ABUNDANCE, AGE, SEX AND SIZE OF CHINOOK, SOCKEYE, COHO, AND CHUM SALMON RETURNING TO UPPER COOK INLET, ALASKA, IN 1998

by

Terri M. Tobias

and

Kenneth E. Tarbox

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AUTHORS

Kenneth E. Tarbox is a fisheries research biologist for the Alaska Department of Fish and Game, Division of Commercial Fisheries, Region II, Upper Cook Inlet, 43961 Kalifornsky Beach Road, Suite B, Soldotna, Alaska 99669.

Terri M. Tobias is a fisheries technician for the Alaska Department of Fish and Game, Division of Commercial Fisheries, Region II, Upper Cook Inlet, 43961 Kalifornsky Beach Road, Suite B, Soldotna, Alaska 99669.

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ABSTRACT

The estimated total return of sockeye salmon *Oncorhynchus nerka* to Upper Cook Inlet (UCI) in 1998 was 2.9 million fish. Commercial harvests and escapements of sockeye salmon that were monitored totaled 2.6 million fish. The commercial harvest was 1.2 million fish while the escapement into six major river systems was 1.4 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 spawners to total return, the exploitation rate for sockeye salmon was 50%. Age classes 1.2, 1.3, 2.2, and 2.3 comprised 96% of the combined UCI commercial sockeye salmon harvests and monitored escapements. Age class 1.3 represented 1.1 million fish or 43% of the total monitored return, while age 1.2 represented 0.6 million fish or 25% of the total monitored return. Average length for the four major age classes ranged from 489 mm for age-1.2 fish to 561 mm for age-2.3 fish. Female composition of sockeye salmon in the combined commercial harvests and escapements equaled 51%.

A total of 7,997 chinook salmon *O. tshawytscha* were commercially harvested in UCI. The Upper Subdistrict eastside set gillnet harvest of 5,039 fish was the only harvest sampled and represented 63% of the total commercial harvest. Ages 1.1, 1.2, 1.3, and 1.4 comprised 94% of the harvest. Average length of the four major age classes ranged from 443 mm for age-1.1 fish to 994 mm for age-1.4 fish. Sex composition favored females at 53.5%.

The commercial harvest of coho salmon *O. kisutch* was 160,644 fish. Commercial gillnet harvests in the drift fleet and Upper and General Subdistricts represented 78% of the total commercial harvest. Age-1.1, -2.1, and -3.1 fish comprised the total harvest. Average lengths for these three respective age classes ranged from 559 mm to 587 mm. For the three commercial fisheries, the female composition of coho salmon averaged 43%.

The commercial harvest of chum salmon *O. keta* equaled 95,654 fish. The drift gillnet harvest which was the only harvest monitored was 88,036 fish or 92% of the total. Age classes 0.3 and 0.4 comprised 99% of the harvest. Average length for these two age classes ranged from 596 mm to 615 mm. Female chum salmon contributed 46% to the harvest.

The commercial harvest of pink salmon *O. gorbuscha* in UCI in 1998 totaled 551,260 fish.

KEY WORDS: Salmon, *Oncorhynchus*, age, size, commercial catch, escapement, exploitation rate, Upper Cook Inlet, Alaska

INTRODUCTION

Upper Cook Inlet (UCI) supports the production of all five species of Pacific salmon *Oncorhynchus* (Figure 1). Since 1966 the average harvest of salmon in UCI was 4.5 million fish representing 3.0 million sockeye *O. nerka*, 1.0 million even-year pink *O. gorbuscha*, 0.1 million odd-year pink, 0.6 million chum *O. keta*, 0.4 million coho *O. kisutch*, and 16,000 chinook *O. tshawytscha* salmon. Salmon harvests in UCI represent approximately five percent of the statewide commercial harvest (Ruesch and Fox 1998). Locations of the commercial fishing districts, subdistricts and Upper Subdistrict beach fisheries are shown in Figure 2.

The pioneering work of Davis and Kissner (1969) in UCI provided a framework from which age, sex and length data collection began. Unfortunately in the early years (1964-78) the sample collection of commercial harvest and escapement data was sporadic and limited compared to the present. Information was published in annual technical reports from 1964 to 1978. 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; Tobias and Waltemyer 1996; Waltemyer 1989, 1990, 1991, 1993, 1994a, 1994b, 1995a, 1995b; Waltemyer and Tobias 1997). The major emphasis has been on sampling sockeye salmon in the commercial harvests and escapements. However, since 1983 chinook, coho, and chum salmon sampling in key commercial harvests has been conducted.

Age, sex and length information in conjunction with abundance data provides a basis for assessing yearly variations in production and effects of management strategies. This report is part of a continuing series. Specific objectives were: 1) document number of salmon harvested in selected commercial gillnet fisheries; 2) report escapement numbers from the major river systems; and 3) estimate age, sex, and length composition of salmon in selected commercial harvests and escapements.

METHODS

Numerical Data

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

Sockeye salmon escapement in Fish Creek was determined by observing fish migrating through a weir located three miles upstream from the confluence with Knik Arm of Cook Inlet (C. Whitmore, ADF&G, Palmer, personal communication).

ADF&G-CF personnel used Bendix Corporation[2] side-scanning single transducer sonar to enumerate the adult salmon escapement in the Kenai (1 July-13 August), Kasilof (15 June-8 August), Crescent (27 June-7 August), and Yentna Rivers (7 July-21 August; Davis and King 1996). Escapement in the Kenai and Yentna rivers was apportioned to salmon species based on fish wheel catches. A trap was used to apportion the salmon escapement in Crescent River. Kasilof River escapement was apportioned to sockeye salmon only.

Chinook salmon escapement in the Kenai River was estimated using Hydroacoustic Technology, Inc. split-beam sonar (RM 8.5; B. King, ADF&G, Soldotna, personal communication).

Cook Inlet Aquaculture Association (CIAA) personnel monitored sockeye salmon escapements through weirs on Hidden, and Packers Lake (G. Fandrei, CIAA, Soldotna, personal communication).

ADF&G-CF personnel monitored sockeye salmon escapements through weirs on Judd Lake and Larson Creek. Chelatna Lake (Lake Creek) weir and sampling was a joint project with ADF&G-CF and CIAA personnel (P. Shields, ADF&G, Soldotna, personal communication).

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 sockeye and chum salmon. Because of the higher number of regenerated scales on coho and chinook, three scales were collected from each of these species. 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 (40X) 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 were recorded for all specimens sampled. Sex of the fish was determined by morphological characteristics. Chinook salmon were also checked for adipose fin clips. Length in millimeters was measured from mid-eye to fork-of-tail.

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 500 fish per strata for sockeye salmon harvested in the commercial fisheries sampling was set to account for unreadable scales. For escapements a single sample size of 500 fish was defined to provide the same level of precision. Escapement samples were weighted over time by sampling a

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

fixed proportion of fish captured by fish wheel each day. The percent of each day's escapement to be sampled was a ratio of the total sample size to the anticipated total escapement.

Commercial fishery harvests were stratified by date and area. Salmon were sampled from each of eight commercial fishing districts and subdistricts from one to ten 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 of 1,233 chinook, 20,387 sockeye, 1,366 coho, and 500 chum salmon were sampled in selected UCI commercial gillnet harvests and escapements in 1998 (Table 1). Age, sex and length data along with harvest and escapement information are presented below.

The 1998 UCI salmon harvest of 2.0 million fish was 2.5 million fish less than in 1997 and approximately 2.4 million less than the long-term (1966-97) average.

Sockeye Salmon

Total Return

The monitored sockeye salmon total return was 2,596,708 fish represented by a commercial harvest of 1,218,956 fish, and an escapement of 1,377,752 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 321,000 fish. These factors combined with the monitored commercial harvests and escapements yielded a total return of 2.9 million fish in 1998.

The following four major age classes made up 95.9% of the monitored sockeye salmon commercial harvests and escapements (Table 3):

Age Class	%	Escapement & Commercial Harvest	Mean Length
1.2	25.0	612,631	489 mm
1.3	43.3	1.064,455	559 mm
2.2	12.8	313,578	496 mm
2.3	14.8	363,817	561 mm

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	22.6	268,914	498 mm
1.3	46.2	550,193	563 mm
2.2	13.4	160,115	502 mm
2.3	16.1	191,600	565 mm

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

Age Class	%	Escapement	Mean Length
1.2	27.2	343,717	483 mm
1.3	40.7	514,262	554 mm
2.2	12.1	153,463	489 mm
2.3	13.6	172,217	557 mm

Female contributions among the major age classes ranged from 44% (Western Subdistrict) to 60% (Salamatof Beach) in the commercial harvests and from 50% (Kenai and Kasilof Rivers) to 73% (Fish Creek) in the escapements (Table 3).

Commercial Harvest by Fishery

The 1998 Central District sockeye drift gillnet harvest (excluding Chinitna Bay) was 599,202 fish (Tables 3 and 4). This harvest represented 49% of the total UCI sockeye harvest. Historically, the drift harvest from 1966-97 has averaged 57%. The major age class percentages, number of fish and mean lengths were:

Age Class	%	Harvest	Mean Length
1.2	18.5	111,121	506 mm
1.3	52.1	312,161	565 mm
2.2	9.8	58,434	511 mm
2.3	17.5	104,810	567 mm

Female composition in the drift gillnet harvest ranged from 44% (3 July) to 53% (6 July; Table 4).

The Cohoe/Ninilchik Beach set gillnet harvest was 233,671 fish and represented 19% of the total UCI sockeye salmon harvest (Tables 3 and 5). Historically the Cohoe/Ninilchik fishery harvest averaged 13%. The major age class percentages, number of fish, and mean lengths were:

Age Class	%	Harvest	Mean Length
1.2	30.0	69,975	483 mm
1.3	34.3	80,174	548 mm
2.2	20.5	47,895	489 mm
2.3	14.4	33,607	549 mm

Female composition in the Cohoe/Ninilchik Beach sockeye harvest ranged from 42% (1-10 August) to 52.7% (20 July; Table 5).

The Kalifonsky Beach set gillnet harvest, which historically averaged 12% of the total UCI sockeye salmon harvest, represented 13% or 158,472 fish in 1998 (Tables 3 and 6). The four major age class percentages, number of fish, and mean lengths in the harvest were:

Age Class	%	Harvest	Mean Length
1.2	32.6	51,686	486 mm
1.3	35.3	55,936	560 mm
2.2	18.4	29,170	494 mm
2.3	12.8	20,218	562 mm

Female composition in the Kalifonsky Beach harvest ranged from 49% (29 June-17 July) to 66% (20 July- 10 August; Table 6).

The Salamatof Beach set gillnet harvest, which historically averaged 12% of the total UCI sockeye salmon harvest, represented 10% or 119,890 fish in 1998 (Tables 3 and 7). The four major age class percentages, number of fish, and mean lengths were:

Age Class	%	Harvest	Mean Length
1.2	15.3	18,379	516 mm
1.3	58.1	69,682	572 mm
2.2	6.9	8,312	526 mm
2.3	18.3	21,888	579 mm

Female composition in the Salamatof Beach harvest ranged from 53% (10-13 July) to 61% (17 July; Table 7).

Of the three Upper Subdistrict beach fisheries, sockeye harvested in the Cohoe/Ninilchik Beach harvest were smallest in total mean length (516 mm) while sockeye in the Salamatof Beach harvest were the largest (561 mm). Kalifonsky Beach sockeye salmon mean length was 524 mm.

In the Central District drift gillnet and Upper Subdistrict (Salamatof, Kalifonsky, and Cohoe/Ninilchik Beaches) set gillnet harvests, age-1.3 fish were the predominant age class (Table 3; Figures 3-6).

The Eastern Subdistrict sockeye salmon set gillnet harvest of 18,332 fish, which historically averaged 1.4% of the total UCI sockeye salmon harvest, represented 1.5% in 1998. (Tables 3 and 8). The major age class percentages, number of fish, and mean lengths were:

Age Class	%	Harvest	Mean Length
1.2	52.6	9,644	513 mm
1.3	23.0	4,214	548 mm
2.2	16.0	2,924	497 mm
2.3	4.5	816	541 mm

Female composition in the harvest was 50%.

The General Subdistrict set gillnet harvest of 42,314, which historically averaged 2.6% of the total UCI sockeye salmon harvest, represented 3.5% in 1998 (Tables 3 and 9). The major age class percentages, number of fish, and mean lengths were:

Age Class	%	Harvest	Mean Length
0.3	4.5	1,884	569 mm
1.2	12.9	5,468	512 mm
1.3	59.1	25,013	571 mm
2.2	4.8	2,040	520 mm
2.3	18.1	7,661	571 mm

Females represented 47% of the harvest.

Chi-square test comparison of the four major age classes (1.2, 1.3, 2.2, 2.3) among the six commercial harvest areas found Cohoe/Ninilchik Beach harvest and Kalifornsky Beach harvest age compositions were not significantly different. The same was found to be true of the Central District drift harvest and Salamatof Beach age composition.

Chi-square test comparisons of all the other commercial harvest areas indicated that they were statistically significant ($P<0.05$; $df=3$) indicating differences in age composition were present. Chi-square statistics ranged from 508 for testing the Eastern Subdistrict harvest to General Subdistrict harvest to 45.5 for t testing Salamatof Beach harvest to General Subdistrict harvest.

The Kalgin Island commercial set gillnet harvest of 23,273 represented 1.9% of the total UCI sockeye harvest (Tables 3 and 10). Historically the Kalgin Island havest represents 1.7% of the total sockeye harvest. The major age class percentages, number of fish, and mean lengths were:

Age Class	%	Harvest	Mean Length
1.2	7.5	1,744	482 mm
1.3	35.6	8,283	559 mm
2.2	24.1	5,614	493 mm
2.3	30.5	7,086	550 mm

Females represented 43% of the harvest.

The Western Subdistrict set gillnet harvest of 19,874 represented 1.6% of the total UCI sockeye harvest. Historically the Western Subdistrict harvests 6.2% of the total sockeye harvest (Tables 3 and 11). The major age class percentages, number of fish, and mean lengths were:

Age Class	%	Harvest	Mean Length
1.2	13.3	2,641	512 mm
1.3	15.2	3,013	564 mm
2.2	57.1	11,340	519 mm
2.3	13.1	2,600	566 mm

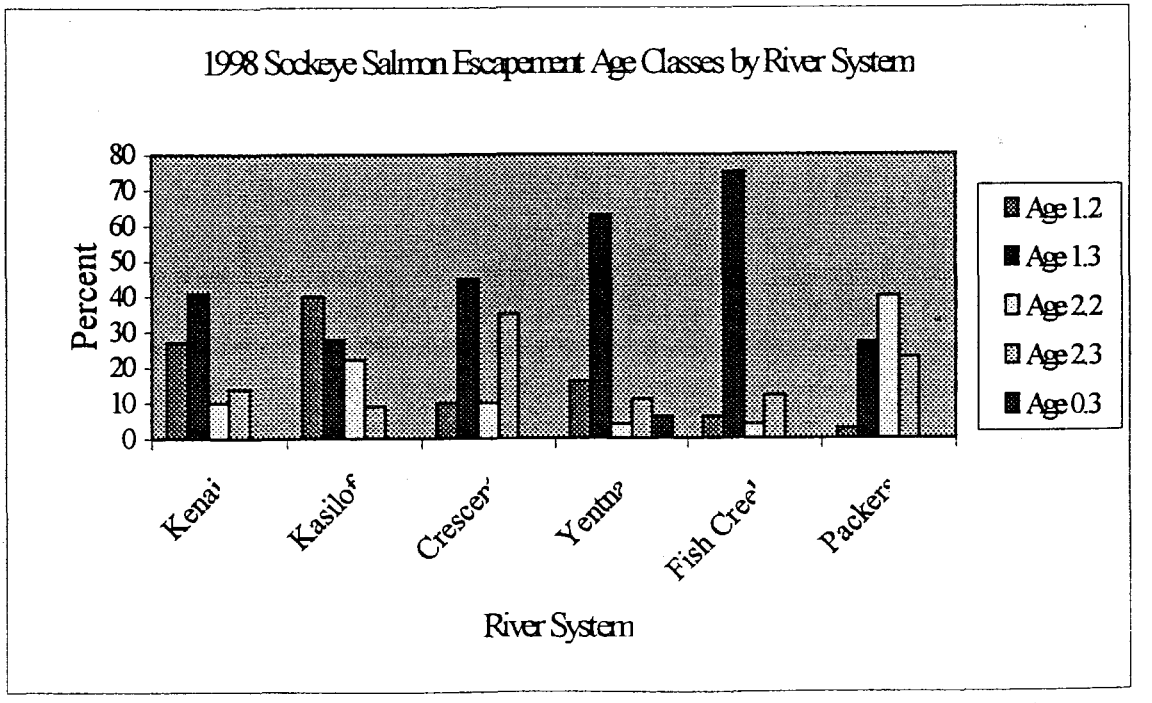
Females represented 44% of the Western Subdistrict harvest.

