69	12.16	1.38		36.24			50.46
Sample Size		3	53	6		158			220
Mean Length		514	567	539		578			573
Std. Error		32	3	16		4			3
Sample Size		3	53	6		158			220
Both Sexes		36,324	199,780	40,360	6,054	597,318			879,836
Percent		4.13	22.71	4.59	0.69	67.89			100.00
Sample Size		18	99	20	3	296			436
Mean Length		494	578	523	629	591			581
Std. Error		10	3	7	12	2			2
Sample Size		18	99	20	3	296			436

-Continued-

Table 6. (page 3 of 5)

	Age Group								
	0.3	1.2	1.3	2.2	1.4	2.3	2.4	3.3	Total
Sample Period 3: 21 - 27 July									
Males	1,446	20,249	57,855	52,069	1,446	185,137	1,446		319,648
Percent	0.24	3.41	9.76	8.78	0.24	31.22	0.24		53.90
Sample Size	1	14	40	36	1	128	1		221
Mean Length	589	464	594	494	637	605	603		576
Std. Error		8	6	6		3			2
Sample Size	1	14	40	36	1	128	1		221
Females		7,232	69,426	60,748	1,446	133,066		1,446	273,364
Percent		1.22	11.71	10.24	0.24	22.44		0.24	46.10
Sample Size		5	48	42	1	92		1	189
Mean Length		497	566	509	597	576		571	556
Std. Error		10	4	5		3			2
Sample Size		5	48	42	1	92		1	189
Both Sexes	1,446	27,481	127,281	112,817	2,892	318,203	1,446	1,446	593,012
Percent	0.24	4.63	21.46	19.02	0.49	53.66	0.24	0.24	100.00
Sample Size	1	19	88	78	2	220	1	1	410
Mean Length	589	473	579	502	617	593	603	571	567
Std. Error		7	3	4		2			2
Sample Size	1	19	88	78	2	220	1	1	410

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Table 6. (page 4 of 5)

	Age Group								
	0.3	1.2	1.3	2.2	1.4	2.3	2.4	3.3	Total
Sample Period 4: 28 July - 14 August									
Males	489	5,376	31,280	9,775	1,955	59,137		489	108,501
Percent	0.23	2.56	14.92	4.66	0.93	28.20		0.23	51.75
Sample Size	1	11	64	20	4	121		1	222
Mean Length	595	488	599	520	636	610		612	593
Std. Error		14	4	12	17	3			2
Sample Size	1	11	64	20	4	121		1	222
Females		3,421	39,588	6,354	489	51,318			101,170
Percent		1.63	18.88	3.03	0.23	24.48			48.25
Sample Size		7	81	13	1	105			207
Mean Length		492	571	522	606	584			572
Std. Error		16	3	10		3			2
Sample Size		7	81	13	1	105			207
Both Sexes	489	8,797	70,868	16,129	2,444	110,455		489	209,671
Percent	0.23	4.20	33.80	7.69	1.17	52.68		0.23	100.00
Sample Size	1	18	145	33	5	226		1	429
Mean Length	595	489	584	521	630	598		612	583
Std. Error		11	2	8	17	2			1
Sample Size	1	18	145	33	5	226		1	429

-Continued-

Table 6. (page 5 of 5)

	Age Group								
	0.3	1.2	1.3	2.2	1.4	2.3	2.4	3.3	Total
All Periods Combined:									
Males	2,210	61,390	207,241	96,416	10,005	555,450	1,721	489	934,922
Percent	0.12	3.40	11.47	5.33	0.55	30.73	0.10	0.03	51.72
Sample Size	3	60	242	93	10	506	2	1	917
Mean Length	585	480	593	504	631	606	609	612	585
Std. Error		6	3	4	9	1			1
Sample Size	3	60	242	93	10	506	2	1	917
Females		18,630	237,124	81,958	1,935	531,525		1,446	872,618
Percent		1.03	13.12	4.53	0.11	29.41		0.08	48.28
Sample Size		22	259	71	2	458		1	813
Mean Length		502	567	514	599	578		571	568
Std. Error		12	2	5		2			2
Sample Size		22	259	71	2	458		1	813
Both Sexes	2,210	80,020	444,365	178,374	11,940	1,086,975	1,721	1,935	1,807,540
Percent	0.12	4.43	24.58	9.87	0.66	60.14	0.10	0.11	100.00
Sample Size	3	82	501	164	12	964	2	2	1,730
Mean Length	585	485	579	508	626	593	609	581	577
Std. Error		5	2	3	9	1			1
Sample Size	3	82	501	164	12	964	2	2	1,730

[a] Mean length in mm.

Table 7. Age, sex and length composition of sockeye salmon in the Eastern Subdistrict commercial set gillnet harvest, Upper Cook Inlet, Alaska, in 1989.

	Age Group									
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	2.3	3.2	Total
Sample Period 1: 5 June - 17 July										
Males	276	552	552	7,452		7,038	2,070	3,450	138	21,528
Percent	0.48	0.95	0.95	12.89		12.17	3.58	5.97	0.24	37.23
Sample Size	2	4	4	54		51	15	25	1	156
Mean Length[a]	464	362	599	494		585	524	596	492	542
Std. Error	4	10	4	4		4	6	5		2
Sample Size	2	4	4	54		51	15	25	1	156
Females	138	3,312	276	13,801	1,104	9,936	3,450	4,278		36,295
Percent	0.24	5.73	0.48	23.87	1.91	17.18	5.97	7.40		62.77
Sample Size	1	24	2	100	8	72	25	31		263
Mean Length	450	363	534	484	386	555	498	568		501
Std. Error		4	16	2	9	3	7	5		1
Sample Size	1	24	2	100	8	72	25	31		263
Both Sexes	414	3,864	828	21,253	1,104	16,974	5,520	7,728	138	57,823
Percent	0.72	6.68	1.43	36.76	1.91	29.36	9.55	13.36	0.24	100.00
Sample Size	3	28	6	154	8	123	40	56	1	419
Mean Length	459	363	577	488	386	568	508	580	492	516
Std. Error	4	4	6	2	9	2	5	3		1
Sample Size	3	28	6	154	8	123	40	56	1	419

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Table 7. (page 2 of 3)

	Age Group									
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	2.3	3.2	Total
Sample Period 2: 18 July - 8 September										
Males	107	179	72	3,153	72	3,618	1,505	1,970		10,676
Percent	0.49	0.82	0.33	14.52	0.33	16.67	6.93	9.07		49.18
Sample Size	3	5	2	88	2	101	42	55		298
Mean Length	464	368	557	497	356	572	501	588		537
Std. Error	15	9	1	4	1	3	5	5		2
Sample Size	3	5	2	88	2	101	42	55		298
Females			179	3,618		4,156	1,576	1,469	36	11,034
Percent			0.82	16.67		19.14	7.26	6.77	0.17	50.82
Sample Size			5	101		116	44	41	1	308
Mean Length			565	490		555	510	561	473	528
Std. Error			6	3		3	4	4		2
Sample Size			5	101		116	44	41	1	308
Both Sexes	107	179	251	6,771	72	7,774	3,081	3,439	36	21,710
Percent	0.49	0.82	1.16	31.19	0.33	35.81	14.19	15.84	0.17	100.00
Sample Size	3	5	7	189	2	217	86	96	1	606
Mean Length	464	368	563	493	356	563	506	577	473	532
Std. Error	15	9	4	2	1	2	3	3		1
Sample Size	3	5	7	189	2	217	86	96	1	606

-Continued-

Table 7. (page 3 of 3)

	Age Group									
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	2.3	3.2	Total
All Periods Combined:										
Males	383	731	624	10,605	72	10,656	3,575	5,420	138	32,204
Percent	0.48	0.92	0.78	13.33	0.09	13.40	4.49	6.81	0.17	40.49
Sample Size	5	9	6	142	2	152	57	80	1	454
Mean Length	464	363	594	494	356	580	514	593	492	540
Std. Error	5	8	4	3	1	3	4	3		2
Sample Size	5	9	6	142	2	152	57	80	1	454
Females	138	3,312	455	17,419	1,104	14,092	5,026	5,747	36	47,329
Percent	0.17	4.16	0.57	21.90	1.39	17.72	6.32	7.23	0.05	59.51
Sample Size	1	24	7	201	8	188	69	72	1	571
Mean Length	450	363	546	486	386	555	502	566	473	507
Std. Error		4	10	2	9	2	5	4		1
Sample Size	1	24	7	201	8	188	69	72	1	571
Both Sexes	521	4,043	1,079	28,024	1,176	24,748	8,601	11,167	174	79,533
Percent	0.66	5.08	1.36	35.24	1.48	31.12	10.81	14.04	0.22	100.00
Sample Size	6	33	13	343	10	340	126	152	2	1,025
Mean Length	460	363	574	489	384	566	507	579	488	521
Std. Error	5	4	5	1	8	2	3	3		1
Sample Size	6	33	13	343	10	340	126	152	2	1,025

[a] Mean length in mm.

Table 8. Age, sex and length composition of sockeye salmon in the General Subdistrict commercial set gillnet harvest, Upper Cook Inlet, Alaska, in 1989.

