

# ABUNDANCE, AGE, SEX, AND SIZE STATISTICS FOR PACIFIC SALMON IN BRISTOL BAY, 2002



By

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## ABSTRACT

Abundance, age, sex, and size data are summarized for 2002 Bristol Bay commercial catches and spawning escapements of Pacific salmon *Oncorhynchus* as part of an ongoing project to collect baseline biological information. These data have been used to determine spawner-recruit relationships, establish spawning escapement goals, and forecast the abundance of future returns. Age, sex, and size of sockeye salmon (*O. nerka*) in the commercial catch and escapement were estimated with systematic stratified sampling programs. Sockeye salmon harvests were assigned to river of origin using either age composition data combined with escapement information or run timing. Total returns to each river were estimated by combining river-specific harvests and escapements. Sampling efforts for other salmon species were limited. Chinook (*O. tshawytscha*), chum (*O. keta*), and coho salmon (*O. kisutch*) escapements were sampled in the Nushagak River. Catches of chinook and chum salmon were sampled in Nushagak and Togiak Districts. In 2002 the total number of sockeye salmon commercially harvested in Bristol Bay was 10.7 million fish and total escapements to all rivers were 6.6 million fish. A total of 14 age classes were present in the 2002 sockeye salmon return, with age-2.2 (38%), age-1.2 (27%), age-1.3 (19%), and age-2.3 (13%) fish making up 97% of the total return.

KEY WORDS: Bristol Bay, Pacific salmon, *Oncorhynchus*, catch, escapement, age composition, sex composition, size composition



## INTRODUCTION

The Bristol Bay Management Area encompasses all waters east of a line from Cape Newenham to Cape Menchikof (Figure 1). Bristol Bay supports harvests of five species of Pacific salmon including the largest sockeye salmon (*Oncorhynchus nerka*) fishery in the world.

The management area is divided into five fishing districts for the regulation of commercial salmon fisheries: Naknek-Kvichak, Egegik, Ugashik, Nushagak, and Togiak Districts (Figure 1). Naknek-Kvichak, Egegik, and Ugashik Districts are referred to as the Eastside fishery, and Nushagak and Togiak Districts are referred to as the Westside fishery. Rivers that produce major salmon runs include Kvichak, Naknek, Alagnak, Egegik, Ugashik, Wood, Igushik, Nushagak, and Togiak Rivers. Bristol Bay sockeye salmon are intercepted in the North Alaska Peninsula fishery (Geiger 1989, Swanton and Murphy 1992), and the South Alaska Peninsula June fishery (Gilbert 1924, Gilbert and Rich 1926, Eggers et al. 1988). At this time the magnitude of interceptions of Bristol Bay salmon in other fisheries are unknown.

The Alaska Department of Fish and Game (ADF&G) conducts a variety of programs that supply the information used to manage Bristol Bay salmon fisheries. These programs include (1) compiling catch statistics, (2) sampling catches for age, sex, and size composition, (3) counting major spawning escapements, and (4) sampling escapement for age, sex, and size composition. Data generated from these programs are used to manage fisheries in season, establish biological escapement goals, and forecast the abundance of future returns. This report summarizes 2002 commercial catch, escapement, age, sex, and size data for Bristol Bay salmon. Such data for Bristol Bay salmon have been summarized annually since 1972 (McCurdy and Paulus 1972; Paulus and Nelson 1972a, 1972b; McCurdy and Schroeder 1972; Krasnowski and Randall 1975a, 1975b, 1976; Randall and Yuen 1978; Meacham and Randall 1979; Meacham and Nelson 1980; Yuen et al. 1981; Yuen and Nelson 1983, 1984a, 1984b, 1985, 1987; Yuen and Meacham 1983; Yuen et al. 1984; Yuen 1984; Yuen et al. 1986; Cross and Stratton 1988; Yuen and Bill 1989a, 1989b, 1990; Stratton 1990, 1991; Stratton and Cross 1990; Stratton and Crawford 1992, 1994; Menard 1997; Gray 1998a, 1998b; Gray and Link 1999; West and Gray 2001; West 2002).