Escapement

A minimum of 1,377,752 sockeye salmon escaped the commercial fishery and entered the major rivers and streams of UCI (Tables 2, 3 and 12-19). Sockeye salmon escapements in descending order of abundance were 767,558 fish in Kenai River, 273,213 fish in Kasilof River, 233,265 fish in Susitna River, 62,257 fish in Crescent River, 22,853 fish in Fish Creek, and 18,606 fish in Packers Creek. 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 (27.2%), age 1.3 (40.7%), age 2.2 (12.1%) and age 2.3 (13.6%, Table 3). Chi-square tests between river escapement age compositions were all highly significant ($P<0.0001$) indicating age composition differences. 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	27.1	208,338	488 mm
1.3	40.7	312,502	562 mm
2.2	9.6	73,466	504 mm
2.3	13.9	106,362	566 mm

The overall mean length of Kenai River sockeye was 526 mm. Females comprised 50% of the Kenai River escapement (Table 12).

Hidden Creek, a tributary of the Kenai River, had an escapement of 67,727 sockeye represented by age-1.2 (82.6%), age-1.3 (13.9%), age-2.2 (3.4%) and age-2.3 (0.2%) fish. Female composition in Hidden Creek was 49% (Table 13).

Age composition in the mainstem escapement was significantly (x^2=371.6, df=3, P<0.05) different from the escapement in Hidden Creek due primarily to ages 1.2 and 1.3.

Kasilof River escapement age class percentages, number of fish and mean lengths were:

Age Class	%	Escapement	Mean Length
1.2	39.7	108,392	472 mm
1.3	28.1	76,831	526 mm
2.2	22.2	60,572	471 mm
2.3	8.9	24,229	521 mm

The overall mean length of Kasilof River escapement sockeye was 491 mm. Females comprised 50% of the Kasilof River escapement (Tables 3 and 14).

Crescent River escapement was 62,257 sockeye salmon with the following major age class percentages, number of fish and mean lengths:

Age Class	%	Escapement	Mean Length
1.2	9.9	6,150	483 mm
1.3	44.5	27,730	568 mm
2.2	10.1	6,258	507 mm
2.3	35.2	21,903	572 mm

The overall mean length of Crescent River escapement sockeye was 555 mm. Females comprised 54% of the Crescent River escapement (Tables 3 and 15).

Packers Creek sockeye salmon escapement was 18,606 fish. The major age class percentages, number of fish, and mean lengths were:

Age Class	%	Escapement	Mean Length
1.2	3.0	549	473 mm
1.3	26.8	4,994	523 mm
2.2	40.1	7,465	464 mm
2.3	23.3	4,335	513 mm
3.3	6.2	1,153	536 mm

The overall mean length of Packers Creek sockeye was 496 mm. Females comprised 70% of the total escapement (Tables 3 and 16).

The Yentna River, a tributary of the Susitna River, had an escapement of 119,623 sockeye salmon. The major age class percentages, number of fish and mean lengths were:

Age Class	%	Escapement	Mean Length
0.3	5.7	6,858	548 mm
1.2	15.7	18,821	486 mm
1.3	62.7	74,964	550 mm
2.2	4.0	4,785	484 mm
2.3	10.5	12,600	547 mm

The overall mean length of Yentna River sockeye was 535 mm. Female composition in the escapement was 52% (Tables 3 and 17).

Chelatna Lake which drains into Lake Creek, a tributary of the Yentna River, had an estimated escapement of 27,284 sockeye (Table 18). The major age classes, number of fish, and mean lengths were:

Age Class	%	Escapement	Mean Length
0.3	7.1	1,946	565 mm
1.2	11.2	3,064	503 mm
1.3	79.9	21,812	566 mm

The overall mean length of Chelatna Lake sockeye was 559mm. Females comprised 46% of the escapement (Table 18).

A comparison of the major age structures between Chelatna Lake (Lake Creek) and Yentna River was statistically significant (χ^2=24.07, df=2 P>0.05). The overall mean length of Chelatna Lake fish (559mm) was larger than Yentna River fish (535 mm).

Judd Lake, a tributary of the Talachulitna and Yentna Rivers had an estimated escapement of 34,416 sockeye. Age composition was as follows: age 1.2 (5.4%), age 1.3 (56.0%), age 2.2 (19.1%), and age 2.3 (18.6%; Table 19). A comparison of the age composition between Judd Lake and Chelatna and Yentna Rivers was statistically significant. Judd Lake had a higher component of age-2.2 and age-2.3 sockeye than Chelatna Lake or Yentna River.

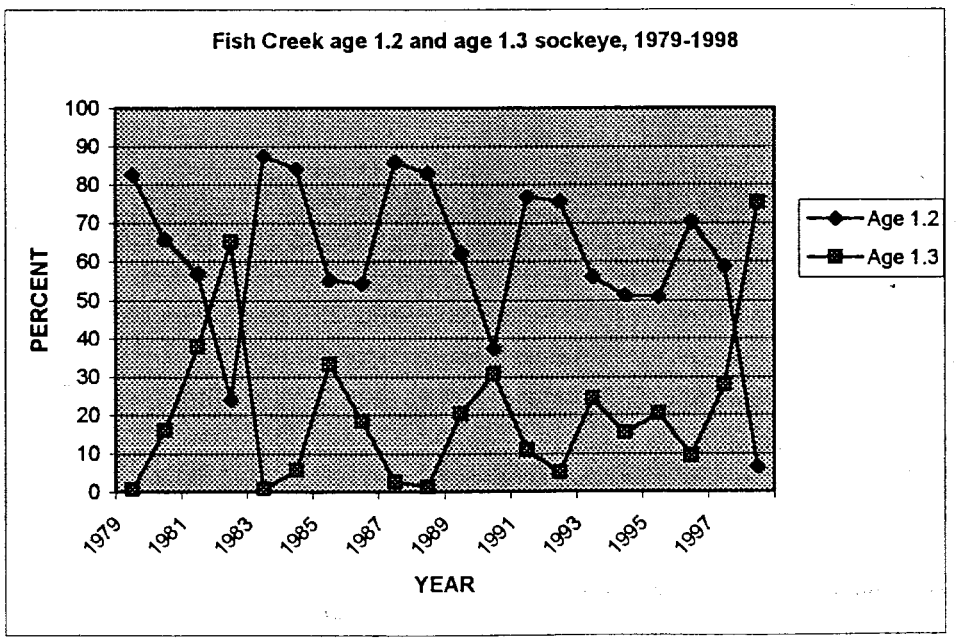
Larson Creek, which flows into the Talkeetna River, a tributary of the Susitna River had an estimated escapement of 63,514 sockeye. Age composition was as follows: age 1.2 (13.6%), age 1.3 (49.0%), age 2.2 (13.2%), and age 2.3 (24.0%; Table 20). Larson Creek was significantly different from Yentna, Chelatna, and Judd Lake, with the highest component of age-2.3 sockeye.

Fish Creek sockeye age class percentages, number of fish, and mean lengths were:

Age Class	%	Escapement	Mean Length
1.2	6.4	1,467	483 mm
1.3	75.4	17,241	527 mm
2.2	4.0	917	478 mm
2.3	12.2	2,788	534 mm

The overall mean length of Fish Creek sockeye was 522 mm. Females comprised 73% of the escapement (Tables 3 and 21).

There was a significant difference in the Fish Creek age composition compared to previous years, with age 1.3 being the predominant age class in 1998. Previous escapement age compositions showed age 1.2 as being the predominant age class in Fish Creek., with the exception of 1982.



Chinook Salmon

The total commercial harvest of chinook salmon in 1998 was 7,997 fish (Table 2) which was below the long-term average harvest of 16,197 fish. The Upper Subdistrict set gillnet fishery harvest was 5,039 or 63% of the UCI harvest (Table 22). The predominant age class percentages, number of fish and mean lengths in the Upper Subdistrict were:

Age Class	%	Harvest	Mean Length
1.1	11.8	592	443 mm
1.2	23.2	1,168	644 mm
1.3	21.1	1,061	838 mm
1.4	38.4	1,934	994 mm

The overall mean length was 806 mm, and females accounted for 54% of the commercial harvest. Age and length composition was similar to past years, and as in 1997, the first sampling period (29 June- 13 July) had a higher number (12% in 1998, 16% in 1997) of male age-1.1 chinook.

Late run chinook salmon escapement entering the Kenai River was estimated at 28,573 (Table 2).

Coho Salmon

Commercial Harvest

The coho salmon commercial harvest of 160,644 fish was significantly below the long-term average of 356,466 fish. Coho salmon were sampled from three gillnet fisheries which represented 78% of the total UCI harvest (Table 23). Age-2.1 coho accounted for the bulk of the harvest:

	Age 2.1	Harvest	Mean Length
Central District drift gillnet	77.5%	64,616	567 mm
Upper Subdistrict set gillnet	79.6%	14,852	595 mm
General Subdistrict set gillnet	77.5%	17,947	560 mm

Age-1.1 (13.1%) and age-3.1 (9.1%) accounted for the remainder of the total monitored coho harvests (Tables 24-26). Mean lengths for all three age groups combined were, on average, larger in the Upper Subdistrict (596 mm) than in the Drift (567 mm) or General Subdistrict harvests (560 mm; Table 23). Age and length composition was similar as in past years.

Females represented from 29% in the Upper Subdistrict set gillnet harvest to 46% in the Central District Drift harvest and General Subdistrict set gillnet harvest. Age composition differences of the three major age classes (1.1, 2.1, 3.1) between the Central District Drift and the Upper Subdistrict set gillnet harvests were significant (χ^2=21.06, df=2, P=<0.05). No age composition differences were observed between the Central District Drift and the General Subdistrict set gillnet harvests (χ^2=0.06, df=2, P=<0.05). There was a significant difference between the Upper Subdistrict and General Subdistrict set gillnet harvests (χ^2=22.21, df=2, P=<0.05).

Escapement

The Yentna River, a tributary of the Susitna River, had an escapement of 24,769 coho. The major age class percentages, number of fish and mean lengths were:

Age Class	%	Harvest	Mean Length
1.1	20.6	5,100	557 mm
2.1	71.6	17,743	573 mm
3.1	7.8	1,926	585 mm

The overall mean length of the Yentna River coho was 571 mm. Female composition in the escapement was 53%. There was a larger number of age class 1.1 (21%) in the Yentna River escapement than in the commercial harvest (Table 27).

Chum Salmon

The chum salmon commercial harvest of 95,654 recorded from 1966 to the present. The historic average harvest of chum salmon is 579,685. Chum salmon were sampled from the commercial drift gillnet harvest of 88,036 fish, which made up 92% of the total commercial harvest. The major age class percentages, number of fish, and mean lengths were:

Age Class	%	Harvest	Mean Length
0.3	86.4	76,041	596 mm
0.4	12.8	11,222	615 mm

Females represented 46% of the chum salmon harvest (Table 28).

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Table 1. Number of salmon sampled from selected commercial gillnet harvests and escapements in Upper Cook Inlet, Alaska, in 1998.

Location[a]	Species			
	Chinook	Sockeye	Coho	Chum
Commercial Catch:				
Central District				
Drift		4,228	353	500
Upper Subdistrict[b]	1,233		513	
Cohoe/Ninilchik Beach		3,040		
Kalifonsky Beach		1,451		
Salamatof Beach		851		
Western Subdistrict		853		
Kalgin Island		500		
Northern District				
Eastern Subdistrict		706		
General Subdistrict		1,000	500	
Subtotal	1,233	12,629	1,366	500
Escapement:				
Central District				
Kenai River				
Mainstem late run		799		
Hidden Creek[c]		959		
Kasilof River				
Mainstem		948		
Crescent River		668		
Packers Creek[c]		433		
Northern District				
Susitna River				
Yentna River		1,801	894[d]	
Chelatna Lake (Lake Creek)[c]		1,332		
Fish Creek[e]		818		
Subtotal		7,758		
Total	1,233	20,387	2,260	500

[a] Specific locations not footnoted were sampled by Commercial Fisheries Division personnel, Alaska Department of Fish and Game (ADF&G).
[b] Represents pooled samples from the Upper Subdistrict commercial set gillnet fisheries.
[c] Samples collected by Cook Inlet Aquaculture Association (CIAA) personnel.
[d] 584 samples collected during escapement sampling, 310 from telemetry studies.
[e] Samples collected by Sport Fish Division personnel, ADF&G.

Table 2. Number of salmon commercially harvested and escapements into the major river systems of Upper Cook Inlet, Alaska, in 1998

Fishery		Chinook	Sockeye	Coho	Pink	Chum	Total
Commercial Harvest:							
A. Northern District Total		2,471	60,646	34,359	11,555	3,977	113,008
1. Northern District West		1,741	42,314	23,159	6,812	3,662	77,688
a. Trading Bay	247-10	282	4,474	1,909	559	8	7,232
b. Tyonek	247-20	743	11,466	4,446	1,241	363	18,259
c. Beluga	247-30	420	18,544	6,619	2,768	749	29,100
d. Susitna Flat	247-41	105	1,580	3,194	707	820	6,406
e. Pt. Mackenzie	247-42	99	762	1,676	316	564	3,418
f. Fire Island	247-43	92	2,899	4,767	1,221	1,063	10,023
g. Knik Arm	247-50	0	2,597	548	0	105	3,250
2. Northern District East		730	18,332	11,200	4,743	315	35,320
a. Pt. Possession	247-70	572	8,499	5,379	2,839	281	17,561
b. Birch Hill	247-80	43	4,560	3,110	494	13	8,220
c. Number 3 Bay	247-90	115	5,282	2,711	1,410	21	9,539
B. Central District Total		5,526	1,158,310	126,285	539,705	91,677	1,921,503
1. East Side Set Total		5,039	512,033	18,662	332,092	688	868,514
a. Salamatof	244-40	829	119,890	5,982	67,821	121	194,643
b. Kalifonsky Beach	244-30	1,943	158,472	4,345	89,387	156	254,303
d. Cohoe/Ninilchik		2,267	233,671	8,335	174,884	411	419,568
1. Cohoe	244-22	1,065	132,758	3,908	81,474	234	219,439
2. Ninilchik	244-21	1,202	100,913	4,427	93,410	177	200,129
2. West Side Set Total		25	19,874	10,328	456	2,019	32,702
a. Little Jack Slough	245-50	0	15,556	2,628	0	44	18,228
b. Polly Creek	245-40	9	510	3	5	26	553
c. Tuxedni Bay	245-30	12	3,519	6,316	441	1,731	12,019
d. Silver Salmon	245-20	4	289	1,381	10	218	1,902
3. Kustatan Total		83	3,765	799	89	4	4,740
a. Big River	245-55	78	2,555	0	0	0	2,633
b. West Foreland	245-60	5	1,210	799	89	4	2,107
4. Kalgin Island Total		47	23,273	12,830	6,640	380	43,170
a. West Side	246-10	39	15,263	9,282	4,966	306	29,876
b. East Side	246-20	8	7,990	3,548	1,674	74	13,294
5. Chinitna Bay Total		0	163	329	146	550	1,088
a. Set	248-10	0	163	329	46	550	1,088
6. Central District Set Total		5,194	559,116	42,948	339,323	3,641	950,214
7. Central District Drift Total		332	599,211	83,337	200,382	88,036	971,298
a. West Side	245-[illegible],90	49	104,751	21,177	19,995	18,281	164,252
b. East Side	244-[illegible],70	283	494,461	62,160	180,387	69,775	807,067
Commercial Harvest Total		7,997	1,218,956	160,644	551,260	95,554	2,034,511
Escapement:							
Kenai River		28,573[a]	767,558				
Kasilof River			273,213				
Crescent River			62,257				
Packers Creek			18,606				
Susitna River[b]			233,265				
Yentna River			119,623				
Fish Creek			22,853				
Escapement Total		7,997	1,377,752				
Upper Cook Inlet Total[c]		36,570	2,596,708	160,644	551,260	95,554	2,034,511

[a] Late run only. Source: D. Athons, ADF&G, Soldotna, personal communication.

[b] Susitna River escapement comprises the Yentna river escapement of 119,623 plus an estimate of Susitna mainstem escapement based on the relation: Sunshine equals 95% of the Yentna escapement developed using comparatiave data from 1981-85. Combining Yentna and Sunshine equals the total Susitna River escapement.

[c] Total does not account for other unmonitored escapements, sport, personal use and subsistence harvests that were estimated at at 321,090 for an estimated total Upper cook Inlet return of 2.9 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 1998.