	Age Group								
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 1: 5 June - 20 July									
Males	1,205	3,614	7,430	34,939	1,205	201	13,052		61,646
Percent	1.41	4.23	8.71	40.94	1.41	0.24	15.29		72.24
Sample Size	6	18	37	174	6	1	65		307
Mean Length[a]	480	578	496	586	520	610	584		571
Std. Error	21	8	7	2	22		4		2
Sample Size	6	18	37	174	6	1	65		307
Females	201	1,205	1,807	14,457	803		5,221		23,694
Percent	0.24	1.41	2.12	16.94	0.94		6.12		27.76
Sample Size	1	6	9	72	4		26		118
Mean Length	520	568	528	567	506		574		563
Std. Error		8	12	3	6		3		2
Sample Size	1	6	9	72	4		26		118
Both Sexes	1,406	4,819	9,237	49,396	2,008	201	18,273		85,340
Percent	1.65	5.65	10.82	57.88	2.35	0.24	21.41		100.00
Sample Size	7	24	46	246	10	1	91		425
Mean Length	486	575	502	581	514	610	581		569
Std. Error	21	6	6	2	13		3		1
Sample Size	7	24	46	246	10	1	91		425

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Table 8. (page 2 of 4)

	Age Group								
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 2: 21 - 27 July									
Males	214	3,427	5,354	25,699	2,784		12,635		50,113
Percent	0.24	3.82	5.97	28.64	3.10		14.08		55.85
Sample Size	1	16	25	120	13		59		234
Mean Length	453	574	509	576	491		570		562
Std. Error		5	6	2	6		3		2
Sample Size	1	16	25	120	13		59		234
Females		2,142	1,713	23,558	1,071		10,922	214	39,620
Percent		2.39	1.91	26.25	1.19		12.17	0.24	44.15
Sample Size		10	8	110	5		51	1	185
Mean Length		554	493	554	494		557	586	550
Std. Error		10	6	2	12		3		2
Sample Size		10	8	110	5		51	1	185
Both Sexes	214	5,569	7,067	49,257	3,855		23,557	214	89,733
Percent	0.24	6.21	7.88	54.89	4.30		26.25	0.24	100.00
Sample Size	1	26	33	230	18		110	1	419
Mean Length	453	566	505	565	492		564	586	557
Std. Error		5	5	2	5		2		1
Sample Size	1	26	33	230	18		110	1	419

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Table 8. (page 3 of 4)

	Age Group								
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 3: 28 July - 8 September									
Males		120	2,937	4,436	1,798		5,395		14,686
Percent		0.46	11.21	16.93	6.86		20.60		56.06
Sample Size		2	49	74	30		90		245
Mean Length		577	486	560	501		567		541
Std. Error		8	4	3	8		3		2
Sample Size		2	49	74	30		90		245
Females		60	2,158	4,436	719		4,076	60	11,509
Percent		0.23	8.24	16.93	2.74		15.56	0.23	43.94
Sample Size		1	36	74	12		68	1	192
Mean Length		586	490	550	523		557	610	540
Std. Error			3	3	7		3		2
Sample Size		1	36	74	12		68	1	192
Both Sexes		180	5,095	8,872	2,517		9,471	60	26,195
Percent		0.69	19.45	33.87	9.61		36.16	0.23	100.00
Sample Size		3	85	148	42		158	1	437
Mean Length		580	488	555	507		563	610	541
Std. Error		8	3	2	6		2		1
Sample Size		3	85	148	42		158	1	437

-Continued-

Table 8. (page 4 of 4)

	Age Group								
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	2.4	Total
All Periods Combined:									
Males	1,419	7,161	15,721	65,074	5,787	201	31,082		126,445
Percent	0.71	3.56	7.81	32.33	2.88	0.10	15.44		62.82
Sample Size	7	36	111	368	49	1	214		786
Mean Length	476	576	499	580	500	610	575		564
Std. Error	21	5	4	2	6		2		1
Sample Size	7	36	111	368	49	1	214		786
Females	201	3,407	5,678	42,451	2,593		20,219	274	74,823
Percent	0.10	1.69	2.82	21.09	1.29		10.05	0.14	37.18
Sample Size	1	17	53	256	21		145	2	495
Mean Length	520	559	503	558	506		561	591	553
Std. Error		7	4	1	6		2		1
Sample Size	1	17	53	256	21		145	2	495
Both Sexes	1,620	10,568	21,399	107,525	8,380	201	51,301	274	201,268
Percent	0.80	5.25	10.63	53.42	4.16	0.10	25.49	0.14	100.00
Sample Size	8	53	164	624	70	1	359	2	1,281
Mean Length	481	571	500	572	502	610	570	591	560
Std. Error	21	4	3	1	4		1		1
Sample Size	8	53	164	624	70	1	359	2	1,281

[a] Mean length in mm.

Table 9. Age, sex and length composition of sockeye salmon in the Kalgin Island commercial set gillnet harvest, Upper Cook Inlet, Alaska, in 1989.

	Age Group										
	1.1	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Sample period:	26 June - 11 September										
Males	193	2,510	1,544	1,931	13,707	193	17,569	386	193	386	38,612
Percent	0.22	2.86	1.76	2.20	15.64	0.22	20.04	0.44	0.22	0.44	44.05
Sample Size	1	13	8	10	71	1	91	2	1	2	200
Mean Length[a]	325	485	353	593	515	634	588	531	650	574	545
Std. Error		10	6	5	4		3	6		16	2
Sample Size	1	13	8	10	71	1	91	2	1	2	200
Females		2,317		3,668	15,252		24,133	3,475		193	49,038
Percent		2.64		4.18	17.40		27.53	3.96		0.22	55.95
Sample Size		12		19	79		125	18		1	254
Mean Length		487		561	516		563	515		606	542
Std. Error		17		5	2		2	5			2
Sample Size		12		19	79		125	18		1	254
Both Sexes	193	4,827	1,544	5,599	28,959	193	41,702	3,861	193	579	87,650
Percent	0.22	5.51	1.76	6.39	33.04	0.22	47.58	4.41	0.22	0.66	100.00
Sample Size	1	25	8	29	150	1	216	20	1	3	454
Mean Length	325	486	353	572	516	634	574	517	650	584	543
Std. Error		10	6	4	2		2	5		16	1
Sample Size	1	25	8	29	150	1	216	20	1	3	454

[a] Mean length in mm.

Table 10. Age, sex and length composition of sockeye salmon in the Western Subdistrict commercial set gillnet harvest, Upper Cook Inlet, Alaska, in 1989.

	Age Group						
	1.2	1.3	2.2	1.4	2.3	3.3	Total
Sample period:	16 June - 6 September						
Males	1,273	10,866	1,698	424	11,460		25,721
Percent	2.28	19.45	3.04	0.76	20.52		46.05
Sample Size	15	128	20	5	135		303
Mean Length[a]	474	578	509	619	576		568
Std. Error	28	3	8	14	3		2
Sample Size	15	128	20	5	135		303
Females	340	14,431	1,188		14,091	85	30,135
Percent	0.61	25.84	2.13		25.23	0.15	53.95
Sample Size	4	170	14		166	1	355
Mean Length	503	554	512		558	556	554
Std. Error	10	2	5		2		1
Sample Size	4	170	14		166	1	355
Both Sexes	1,613	25,297	2,886	424	25,551	85	55,856
Percent	2.89	45.29	5.17	0.76	45.74	0.15	100.00
Sample Size	19	298	34	5	301	1	658
Mean Length	480	565	510	619	566	556	560
Std. Error	23	2	5	14	2		1
Sample Size	19	298	34	5	301	1	658

[a] Mean length in mm.

Table 11. Age, sex and length composition of sockeye salmon escapement in Kenai River, Upper Cook Inlet, Alaska, in 1989.

	Age Group											
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	2.4	Total
Sample Period 1: 1 - 18 July												
Males				23,162		108,400	12,971		1,853	108,400	1,853	256,639
Percent				4.17		19.50	2.33		0.33	19.50	0.33	46.17
Sample Size				25		117	14		2	117	2	277
Mean Length[a]				475		593	510		605	607	614	584
Std. Error				8		3	10		74	2	32	2
Sample Size				25		117	14		2	117	2	277
Females				12,971		100,061	12,971		926	171,402	926	299,257
Percent				2.33		18.00	2.33		0.17	30.83	0.17	53.83
Sample Size				14		108	14		1	185	1	323
Mean Length				478		566	514		591	584	595	570
Std. Error				9		2	13			2		1
Sample Size				14		108	14		1	185	1	323
Both Sexes				36,133		208,461	25,942		2,779	279,802	2,779	555,896
Percent				6.50		37.50	4.67		0.50	50.33	0.50	100.00
Sample Size				39		225	28		3	302	3	600
Mean Length				476		580	512		600	593	607	577
Std. Error				6		2	8		74	1	32	1
Sample Size				39		225	28		3	302	3	600

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Table 11. (page 2 of 4)

	Age Group											
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	2.4	Total
Sample Period 2: 19 - 25 July												
Males		2,223		13,336		54,457	17,782		3,334	184,485	1,111	276,728
Percent		0.40		2.38		9.70	3.17		0.59	32.87	0.20	49.31
Sample Size		2		12		49	16		3	166	1	249
Mean Length		332		443		594	501		636	611	591	590
Std. Error		22		8		6	10		13	2		2
Sample Size		2		12		49	16		3	166	1	249
Females	1,111			6,668		67,793	12,225		4,445	192,266		284,508
Percent	0.20			1.19		12.08	2.18		0.79	34.26		50.69
Sample Size	1			6		61	11		4	173		256
Mean Length	405			486		566	523		602	582		573
Std. Error				16		3	9		15	2		2
Sample Size	1			6		61	11		4	173		256
Both Sexes	1,111	2,223		20,004		122,250	30,007		7,779	376,751	1,111	561,236
Percent	0.20	0.40		3.56		21.78	5.35		1.39	67.13	0.20	100.00
Sample Size	1	2		18		110	27		7	339	1	505
Mean Length	405	332		458		579	510		617	596	591	581
Std. Error		22		8		3	7		10	1		1
Sample Size	1	2		18		110	27		7	339	1	505

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Table 11. (page 3 of 4)