## METHODS

### *Catch Estimation*

Commercial catches in numbers of salmon by Bristol Bay Districts were taken from summaries of fish tickets (sales receipts given to fishers by buyers at the time of delivery). The final catch numbers used for this report were from final fish ticket reports compiled by Keith Weiland, Egegik/Ugashik Area Management Biologist. The number of Bristol Bay sockeye salmon caught in the North Alaska Peninsula fishery is unknown. All sockeye salmon caught during the South Alaska Peninsula fishery around Unimak

and Shumagin Islands in June were assumed to be of Bristol Bay origin. A 1987 tagging study indicated that sockeye salmon stocks other than Bristol Bay composed only a small percentage of the South Alaska Peninsula harvest at this time of the year (Eggers et al. 1988).

### *Escapement Enumeration*

Bristol Bay salmon escapements in 2002 were estimated with various methods by staff from the Division of Commercial Fisheries (ADF&G 2003). Sockeye salmon escapement estimates were based on visual counts made from counting towers on the banks of the Kvichak, Alagnak, Naknek, Egegik, Ugashik, Wood, Igushik, Nuyakuk and Togiak Rivers. At all tower projects, counts were made for 10 minutes every hour on each riverbank. Counting began on one bank at the start of each hour, followed by counting on the opposite bank. Each 10-minute count was expanded into an hourly estimate (x6) and these were added together to arrive at a total daily escapement. Escapement to several river systems and areas below the counting towers was estimated from aerial surveys (Alagnak River, as well as areas in Egegik, Ugashik, and Togiak Districts; Sands et al. 2003). The Snake River escapement was estimated annually by aerial surveys and included in the total run prior to 1998, but with the closure of the Snake River Section and funding shortages in recent years, these surveys have been discontinued. Side-looking sonar located in the lower Nushagak River near Portage Creek was used to estimate salmon escapements for the entire Nushagak River drainage (McKinley 2003).

### *Age, Sex, and Size Estimation*

Ages for all 2002 Bristol Bay salmon runs were determined by examining scales (Mosher 1968), except ages of sockeye salmon spawning in Alagnak River, which were determined from otoliths (Bilton and Jenkinson 1968). European notation (e.g., 2.2; Koo 1962) was used to record ages; numerals preceding the decimal refer to the number of freshwater annuli and numerals following the decimal refer to the number of marine annuli. Total age of the fish from the time of egg deposition equals the sum of these numbers plus one.

Scales were collected from the left side of the fish approximately two rows above the lateral line in the area crossed by a diagonal from the posterior insertion of the dorsal fin to the anterior insertion of the anal fin (INPFC 1963). Scales were mounted on gum cards and impressions made on cellulose acetate cards with a heated hydraulic press (Clutter and Whitesel 1956). Salmon were measured to the nearest mm from the middle-of-the-eye to the fork-of-the-tail. Weights were recorded to the nearest 0.1 kg using an Accu-weigh, model A-280 digital scale. Sex was determined by visually examining external morphology of the fish (Groot and Margolis 1991).

Catch sampling was stratified spatially by district and escapement sampling was stratified by major drainage. The number of time strata sampled differed among fisheries and rivers. District catches of sockeye salmon were usually sampled each fishing period during the emergency order period for 2002 (1 June to 17 July). For dates not sampled, the age composition of sockeye salmon harvested was assumed to be the same as that

estimated for the most recent catch date. Chinook and chum salmon catches were sampled less frequently than sockeye salmon. Coho and pink salmon catches were not sampled.

For the escapement, three time strata were desired for sockeye salmon. In general, the first strata represents the early part of the run and encompasses about 10 days, the middle strata represents the peak of the run and encompasses about 5 days, and the final strata represents the end of the run and encompasses about 10 days. Samples from successive dates were combined into the same time stratum when significant ( $\alpha = 0.05$ ) differences in age composition among consecutive dates were not found. Only one time strata was required for chinook, chum, and coho salmon escapement samples.