	Age Group														
LOCATION	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total
COMMERCIAL HARVEST															
Central District															
Central Drift															
Number	655		6,438	111,121	6		312,161	58,434		2,917	104,810	319	1,062	1,279	599,202
Percent	.11		1.07	18.54	.00		52.10	9.75		.49	17.49	.05	.18	.21	100.00
Sample Size	3		33	767	1		1,941	359		16	660	2	6	8	3,796
Mean Length[1]	460		569	506	370		565	511		591	567	489	584	565	550
% Female	51		50	33	100		56	42		49	53	16	70	31	50
Cohoe/Ninilchik Beach															
Number	194		363	69,975	123		80,174	47,895		778	33,607	407	20	135	233,671
Percent	.08		.16	29.95	.05		34.31	20.50		.33	14.38	.17	.01	.06	100.00
Sample Size	1		3	825	3		953	550		9	403	3	1	3	2,754
Mean Length	430		549	483	388		548	489		608	549	536	641	544	516
% Female	100		53	40	67		54	47		72	51	100		85	48
Kalifonsky Beach															
Number				51,686	110		55,936	29,170		1,022	20,218	110	220		158,472
Percent				32.62	.07		35.30	18.41		.64	12.76	.07	.14		100.00
Sample Size				281	1		352	162		6	128	1	2		933
Mean Length				486	395		560	494		605	562	471	592		524
% Female				47	100		58	58		67	61		50		55
Salamatof Beach															
Number	18		128	18,379	18		69,682	8,312		843	21,888	274	220	128	119,890
Percent	.02		.11	15.33	.02		58.12	6.93		.70	18.26	.23	.18	.11	100.00
Sample Size	1		1	219	1		537	96		6	172	3	1	1	1,038
Mean Length	405		568	516	410		572	526		582	579	498	541	593	561
% Female	100		100	40	100		65	59		83	61	53	100	100	60
Western															
Number			69	2,641	23		3,013	11,340			2,600	156		32	19,874
Percent			.35	13.29	.12		15.16	57.06			13.08	.78		.16	100.00
Sample Size			3	100	1		115	415			105	6		1	746
Mean Length			558	512	417		564	519			566	525		596	531
% Female			33	46	100		37	47			37	29			44

-continued-

Table 3. (page 2 of 3)

LOCATION	Age Group 0.2	1.1	0.3	1.2	2.1	0.4	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	108	151	216	9,644	108		4,214	2,924			816	151			18,332
Percent	.59	.82	1.18	52.61	.59		22.99	15.95			4.45	.82			100.00
Sample Size	3	4	7	387	3		133	94			25	5			661
Mean Length	480	363	588	513	370		548	497			541	490			518
% Female	40		30	52	40		55	43			45	72			50
General Subdistrict															
Number	93		1,884	5,468		31	25,013	2,040		93	7,661		31		42,314
Percent	.22		4.45	12.92		.07	59.11	4.82		.22	18.11		.07		100.00
Sample Size	2		42	109		1	549	41		3	161		1		909
Mean Length	451		569	512		597	571	520		635	571		571		561
% Female	33		46	41			50	35		33	48		100		47
COMMERCIAL HARVEST TOTAL															
Number	1,068	151	9,098	268,914	388	31	550,193	160,115		5,653	191,600	1,417	1,553	1,574	1,191,755°
Percent	.09	.01	.76	22.56	.03	.00	46.17	13.44		.47	16.08	.12	.13	.13	100.00
Sample Size	10	4	89	2,688	10	1	4,580	1,717		40	1,654	20	11	13	10,837
Mean Length	455	363	569	498	387	597	563	502		595	565	507	579	566	540
% Female	0	0	50	39	73		56	48		60	54	53	71	41	51
ESCAPEMENT															
Central District															
Kenai River															
Number		2,193		208,338	50,440		312,502	73,466	1,097	9,869	106,362	1,097	1,097	1,097	767,558
Percent		.29		27.14	6.57		40.71	9.57	.14	1.29	13.86	.14	.14	.14	100.00
Sample Size		2		190	46		285	67	1	9	97	1	1	1	700
Mean Length		364		488	395		562	504	381	612	566	530	595	550	526
% Female		100		50	46		49	58	100	22	51	100			50
Kasilof River															
Number	319	319		108,392	1,594		76,831	60,572		957	24,229				273,213
Percent	.12	.12		39.67	.58		28.12	22.17		.35	8.87				100.00
Sample Size	1	1		340	5		241	190		3	76				857
Mean Length	422	337		472	356		526	471		538	521				491
% Female		100		48	20		54	50		33	47				50

-Continued-

Table 3. (page 3 of 3)

LOCATION	Age Group 0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total
ESCAPEMENT (continued)															
Crescent River															
Number				6,150			27,730	6,258		216	21,903				62,257
Percent				9.88			44.54	10.05		.35	35.18				100.00
Sample Size				57			257	58		2	203				577
Mean Length				483			568	507		601	572				555
% Female				32			56	53			58				54
Packers Creek															
Number				549	55		4,994	7,465			4,335		55	1,153	18,606
Percent				2.95	.30		26.84	40.12			23.30		.30	6.20	100.00
Sample Size				10	1		91	136			79		1	21	339
Mean Length				473	359		523	464			513		562	536	496
% Female				100			73	70			72			38	70
Northern District															
Yentna River															
Number	877	399	6,858	18,821			74,964	4,785		319	12,600				119,623[c]
Percent	.73	.33	5.73	15.73			62.67	4.00		.27	10.53				100.00
Sample Size	11	5	86	236			940	60		4	158				1,500
Mean Length	463	321	548	486			550	484		585	547				535
% Female	27	20	55	56			52	40		75	48				52
Fish Creek															
Number		110	110	1,467	37		17,241	917		37	2,788	73		73	22,853
Percent		.48	.48	6.42	.16		75.44	4.01		.16	12.20	.32		.32	100.00
Sample Size		3	3	40	1		470	25		1	76	2		2	623
Mean Length		360	542	483	405		527	478		615	534	443		538	522
% Female			66	85			74	68		100	63	100		100	73
ESCAPEMENT TOTAL															
Number	1,196	3,021	6,968	343,717	52,126		514,262	153,463	1,097	11,398	172,217	1,170	1,152	2,323	1,264,110
Percent	.09	.24	.55	27.19	4.12		40.68	12.14	.09	.90	13.62	.09	.09	.18	100.00
Sample Size	12	11	89	873	53		2,284	536	1	19	689	3	2	24	4,596
Mean Length	452	355	548	483	394		554	489	381	605	557	525	593	543	520
% Female	0	86	55	49	45		51	55	100	24	52	100		22	51
UPPER COOK INLET TOTAL															
Number	2,264	3,172	16,066	612,631	52,514	31	1,064,455	313,578	1,097	17,051	363,817	2,587	2,705	3,897	2,455,865
Percent	.09	.13	.65	24.95	2.14	.00	43.34	12.77	.04	.69	14.81	.11	.11	.16	100.00
Sample Size	22	15	178	3,561	63	1	6,864	2,253	1	59	2,343	23	13	37	15,433
Mean Length	454	355	560	489	394	597	559	496	381	601	561	515	585	552	530
% Female	38	82	52	45	45		54	51	100	36	53	74	41	30	51

[a] Mean length in mm.
[b] Total does not include the Kalgin Island, Kustatan or Chinitna Bay commercial harvest of 27,201.
[c] Yentna River represents 51% of the Susitna River total escapement based on the relation: Sunshine equals 95% of Yentna. This relation was developed from the years of comparable data 1981-85 when the Yentna and Sunshine sites were operating. Therefore, the total Susitna River escapement estimate for 1998 is 233,265.

Table 4. Age, sex and length composition of sockeye salmon in the Central District commercial drift gillnet harvest, Upper Cook Inlet, Alaska, in 1998.

	Age Group											
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 1: 26 June[a]												
Males			1,213		2,332	317		783			19	4,664
Percent			14.23		27.35	3.72		9.18			0.22	54.71
Sample Size			65		125	17		42			1	250
Mean Length[b]			493		546	506		546			612	530
Std. Error			3		3	7		3				2
Sample Size			65		125	17		42			1	250
Females		19	373		2,555	149		765				3,861
Percent		0.22	4.38		29.97	1.75		8.97				45.29
Sample Size		1	20		137	8		41				207
Mean Length		494	498		541	510		546				536
Std. Error			5		2	12		5				2
Sample Size		1	20		137	8		41				207
Both Sexes		19	1,586		4,887	466		1,548			19	8,525
Percent		0.22	18.60		57.33	5.47		18.16			0.22	100.00
Sample Size		1	85		262	25		83			1	457
Mean Length		494	494		543	507		546			612	533
Std. Error			2		2	6		3				1
Sample Size		1	85		262	25		83			1	457

Table 4. (page 2 of 10)

	Age Group											
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 2: 29 June[a]												
Males	50		3,338		5,230	996		2,242		50	50	11,956
Percent	0.22		14.47		22.68	4.32		9.72		0.22	0.22	51.84
Sample Size	1		67		105	20		45		1	1	240
Mean Length	492		501		547	500		548		624	571	531
Std. Error			3		3	6		5				2
Sample Size	1		67		105	20		45		1	1	240
Females		349	1,295		6,974	697	100	1,644	50			11,109
Percent		1.51	5.61		30.24	3.02	0.43	7.13	0.22			48.16
Sample Size		7	26		140	14	2	33	1			223
Mean Length		554	492		546	508	599	547	511			538
Std. Error		7	4		2	7	5	3				1
Sample Size		7	26		140	14	2	33	1			223
Both Sexes	50	349	4,633		12,204	1,693	100	3,886	50	50	50	23,065
Percent	0.22	1.51	20.09		52.91	7.34	0.43	16.85	0.22	0.22	0.22	100.00
Sample Size	1	7	93		245	34	2	78	1	1	1	463
Mean Length	492	554	498		547	503	599	548	511	624	571	534
Std. Error		7	3		2	4	5	3				1
Sample Size	1	7	93		245	34	2	78	1	1	1	463

-Continued-

Table 4. (page 3 of 10)

	Age Group											
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 3: 3 July[a]												
Males		118	4,900		5,844	2,420		1,712				14,994
Percent		0.44	18.20		21.71	8.99		6.36				55.70
Sample Size		2	83		99	41		29				254
Mean Length		642	502		562	497		556				532
Std. Error		24	2		3	3		4				2
Sample Size		2	83		99	41		29				254
Females		59	1,948		6,317	944	59	2,597				11,924
Percent		0.22	7.24		23.47	3.51	0.22	9.65				44.30
Sample Size		1	33		107	16	1	44				202
Mean Length		554	503		557	504	641	543				541
Std. Error			4		3	7		4				2
Sample Size		1	33		107	16	1	44				202
Both Sexes		177	6,848		12,161	3,364	59	4,309				26,918
Percent		0.66	25.44		45.18	12.50	0.22	16.01				100.00
Sample Size		3	116		206	57	1	73				456
Mean Length		613	503		560	499	641	548				536
Std. Error		24	2		2	3		3				1
Sample Size		3	116		206	57	1	73				456

-Continued-

Table 4. (page 4 of 10)

	Age Group											
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 4: 6 July[a]												
Males		253	9,348		9,600	4,926		2,779				26,906
Percent		0.44	16.23		16.67	8.55		4.82				46.71
Sample Size		2	74		76	39		22				213
Mean Length		585	503		564	508		560				532
Std. Error		15	3		4	5		6				2
Sample Size		2	74		76	39		22				213
Females		126	8,084		13,391	3,663	253	5,179				30,696
Percent		0.22	14.03		23.25	6.36	0.44	8.99				53.29
Sample Size		1	64		106	29	2	41				243
Mean Length		574	496		554	505	605	555				534
Std. Error			4		3	6	10	5				2
Sample Size		1	64		106	29	2	41				243
Both Sexes		379	17,432		22,991	8,589	253	7,958				57,602
Percent		0.66	30.26		39.91	14.91	0.44	13.82				100.00
Sample Size		3	138		182	68	2	63				456
Mean Length		581	500		558	507	605	557				533
Std. Error		15	2		2	4	10	4				1
Sample Size		3	138		182	68	2	63				456

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Table 4. (page 5 of 10)

	Age Group											
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 5: 10 July[a]												
Males			22,255		32,184	13,011	685	10,272				78,407
Percent			14.74		21.31	8.62	0.45	6.80				51.93
Sample Size			65		94	38	2	30				229
Mean Length			501		569	503	590	572				539
Std. Error			4		3	4	13	6				2
Sample Size			65		94	38	2	30				229
Females		342	8,560		43,826	8,217	342	11,299				72,586
Percent		0.23	5.67		29.03	5.44	0.23	7.48				48.07
Sample Size		1	25		128	24	1	33				212
Mean Length		566	511		562	523	571	565				552
Std. Error			4		2	6		6				2
Sample Size		1	25		128	24	1	33				212
Both Sexes		342	30,815		76,010	21,228	1,027	21,571				150,993
Percent		0.23	20.41		50.34	14.06	0.68	14.29				100.00
Sample Size		1	90		222	62	3	63				441
Mean Length		566	504		565	510	584	568				545
Std. Error			3		2	3	13	4				1
Sample Size		1	90		222	62	3	63				441

-Continued-

Table 4. (page 6 of 10)

	Age Group											
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 6: 11 July[c]												
Males		6	170		227	88	6	59			6	562
Percent		0.52	14.66		19.57	7.59	0.52	5.09			0.52	48.45
Sample Size		1	29		39	15	1	10			1	96
Mean Length		567	510		574	520	613	560			604	545
Std. Error			5		5	8		9				3
Sample Size		1	29		39	15	1	10			1	96
Females			146	6	276	64		100		6		598
Percent			12.59	0.52	23.79	5.52		8.62		0.52		51.55
Sample Size			25	1	47	11		17		1		102
Mean Length			504	370	557	519		553		599		538
Std. Error			6		4	11		7				3
Sample Size			25	1	47	11		17		1		102
Both Sexes		6	316	6	503	152	6	159		6	6	1,160
Percent		0.52	27.24	0.52	43.36	13.10	0.52	13.71		0.52	0.52	100.00
Sample Size		1	54	1	86	26	1	27		1	1	198
Mean Length		567	507	370	565	520	613	556		599	604	542
Std. Error			4		3	7		5				2
Sample Size		1	54	1	86	26	1	27		1	1	198

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Table 4. (page 7 of 10)

	Age Group											
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 7: 13 - 15 July[d]												
Males	269		12,924		19,118	5,654	538	9,424	269	269		48,465
Percent	0.29		13.75		20.35	6.02	0.57	10.03	0.29	0.29		51.58
Sample Size	1		48		71	21	2	35	1	1		180
Mean Length	496		492		579	502	578	578	485	622		546
Std. Error			4		4	9	49	6				3
Sample Size	1		48		71	21	2	35	1	1		180
Females		538	7,539		26,118	4,039	538	6,193		269	269	45,503
Percent		0.57	8.02		27.79	4.30	0.57	6.59		0.29	0.29	48.42
Sample Size		2	28		97	15	2	23		1	1	169
Mean Length		560	515		565	521	597	551		515	593	551
Std. Error		33	5		2	6	4	6				2
Sample Size		2	28		97	15	2	23		1	1	169
Both Sexes	269	538	20,463		45,236	9,693	1,076	15,617	269	538	269	93,968
Percent	0.29	0.57	21.78		48.14	10.32	1.15	16.62	0.29	0.57	0.29	100.00
Sample Size	1	2	76		168	36	4	58	1	2	1	349
Mean Length	496	560	501		571	510	587	567	485	569	593	548
Std. Error		33	3		2	6	25	4				2
Sample Size	1	2	76		168	36	4	58	1	2	1	349

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Table 4. (page 8 of 10)

	Age Group											
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 8: 17 July[e]												
Males		2,686	15,777		47,668	5,371		15,106			671	87,279
Percent		1.51	8.85		26.74	3.01		8.47			0.38	48.96
Sample Size		8	47		142	16		45			2	260
Mean Length		576	522		576	510		581			542	563
Std. Error		8	4		3	9		4			27	2
Sample Size		8	47		142	16		45			2	260
Females	336	1,678	7,049		56,061	5,371		20,141		336		90,972
Percent	0.19	0.94	3.95		31.45	3.01		11.30		0.19		51.04
Sample Size	1	5	21		167	16		60		1		271
Mean Length	426	558	509		557	527		562		589		552
Std. Error		10	5		2	5		3				1
Sample Size	1	5	21		167	16		60		1		271
Both Sexes	336	4,364	22,826		103,729	10,742		35,247		336	671	178,251
Percent	0.19	2.45	12.81		58.19	6.03		19.77		0.19	0.38	100.00
Sample Size	1	13	68		309	32		105		1	2	531
Mean Length	426	569	517		566	519		570		589	542	557
Std. Error		6	3		2	5		2			27	1
Sample Size	1	13	68		309	32		105		1	2	531