	Age Group											
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	2.4	Total
Sample Period 3: 26 July - 15 August												
Males		1,002		14,024	7,012	47,081	17,029	3,005	3,005	119,204		211,362
Percent		0.21		2.90	1.45	9.75	3.53	0.62	0.62	24.69		43.78
Sample Size		1		14	7	47	17	3	3	119		211
Mean Length		395		465	414	587	487	418	595	595		567
Std. Error				14	23	4	9	18	23	3		2
Sample Size		1		14	7	47	17	3	3	119		211
Females			1,002	20,034	6,010	49,084	48,082	2,003	1,002	143,246	1,002	271,465
Percent			0.21	4.15	1.24	10.17	9.96	0.41	0.21	29.67	0.21	56.22
Sample Size			1	20	6	49	48	2	1	143	1	271
Mean Length			560	445	386	561	498	391	567	571	638	542
Std. Error				5	5	4	5	9		2		2
Sample Size			1	20	6	49	48	2	1	143	1	271
Both Sexes		1,002	1,002	34,058	13,022	96,165	65,111	5,008	4,007	262,450	1,002	482,827
Percent		0.21	0.21	7.05	2.70	19.92	13.49	1.04	0.83	54.36	0.21	100.00
Sample Size		1	1	34	13	96	65	5	4	262	1	482
Mean Length		395	560	453	401	574	495	407	588	582	638	553
Std. Error				6	12	3	4	11	23	2		1
Sample Size		1	1	34	13	96	65	5	4	262	1	482

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Table 11. (page 4 of 4)

	Age Group											
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	2.4	Total
All Periods Combined:												
Males		3,225		50,522	7,012	209,938	47,782	3,005	8,192	412,089	2,964	744,729
Percent		0.20		3.16	0.44	13.12	2.99	0.19	0.51	25.76	0.19	46.55
Sample Size		3		51	7	213	47	3	8	402	3	737
Mean Length		352		464	414	592	499	418	614	605	605	582
Std. Error		22		6	23	2	6	18	19	1	32	1
Sample Size		3		51	7	213	47	3	8	402	3	737
Females	1,111		1,002	39,673	6,010	216,938	73,278	2,003	6,373	506,914	1,928	855,230
Percent	0.07		0.06	2.48	0.38	13.56	4.58	0.13	0.40	31.68	0.12	53.45
Sample Size	1		1	40	6	218	73	2	6	501	2	850
Mean Length	405		560	463	386	565	505	391	595	579	617	562
Std. Error				5	5	2	4	9	15	1		1
Sample Size	1		1	40	6	218	73	2	6	501	2	850
Both Sexes	1,111	3,225	1,002	90,195	13,022	426,876	121,060	5,008	14,565	919,003	4,892	1,599,959
Percent	0.07	0.20	0.06	5.64	0.81	26.68	7.57	0.31	0.91	57.44	0.31	100.00
Sample Size	1	3	1	91	13	431	120	5	14	903	5	1,587
Mean Length	405	352	560	463	401	578	503	407	606	591	610	571
Std. Error		22		4	12	1	3	11	14	1	32	1
Sample Size	1	3	1	91	13	431	120	5	14	903	5	1,587

[a] Mean length in mm.

Table 12. Age, sex and length composition of sockeye salmon escapement in Hidden Creek, Kenai River drainage, Upper Cook Inlet, Alaska, in 1989.

	Age Group						
	1.1	1.2	1.3	2.2	2.3	3.2	Total
Sample period:	13 July - 31 August						
Males	12	1,198	2,755	408	124	12	4,509
Percent	0.15	15.42	35.46	5.25	1.60	0.15	58.03
Sample Size	1	97	223	33	10	1	365
Mean Length[a]	390	551	587	556	592	576	574
Std. Error		3	2	5	5		1
Sample Size	1	97	223	33	10	1	365
Females		1,285	1,050	840	86		3,261
Percent		16.54	13.51	10.81	1.11		41.97
Sample Size		104	85	68	7		264
Mean Length		520	565	525	560		537
Std. Error		3	3	3	8		2
Sample Size		104	85	68	7		264
Both Sexes	12	2,483	3,805	1,248	210	12	7,770
Percent	0.15	31.96	48.97	16.06	2.70	0.15	100.00
Sample Size	1	201	308	101	17	1	629
Mean Length	390	535	581	535	579	576	558
Std. Error		2	1	3	4		1
Sample Size	1	201	308	101	17	1	629

[a] Mean length in mm.

Table 13. Age, sex and length composition of sockeye salmon escapement in Kasilof River, Upper Cook Inlet, Alaska, in 1989.

	Age Group						
	1.2	2.1	1.3	2.2	1.4	2.3	Total
Sample Period 1: 15 June - 6 July							
Males	1,353		14,017	3,673		4,640	23,683
Percent	3.09		32.01	8.39		10.60	54.08
Sample Size	14		145	38		48	245
Mean Length[a]	507		555	487		542	539
Std. Error	8		2	2		3	2
Sample Size	14		145	38		48	245
Females	967		12,953	1,740	97	4,350	20,107
Percent	2.21		29.58	3.97	0.22	9.93	45.92
Sample Size	10		134	18	1	45	208
Mean Length	493		545	493	570	539	537
Std. Error	6		2	8		4	2
Sample Size	10		134	18	1	45	208
Both Sexes	2,320		26,970	5,413	97	8,990	43,790
Percent	5.30		61.59	12.36	0.22	20.53	100.00
Sample Size	24		279	56	1	93	453
Mean Length	501		550	489	570	541	538
Std. Error	5		2	3		2	1
Sample Size	24		279	56	1	93	453

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Table 13. (page 2 of 4)

	Age Group						
	1.2	2.1	1.3	2.2	1.4	2.3	Total
Sample Period 2: 7 - 20 July							
Males	5,702		8,103	13,054		4,952	31,811
Percent	8.30		11.79	18.99		7.21	46.29
Sample Size	38		54	87		33	212
Mean Length	468		548	481		529	503
Std. Error	5		4	3		5	2
Sample Size	38		54	87		33	212
Females	5,852		13,355	13,955		3,751	36,913
Percent	8.52		19.43	20.31		5.46	53.71
Sample Size	39		89	93		25	246
Mean Length	475		544	482		539	509
Std. Error	3		2	3		5	2
Sample Size	39		89	93		25	246
Both Sexes	11,554		21,458	27,009		8,703	68,724
Percent	16.81		31.22	39.30		12.66	100.00
Sample Size	77		143	180		58	458
Mean Length	472		545	482		533	506
Std. Error	3		2	2		4	1
Sample Size	77		143	180		58	458

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Table 13. (page 3 of 4)

	Age Group						
	1.2	2.1	1.3	2.2	1.4	2.3	Total
Sample Period 3: 21 July - 15 August							
Males	2,929	117	3,983	8,788		1,523	17,340
Percent	6.41	0.26	8.72	19.23		3.33	37.95
Sample Size	25	1	34	75		13	148
Mean Length	475	357	546	472		534	494
Std. Error	5		6	3		11	2
Sample Size	25	1	34	75		13	148
Females	6,795		3,515	16,636		1,406	28,352
Percent	14.87		7.69	36.41		3.08	62.05
Sample Size	58		30	142		12	242
Mean Length	474		539	477		525	486
Std. Error	3		4	2		8	1
Sample Size	58		30	142		12	242
Both Sexes	9,724	117	7,498	25,424		2,929	45,692
Percent	21.28	0.26	16.41	55.64		6.41	100.00
Sample Size	83	1	64	217		25	390
Mean Length	474	357	543	475		530	489
Std. Error	3		4	2		7	1
Sample Size	83	1	64	217		25	390

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Table 13. (page 4 of 4)

	Age Group						
	1.2	2.1	1.3	2.2	1.4	2.3	Total
All Periods Combined:							
Males	9,984	117	26,103	25,515		11,115	72,834
Percent	6.31	0.07	16.50	16.13		7.03	46.04
Sample Size	77	1	233	200		94	605
Mean Length	476	357	552	479		535	513
Std. Error	4		2	2		3	1
Sample Size	77	1	233	200		94	605
Females	13,614		29,823	32,331	97	9,507	85,372
Percent	8.61		18.85	20.44	0.06	6.01	53.96
Sample Size	107		253	253	1	82	696
Mean Length	476		544	480	570	537	508
Std. Error	2		1	2		3	1
Sample Size	107		253	253	1	82	696
Both Sexes	23,598	117	55,926	57,846	97	20,622	158,206
Percent	14.92	0.07	35.35	36.56	0.06	13.03	100.00
Sample Size	184	1	486	453	1	176	1,301
Mean Length	476	357	547	479	570	536	510
Std. Error	2		1	1		2	1
Sample Size	184	1	486	453	1	176	1,301

[a] Mean length in mm.

Table 14. Age, sex and length composition of sockeye salmon escapement in Crescent River, Upper Cook Inlet, Alaska, in 1989.

	Age Group									
	0.3	1.2	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Sample period:	1 July - 1 August									
Males	100	200	17,391	600		22,188	100	100		40,679
Percent	0.14	0.28	24.47	0.84		31.22	0.14	0.14		57.24
Sample Size	1	2	174	6		222	1	1		407
Mean Length[a]	595	475	595	526		591	555	615		591
Std. Error		20	2	8		3				2
Sample Size	1	2	174	6		222	1	1		407
Females		300	14,892	800	100	14,193			100	30,385
Percent		0.42	20.96	1.13	0.14	19.97			0.14	42.76
Sample Size		3	149	8	1	142			1	304
Mean Length		478	562	524	575	564			575	561
Std. Error		15	3	9		2				2
Sample Size		3	149	8	1	142			1	304
Both Sexes	100	500	32,283	1,400	100	36,381	100	100	100	71,064
Percent	0.14	0.70	45.43	1.97	0.14	51.19	0.14	0.14	0.14	100.00
Sample Size	1	5	323	14	1	364	1	1	1	711
Mean Length	595	477	580	525	575	580	555	615	575	578
Std. Error		12	2	6		2				1
Sample Size	1	5	323	14	1	364	1	1	1	711

[a] Mean length in mm.

Table 15. Age, sex and length composition of sockeye salmon escapement in Packers Creek, Kalgin Island, Upper Cook Inlet, Alaska, in 1989.