Sample sizes were selected to ensure that with repeated sampling, each major age group in each stratum would be estimated within 5% of its true value 90% of the time, based on Thompson's (1987) work on the "worst-case" parameter value for the multinomial distribution. Sample size goals for sockeye and chinook salmon catches were set at 500 fish per species per time and area stratum. Chum salmon catch sample goals were set at 400 individuals per stratum. Weights of approximately 100 fish per species per stratum were taken from the catch. Sample size goals for each escapement project were 400 - 500 fish (sockeye, chinook, and chum salmon) per time stratum. Coho salmon escapement sample goals were set at 250 fish per time stratum. These may be adjusted annually to account for high numbers of unreadable scales encountered in an area the previous year.

### *Estimation of Sockeye Salmon Catch Composition*

Sockeye salmon harvested in Egegik and Ugashik Districts were assumed to be destined for Egegik and Ugashik Rivers, respectively. Similarly, sockeye salmon caught in Togiak River Section of Togiak District were assumed to be destined for Togiak River. Sockeye salmon harvested in other sections of Togiak District were assumed to be returning to systems not monitored for escapement or age composition and were not assigned to Togiak River. All sockeye salmon caught in set gillnets fished from Igushik Beach were included in total run estimates for Igushik River. Sockeye salmon harvested in Naknek-Kvichak District were assumed to be returning to Kvichak, Alagnak, and Naknek Rivers with the exception of the Naknek River Special Harvest Area catch (i.e., inside the Naknek River), which was apportioned entirely to the Naknek River. Sockeye harvested in Nushagak District were assumed to be returning to Wood, Igushik and Nushagak Rivers with the exception of the Wood River Special Harvest Area catch (i.e., inside the Wood River), which was apportioned entirely to the Wood River. Sockeye salmon caught in Naknek-Kvichak and Nushagak Districts were assigned to a natal river under the assumption that the harvest age composition of a given stock is similar to its escapement age composition such that:

$$\hat{C}_{ij} = \hat{C}_j \frac{\hat{E}_{ij}}{\sum_{i=1}^n \hat{E}_{ij}} \quad 1$$

where:

$\hat{C}_{ij}$  = estimated catch of sockeye salmon from river  $i$  and age  $j$

$\hat{C}_j$  = estimated district catch sockeye salmon age  $j$ , and

$\hat{E}_{ij}$  = estimated escapement to river  $i$  of sockeye salmon age  $j$ , and

$n$  = number of rivers contributing to the mixed stock catch.

This has been referred to as the standard method (STD) used to construct brood tables. In conjunction with the STD, run timing differences between river escapements are often used to estimate the catch stock composition.

## RESULTS

### *Bristol Bay Sockeye Salmon Run*

#### **Bay-Wide Summary**

An estimated 17,825,459 Bristol Bay sockeye salmon returned from sea in 2002 (inshore and offshore harvests and escapements); 11,247,923 were caught and 6,577,536 escaped the fishery to spawn (Table 1). An estimated 591,106 Bristol Bay sockeye salmon were harvested in the South Alaska Peninsula fishery in June 2002, leaving a total inshore return of 17,234,353 sockeye salmon. Of this total inshore return, 10,656,817 sockeye salmon were caught (does not include Matogak, Osviak, Kulukak, and Cape Pierce Section harvests of the Togiak District which accounted for 19,503 sockeye salmon in 2002), representing an inshore harvest rate of 62%. Commercial catch of sockeye salmon was assigned to a river of origin based on 27,190 fish sampled using the methods described above (Table 2). The 2002 inshore return was 53% smaller than the recent 10-year average return and the lowest since 1977 (Table 3). The 2002 total harvest was 59% smaller than the recent 10-year average harvest and the smallest since 1977.

The 2002 total Bristol Bay sockeye salmon run was predominantly age-2.2 fish (37.5%), followed by age-1.2 (27.4%), age-1.3 (19.4%), and age-2.3 (13.0%) fish (Table 2). The mean length of all sockeye salmon returning to Bristol Bay (catch plus escapement) in 2002 was 531 mm and the mean weight was 2.5 kg (Table 2). The 2002 return mean length was 1% smaller than the recent 10-year average and the 2002 return

mean weight was 6% smaller than the recent 10-year average (Table 4). Size-at-age information for the most common ages of Bristol Bay sockeye salmon is summarized in Table 4. Escapements by day and river system in 2002 are presented in Table 5.