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Table 4. (page 9 of 10)

	Age Group											
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 9: 1 - 7 August[f]												
Males		132	4,091		15,965	924	264	6,862			132	28,370
Percent		0.22	6.97		27.19	1.57	0.45	11.69			0.22	48.31
Sample Size		1	31		121	7	2	52			1	215
Mean Length		570	530		588	535	587	583			605	577
Std. Error			5		2	10	44	3				2
Sample Size		1	31		121	7	2	52			1	215
Females		132	2,111		18,475	1,583	132	7,653		132	132	30,350
Percent		0.22	3.60		31.46	2.70	0.22	13.03		0.22	0.22	51.69
Sample Size		1	16		140	12	1	58		1	1	230
Mean Length		571	525		565	529	622	569		616	573	562
Std. Error			5		2	5		3				1
Sample Size		1	16		140	12	1	58		1	1	230
Both Sexes		264	6,202		34,440	2,507	396	14,515		132	264	58,720
Percent		0.45	10.56		58.65	4.27	0.67	24.72		0.22	0.45	100.00
Sample Size		2	47		261	19	3	110		1	2	445
Mean Length		571	528		576	531	599	575		616	589	569
Std. Error			3		2	5	44	2				1
Sample Size		2	47		261	19	3	110		1	2	445

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Table 4. (page 10 of 10)

	Age Group											
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
All Periods Combined:												
Males	319	3,195	74,016		138,168	33,707	1,493	49,239	269	319	878	301,603
Percent	0.05	0.53	12.35		23.06	5.63	0.25	8.22	0.04	0.05	0.15	50.33
Sample Size	2	14	509		872	214	7	310	1	2	6	1,937
Mean Length	495	579	506		573	505	585	574	485	622	555	549
Std. Error		7	2		1	3	20	2			27	1
Sample Size	2	14	509		872	214	7	310	1	2	6	1,937
Females	336	3,243	37,105	6	173,993	24,727	1,424	55,571	50	743	401	297,599
Percent	0.06	0.54	6.19	0.00	29.04	4.13	0.24	9.27	0.01	0.12	0.07	49.67
Sample Size	1	19	258	1	1,069	145	9	350	1	4	2	1,859
Mean Length	426	559	508	370	559	520	596	560	511	567	586	550
Std. Error		10	2		1	3	4	2				1
Sample Size	1	19	258	1	1,069	145	9	350	1	4	2	1,859
Both Sexes	655	6,438	111,121	6	312,161	58,434	2,917	104,810	319	1,062	1,279	599,202
Percent	0.11	1.07	18.54	0.00	52.10	9.75	0.49	17.49	0.05	0.18	0.21	100.00
Sample Size	3	33	767	1	1,941	359	16	660	2	6	8	3,796
Mean Length	460	569	506	370	565	511	591	567	489	584	565	550
Std. Error		6	1		1	2	13	1			27	1
Sample Size	3	33	767	1	1,941	359	16	660	2	6	8	3,796

[a] All areas of Central District open except west of 152 degrees 25 minutes - 0700-1900.
[b] Mean length in mm.
[c] Kasilof Section open 0500-1900.
[d] Kenai and Kasilof Sections open 7/13 - 0700-1900, 7/15 Kasilof Section open 1500-2300.
[e] All areas of Central District open except west of 152 degrees 25 minutes - 0700-1900.
[f] Kenai and Kasilof Sections open 8/1 - 1700-2200, 8/2 0500-2200, 8/3 0500-0700, all of Central District open 8/3 0700-1900, 8/5 Kenai and Kasilof Sections open 0700-1900, 8/7 All Central District open 0700-1900.

Table 5. Age, sex and length composition of sockeye salmon in the Cohoe/Ninilchik Beach commercial set gillnet harvest, Upper Cook Inlet, Alaska, in 1998.

	Age Group											
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 1: 26 June - 3 July												
Males		87	7,997		7,911	3,129		2,869				21,993
Percent		0.22	20.26		20.05	7.93		7.27				55.73
Sample Size		1	92		91	36		33				253
Mean Length[a]		586	489		543	487		545				516
Std. Error			3		3	3		6				2
Sample Size		1	92		91	36		33				253
Females			3,912		9,388	1,565		2,608				17,473
Percent			9.91		23.79	3.97		6.61				44.27
Sample Size			45		108	18		30				201
Mean Length			494		537	498		532				523
Std. Error			4		2	6		5				2
Sample Size			45		108	18		30				201
Both Sexes		87	11,909		17,299	4,694		5,477				39,466
Percent		0.22	30.18		43.83	11.89		13.88				100.00
Sample Size		1	137		199	54		63				454
Mean Length		586	491		540	490		539				519
Std. Error			2		2	3		4				1
Sample Size		1	137		199	54		63				454

Table 5. (page 2 of 7)

	Age Group											
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 2: 6 July												
Males			3,178		2,367	2,062		980				8,587
Percent			20.26		15.09	13.14		6.25				54.74
Sample Size			94		70	61		29				254
Mean Length			477		540	482		538				503
Std. Error			2		3	3		6				2
Sample Size			94		70	61		29				254
Females			1,893		3,381	1,082	34	710				7,100
Percent			12.07		21.55	6.90	0.22	4.53				45.26
Sample Size			56		100	32	1	21				210
Mean Length			481		536	481	635	533				513
Std. Error			3		2	3		6				1
Sample Size			56		100	32	1	21				210
Both Sexes			5,071		5,748	3,144	34	1,690				15,687
Percent			32.33		36.64	20.04	0.22	10.77				100.00
Sample Size			150		170	93	1	50				464
Mean Length			478		538	481	635	536				507
Std. Error			2		2	2		4				1
Sample Size			150		170	93	1	50				464

-Continued-

Table 5. (page 3 of 7)

	Age Group											
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 3: 10 - 13 July												
Males		82	8,187		5,157	4,011		2,374				19,811
Percent		0.22	21.79		13.72	10.67		6.32				52.72
Sample Size		1	100		63	49		29				242
Mean Length		552	483		555	490		553				512
Std. Error			3		4	4		6				2
Sample Size		1	100		63	49		29				242
Females			5,894	82	6,222	2,865	82	2,620				17,765
Percent			15.69	0.22	16.56	7.62	0.22	6.97				47.28
Sample Size			72	1	76	35	1	32				217
Mean Length			476	409	542	495	583	545				512
Std. Error			3		3	5		6				2
Sample Size			72	1	76	35	1	32				217
Both Sexes		82	14,081	82	11,379	6,876	82	4,994				37,576
Percent		0.22	37.47	0.22	30.28	18.30	0.22	13.29				100.00
Sample Size		1	172	1	139	84	1	61				459
Mean Length		552	480	409	548	492	583	549				512
Std. Error			2		2	3		4				1
Sample Size		1	172	1	139	84	1	61				459

-Continued-

Table 5. (page 4 of 7)

	Age Group											
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 4: 15 - 17 July												
Males			15,100		11,810	9,487	194	4,259				40,850
Percent			17.53		13.71	11.01	0.23	4.94				47.42
Sample Size			78		61	49	1	22				211
Mean Length			481		563	490	627	567				517
Std. Error			3		5	5		7				2
Sample Size			78		61	49	1	22				211
Females	194	194	10,261		16,650	11,035	387	6,195	387			45,303
Percent	0.23	0.23	11.91		19.33	12.81	0.45	7.19	0.45			52.58
Sample Size	1	1	53		86	57	2	32	2			234
Mean Length	430	532	489		551	500	604	559	536			526
Std. Error			4		3	4	31	6	4			2
Sample Size	1	1	53		86	57	2	32	2			234
Both Sexes	194	194	25,361		28,460	20,522	581	10,454	387			86,153
Percent	0.23	0.23	29.44		33.03	23.82	0.67	12.13	0.45			100.00
Sample Size	1	1	131		147	106	3	54	2			445
Mean Length	430	532	484		556	495	612	562	536			521
Std. Error			2		3	3	31	4	4			1
Sample Size	1	1	131		147	106	3	54	2			445

-Continued-

Table 5. (page 5 of 7)

	Age Group											
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 5: 20 July												
Males			1,142	41	1,408	938	20	754		20	20	4,343
Percent			12.45	0.45	15.34	10.22	0.22	8.22		0.22	0.22	47.33
Sample Size			56	2	69	46	1	37		1	1	213
Mean Length			484	346	567	483	620	549		641	601	523
Std. Error			4	4	4	4		6				2
Sample Size			56	2	69	46	1	37		1	1	213
Females			1,244		1,591	1,122	61	775	20		20	4,833
Percent			13.56		17.34	12.23	0.66	8.45	0.22		0.22	52.67
Sample Size			61		78	55	3	38	1		1	237
Mean Length			485		543	497	584	552	538		558	519
Std. Error			3		3	4	15	4				2
Sample Size			61		78	55	3	38	1		1	237
Both Sexes			2,386	41	2,999	2,060	81	1,529	20	20	40	9,176
Percent			26.00	0.45	32.68	22.45	0.88	16.66	0.22	0.22	0.44	100.00
Sample Size			117	2	147	101	4	75	1	1	2	450
Mean Length			484	346	554	491	593	550	538	641	580	521
Std. Error			2	4	3	3	15	4				1
Sample Size			117	2	147	101	4	75	1	1	2	450

-Continued-

Table 5. (page 6 of 7)

	Age Group											
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 6: 1 - 10 August												
Males			6,719		8,423	5,962		5,299				26,403
Percent			14.73		18.47	13.07		11.62				57.88
Sample Size			71		89	63		56				279
Mean Length			483		551	477		548				516
Std. Error			3		4	3		5				2
Sample Size			71		89	63		56				279
Females			4,448		5,866	4,637		4,164			95	19,210
Percent			9.75		12.86	10.17		9.13			0.21	42.12
Sample Size			47		62	49		44			1	203
Mean Length			471		532	470		530			529	503
Std. Error			4		3	3		4				2
Sample Size			47		62	49		44			1	203
Both Sexes			11,167		14,289	10,599		9,463			95	45,613
Percent			24.48		31.33	23.24		20.75			0.21	100.00
Sample Size			118		151	112		100			1	482
Mean Length			479		543	474		540			529	511
Std. Error			2		3	2		3				1
Sample Size			118		151	112		100			1	482

-Continued-

Table 5. (page 7 of 7)

	Age Group											
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
All Periods Combined:												
Males		169	42,323	41	37,076	25,589	214	16,535		20	20	121,987
Percent		0.07	18.11	0.02	15.87	10.95	0.09	7.08		0.01	0.01	52.20
Sample Size		2	491	2	443	304	2	206		1	1	1,452
Mean Length		570	483	346	554	485	626	553		641	601	515
Std. Error			1	4	2	2		3				1
Sample Size		2	491	2	443	304	2	206		1	1	1,452
Females	194	194	27,652	82	43,098	22,306	564	17,072	407		115	111,684
Percent	0.08	0.08	11.83	0.04	18.44	9.55	0.24	7.31	0.17		0.05	47.80
Sample Size	1	1	334	1	510	246	7	197	3		2	1,302
Mean Length	430	532	483	409	543	492	601	544	536		534	518
Std. Error			2		1	2	27	3	4			1
Sample Size	1	1	334	1	510	246	7	197	3		2	1,302
Both Sexes	194	363	69,975	123	80,174	47,895	778	33,607	407	20	135	233,671
Percent	0.08	0.16	29.95	0.05	34.31	20.50	0.33	14.38	0.17	0.01	0.06	100.00
Sample Size	1	3	825	3	953	550	9	403	3	1	3	2,754
Mean Length	430	549	483	388	548	489	608	549	536	641	544	516
Std. Error			1	4	1	1	27	2	4			1
Sample Size	1	3	825	3	953	550	9	403	3	1	3	2,754

[a] Mean length in mm.

Table 6. Age, sex and length composition of sockeye salmon in the Kalifonsky Beach commercial set gillnet harvest, Upper Cook Inlet, Alaska, in 1998.

	Age Group								
	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	Total
Sample Period 1: 29 June - 17 July									
Males	23,804		15,484	9,937	231	5,084			54,540
Percent	22.25		14.47	9.29	0.22	4.75			50.97
Sample Size	103		67	43	1	22			236
Mean Length'	484		549	485	658	561			511
Std. Error	2		4	4		8			2
Sample Size	103		67	43	1	22			236
Females	15,946		17,565	11,786	462	6,702			52,461
Percent	14.90		16.42	11.01	0.43	6.26			49.03
Sample Size	69		76	51	2	29			227
Mean Length	484		548	505	597	550			520
Std. Error	3		3	5	16	6			2
Sample Size	69		76	51	2	29			227
Both Sexes	39,750		33,049	21,723	693	11,786			107,001
Percent	37.15		30.89	20.30	0.65	11.01			100.00
Sample Size	172		143	94	3	51			463
Mean Length	484		549	496	617	555			515
Std. Error	2		3	3	16	5			1
Sample Size	172		143	94	3	51			463

Table 6. (page 2 of 3)

	Age Group								
	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	Total
Sample Period 2: 20 July - 10 August									
Males	3,723		7,994	2,300	110	2,847	110	110	17,194
Percent	7.23		15.53	4.47	0.21	5.53	0.21	0.21	33.41
Sample Size	34		73	21	1	26	1	1	157
Mean Length	506		596	491	599	589	471	643	561
Std. Error	6		3	8		6			3
Sample Size	34		73	21	1	26	1	1	157
Females	8,213	110	14,893	5,147	219	5,585		110	34,277
Percent	15.96	0.21	28.93	10.00	0.43	10.85		0.21	66.59
Sample Size	75	1	136	47	2	51		1	313
Mean Length	485	395	567	484	572	562		541	534
Std. Error	3		2	4	4	5			2
Sample Size	75	1	136	47	2	51		1	313
Both Sexes	11,936	110	22,887	7,447	329	8,432	110	220	51,471
Percent	23.19	0.21	44.47	14.47	0.64	16.38	0.21	0.43	100.00
Sample Size	109	1	209	68	3	77	1	2	470
Mean Length	492	395	577	486	581	571	471	592	543
Std. Error	3		2	4	4	4			1
Sample Size	109	1	209	68	3	77	1	2	470

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Table 6. (page 3 of 3)

	Age Group								
	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	Total
All Periods Combined:									
Males	27,527		23,478	12,237	341	7,931	110	110	71,734
Percent	17.37		14.82	7.72	0.22	5.00	0.07	0.07	45.27
Sample Size	137		140	64	2	48	1	1	393
Mean Length	487		565	486	639	571	471	643	523
Std. Error	2		3	4		6			1
Sample Size	137		140	64	2	48	1	1	393
Females	24,159	110	32,458	16,933	681	12,287		110	86,738
Percent	15.24	0.07	20.48	10.69	0.43	7.75		0.07	54.73
Sample Size	144	1	212	98	4	80		1	540
Mean Length	485	395	557	499	588	556		541	525
Std. Error	2		2	3	11	4			1
Sample Size	144	1	212	98	4	80		1	540
Both Sexes	51,686	110	55,936	29,170	1,022	20,218	110	220	158,472
Percent	32.62	0.07	35.30	18.41	0.64	12.76	0.07	0.14	100.00
Sample Size	281	1	352	162	6	128	1	2	933
Mean Length	486	395	560	494	605	562	471	592	524
Std. Error	2		2	3	11	3			1
Sample Size	281	1	352	162	6	128	1	2	933

[a] Mean length in mm.

Table 7. Age, sex and length composition of sockeye salmon in the Salamatof Beach commercial set gillnet harvest, Upper Cook Inlet, Alaska, in 1998.