	Age Group										
	1.1	1.2	2.1	1.3	2.2	3.1	2.3	3.2	2.4	3.3	Total
Sample Period 1: 16 May - 5 August											
Males	156	1,370	1,557		1,838		872	125			5,918
Percent	1.38	12.15	13.81		16.30		7.73	1.11			52.49
Sample Size	5	44	50		59		28	4			190
Mean Length[a]	336	472	359		494		571	474			460
Std. Error	10	6	4		10		4	35			4
Sample Size	5	44	50		59		28	4			190
Females		1,121	93	31	2,741		966	343		62	5,357
Percent		9.94	0.82	0.27	24.31		8.57	3.04		0.55	47.51
Sample Size		36	3	1	88		31	11		2	172
Mean Length		470	362	580	493		549	490		528	497
Std. Error		4	4		5		4	9		8	3
Sample Size		36	3	1	88		31	11		2	172
Both Sexes	156	2,491	1,650	31	4,579		1,838	468		62	11,275
Percent	1.38	22.09	14.63	0.27	40.61		16.30	4.15		0.55	100.00
Sample Size	5	80	53	1	147		59	15		2	362
Mean Length	336	471	359	580	494		559	486		528	478
Std. Error	10	4	4		5		3	11		8	2
Sample Size	5	80	53	1	147		59	15		2	362

-Continued-

Table 15. (page 2 of 3)

	Age Group										
	1.1	1.2	2.1	1.3	2.2	3.1	2.3	3.2	2.4	3.3	Total
Sample Period 2: 6 August - 18 September											
Males	190	158	3,005		1,329	32	791	253	32	32	5,822
Percent	1.72	1.43	27.21		12.03	0.29	7.16	2.29	0.29	0.29	52.72
Sample Size	6	5	95		42	1	25	8	1	1	184
Mean Length	329	492	355		505	345	573	501	600	550	431
Std. Error	6	17	1		6		4	11			2
Sample Size	6	5	95		42	1	25	8	1	1	184
Females		348		32	2,848		1,202	759		32	5,221
Percent		3.15		0.29	25.79		10.88	6.87		0.29	47.28
Sample Size		11		1	90		38	24		1	165
Mean Length		492		585	500		557	499		490	513
Std. Error		7			2		3	5			2
Sample Size		11		1	90		38	24		1	165
Both Sexes	190	506	3,005	32	4,177	32	1,993	1,012	32	64	11,043
Percent	1.72	4.58	27.21	0.29	37.82	0.29	18.05	9.16	0.29	0.58	100.00
Sample Size	6	16	95	1	132	1	63	32	1	2	349
Mean Length	329	492	355	585	502	345	563	500	600	520	469
Std. Error	6	7	1		3		3	5			1
Sample Size	6	16	95	1	132	1	63	32	1	2	349

-Continued-

Table 15. (page 3 of 3)

	Age Group										
	1.1	1.2	2.1	1.3	2.2	3.1	2.3	3.2	2.4	3.3	Total
All Periods Combined:											
Males	346	1,528	4,562		3,167	32	1,663	378	32	32	11,740
Percent	1.55	6.85	20.44		14.19	0.14	7.45	1.69	0.14	0.14	52.60
Sample Size	11	49	145		101	1	53	12	1	1	374
Mean Length	332	474	356		499	345	572	492	600	550	446
Std. Error	5	6	2		6		3	14			2
Sample Size	11	49	145		101	1	53	12	1	1	374
Females		1,469	93	63	5,589		2,168	1,102		94	10,578
Percent		6.58	0.42	0.28	25.04		9.71	4.94		0.42	47.40
Sample Size		47	3	2	178		69	35		3	337
Mean Length		475	362	583	497		553	496		515	505
Std. Error		3	4		3		3	4		8	2
Sample Size		47	3	2	178		69	35		3	337
Both Sexes	346	2,997	4,655	63	8,756	32	3,831	1,480	32	126	22,318
Percent	1.55	13.43	20.86	0.28	39.23	0.14	17.17	6.63	0.14	0.56	100.00
Sample Size	11	96	148	2	279	1	122	47	1	4	711
Mean Length	332	475	357	583	497	345	561	495	600	524	474
Std. Error	5	3	2		3		2	5		8	1
Sample Size	11	96	148	2	279	1	122	47	1	4	711

[a] Mean length in mm.

Table 16. Age, sex and length composition of sockeye salmon escapement in Yentna River, (RM 4.0), Susitna River drainage, Upper Cook Inlet, Alaska, in 1989.

	Age Group									
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	Total
Sample Period 1: 7 - 22 July										
Males	1,393	50	995	3,980		6,118	796		1,144	14,476
Percent	5.18	0.19	3.70	14.79		22.73	2.96		4.25	53.79
Sample Size	28	1	20	80		123	16		23	291
Mean Length[a]	451	347	575	455		581	474		597	528
Std. Error	4		9	3		3	8		20	2
Sample Size	28	1	20	80		123	16		23	291
Females	50		945	1,194		7,909	448		1,890	12,436
Percent	0.19		3.51	4.44		29.39	1.66		7.02	46.21
Sample Size	1		19	24		159	9		38	250
Mean Length	423		565	486		556	496		551	547
Std. Error			5	8		2	13		4	2
Sample Size	1		19	24		159	9		38	250
Both Sexes	1,443	50	1,940	5,174		14,027	1,244		3,034	26,912
Percent	5.36	0.19	7.21	19.23		52.12	4.62		11.27	100.00
Sample Size	29	1	39	104		282	25		61	541
Mean Length	450	347	570	462		567	482		569	537
Std. Error	4		5	3		2	7		8	1
Sample Size	29	1	39	104		282	25		61	541

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Table 16. (page 2 of 4)

	Age Group									
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	Total
Sample Period 2: 23 - 27 July										
Males	1,484		1,154	6,264		12,694	659	247	1,401	23,903
Percent	3.29		2.55	13.87		28.10	1.46	0.55	3.10	52.92
Sample Size	18		14	76		154	8	3	17	290
Mean Length	434		592	452		579	471	598	539	532
Std. Error	5		9	4		3	14	8	27	2
Sample Size	18		14	76		154	8	3	17	290
Females	165	82	1,401	2,638	82	13,683	1,401		1,813	21,265
Percent	0.37	0.18	3.10	5.84	0.18	30.29	3.10		4.01	47.08
Sample Size	2	1	17	32	1	166	17		22	258
Mean Length	443	340	557	473	375	557	486		553	539
Std. Error	20		9	5		2	7		5	2
Sample Size	2	1	17	32	1	166	17		22	258
Both Sexes	1,649	82	2,555	8,902	82	26,377	2,060	247	3,214	45,168
Percent	3.65	0.18	5.66	19.71	0.18	58.40	4.56	0.55	7.12	100.00
Sample Size	20	1	31	108	1	320	25	3	39	548
Mean Length	435	340	573	458	375	568	481	598	547	536
Std. Error	5		6	3		2	6	8	12	1
Sample Size	20	1	31	108	1	320	25	3	39	548

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Table 16. (page 3 of 4)

	Age Group									
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	Total
Sample Period 3: 28 July - 20 August										
Males	754	424	660	3,914	330	5,424	990		1,320	13,816
Percent	3.12	1.75	2.73	16.18	1.36	22.42	4.09		5.46	57.12
Sample Size	16	9	14	83	7	115	21		28	293
Mean Length	439	351	570	457	331	571	489		565	513
Std. Error	5	10	10	4	4	6	10		7	3
Sample Size	16	9	14	83	7	115	21		28	293
Females	141	94	849	1,556	47	5,895	1,037	47	707	10,373
Percent	0.58	0.39	3.51	6.43	0.19	24.37	4.29	0.19	2.92	42.88
Sample Size	3	2	18	33	1	125	22	1	15	220
Mean Length	470	335	548	483	340	546	492	566	535	527
Std. Error	24	5	7	6		3	8		9	2
Sample Size	3	2	18	33	1	125	22	1	15	220
Both Sexes	895	518	1,509	5,470	377	11,319	2,027	47	2,027	24,189
Percent	3.70	2.14	6.24	22.61	1.56	46.79	8.38	0.19	8.38	100.00
Sample Size	19	11	32	116	8	240	43	1	43	513
Mean Length	443	348	558	464	332	558	490	566	554	519
Std. Error	6	8	6	3	4	3	6		5	2
Sample Size	19	11	32	116	8	240	43	1	43	513

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Table 16. (page 4 of 4)

	Age Group									
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	Total
All Periods Combined:										
Males	3,631	474	2,809	14,158	330	24,236	2,445	247	3,865	52,195
Percent	3.77	0.49	2.92	14.71	0.34	25.18	2.54	0.26	4.01	54.22
Sample Size	62	10	48	239	7	392	45	3	68	874
Mean Length	442	351	581	454	331	578	479	598	565	526
Std. Error	3	10	5	2	4	2	6	8	12	1
Sample Size	62	10	48	239	7	392	45	3	68	874
Females	356	176	3,195	5,388	129	27,487	2,886	47	4,410	44,074
Percent	0.37	0.18	3.32	5.60	0.13	28.55	3.00	0.05	4.58	45.78
Sample Size	6	3	54	89	2	450	48	1	75	728
Mean Length	451	337	557	479	362	555	490	566	549	538
Std. Error	15	5	4	4		1	5		3	1
Sample Size	6	3	54	89	2	450	48	1	75	728
Both Sexes	3,987	650	6,004	19,546	459	51,723	5,331	294	8,275	96,269
Percent	4.14	0.68	6.24	20.30	0.48	53.73	5.54	0.31	8.60	100.00
Sample Size	68	13	102	328	9	842	93	4	143	1,602
Mean Length	442	347	568	461	340	565	485	593	557	532
Std. Error	3	8	3	2	4	1	4	8	6	1
Sample Size	68	13	102	328	9	842	93	4	143	1,602

[a] Mean length in mm.

Table 17. Age, sex and length composition of sockeye salmon escapement in Judd Lake, Talachilitna and Yentna River drainage, Upper Cook Inlet, Alaska, in 1989.