Results from catch and escapement sampling for each district and river system are described below. Appendices A.1 – A.24 summarize 2002 sampling results by sample period and apportion catch and escapement to ages. Brood year tables summarize the total sockeye salmon return from escapement by brood year for nine Bristol Bay river systems (Appendices B.1 – B.9). These return-per-spawner data are used to set escapement goals and forecast future returns of Bristol Bay sockeye salmon.

The South Alaska Peninsula harvest is composed of fish caught during June fisheries around Unimak and Shumagin Islands. In 2002, the total number of sockeye salmon commercially harvested in the South Alaska Peninsula fisheries was 591,106 fish (Table 1). This harvest is incorporated into the Bristol Bay brood tables according to the proportion of the specific age groups in the inshore returns to individual districts relative to the total inshore return to Bristol Bay.

#### **Naknek-Kvichak District Sockeye Salmon Run (Kvichak, Alagnak, and Naknek Rivers)**

The 2002 total run forecast for the Kvichak River was only 1.8 million sockeye salmon, 200 thousand less than the minimum escapement goal of 2.0 million. This did not leave a projected harvestable surplus in the Kvichak River (ADF&G 2003). Therefore, harvest in the Naknek-Kvichak District was restricted to the Naknek Special Harvest Area (NRSHA). An estimated 4,153,702 sockeye salmon returned to the Naknek-Kvichak District in 2002; 1,418,938 were caught and 2,734,764 escaped the fishery to spawn (Table 6). The estimated total return (catch plus escapement) to the district in 2002 was 71% less than the recent 10-year average and the total harvest was 83% smaller than the recent 10-year average (Table 7). The commercial harvest rate in the district was 34%, which was lower than the last 10-year average of 60%. Age composition of the total return of Naknek-Kvichak stocks (based on catch and escapement) was primarily age-1.2 fish (31%), followed by age-1.3 (29%), age-2.2 (28%) and age-2.3 (9.1%) fish (Table 8). Age composition of the commercial harvest was composed of age-2.2 (33%), age-1.3 (32%), age-1.2 (18%), and age-2.3 (13%) fish. Mean length of sockeye salmon harvested in the district was 534 mm and mean weight was 2.6 kg (Appendix A.1). Weighted mean length of sockeye salmon in the combined escapements was 525 mm (Appendices A.2 and A.3).

***Kvichak River.*** An estimated 703,884 Kvichak River sockeye salmon returned to Bristol Bay in 2002 (Table 6). With the Naknek-Kvichak District commercial fishery restricted to the NRSHA, no commercial harvest was allocated to the Kvichak River. The Kvichak escapement was dominated by age-1.2 fish (44%), followed by age-2.2 (36%), age-1.3 (15%), and age-2.3 (2%) fish (Table 8). Mean length of sockeye salmon in the Kvichak escapement was 526 mm (Appendix A.2).

***Alagnak River.*** An estimated 766,962 Alagnak River sockeye salmon returned to Bristol Bay in 2002 (Table 6). With the Naknek-Kvichak District commercial fishery restricted to the NRSHA, no commercial harvest was allocated to the Alagnak River. The tower escapement estimate of 766,962 was used in the 2002

total run estimate and the aerial survey estimate of 335,661 was used in the brood table to maintain consistency with previous years. Age composition of the Alagnak River return was predominately age-1.2 (47%) fish, followed by age-1.3 (34%), age-2.2 (15%), and age-2.3 (3%) fish (Table 8). Alagnak River escapement was not sampled for length.

***Naknek River.*** An estimated 2,682,856 Naknek River sockeye salmon returned to Bristol Bay in 2002; 1,418,938 were harvested and 1,263,918 escaped the fishery to spawn (Table 6). This represented a harvest rate of 53%. Age composition of the Naknek return (catch plus escapement) was composed of age-1.3 fish (31%), age-2.2 (30%) fish, age-1.2 (23%) and age-2.3 (13%; Table 8). The NRSHA catch was primarily age-2.2 (33%), followed by age-1.3 (32%), age-1.2 (18%), and age-2.3 (13%) fish (Appendix B.2). Age composition of the Naknek River escapement was predominantly age-1.3 fish (30%), followed by age-1.2 (27%), and age-2.2 (26%) fish. Mean length of sockeye salmon in the Naknek River escapement was 524 mm (Appendix A.3).