	Age Group											
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 1: 10 - 13 July												
Males			1,162		899	282	18	300				2,661
Percent			20.48		15.84	4.97	0.32	5.29				46.89
Sample Size			66		51	16	1	17				151
Mean Length[a]			487		563	497	591	567				524
Std. Error			4		10	10		8				4
Sample Size			66		51	16	1	17				151
Females	18		793	18	1,251	458		458	18			3,014
Percent	0.32		13.97	0.32	22.04	8.07		8.07	0.32			53.11
Sample Size	1		45	1	71	26		26	1			171
Mean Length	405		575	410	543	505		553	541			545
Std. Error			101		3	7		6				27
Sample Size	1		45	1	71	26		26	1			171
Both Sexes	18		1,955	18	2,150	740	18	758	18			5,675
Percent	0.32		34.45	0.32	37.89	13.04	0.32	13.36	0.32			100.00
Sample Size	1		111	1	122	42	1	43	1			322
Mean Length	405		523	410	551	502	591	558	541			535
Std. Error			41		5	6		5				14
Sample Size	1		111	1	122	42	1	43	1			322

Table 7. (page 2 of 4)

	Age Group											
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 2: 17 July												
Males			5,649		11,810	2,439	128	3,595	128			23,749
Percent			9.32		19.49	4.03	0.21	5.93	0.21			39.19
Sample Size			44		92	19	1	28	1			185
Mean Length			506		570	522	593	587	466			552
Std. Error			5		3	7		6				2
Sample Size			44		92	19	1	28	1			185
Females		128	4,622		21,439	3,595	257	6,547	128		128	36,844
Percent		0.21	7.63		35.38	5.93	0.42	10.80	0.21		0.21	60.81
Sample Size		1	36		167	28	2	51	1		1	287
Mean Length		568	508		558	528	594	566	523		593	551
Std. Error			4		2	4	8	3				1
Sample Size		1	36		167	28	2	51	1		1	287
Both Sexes		128	10,271		33,249	6,034	385	10,142	256		128	60,593
Percent		0.21	16.95		54.87	9.96	0.64	16.74	0.42		0.21	100.00
Sample Size		1	80		259	47	3	79	2		1	472
Mean Length		568	507		563	525	593	573	495		593	551
Std. Error			3		1	4	8	3				1
Sample Size		1	80		259	47	3	79	2		1	472

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Table 7. (page 3 of 4)

	Age Group											
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
Sample Period 3: 1 - 10 August[b]												
Males			4,175		11,868	659		4,615				21,317
Percent			7.79		22.13	1.23		8.61				39.75
Sample Size			19		54	3		21				97
Mean Length			531		600	550		597				584
Std. Error			5		4	10		5				3
Sample Size			19		54	3		21				97
Females			1,978		22,415	879	440	6,373		220		32,305
Percent			3.69		41.80	1.64	0.82	11.89		0.41		60.25
Sample Size			9		102	4	2	29		1		147
Mean Length			522		573	530	572	578		541		570
Std. Error			5		2	9	4	5				2
Sample Size			9		102	4	2	29		1		147
Both Sexes			6,153		34,283	1,538	440	10,988		220		53,622
Percent			11.47		63.93	2.87	0.82	20.49		0.41		100.00
Sample Size			28		156	7	2	50		1		244
Mean Length			528		583	539	572	586		541		575
Std. Error			4		2	7	4	4				2
Sample Size			28		156	7	2	50		1		244

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Table 7. (page 4 of 4)

	Age Group											
	0.2	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	2.4	3.3	Total
All Periods Combined:												
Males			10,986		24,577	3,380	146	8,510	128			47,727
Percent			9.16		20.50	2.82	0.12	7.10	0.11			39.81
Sample Size			129		197	38	2	66	1			433
Mean Length			513		585	525	593	592	466			565
Std. Error			3		2	5		4				2
Sample Size			129		197	38	2	66	1			433
Females	18	128	7,393	18	45,105	4,932	697	13,378	146	220	128	72,163
Percent	0.02	0.11	6.17	0.02	37.62	4.11	0.58	11.16	0.12	0.18	0.11	60.19
Sample Size	1	1	90	1	340	58	4	106	2	1	1	605
Mean Length	405	568	519	410	565	526	580	571	525	541	593	559
Std. Error			11		1	3	4	3				2
Sample Size	1	1	90	1	340	58	4	106	2	1	1	605
Both Sexes	18	128	18,379	18	69,682	8,312	843	21,888	274	220	128	119,890
Percent	0.02	0.11	15.33	0.02	58.12	6.93	0.70	18.26	0.23	0.18	0.11	100.00
Sample Size	1	1	219	1	537	96	6	172	3	1	1	1,038
Mean Length	405	568	516	410	572	526	582	579	498	541	593	561
Std. Error			5		1	3	4	2				1
Sample Size	1	1	219	1	537	96	6	172	3	1	1	1,038

[a] Mean length in mm.
[b] Samples taken from North Kalifornsky beach to represent Salamatof Beach on 8/03.

Table 8. Age, sex and length composition of sockeye salmon in the Eastern Subdistrict commercial set gillnet harvest, Upper Cook Inlet, Alaska, in 1998.

	Age Group									
	0.2	1.1	0.3	1.2	2.1	1.3	2.2	2.3	3.2	Total
Sample Period 1: 1 June - 17 July										
Males	43	129	86	1,157	43	1,157	1,157	343		4,115
Percent	0.53	1.58	1.06	14.21	0.53	14.21	14.21	4.21		50.52
Sample Size	1	3	2	27	1	27	27	8		96
Mean Length'	500	361	597	498	338	560	491	542		513
Std. Error		13	4	6		6	5	13		3
Sample Size	1	3	2	27	1	27	27	8		96
Females	43		43	1,415	43	1,543	643	214	86	4,030
Percent	0.53		0.53	17.37	0.53	18.94	7.89	2.63	1.06	49.48
Sample Size	1		1	33	1	36	15	5	2	94
Mean Length	459		584	493	394	535	479	514	494	507
Std. Error				4		4	6	12	7	3
Sample Size	1		1	33	1	36	15	5	2	94
Both Sexes	86	129	129	2,572	86	2,700	1,800	557	86	8,145
Percent	1.06	1.58	1.58	31.58	1.06	33.15	22.10	6.84	1.06	100.00
Sample Size	2	3	3	60	2	63	42	13	2	190
Mean Length	480	361	592	495	366	546	487	531	494	510
Std. Error		13	4	4		4	4	9	7	2
Sample Size	2	3	3	60	2	63	42	13	2	190

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Table 8. (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: 24 July - 28 August										
Males	22	22	65	3,482	22	757	497	108	43	5,018
Percent	0.22	0.22	0.64	34.18	0.22	7.43	4.88	1.06	0.42	49.26
Sample Size	1	1	3	161	1	35	23	5	2	232
Mean Length	484	379	587	526	387	572	521	574	475	532
Std. Error			15	2		6	5	12	11	2
Sample Size	1	1	3	161	1	35	23	5	2	232
Females			22	3,590		757	627	151	22	5,169
Percent			0.22	35.24		7.43	6.15	1.48	0.22	50.74
Sample Size			1	166		35	29	7	1	239
Mean Length			569	514		535	506	552	502	517
Std. Error				1		5	6	12		1
Sample Size			1	166		35	29	7	1	239
Both Sexes	22	22	87	7,072	22	1,514	1,124	259	65	10,187
Percent	0.22	0.22	0.85	69.42	0.22	14.86	11.03	2.54	0.64	100.00
Sample Size	1	1	4	327	1	70	52	12	3	471
Mean Length	484	379	582	520	387	553	513	561	484	525
Std. Error			15	1		4	4	9	11	1
Sample Size	1	1	4	327	1	70	52	12	3	471

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Table 8. (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	65	151	151	4,639	65	1,914	1,654	451	43	9,133
Percent	0.35	0.82	0.82	25.31	0.35	10.44	9.02	2.46	0.23	49.82
Sample Size	2	4	5	188	2	62	50	13	2	328
Mean Length	495	363	592	519	355	565	500	550	475	524
Std. Error		13	7	2		4	4	10	11	2
Sample Size	2	4	5	188	2	62	50	13	2	328
Females	43		65	5,005	43	2,300	1,270	365	108	9,199
Percent	0.23		0.35	27.30	0.23	12.55	6.93	1.99	0.59	50.18
Sample Size	1		2	199	1	71	44	12	3	333
Mean Length	459		579	508	394	535	492	530	496	513
Std. Error				2		3	4	9	7	1
Sample Size	1		2	199	1	71	44	12	3	333
Both Sexes	108	151	216	9,644	108	4,214	2,924	816	151	18,332
Percent	0.59	0.82	1.18	52.61	0.59	22.99	15.95	4.45	0.82	100.00
Sample Size	3	4	7	387	3	133	94	25	5	661
Mean Length	480	363	588	513	370	548	497	541	490	518
Std. Error		13	7	1		3	3	7	6	1
Sample Size	3	4	7	387	3	133	94	25	5	661

[a] Mean length in mm.

Table 9. Age, sex and length composition of sockeye salmon in the General Subdistrict commercial set gillnet harvest, Upper Cook Inlet, Alaska, in 1998.

	Age Group									
	0.2	0.3	1.2	0.4	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 1: 1 June - 19 July										
Males	62	556	2,658		8,161	866		2,782		15,085
Percent	0.22	1.95	9.33		28.64	3.04		9.76		52.93
Sample Size	1	9	43		132	14		45		244
Mean Length[a]	436	572	516		584	527		580		567
Std. Error		8	6		2	6		3		2
Sample Size	1	9	43		132	14		45		244
Females		618	1,546		7,974	680		2,597		13,415
Percent		2.17	5.42		27.98	2.39		9.11		47.07
Sample Size		10	25		129	11		42		217
Mean Length		567	504		560	510		563		552
Std. Error		6	4		2	5		3		1
Sample Size		10	25		129	11		42		217
Both Sexes	62	1,174	4,204		16,135	1,546		5,379		28,500
Percent	0.22	4.12	14.75		56.61	5.42		18.87		100.00
Sample Size	1	19	68		261	25		87		461
Mean Length	436	569	512		572	519		572		560
Std. Error		5	4		1	4		2		1
Sample Size	1	19	68		261	25		87		461

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	Age Group									
	0.2	0.3	1.2	0.4	1.3	2.2	1.4	2.3	2.4	Total
Sample Period 2: 24 July - 24 August										
Males		463	555	31	4,438	463	62	1,203		7,215
Percent		3.35	4.02	0.22	32.13	3.35	0.45	8.71		52.23
Sample Size		15	18	1	144	15	2	39		234
Mean Length		573	517	597	583	522	679	579		573
Std. Error		5	5		2	5	46	5		2
Sample Size		15	18	1	144	15	2	39		234
Females	31	247	709		4,440	31	31	1,079	31	6,599
Percent	0.22	1.79	5.13		32.14	0.22	0.22	7.81	0.22	47.77
Sample Size	1	8	23		144	1	1	35	1	214
Mean Length	482	562	510		556	498	548	558	571	551
Std. Error		8	4		2			6		2
Sample Size	1	8	23		144	1	1	35	1	214
Both Sexes	31	710	1,264	31	8,878	494	93	2,282	31	13,814
Percent	0.22	5.14	9.15	0.22	64.27	3.58	0.67	16.52	0.22	100.00
Sample Size	1	23	41	1	288	16	3	74	1	448
Mean Length	482	569	513	597	569	521	635	569	571	563
Std. Error		4	3		1	5	46	4		1
Sample Size	1	23	41	1	288	16	3	74	1	448

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	Age Group									
	0.2	0.3	1.2	0.4	1.3	2.2	1.4	2.3	2.4	Total
All Periods Combined:										
Males	62	1,019	3,213	31	12,599	1,329	62	3,985		22,300
Percent	0.15	2.41	7.59	0.07	29.78	3.14	0.15	9.42		52.70
Sample Size	1	24	61	1	276	29	2	84		478
Mean Length	436	572	516	597	584	525	679	580		569
Std. Error		5	5		1	4	46	3		1
Sample Size	1	24	61	1	276	29	2	84		478
Females	31	865	2,255		12,414	711	31	3,676	31	20,014
Percent	0.07	2.04	5.33		29.34	1.68	0.07	8.69	0.07	47.30
Sample Size	1	18	48		273	12	1	77	1	431
Mean Length	482	565	505		559	509	548	562	571	552
Std. Error		5	3		1	5		3		1
Sample Size	1	18	48		273	12	1	77	1	431
Both Sexes	93	1,884	5,468	31	25,013	2,040	93	7,661	31	42,314
Percent	0.22	4.45	12.92	0.07	59.11	4.82	0.22	18.11	0.07	100.00
Sample Size	2	42	109	1	549	41	3	161	1	909
Mean Length	451	569	512	597	571	520	635	571	571	561
Std. Error		3	3		1	3	46	2		1
Sample Size	2	42	109	1	549	41	3	161	1	909

[a] Mean length in mm.

Table 10. Age, sex and length composition of sockeye salmon in the Kalgin Island commercial set gillnet harvest, Upper Cook Inlet, Alaska, in 1998.

	Age Group							
	0.3	1.2	1.3	2.2	2.3	3.2	3.3	Total
Sample period:	26 June - 28 August							
Males	109	872	4,905	3,216	3,870	109	109	13,190
Percent	0.47	3.75	21.08	13.82	16.63	0.47	0.47	56.68
Sample Size	2	16	90	59	71	2	2	242
Mean Length[a]	563	479	566	495	557	529	587	540
Std. Error	4	10	3	4	4	11	16	2
Sample Size	2	16	90	59	71	2	2	242
Females	55	872	3,378	2,398	3,216		164	10,083
Percent	0.24	3.75	14.51	10.30	13.82		0.70	43.32
Sample Size	1	16	62	44	59		3	185
Mean Length	549	485	549	490	543		529	527
Std. Error		7	2	4	3		13	2
Sample Size	1	16	62	44	59		3	185
Both Sexes	164	1,744	8,283	5,614	7,086	109	273	23,273
Percent	0.70	7.49	35.59	24.12	30.45	0.47	1.17	100.00
Sample Size	3	32	152	103	130	2	5	427
Mean Length	558	482	559	493	550	529	552	534
Std. Error	4	6	2	3	2	11	10	1
Sample Size	3	32	152	103	130	2	5	427

[a] Mean length in mm.

Table 11. Age, sex and length composition of sockeye salmon in the Western Subdistrict commercial set gillnet harvest, Upper Cook Inlet, Alaska, in 1998.

	Age Group								
	0.3	1.2	2.1	1.3	2.2	2.3	3.2	3.3	Total
Sample Period 1: 22 June - 24 July									
Males		770		994	3,367	449	64	32	5,676
Percent		7.95		10.26	34.77	4.64	0.66	0.33	58.61
Sample Size		24		31	105	14	2	1	177
Mean Length[a]		524		571	525	564	527	596	537
Std. Error		4		5	2	5	10		2
Sample Size		24		31	105	14	2	1	177
Females		449		321	3,015	224			4,009
Percent		4.64		3.31	31.13	2.31			41.39
Sample Size		14		10	94	7			125
Mean Length		498		539	508	542			512
Std. Error		4		6	2	6			2
Sample Size		14		10	94	7			125
Both Sexes		1,219		1,315	6,382	673	64	32	9,685
Percent		12.59		13.58	65.90	6.95	0.66	0.33	100.00
Sample Size		38		41	199	21	2	1	302
Mean Length		514		563	517	556	527	596	526
Std. Error		3		4	1	4	10		1
Sample Size		38		41	199	21	2	1	302

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	Age Group								
	0.3	1.2	2.1	1.3	2.2	2.3	3.2	3.3	Total
Sample Period 2: 27 July - 28 August									
Males	46	665		895	2,617	1,193	46		5,462
Percent	0.45	6.53		8.78	25.68	11.71	0.45		53.61
Sample Size	2	29		39	114	52	2		238
Mean Length	565	519		573	528	572	546		544
Std. Error	23	5		4	2	4	13		1
Sample Size	2	29		39	114	52	2		238
Females	23	757	23	803	2,341	734	46		4,727
Percent	0.23	7.43	0.23	7.88	22.98	7.20	0.45		46.39
Sample Size	1	33	1	35	102	32	2		206
Mean Length	545	503	417	556	513	564	502		526
Std. Error		4		4	2	4	6		1
Sample Size	1	33	1	35	102	32	2		206
Both Sexes	69	1,422	23	1,698	4,958	1,927	92		10,189
Percent	0.68	13.96	0.23	16.67	48.66	18.91	0.90		100.00
Sample Size	3	62	1	74	216	84	4		444
Mean Length	558	510	417	565	521	569	524		536
Std. Error	23	3		3	1	3	7		1
Sample Size	3	62	1	74	216	84	4		444

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	Age Group								
	0.3	1.2	2.1	1.3	2.2	2.3	3.2	3.3	Total
All Periods Combined:									
Males	46	1,435		1,889	5,984	1,642	110	32	11,138
Percent	0.23	7.22		9.50	30.11	8.26	0.55	0.16	56.04
Sample Size	2	53		70	219	66	4	1	415
Mean Length	565	521		572	526	570	535	596	540
Std. Error	23	3		3	1	3	8		1
Sample Size	2	53		70	219	66	4	1	415
Females	23	1,206	23	1,124	5,356	958	46		8,736
Percent	0.12	6.07	0.12	5.66	26.95	4.82	0.23		43.96
Sample Size	1	47	1	45	196	39	2		331
Mean Length	545	501	417	551	510	559	502		519
Std. Error		3		3	1	4	6		1
Sample Size	1	47	1	45	196	39	2		331
Both Sexes	69	2,641	23	3,013	11,340	2,600	156	32	19,874
Percent	0.35	13.29	0.12	15.16	57.06	13.08	0.78	0.16	100.00
Sample Size	3	100	1	115	415	105	6	1	746
Mean Length	558	512	417	564	519	566	525	596	531
Std. Error	23	2		2	1	2	6		1
Sample Size	3	100	1	115	415	105	6	1	746

[a] Mean length in mm.