	Age Group				
	1.2	1.3	2.2	2.3	Total
Sample period:	25 July - 27 August				
Males	1,450	2,558	1,364	1,450	6,822
Percent	11.34	20.00	10.66	11.34	53.33
Sample Size	17	30	16	17	80
Mean Length[a]	493	588	517	598	556
Std. Error	12	5	7	5	4
Sample Size	17	30	16	17	80
Females	1,023	3,497	597	853	5,970
Percent	8.00	27.34	4.67	6.67	46.67
Sample Size	12	41	7	10	70
Mean Length	488	560	495	557	541
Std. Error	9	4	6	5	3
Sample Size	12	41	7	10	70
Both Sexes	2,473	6,055	1,961	2,303	12,792
Percent	19.33	47.33	15.33	18.00	100.00
Sample Size	29	71	23	27	150
Mean Length	491	572	510	583	549
Std. Error	8	3	5	4	2
Sample Size	29	71	23	27	150

[a] Mean length in mm.

Table 18. Age, sex and length composition of sockeye salmon captured by fishwheel in the vicinity of Sunshine Station (river mile 80) in the Susitna River mainstream, Upper Cook Inlet, Alaska, in 1989.

	Age Group									
	0.2	1.1	0.3	1.2	1.3	2.2	1.4	2.3	3.2	Total
Sample Period 1: 14 - 22 July										
Males	3		2	82	257	21		34	1	400
Percent	0.37		0.25	10.11	31.69	2.59		4.19	0.12	49.32
Sample Size	3		2	73	226	19		30	1	354
Mean Length[a]	405		578	487	591	499		593	584	564
Std. Error	13		11	7	2	12		6		2
Sample Size	3		2	73	226	19		30	1	354
Females		1	5	41	299	19	1	45		411
Percent		0.12	0.62	5.06	36.87	2.34	0.12	5.55		50.68
Sample Size		1	4	36	265	17	1	40		364
Mean Length		360	573	504	564	519	600	566		556
Std. Error			8	5	2	3		3		1
Sample Size		1	4	36	265	17	1	40		364
Both Sexes	3	1	7	123	556	40	1	79	1	811
Percent	0.37	0.12	0.86	15.17	68.56	4.93	0.12	9.74	0.12	100.00
Sample Size	3	1	6	109	491	36	1	70	1	718
Mean Length	405	360	574	493	577	509	600	578	584	560
Std. Error	13		6	5	1	7		3		1
Sample Size	3	1	6	109	491	36	1	70	1	718

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Table 18. (page 2 of 3)

	Age Group									
	0.2	1.1	0.3	1.2	1.3	2.2	1.4	2.3	3.2	Total
Sample Period 2: 23 July - 2 August										
Males	2	2	4	96	201	37		36	2	380
Percent	0.26	0.26	0.52	12.53	26.24	4.83		4.70	0.26	49.61
Sample Size	1	1	2	54	113	21		20	1	213
Mean Length	414	359	563	493	595	506		597	538	558
Std. Error			2	8	3	12		6		3
Sample Size	1	1	2	54	113	21		20	1	213
Females			2	95	223	30		34	2	386
Percent			0.26	12.40	29.11	3.92		4.44	0.26	50.39
Sample Size			1	53	125	17		19	1	216
Mean Length			594	502	563	498		561	514	543
Std. Error				3	2	5		8		2
Sample Size			1	53	125	17		19	1	216
Both Sexes	2	2	6	191	424	67		70	4	766
Percent	0.26	0.26	0.78	24.93	55.35	8.75		9.14	0.52	100.00
Sample Size	1	1	3	107	238	38		39	2	429
Mean Length	414	359	573	498	578	502		580	526	550
Std. Error			2	4	2	7		5		2
Sample Size	1	1	3	107	238	38		39	2	429

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Table 18. (page 3 of 3)

	Age Group									
	0.2	1.1	0.3	1.2	1.3	2.2	1.4	2.3	3.2	Total
All Periods Combined:										
Males	5	2	6	178	458	58		70	3	780
Percent	0.32	0.13	0.38	11.29	29.04	3.68		4.44	0.19	49.46
Sample Size	4	1	4	127	339	40		50	2	567
Mean Length	409	359	568	490	593	503		595	553	561
Std. Error	13		4	5	2	9		4		2
Sample Size	4	1	4	127	339	40		50	2	567
Females		1	7	136	522	49	1	79	2	797
Percent		0.06	0.44	8.62	33.10	3.11	0.06	5.01	0.13	50.54
Sample Size		1	5	89	390	34	1	59	1	580
Mean Length		360	579	503	563	506	600	564	514	549
Std. Error			8	2	1	3		4		1
Sample Size		1	5	89	390	34	1	59	1	580
Both Sexes	5	3	13	314	980	107	1	149	5	1,577
Percent	0.32	0.19	0.82	19.91	62.14	6.79	0.06	9.45	0.32	100.00
Sample Size	4	2	9	216	729	74	1	109	3	1,147
Mean Length	409	359	574	496	577	505	600	579	538	555
Std. Error	13		4	3	1	5		3		1
Sample Size	4	2	9	216	729	74	1	109	3	1,147

[a] Mean length in mm.

Table 19. Age, sex and length composition of sockeye salmon escapement in Fish Creek, Upper Cook Inlet, Alaska, in 1989.

	Age Group							
	1.1	1.2	2.1	1.3	2.2	2.3	3.2	Total
Sample period:	7 July - 9 September							
Males	2,437	17,918	2,293	4,300	3,010	573	143	30,674
Percent	3.63	26.65	3.41	6.40	4.48	0.85	0.21	45.63
Sample Size	17	125	16	30	21	4	1	214
Mean Length[a]	362	475	361	560	486	547	443	472
Std. Error	5	5	6	7	8	4		3
Sample Size	17	125	16	30	21	4	1	214
Females	143	19,923	143	10,177	3,297	2,867		36,550
Percent	0.21	29.64	0.21	15.14	4.90	4.26		54.37
Sample Size	1	139	1	71	23	20		255
Mean Length	351	497	380	541	497	547		512
Std. Error		2		3	6	6		2
Sample Size	1	139	1	71	23	20		255
Both Sexes	2,580	37,841	2,436	14,477	6,307	3,440	143	67,224
Percent	3.84	56.29	3.62	21.54	9.38	5.12	0.21	100.00
Sample Size	18	264	17	101	44	24	1	469
Mean Length	362	487	362	547	492	547	443	494
Std. Error	5	3	6	3	5	5		2
Sample Size	18	264	17	101	44	24	1	469

[a] Mean length in mm.

Table 20. Comparison of 1989 age composition and mean length from initial aging in 1989 and re-aging in 1999 in the commercial harvests and escapements of Upper Cook Inlet, Alaska.

		Age 1.2		Age 1.3		Age 2.2		Age 2.3	
		%	Length (mm)	%	Length (mm)	%	Length (mm)	%	Length (mm)
COMMERCIAL HARVEST									
Cohoe/Ninilchik Beach	initial	14%	495	70%	576	6%	507	10%	574
	re-aged	4%	482	23%	561	14%	494	59%	581
Kalifonsky Beach	initial	21%	490	68%	573	4%	511	6%	581
	re-aged	5%	483	25%	557	22%	493	48%	582
Salamatof Beach	initial	11%	505	71%	590	4%	525	13%	589
	re-aged	4%	485	25%	579	10%	508	60%	593
Western Subdistrict	initial	8%	513	81%	564	1%	509	10%	574
	re-aged	3%	480	45%	565	5%	510	46%	566
Kalgin Island	initial	22%	511	36%	576	20%	520	17%	561
	re-aged	6%	486	6%	572	33%	516	48%	574
Eastern Subdistrict	initial	39%	497	42%	569	8%	505	6%	566
	re-aged	35%	489	31%	566	11%	507	14%	579
General Subdistrict	initial	16%	513	67%	571	6%	509	11%	565
	re-aged	11%	500	53%	572	4%	502	25%	570
Commercial Harvest Total	initial	16%	498	69%	576	4%	512	10%	576
	re-aged	5%	486	25%	567	15%	498	53%	586
ESCAPEMENT									
Kenai River	initial	9%	493	75%	587	4%	510	10%	589
	re-aged	6%	463	27%	578	8%	503	57%	591
Kasilof River	initial	44%	480	46%	546	5%	487	4%	527
	re-aged	15%	476	35%	547	37%	479	13%	536
Crescent River	initial	3%	531	81%	578	1%	558	15%	586
	re-aged	10%	477	45%	580	2%	525	51%	580
Packers Creek	initial	38%	490	4%	556	21%	505	10%	557
	re-aged	13%	475	30%	583	39%	497	17%	561
Yentna River	initial	27%	471	64%	563	3%	501	4%	560
	re-aged	20%	461	54%	565	6%	485	9%	557
Fish Creek	initial	62%	494	20%	544	5%	489	3%	553
	re-aged	56%	487	22%	547	9%	492	5%	547
Escapement Total	initial	15%	484	70%	573	4%	502	9%	574
	re-aged	9%	470	29%	573	10%	495	49%	589
UCI TOTAL	initial	16%	492	70%	575	4%	508	10%	575
	re-aged	6%	479	27%	569	14%	497	52%	586