### **Egegik District Sockeye Salmon Run**

An estimated 5,646,466 sockeye salmon returned to the Egegik District in 2002; 4,610,374 were caught and 1,036,092 escaped the fishery to spawn (Table 6). The estimated total return (catch plus escapement) to the district in 2002 was 51% less than the recent 10-year average. The total harvest was 73% less than the recent 10-year average (Table 7). The commercial harvest rate in the district was 82%, which was lower than the recent 10-year average of 88%. Age composition of the return to the district (based on catch and escapement) was primarily age-2.2 fish (61%), followed by age-2.3 fish (30%), and age-1.3 fish (6%; Table 8). The district commercial catch was composed of age-2.2 (63%), age-2.3 (28%), age-1.3 (6%), and age-1.2 (2%) fish. Mean length of sockeye salmon harvested in the district was 542 mm and mean weight was 2.6 kg (Appendix A.4). Age composition of the escapement was predominantly age-2.2 (55%) fish, followed by age-2.3 (37%), and age-1.3 (4%) fish (Table 8). Mean length of sockeye salmon in the escapement was 545 mm (Appendix A.5).

### **Ugashik District Sockeye Salmon Run**

An estimated 2,478,818 sockeye salmon returned to the Ugashik District in 2002; 1,573,234 were caught and 905,584 escaped the fishery to spawn (Table 6). The estimated total return to the district (catch plus escapement) in 2002 was 36% less than the recent 10-year average and the total harvest was 42% less than the recent 10-year average (Table 6). The commercial harvest rate in the district was 63%, which was lower than the last 10-year average of 70%. Age composition of the return to the district (based on catch and escapement) was dominated by age-2.2 fish (61%), followed by age-1.3 (27%), and age-1.2 (8%) fish (Table 8). The district commercial catch was primarily age-2.2 (65%), followed by age-1.3 (27%), age-2.3 (5%), and age-1.2 (3%) fish. Mean length of sockeye salmon harvested in the district was 545 mm and mean weight was 2.6 kg (Appendix A.6). Age composition of the escapement was composed of age-2.2 (53%) fish, age-1.3 (29%), and age 1.2 (17%) fish (Table 8). Mean length of sockeye salmon in the escapement was 536 mm (Appendix A.7).

### **Nushagak District Sockeye Salmon Run (Wood, Igushik, and Nushagak Rivers)**

An estimated 4,562,550 sockeye salmon returned to the Nushagak District in 2002; 2,840,031 were caught and 1,722,519 escaped the fishery to spawn (Table 6). The estimated total return (catch plus escapement) to the district in 2002 was 31% less than the recent 10-year average and the total harvest was 36% less than the recent 10-year average (Table 7). The commercial harvest rate in the district was 62%, which was lower than the last 10-year average of 65%. Age composition of the return to the district (based on catch and escapement) was dominated by age-1.2 fish (71%), followed by age-1.3 (21%) fish (Table 8). The district commercial catch was primarily age-1.2 (74%) and age-1.3 (19%) fish. Mean length of sockeye salmon harvested in the district was 509 mm and mean weight was 2.3 kg (Appendix A.8). Weighted mean length of sockeye salmon in the combined escapements was 532 mm (Appendix A.11 - A.14).

**Wood River.** An estimated 3,714,832 Wood River sockeye salmon returned to Bristol Bay in 2002; 2,431,150 were caught and 1,283,682 escaped the fishery to spawn (Table 6). This represented an inshore harvest rate of 65%. Age composition of the Wood River return (based on catch and escapement) was dominated by age-1.2 fish (76%), followed by age-1.3 (18%), and age-2.2 (4%) fish (Table 7). The Wood River Special Harvest Area (WRSHA) catch was predominantly age-1.2 fish (83%), followed by age-1.3 (11%) fish (Appendix A.9). Age composition of the Wood River escapement was primarily composed of age-1.2 fish (78%) and age-1.3 (16%) fish (Appendix A.11). Mean length of sockeye salmon in the Wood River escapement was 508 mm.