Table 12. Age, sex and length composition of sockeye salmon escapement in Kenai River, Upper Cook Inlet, Alaska, in 1998.

	Age Group											
	1.1	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Total
Sample period:	1 July - 13 August											
Males		104,169	27,413	160,089	30,702		7,676	52,633		1,097	1,097	384,876
Percent		13.57	3.57	20.86	4.00		1.00	6.86		0.14	0.14	50.14
Sample Size		95	25	146	28		7	48		1	1	351
Mean Length[a]		483	396	577	501		616	574		595	550	533
Std. Error		4	5	2	8		5	4				2
Sample Size		95	25	146	28		7	48		1	1	351
Females	2,193	104,169	23,027	152,413	42,764	1,097	2,193	53,729	1,097			382,682
Percent	0.29	13.57	3.00	19.86	5.57	0.14	0.29	7.00	0.14			49.86
Sample Size	2	95	21	139	39	1	2	49	1			349
Mean Length	364	494	393	547	507	381	597	559	530			519
Std. Error	15	3	4	2	4		15	3				1
Sample Size	2	95	21	139	39	1	2	49	1			349
Both Sexes	2,193	208,338	50,440	312,502	73,466	1,097	9,869	106,362	1,097	1,097	1,097	767,558
Percent	0.29	27.14	6.57	40.71	9.57	0.14	1.29	13.86	0.14	0.14	0.14	100.00
Sample Size	2	190	46	285	67	1	9	97	1	1	1	700
Mean Length	364	488	395	562	504	381	612	566	530	595	550	526
Std. Error	15	3	3	2	4		5	2				1
Sample Size	2	190	46	285	67	1	9	97	1	1	1	700

[a] Mean length in mm.

Table 13. Age, sex and length composition of sockeye salmon escapement in Hidden Creek, Kenai River drainage, Upper Cook Inlet, Alaska, in 1998.

	Age Group				
	1.2	1.3	2.2	2.3	Total
Sample period:	10 July - 31 August				
Males	26,587	6,893	985		34,465
Percent	39.26	10.18	1.45		50.89
Sample Size	243	63	9		315
Mean Length[a]	519	561	527		528
Std. Error	1	3	9		1
Sample Size	243	63	9		315
Females	29,323	2,517	1,313	109	33,262
Percent	43.30	3.72	1.94	0.16	49.11
Sample Size	268	23	12	1	304
Mean Length	501	544	507	546	505
Std. Error	1	4	4		1
Sample Size	268	23	12	1	304
Both Sexes	55,910	9,410	2,298	109	67,727
Percent	82.55	13.89	3.39	0.16	100.00
Sample Size	511	86	21	1	619
Mean Length	510	556	516	546	516
Std. Error	1	2	4		1
Sample Size	511	86	21	1	619

[a] Mean length in mm.

Table 14. Age, sex and length composition of sockeye salmon escapement in Kasilof River, Upper Cook Inlet, Alaska, in 1998.

	Age Group								
	0.2	1.1	1.2	2.1	1.3	2.2	1.4	2.3	Total
Sample period:	15 June - 8 August								
Males	319		56,747	1,275	35,068	30,286	638	12,752	137,085
Percent	0.12		20.77	0.47	12.84	11.09	0.23	4.67	50.18
Sample Size	1		178	4	110	95	2	40	430
Mean Length[a]	422		475	357	527	473	545	523	492
Std. Error			2	10	3	2	5	4	1
Sample Size	1		178	4	110	95	2	40	430
Females		319	51,645	319	41,763	30,286	319	11,477	136,128
Percent		0.12	18.90	0.12	15.29	11.09	0.12	4.20	49.82
Sample Size		1	162	1	131	95	1	36	427
Mean Length		337	468	355	525	469	525	519	490
Std. Error			2		2	3		4	1
Sample Size		1	162	1	131	95	1	36	427
Both Sexes	319	319	108,392	1,594	76,831	60,572	957	24,229	273,213
Percent	0.12	0.12	39.67	0.58	28.12	22.17	0.35	8.87	100.00
Sample Size	1	1	340	5	241	190	3	76	857
Mean Length	422	337	472	356	526	471	538	521	491
Std. Error			1	10	2	2	5	3	1
Sample Size	1	1	340	5	241	190	3	76	857

[a] Mean length in mm.

Table 15. Age, sex and length composition of sockeye salmon escapement in Crescent River, Upper Cook Inlet, Alaska, in 1998.

	Age Group					
	1.2	1.3	2.2	1.4	2.3	Total
Sample period:	27 June -	7 August				
Males	4,208	12,301	2,913	216	9,171	28,809
Percent	6.76	19.76	4.68	0.35	14.73	46.27
Sample Size	39	114	27	2	85	267
Mean Length[a]	473	583	497	601	584	558
Std. Error	5	2	7	11	3	2
Sample Size	39	114	27	2	85	267
Females	1,942	15,429	3,345		12,732	33,448
Percent	3.12	24.78	5.37		20.45	53.73
Sample Size	18	143	31		118	310
Mean Length	505	556	515		563	552
Std. Error	4	2	3		2	1
Sample Size	18	143	31		118	310
Both Sexes	6,150	27,730	6,258	216	21,903	62,257
Percent	9.88	44.54	10.05	0.35	35.18	100.00
Sample Size	57	257	58	2	203	577
Mean Length	483	568	507	601	572	555
Std. Error	3	1	4	11	2	1
Sample Size	57	257	58	2	203	577

[a] Mean length in mm.

Table 16. Age, sex and length composition of sockeye salmon escapement in Packers Creek, Kalgin Island, Upper Cook Inlet, Alaska, in 1998.

	Age Group							
	1.2	2.1	1.3	2.2	2.3	2.4	3.3	Total
Sample period:	1 July - 31 August							
Males		55	1,372	2,250	1,207	55	714	5,653
Percent		0.30	7.37	12.09	6.49	0.30	3.84	30.38
Sample Size		1	25	41	22	1	13	103
Mean Length[a]		359	536	451	523	562	549	500
Std. Error			4	5	6		7	3
Sample Size		1	25	41	22	1	13	103
Females	549		3,622	5,215	3,128		439	12,953
Percent	2.95		19.47	28.03	16.81		2.36	69.62
Sample Size	10		66	95	57		8	236
Mean Length	473		518	470	509		516	495
Std. Error	4		3	2	4		10	1
Sample Size	10		66	95	57		8	236
Both Sexes	549	55	4,994	7,465	4,335	55	1,153	18,606[b]
Percent	2.95	0.30	26.84	40.12	23.30	0.30	6.20	100.00
Sample Size	10	1	91	136	79	1	21	339
Mean Length	473	359	523	464	513	562	536	496
Std. Error	4		2	2	3		6	1
Sample Size	10	1	91	136	79	1	21	339

[a] Mean length in mm.
[b] Total represents an escapement through the weir of 17,729, a cost recovery harvest below the weir of 868 fish, and 9 mortalities at the weir.

Table 17. Age, sex and length composition of sockeye salmon escapement in Yentna River, (RM 4.0), Susitna River drainage, Upper Cook Inlet, Alaska, in 1998.

	Age Group								
	0.2	1.1	0.3	1.2	1.3	2.2	1.4	2.3	Total
Sample period:	7 July - 21 August								
Males	638	319	3,110	8,294	36,126	2,871	80	6,539	57,977
Percent	0.53	0.27	2.60	6.93	30.20	2.40	0.07	5.47	48.47
Sample Size	8	4	39	104	453	36	1	82	727
Mean Length[a]	454	315	561	485	562	482	620	558	544
Std. Error	17	6	5	4	1	7		3	1
Sample Size	8	4	39	104	453	36	1	82	727
Females	239	80	3,748	10,527	38,838	1,914	239	6,061	61,646
Percent	0.20	0.07	3.13	8.80	32.47	1.60	0.20	5.07	51.53
Sample Size	3	1	47	132	487	24	3	76	773
Mean Length	488	345	538	486	538	487	573	534	527
Std. Error	24		3	2	1	6	14	4	1
Sample Size	3	1	47	132	487	24	3	76	773
Both Sexes	877	399	6,858	18,821	74,964	4,785	319	12,600	119,623
Percent	0.73	0.33	5.73	15.73	62.67	4.00	0.27	10.53	100.00
Sample Size	11	5	86	236	940	60	4	158	1,500
Mean Length	463	321	548	486	550	484	585	547	535
Std. Error	14	6	3	2	1	5	14	2	1
Sample Size	11	5	86	236	940	60	4	158	1,500

[a] Mean length in mm.

Table 18. Age, sex and length composition of sockeye salmon escapement in Chelatna Lake (Lake Creek), Yentna River Drainage, Upper cook Inlet, Alaska, in 1998.

	Age Group							
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	Total
Sample period:	15 July - 22 August							
Males	24	1,289	1,143	12,208	24	24	146	14,858
Percent	0.09	4.72	4.19	44.74	0.09	0.09	0.54	54.46
Sample Size	1	53	47	502	1	1	6	611
Mean Length[1]	531	575	514	578	515	625	576	572
Std. Error		2	2	1			2	1
Sample Size	1	53	47	502	1	1	6	611
Females	49	657	1,921	9,604		49	146	12,426
Percent	0.18	2.41	7.04	35.20		0.18	0.54	45.54
Sample Size	2	27	79	395		2	6	511
Mean Length	469	545	496	552		564	561	543
Std. Error	24	4	2	1		8	10	1
Sample Size	2	27	79	395		2	6	511
Both Sexes	73	1,946	3,064	21,812	24	73	292	27,284
Percent	0.27	7.13	11.23	79.94	0.09	0.27	1.07	100.00
Sample Size	3	80	126	897	1	3	12	1,122
Mean Length	489	565	503	566	515	584	568	559
Std. Error	24	2	1	1		8	5	1
Sample Size	3	80	126	897	1	3	12	1,122

[1] Mean length in mm.

Table 19. Age, sex and length composition of sockeye salmon escapement in Judd Lake, Talachilitna and Yentna River drainage, Upper Cook Inlet, Alaska, in 1998.

	Age Group						
	0.3	1.2	1.3	2.2	1.4	2.3	Total
Sample period:	28 July - 29 August						
Males	58	874	7,861	2,853		2,388	14,034
Percent	0.17	2.54	22.84	8.29		6.94	40.78
Sample Size	1	15	135	49		41	241
Mean Length	565	482	564	479		559	541
Std. Error		9	2	3		4	2
Sample Size	1	15	135	49		41	241
Females	175	990	11,414	3,727	58	4,018	20,382
Percent	0.51	2.88	33.16	10.83	0.17	11.67	59.22
Sample Size	3	17	196	64	1	69	350
Mean Length	553	477	543	476	515	541	527
Std. Error	13	6	1	3		2	1
Sample Size	3	17	196	64	1	69	350
Both Sexes	233	1,864	19,275	6,580	58	6,406	34,416
Percent	0.68	5.42	56.01	19.12	0.17	18.61	100.00
Sample Size	4	32	331	113	1	110	591
Mean Length	556	480	552	478	515	548	533
Std. Error	13	5	1	2		2	1
Sample Size	4	32	331	113	1	110	591

Table 20. Age, sex and length composition of sockeye salmon escapement in Larson Creek, Talkeetna and Susitna River drainage, Upper Cook Inlet, Alaska in 1998.

	Age Group					
	0.3	1.2	1.3	2.2	2.3	Total
Sample period:	20 July - 23 August					
Males		2,213	14,384	2,988	6,639	26,224
Percent		3.48	22.65	4.70	10.45	41.29
Sample Size		20	130	27	60	237
Mean Length		523	571	516	566	559
Std. Error		7	2	3	3	1
Sample Size		20	130	27	60	237
Females	111	6,418	16,708	5,422	8,631	37,290
Percent	0.17	10.10	26.31	8.54	13.59	58.71
Sample Size	1	58	151	49	78	337
Mean Length	560	499	538	496	538	525
Std. Error		2	2	3	3	1
Sample Size	1	58	151	49	78	337
Both Sexes	111	8,631	31,092	8,410	15,270	63,514
Percent	0.17	13.59	48.95	13.24	24.04	100.00
Sample Size	1	78	281	76	138	574
Mean Length	560	505	553	503	550	539
Std. Error		2	1	2	2	1
Sample Size	1	78	281	76	138	574

Table 21. Age, sex and length composition of sockeye salmon escapement in Fish Creek, Upper Cook Inlet, Alaska, in 1998.

	Age Group										
	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	3.2	3.3	Total
Sample period:	7 July - 27 September										
Males	110	37	220	37	4,512	293		1,027			6,236
Percent	0.48	0.16	0.96	0.16	19.74	1.28		4.49			27.29
Sample Size	3	1	6	1	123	8		28			170
Mean Length[a]	360	535	486	405	536	463		540			527
Std. Error	3		15		5	12		5			4
Sample Size	3	1	6	1	123	8		28			170
Females		73	1,247		12,729	624	37	1,761	73	73	16,617
Percent		0.32	5.46		55.70	2.73	0.16	7.71	0.32	0.32	72.71
Sample Size		2	34		347	17	1	48	2	2	453
Mean Length		545	482		523	485	615	531	443	538	520
Std. Error		10	3		1	5		4	27	18	1
Sample Size		2	34		347	17	1	48	2	2	453
Both Sexes	110	110	1,467	37	17,241	917	37	2,788	73	73	22,853
Percent	0.48	0.48	6.42	0.16	75.44	4.01	0.16	12.20	0.32	0.32	100.00
Sample Size	3	3	40	1	470	25	1	76	2	2	623
Mean Length	360	542	483	405	527	478	615	534	443	538	522
Std. Error	3	10	3		2	5		3	27	18	1
Sample Size	3	3	40	1	470	25	1	76	2	2	623

[a] Length in mm.

Table 22. Age, sex and length composition of chinook salmon in the Upper Subdistrict commercial set gillnet harvest, Upper Cook Inlet, Alaska, in 1998.

	Age Group												
	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	1.5	2.4	Total
Sample Period 1: 29 June - 13 July													
Males	6	332	11	332	6		248	28	253		11		1,227
Percent	0.22	12.36	0.41	12.36	0.22		9.24	1.04	9.42		0.41		45.70
Sample Size	1	59	2	59	1		44	5	45		2		218
Mean Length[1]	520	439	780	640	440		801	671	1,012		1,068		699
Std. Error		5	120	8			9	31	11		58		4
Sample Size	1	59	2	59	1		44	5	45		2		218
Females	17	152		450	6		298	51	428	11	28	17	1,458
Percent	0.63	5.66		16.76	0.22		11.10	1.90	15.94	0.41	1.04	0.63	54.30
Sample Size	3	27		80	1		53	9	76	2	5	3	259
Mean Length	617	454		640	495		825	645	968	835	1,017	891	766
Std. Error	26	5		6			11	22	6	95	6	60	4
Sample Size	3	27		80	1		53	9	76	2	5	3	259
Both Sexes	23	484	11	782	12		546	79	681	11	39	17	2,685
Percent	0.86	18.03	0.41	29.12	0.45		20.34	2.94	25.36	0.41	1.45	0.63	100.00
Sample Size	4	86	2	139	2		97	14	121	2	7	3	477
Mean Length	591	444	780	640	468		814	654	984	835	1,031	891	735
Std. Error	26	4	120	5			7	18	6	95	17	60	3
Sample Size	4	86	2	139	2		97	14	121	2	7	3	477

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	Age Group												
	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	1.5	2.4	Total
Sample Period 2: 15 July - 10 August													
Males		54		212	5	5	217		597	5	22		1,117
Percent		2.29		9.01	0.21	0.21	9.22		25.36	0.21	0.93		47.45
Sample Size		10		39	1	1	40		110	1	4		206
Mean Length		436		666	390	980	852		1,012	870	1,141		887
Std. Error		8		11			9		10		20		6
Sample Size		10		39	1	1	40		110	1	4		206
Females		54		174			298		656	11	33	11	1,237
Percent		2.29		7.39			12.66		27.87	0.47	1.40	0.47	52.55
Sample Size		10		32			55		121	2	6	2	228
Mean Length		445		633			870		986	930	998	1,000	885
Std. Error		9		12			7		5	60	32	10	4
Sample Size		10		32			55		121	2	6	2	228
Both Sexes		108		386	5	5	515		1,253	16	55	11	2,354
Percent		4.59		16.40	0.21	0.21	21.88		53.23	0.68	2.34	0.47	100.00
Sample Size		20		71	1	1	95		231	3	10	2	434
Mean Length		440		651	390	980	863		999	911	1,055	1,000	886
Std. Error		6		8			6		5	60	21	10	3
Sample Size		20		71	1	1	95		231	3	10	2	434

-Continued-

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	Age Group												
	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	1.5	2.4	Total
All Periods Combined:													
Males	6	386	11	544	11	5	465	28	850	5	33		2,344
Percent	0.12	7.66	0.22	10.80	0.22	0.10	9.23	0.56	16.87	0.10	0.65		46.52
Sample Size	1	69	2	98	2	1	84	5	155	1	6		424
Mean Length	520	438	780	650	417	980	825	671	1,012	870	1,117		789
Std. Error		4	120	7			7	31	8		23		4
Sample Size	1	69	2	98	2	1	84	5	155	1	6		424
Females	17	206		624	6		596	51	1,084	22	61	28	2,695
Percent	0.34	4.09		12.38	0.12		11.83	1.01	21.51	0.44	1.21	0.56	53.48
Sample Size	3	37		112	1		108	9	197	4	11	5	487
Mean Length	617	451		638	495		848	645	979	883	1,007	934	820
Std. Error	26	4		6			7	22	4	56	17	37	3
Sample Size	3	37		112	1		108	9	197	4	11	5	487
Both Sexes	23	592	11	1,168	17	5	1,061	79	1,934	27	94	28	5,039
Percent	0.46	11.75	0.22	23.18	0.34	0.10	21.06	1.57	38.38	0.54	1.87	0.56	100.00
Sample Size	4	106	2	210	3	1	192	14	352	5	17	5	911
Mean Length	591	443	780	644	445	980	838	654	994	880	1,045	934	806
Std. Error	26	3	120	4			5	18	4	56	14	37	2
Sample Size	4	106	2	210	3	1	192	14	352	5	17	5	911

[a] Mean length in mm.