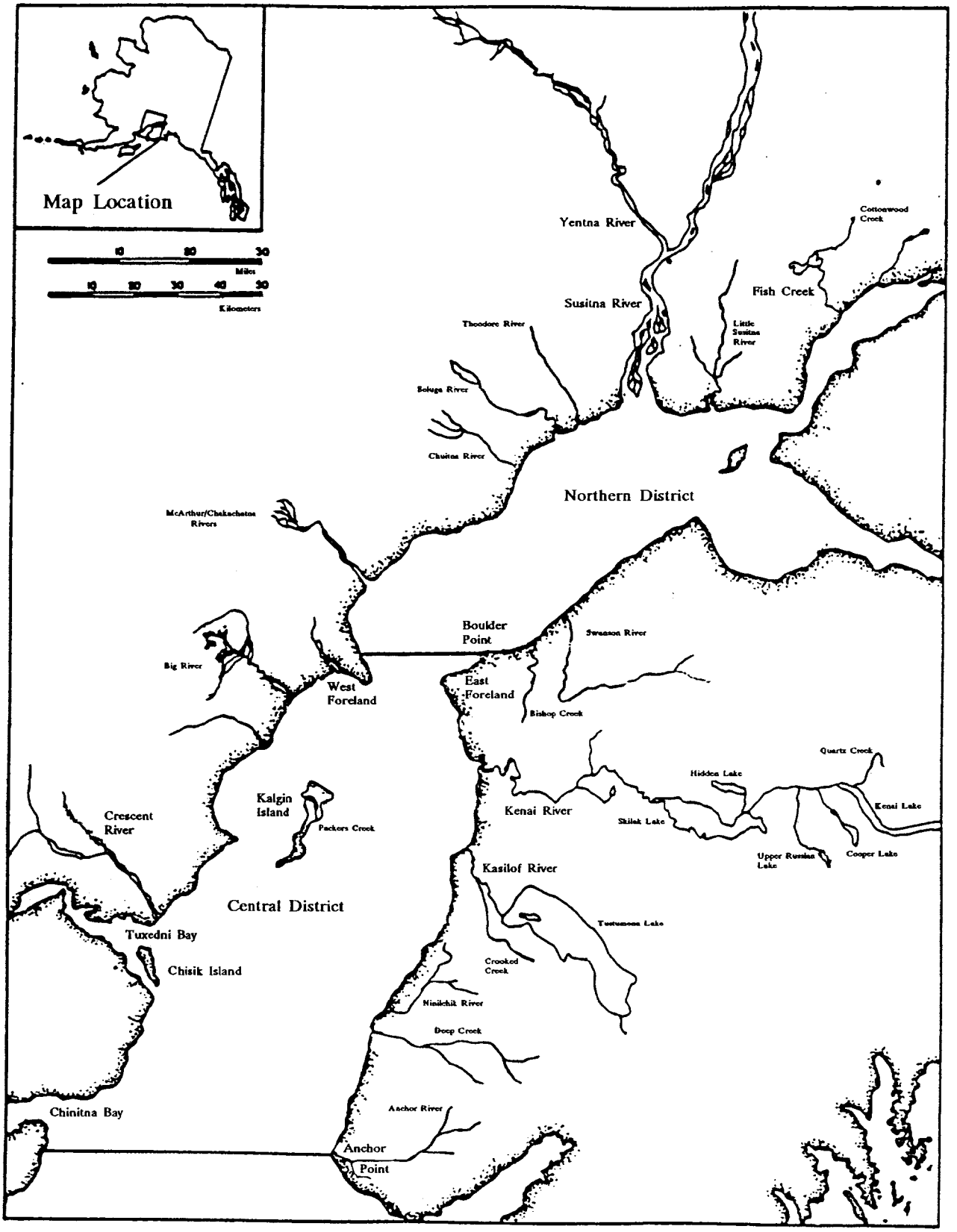


Figure 1. Map of Upper Cook Inlet showing locations of the Northern and Central Districts and the primary salmon spawning drainages.

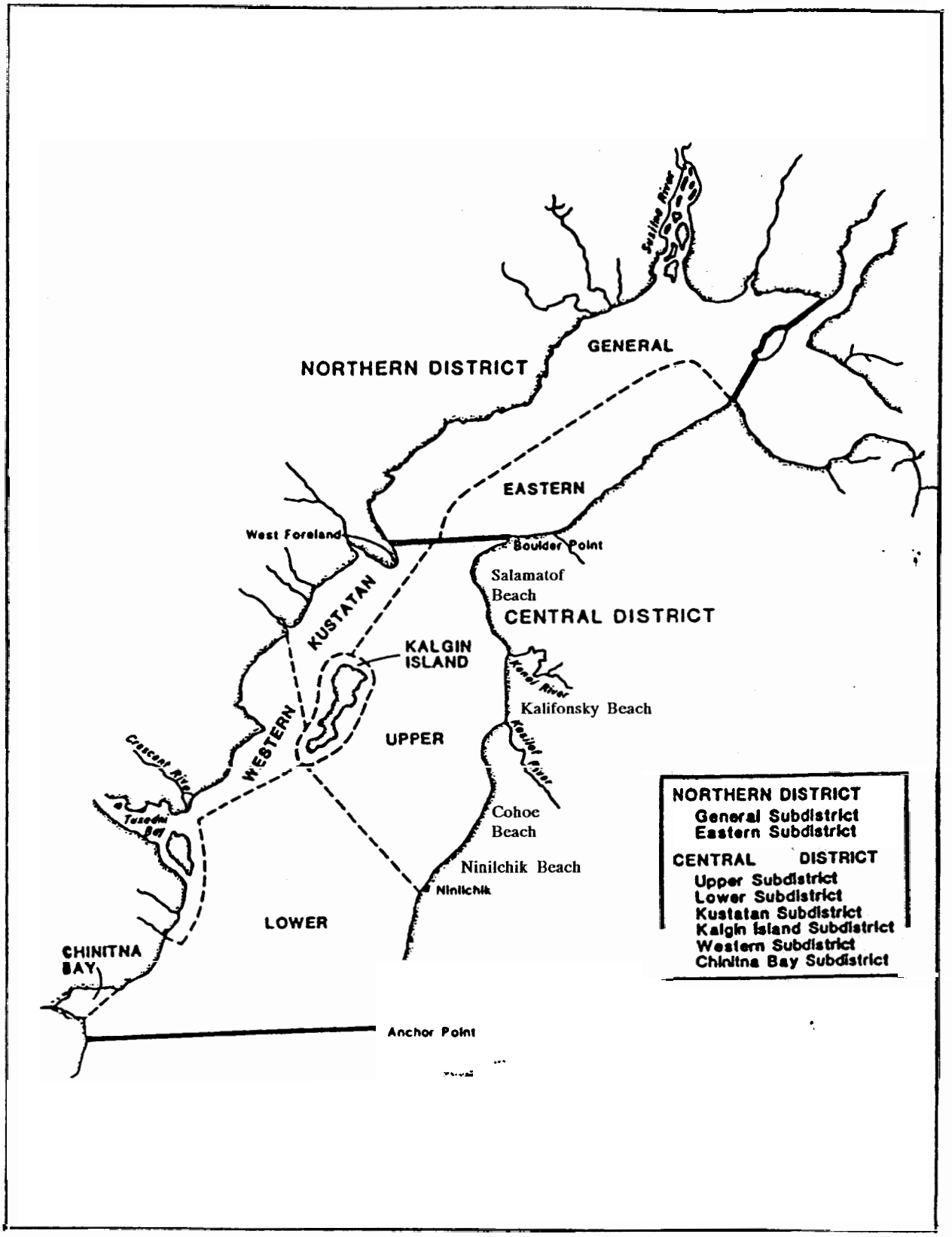


Figure 2. Map of Upper Cook Inlet showing the commercial fishing districts, subdistricts and Upper Subdistrict beach fisheries.

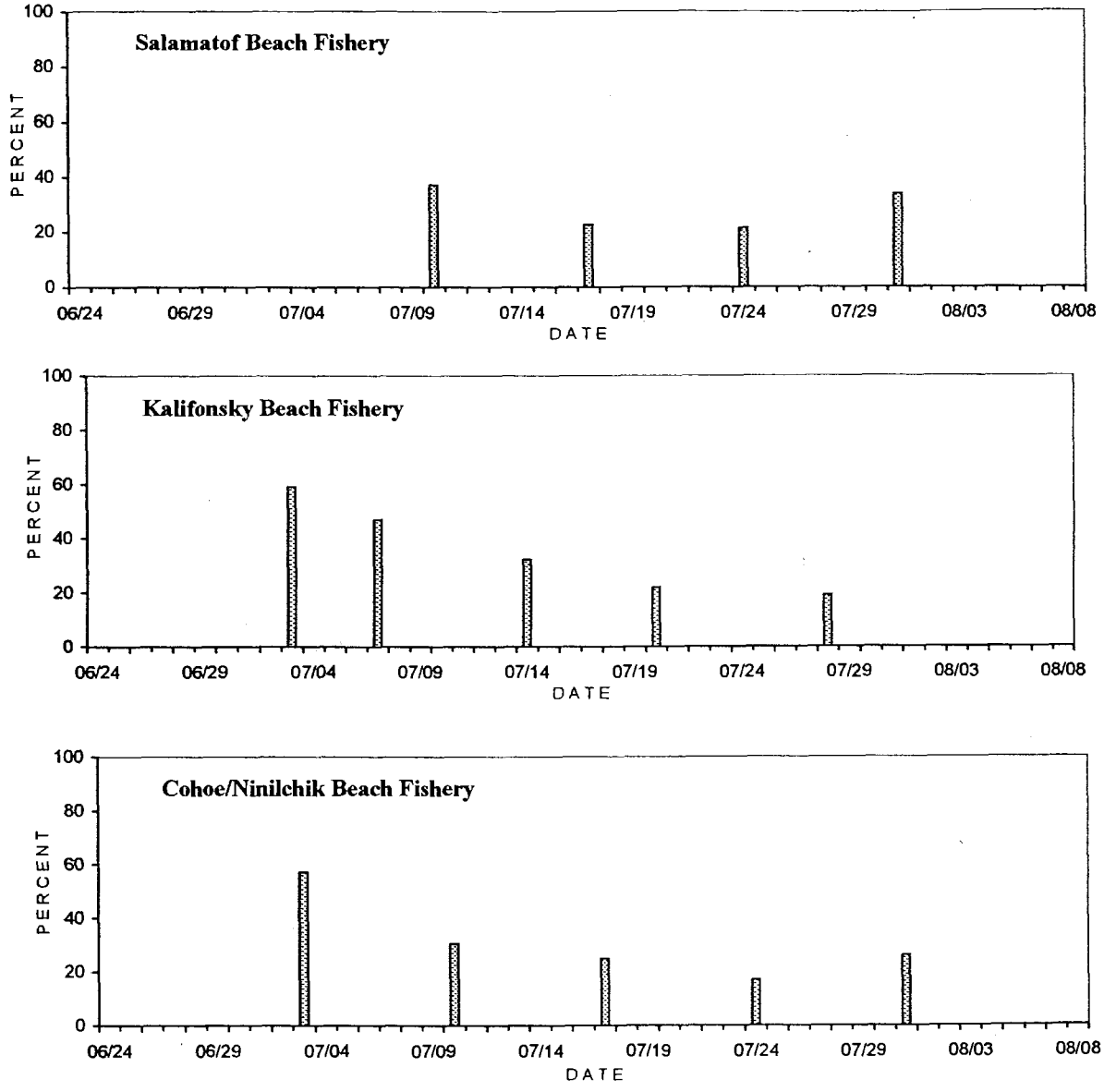


Figure 3. Trends in age-1.3 sockeye salmon composition in the Upper Subdistrict (Salamatof, Kalifonsky, and Cohoe/Ninilchik Beaches) set gillnet harvests, Upper Cook Inlet, Alaska, in 1989.