Table 23. Age,length and percent female composition of coho salmon in selected commercial gillnet harvests and river escapements, Upper Cook Inlet, Alaska, in 1998.

Fishery	Age Group 1.1	2.1	3.1	2.2	Total
COMMERCIAL HARVEST					
Central District					
Central Drift					
Number	12,078	64,616	6,643		83,337
Percent	14.49	77.54	7.97		100.00
Sample Size	40	214	22		276
Mean Length[a]	560	567	579		567
% Female	37	49	32		46
Upper Subdistrict					
Number	1,039	14,852	2,728	43	18,662
Percent	5.57	79.58	14.62	.23	100.00
Sample Size	24	343	63	1	431
Mean Length	576	595	613	488	596
% Female	42	29	22	100	29
General Subdistrict					
Number	3,258	17,947	1,954		23,159
Percent	14.07	77.49	8.44		100.00
Sample Size	55	303	33		391
Mean Length	548	560	577		560
% Female	47	45	55		46
COMMERCIAL HARVEST TOTAL					
Number	16,375	97,415	11,325	43	125,158
Percent	13.08	77.83	9.05	.03	100.00
Sample Size	119	860	118	1	1,098
Mean Length	559	570	587	488	570
% Female	40	45	33	100	43
ESCAPEMENT					
Northern District					
Yentna River					
Number	5,100	17,743	1,926		24,769
Percent	20.59	71.63	7.78		100.00
Sample Size	98	341	37		476
Mean Length	557	573	585		571
% Female	50	54	49		53
ESCAPEMENT TOTAL					
Number	5,100	17,743	1,926		24,769
Percent	20.59	71.63	7.78		100.00
Sample Size	98	341	37		476
Mean Length	557	573	585		571
% Female	50	54	49		53
UPPER COOK INLET TOTAL					
Number	21,475	115,158	13,251	43	149,927
Percent	14.32	76.81	8.84	.03	100.00
Sample Size	217	1,201	155	1	1,574
Mean Length	558	570	587	488	570
% Female	42	46	36	100	45

[a] Mean length in mm.

Table 24. Age, sex and length composition of coho salmon in the Central District commercial drift gillnet harvest, Upper Cook Inlet, Alaska, in 1998.

	Age Group			
	1.1	2.1	3.1	Total
Sample period:	26 June -	7 August		
Males	7,549	33,214	4,529	45,292
Percent	9.06	39.86	5.43	54.35
Sample Size	25	110	15	150
Mean Length[a]	566	571	574	570
Std. Error	6	4	10	3
Sample Size	25	110	15	150
Females	4,529	31,402	2,114	38,045
Percent	5.43	37.68	2.54	45.65
Sample Size	15	104	7	126
Mean Length	550	562	589	562
Std. Error	6	3	11	3
Sample Size	15	104	7	126
Both Sexes	12,078	64,616	6,643	83,337
Percent	14.49	77.54	7.97	100.00
Sample Size	40	214	22	276
Mean Length	560	567	579	567
Std. Error	4	2	7	2
Sample Size	40	214	22	276

[a] Mean length in mm.

Table 25. Age, sex and length composition of coho salmon in the Upper Subdistrict commercial set gillnet harvest, Upper Cook Inlet, Alaska, in 1998.

	Age Group				
	1.1	2.1	3.1	2.2	Total
Sample period:	29 June - 10 August				
Males	606	10,522	2,122		13,250
Percent	3.25	56.38	11.37		71.00
Sample Size	14	243	49		306
Mean Length[a]	584	603	617		604
Std. Error	7	3	6		2
Sample Size	14	243	49		306
Females	433	4,330	606	43	5,412
Percent	2.32	23.20	3.25	0.23	29.00
Sample Size	10	100	14	1	125
Mean Length	565	576	599	488	577
Std. Error	18	4	10		4
Sample Size	10	100	14	1	125
Both Sexes	1,039	14,852	2,728	43	18,662
Percent	5.57	79.58	14.62	0.23	100.00
Sample Size	24	343	63	1	431
Mean Length	576	595	613	488	596
Std. Error	9	2	5		2
Sample Size	24	343	63	1	431

[a] Mean length in mm.

Table 26. Age, sex and length composition of coho salmon in the General Subdistrict commercial set gillnet harvest, Upper Cook Inlet, Alaska, in 1998.

	Age Group			
	1.1	2.1	3.1	Total
Sample period:	29 June - 24 August			
Males	1,718	9,951	888	12,557
Percent	7.42	42.97	3.83	54.22
Sample Size	29	168	15	212
Mean Length[a]	547	561	581	560
Std. Error	7	3	8	2
Sample Size	29	168	15	212
Females	1,540	7,996	1,066	10,602
Percent	6.65	34.53	4.60	45.78
Sample Size	26	135	18	179
Mean Length	549	560	573	559
Std. Error	5	3	5	2
Sample Size	26	135	18	179
Both Sexes	3,258	17,947	1,954	23,159
Percent	14.07	77.49	8.44	100.00
Sample Size	55	303	33	391
Mean Length	548	560	577	560
Std. Error	4	2	5	2
Sample Size	55	303	33	391

[a] Mean length in mm.

Table 27. Age, sex and length composition of coho salmon escapement in Yentna River, (RM 4.0), Susitna River drainage, Upper Cook Inlet, Alaska, in 1998.

	Age Group			
	1.1	2.1	3.1	Total
Sample period:	7 July - 21 August			
Males	2,550	8,117	989	11,656
Percent	10.30	32.77	3.99	47.06
Sample Size	49	156	19	224
Mean Length[a]	561	579	597	576
Std. Error	8	3	9	3
Sample Size	49	156	19	224
Females	2,550	9,626	937	13,113
Percent	10.30	38.86	3.78	52.94
Sample Size	49	185	18	252
Mean Length	553	569	573	566
Std. Error	5	3	10	2
Sample Size	49	185	18	252
Both Sexes	5,100	17,743	1,926	24,769
Percent	20.59	71.63	7.78	100.00
Sample Size	98	341	37	476
Mean Length	557	573	585	571
Std. Error	5	2	7	2
Sample Size	98	341	37	476

[a] Mean length in mm.

Table 28. Age, sex and length composition of chum salmon in the Central District commercial drift gillnet harvest, Upper Cook Inlet, Alaska, in 1998.

	Age Group				
	0.2	0.3	0.4	0.5	Total
Sample period:	10 July				
Males	193	40,632	7,159		47,984
Percent	0.22	46.15	8.13		54.50
Sample Size	1	210	37		248
Mean Length[a]	549	597	616		599
Std. Error		2	3		2
Sample Size	1	210	37		248
Females	387	35,409	4,063	193	40,052
Percent	0.44	40.22	4.62	0.22	45.50
Sample Size	2	183	21	1	207
Mean Length	585	595	612	605	597
Std. Error	1	2	5		2
Sample Size	2	183	21	1	207
Both Sexes	580	76,041	11,222	193	88,036
Percent	0.66	86.37	12.75	0.22	100.00
Sample Size	3	393	58	1	455
Mean Length	573	596	615	605	598
Std. Error	1	1	3		1
Sample Size	3	393	58	1	455

[a] Mean lenth in mm.

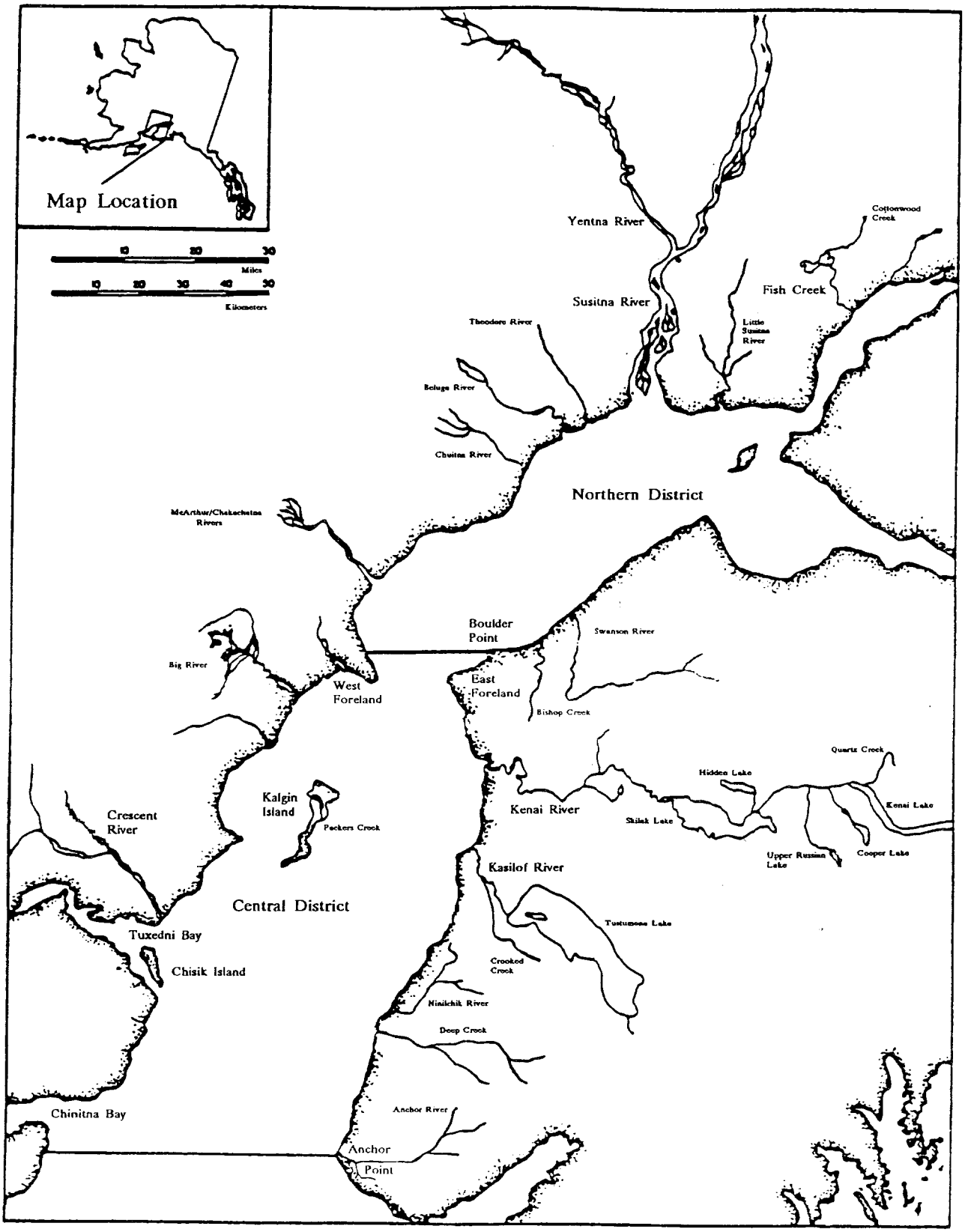

Figure 1. Map of Upper Cook Inlet showing locations of the Northern and Central Districts and the primary salmon spawning drainages.

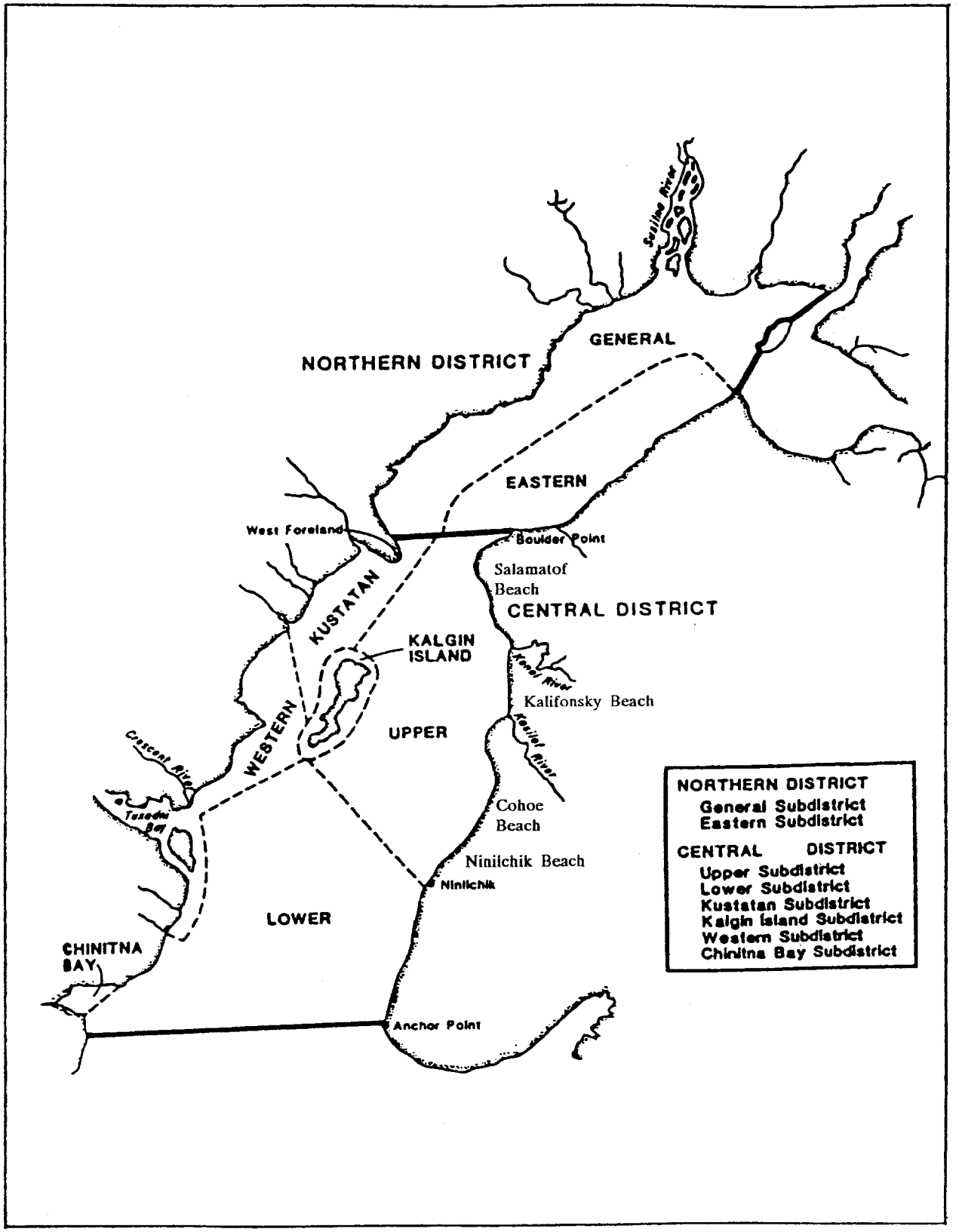

Figure 2. Map of Upper Cook Inlet showing the commercial fishing districts, subdistricts and Upper Subdistrict beach fisheries.