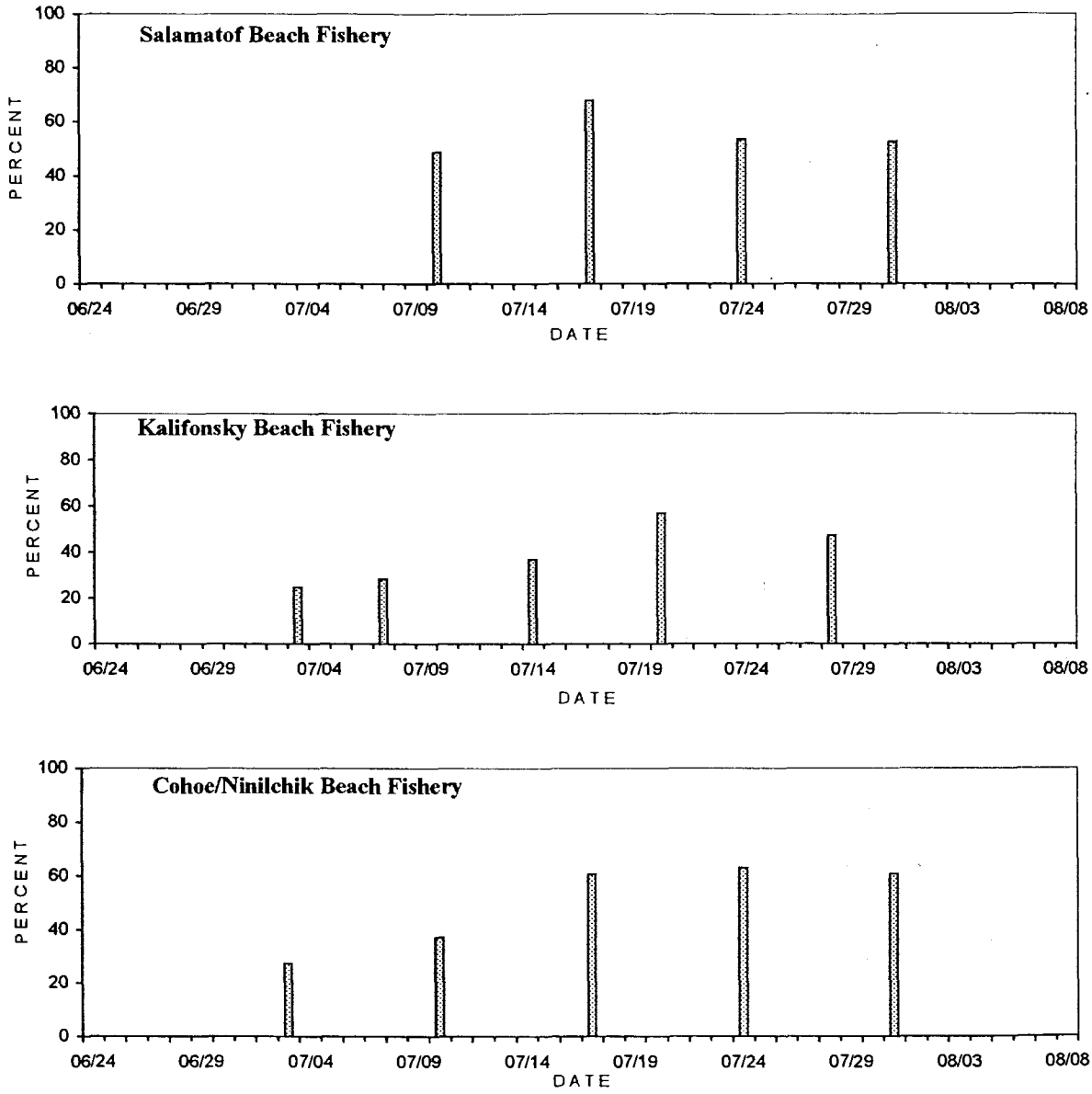


Figure 4. Trends in age-2.3 sockeye salmon composition in the Upper Subdistrict (Salamatof Kalifonsky, and Cohoe/Ninilchik Beaches) set gillnet harvests, Upper Cook Inlet, Alaska, in 1989.

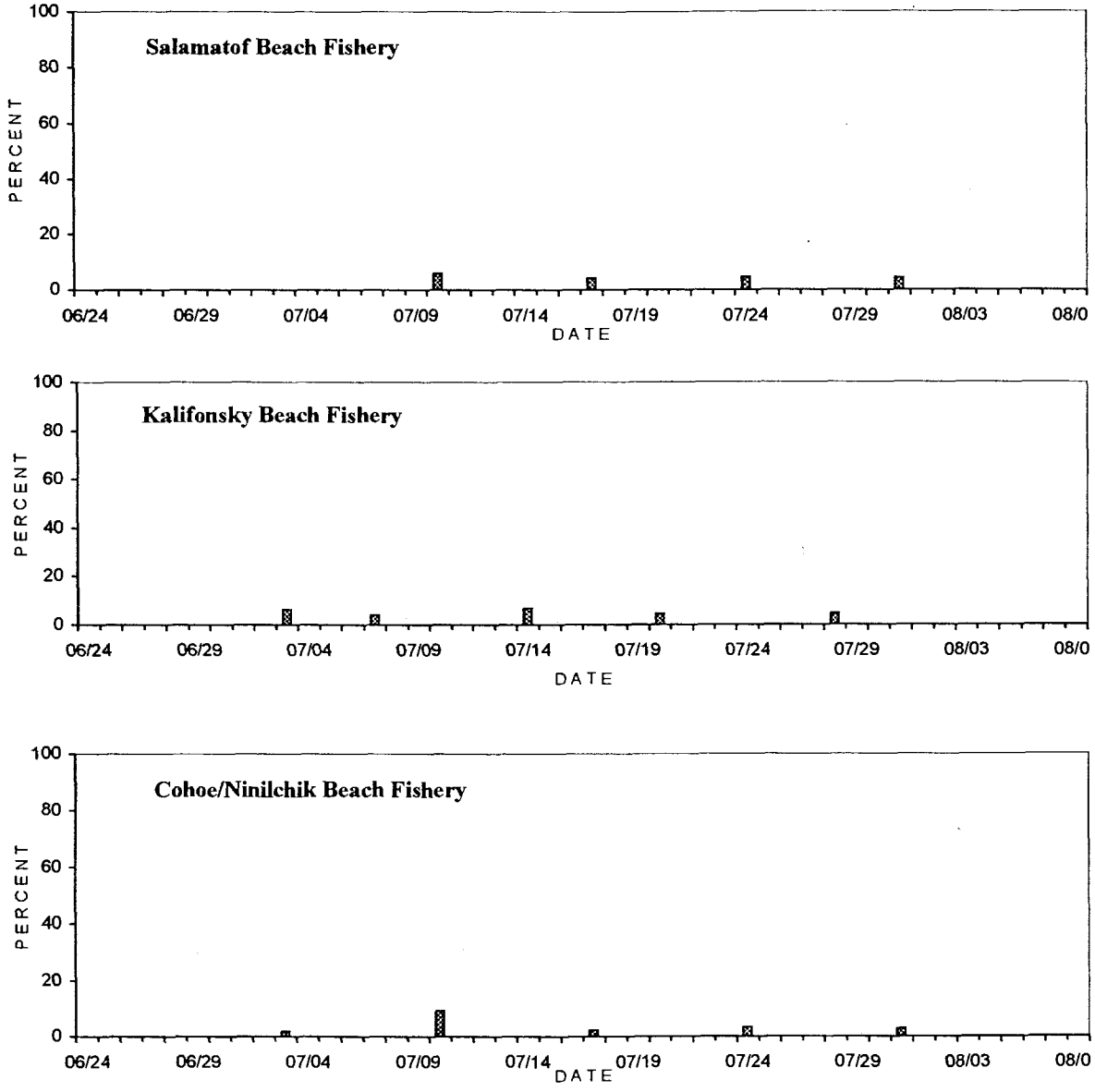


Figure 5. Trends in age-1.2 sockeye salmon composition in the Upper Subdistrict (Salamatof, Kalifonsky, and Cohoe/Ninilchik Beaches) set gillnet harvests, Upper Cook Inlet, Alaska, in 1989.