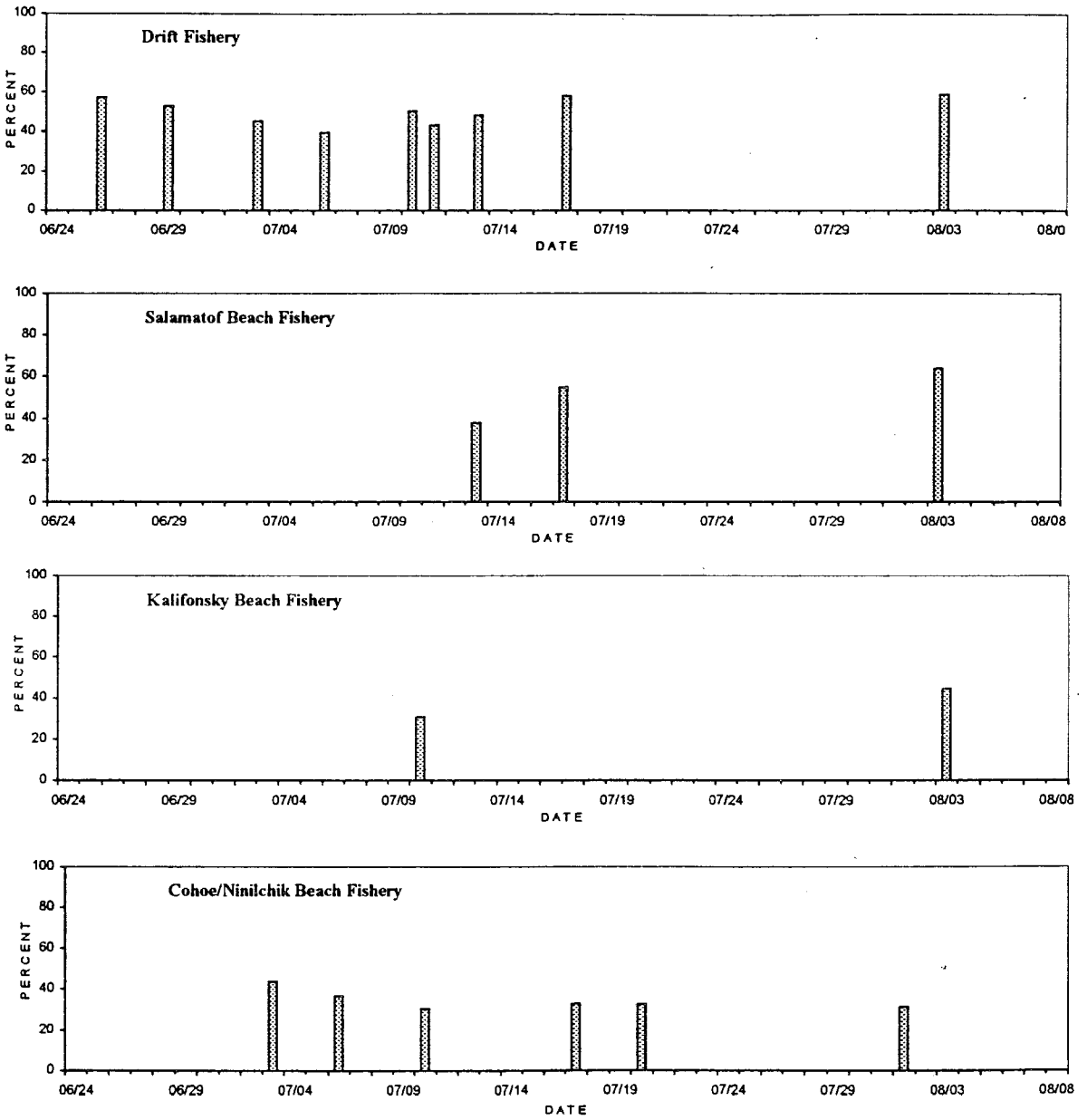

Figure 3. Trends in age-1.3 sockeye salmon composition in the Central District drift gillnet and Upper Subdistrict (Salamatof, Kalifonsky, and Cohoe/Ninilchik Beaches) set gillnet harvests, Upper Cook Inlet, Alaska, in 1998.

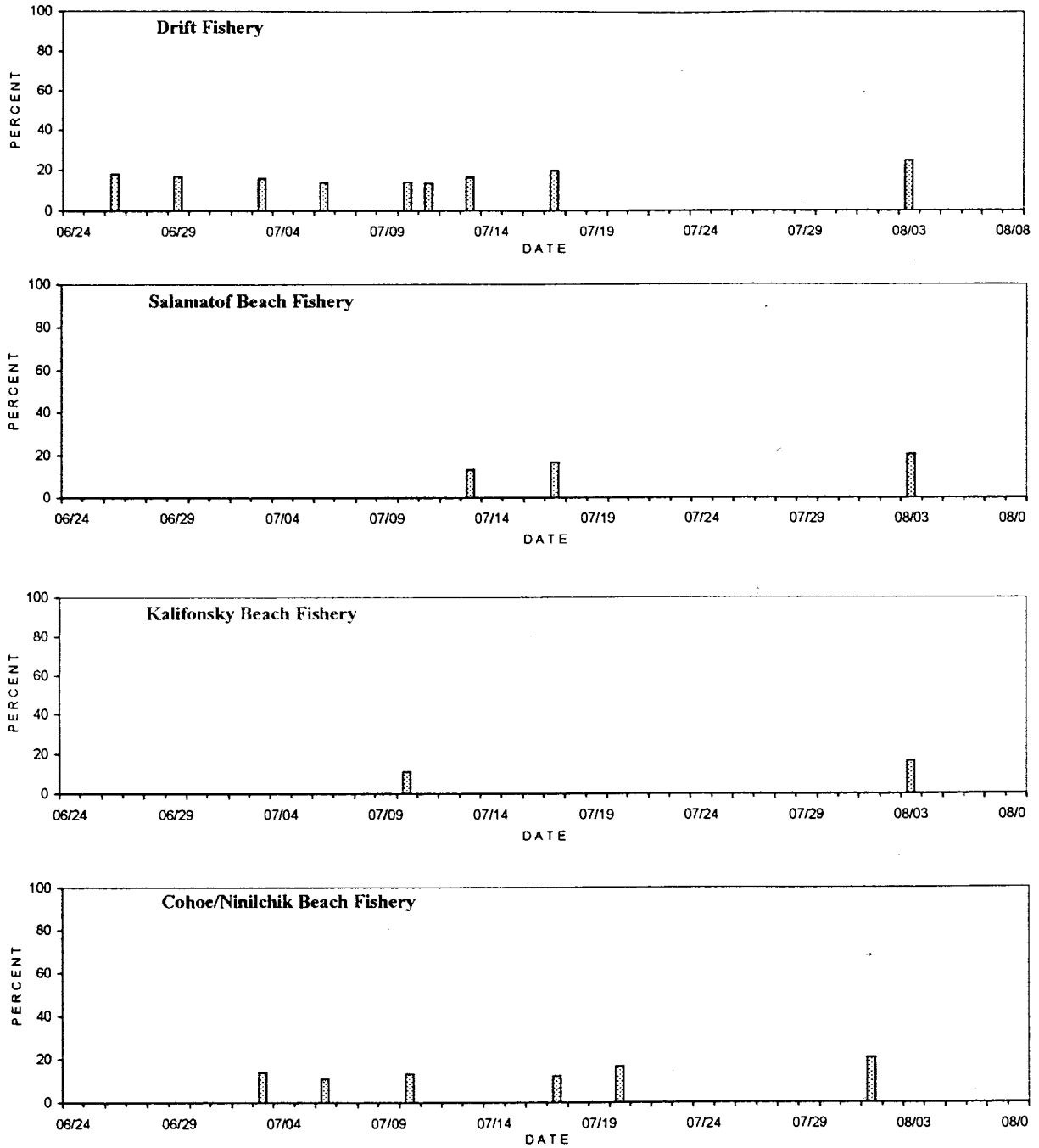

Figure 4. Trends in age-2.3 sockeye salmon composition in the Central District drift gillnet and Upper Subdistrict (Salamatof, Kalifonsky, and Cohoe/Ninilchik Beaches) set gillnet harvests, Upper Cook Inlet, Alaska, in 1998.

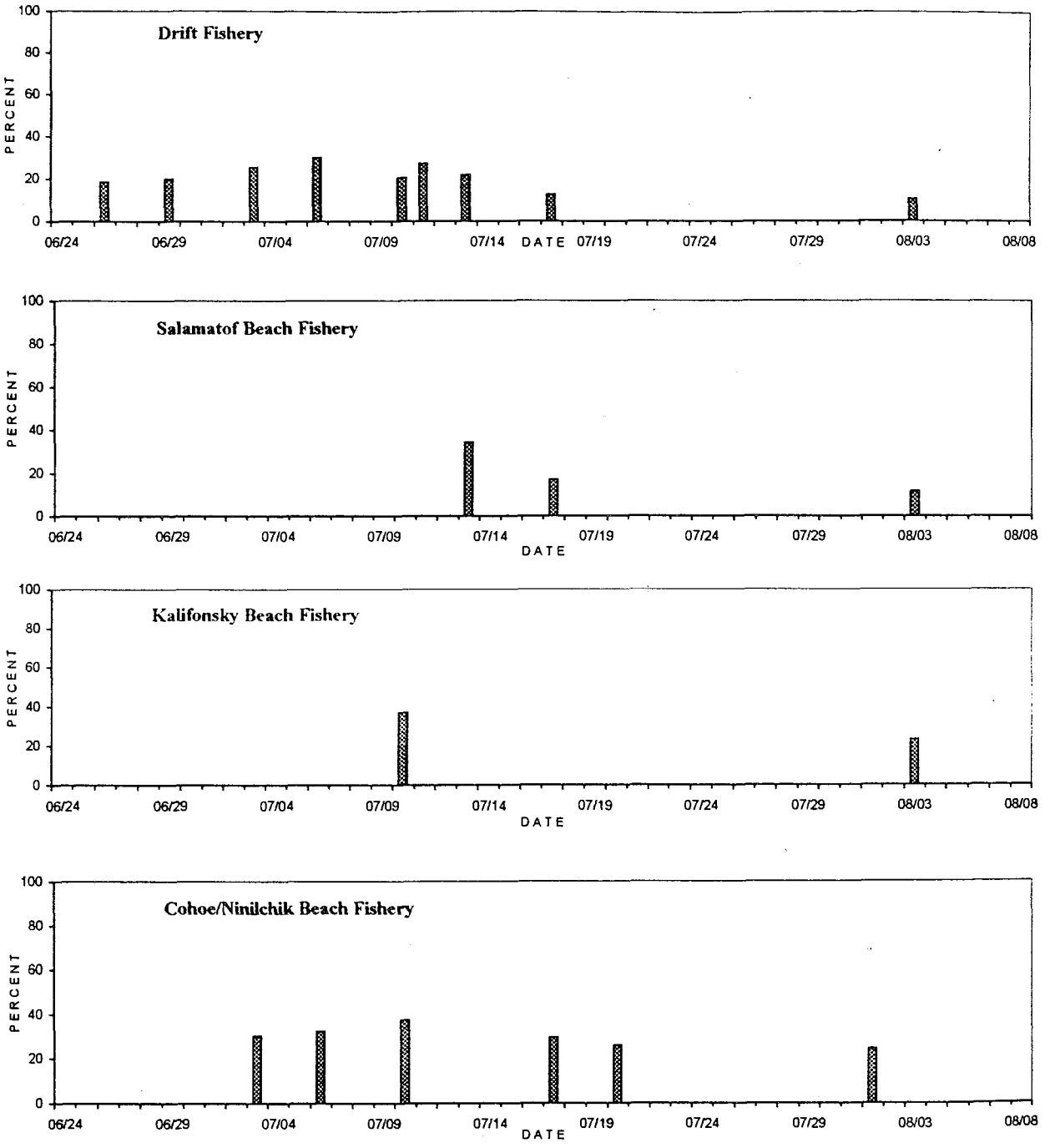

Figure 5. Trends in age-1.2 sockeye salmon composition in the Central District drift gillnet and Upper Subdistrict (Salamatof, Kalifonsky, and Cohoe/Ninilchik Beaches) set gillnet harvests, Upper Cook Inlet, Alaska, in 1998.

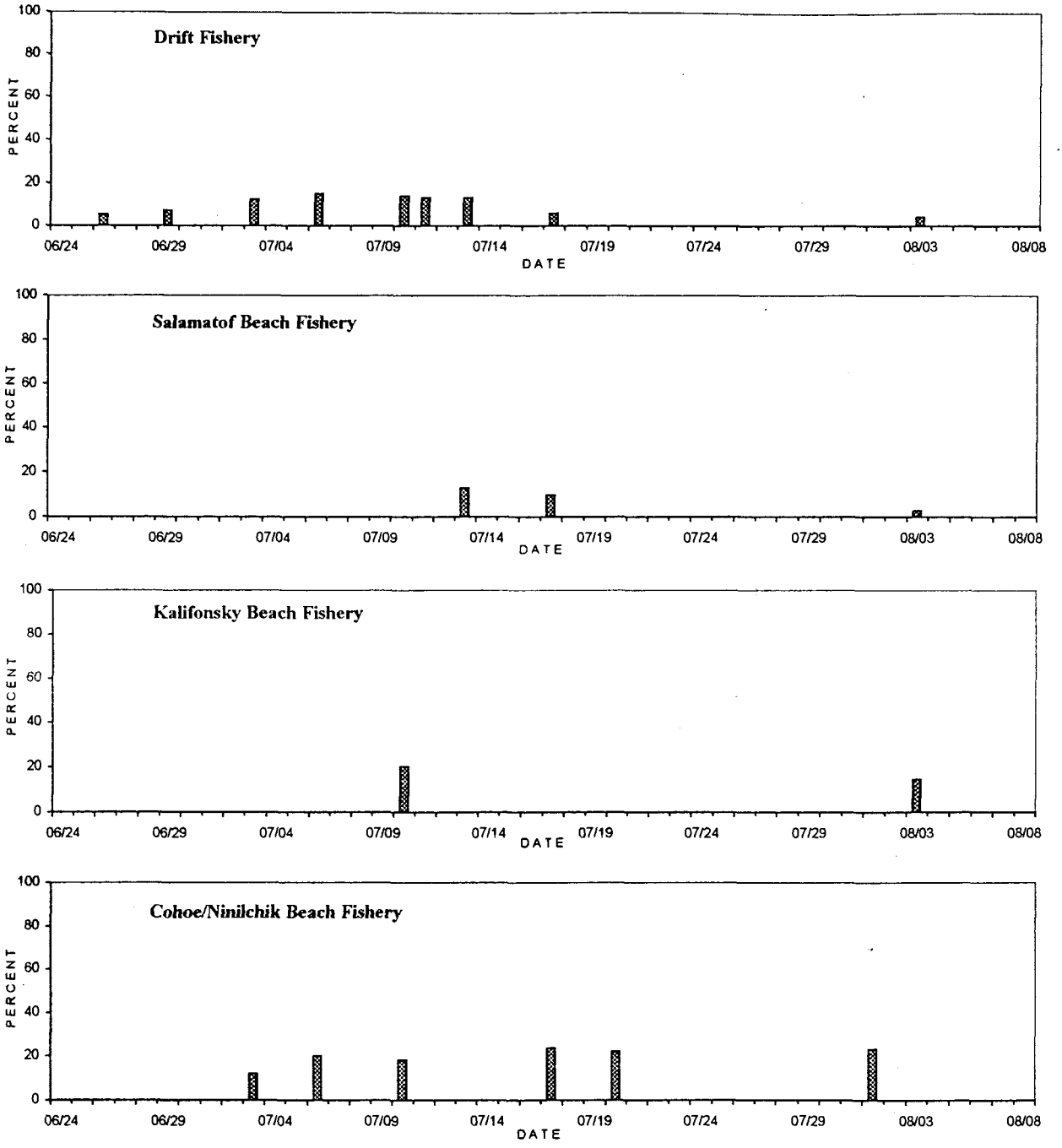

Figure 6. Trends in age-2.2 sockeye salmon composition in the Central District drift gillnet and Upper Subdistrict (Salamatof, Kalifonsky, and Cohoe/Ninilchik Beaches) set gillnet harvests, Upper Cook Inlet, Alaska, in 1998.

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