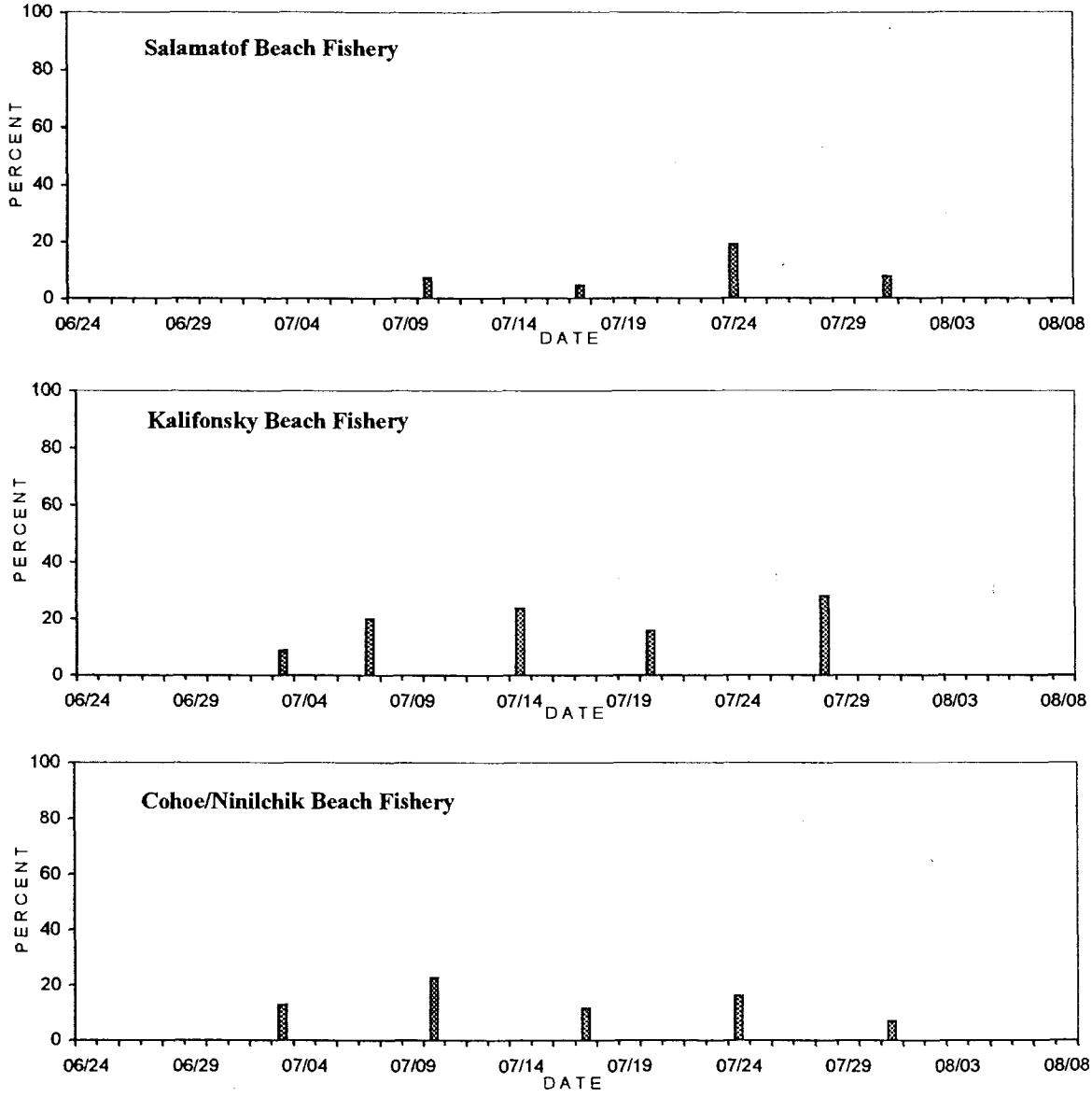
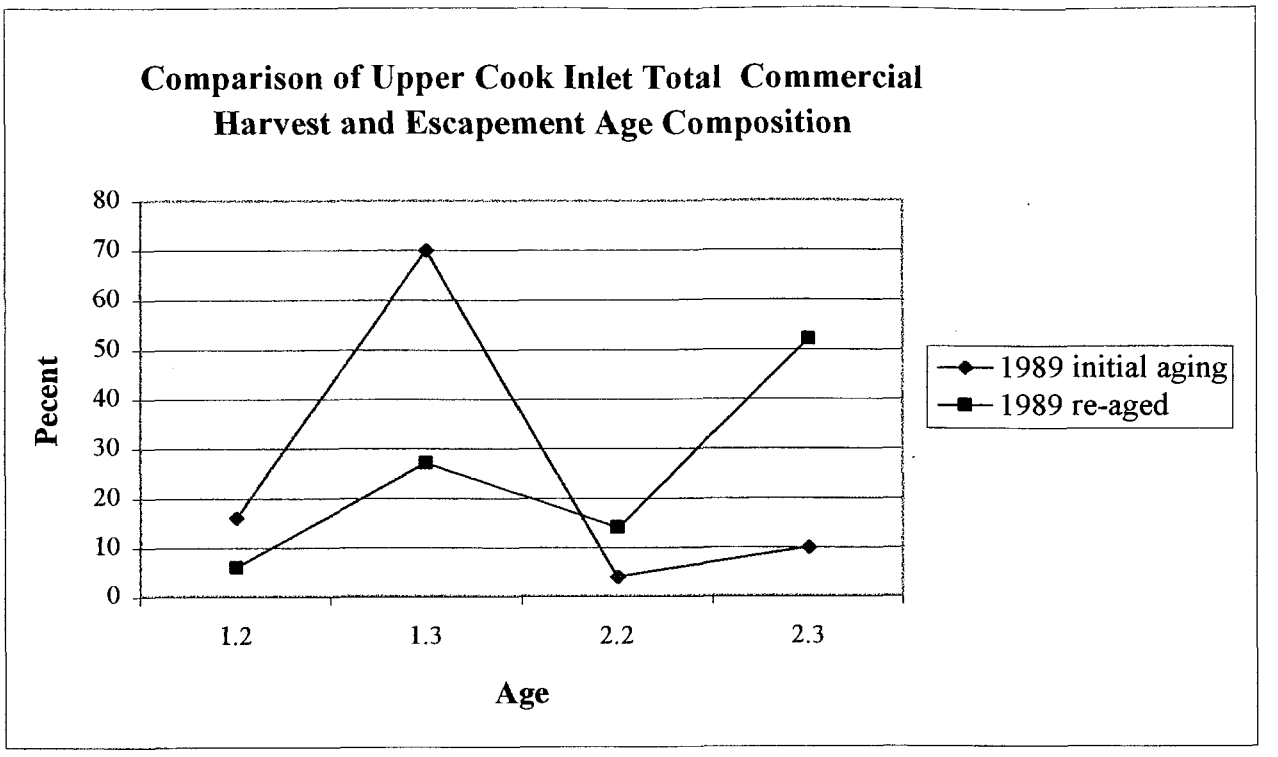


Figure 6. Trends in age-2.2 sockeye salmon composition in the Upper Subdistrict (Salamatof, Kalifonsky, and Cohoe/Ninilchik Beaches) set gillnet harvests, Upper Cook Inlet, Alaska, in 1989.



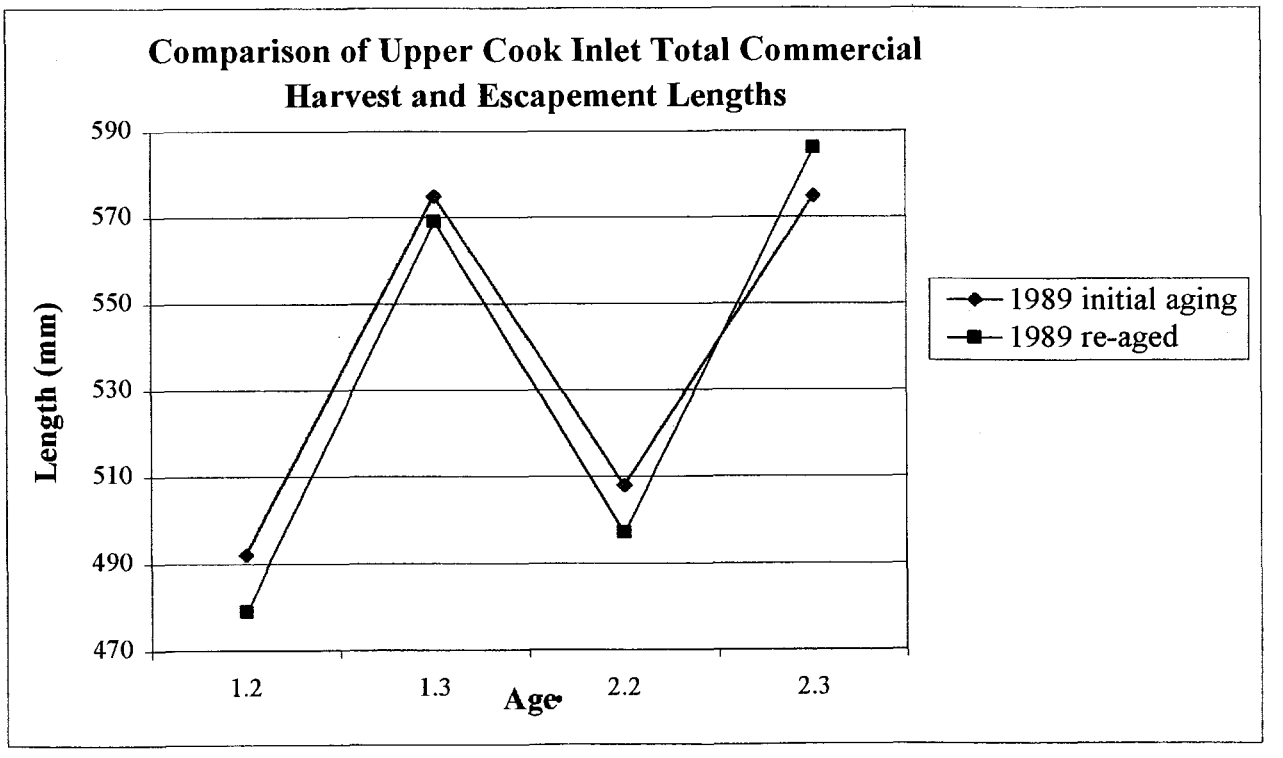


Figure 7. Comparison of total Cook Inlet sockeye escapement and commercial harvest age composition and length between initial aging in 1989 and correction in 1999.

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