**Igushik River.** An estimated 206,811 Igushik River sockeye salmon returned to Bristol Bay in 2002; 83,655 were harvested and 123,156 escaped the fishery to spawn (Table 6). This represented an inshore harvest rate of 40%. The Igushik return (based on catch and escapement) was composed primarily of age-1.2 fish (67%) and age-1.3 (24%) fish (Table 8). Catch in the Igushik Beach setnet fishery was composed of age-1.2 (52%), age-1.3 (35%), and age-2.2 (9%) fish (Appendix A.10). Age composition of the Igushik River escapement was predominantly age-1.2 (67%) fish, followed by age-1.3 (24%) fish (Appendix A.12). Mean length of sockeye salmon in the Igushik River escapement was 529 mm.

**Nushagak River.** An estimated 640,907 Nushagak River sockeye salmon returned to Bristol Bay in 2002; 325,226 were harvested and 315,681 escaped the fishery to spawn (Table 6). This represented an inshore harvest rate of 51%. Age composition of the Nushagak return (based on catch and escapement) was predominantly age-1.2 fish (47%), followed by age-1.3 (38%) fish (Table 8). The Nushagak River harvest was dominated by age-1.2 (72%) fish and age-1.3 (21%) fish. Escapement age composition was composed primarily of age-1.3 fish (57%), age-1.2 (21%) and age-1.4 (15%) fish (Appendix A.13). Mean length of sockeye salmon in the Nushagak River escapement was 543 mm.

An estimated 68,928 sockeye salmon passed the Nuyakuk counting tower in 2002 (Appendix A.14). Age composition of the Nuyakuk River escapement was predominantly age-1.3 (64%) and age-1.2 (23%) fish and the mean length was 548 mm.

### **Togiak and Kulukak Section Sockeye Salmon Run**

An estimated 392,817 sockeye salmon returned to the Togiak River Section, Togiak District in 2002; 214,240 were caught and 178,577 escaped the fishery to spawn (Table 6). The estimated total return to the section (catch plus escapement) in 2002 was 40% less than the recent 10-year average and the total harvest was 51% less than the recent 10-year average (Table 7). The commercial harvest rate in the district was 55%, which was lower than the last 10-year average of 67%. Age composition of the return to the district (based on catch and escapement) was dominated by age-1.3 fish (75%), followed by age-1.2 (13%), and age-2.2 (4%) fish (Table 8). The district commercial catch was composed of age-1.3 (75%), age-1.2 (10%), and age-2.3 (8%) fish. Mean length of sockeye salmon harvested in the district was 559 mm and mean weight was 3.4 kg (Appendix A.15). The age composition of the escapement was predominantly age-1.3 (75%) fish and age-1.2 (18%) fish (Table 8). Mean length of sockeye salmon in the escapement was 569 mm (Appendix A.17).

Age, sex, and size composition data for the sockeye salmon commercial harvest, Kulukak Section, Togiak District is presented in Appendix A.16.

### ***Bristol Bay Chinook Salmon Run***

In 2002, a total of 44,123 chinook salmon were harvested commercially in Bristol Bay. Most (42,274) were caught in the Nushagak and Togiak Districts. The age and size compositions for Nushagak District and Togiak River Section catches and the Nushagak River escapement were estimated.

### **Nushagak District Chinook Salmon Run**

An estimated 39,473 chinook salmon were caught in the Nushagak District with age-1.4 (47%), age-1.3 (43%), and age-1.2 (8%) accounting for most of the catch sample (Appendix A.18). Mean length of the chinook salmon in the catch was 761 mm and mean weight was 8.4 kg. An estimated 87,141 chinook salmon passed the Nushagak River sonar site (Appendix A.19). The escapement sample was composed of 36% age-1.2, 33% age-1.4 and 28% age-1.3 fish. Mean length of chinook salmon in the escapement was 693 mm.

### **Togiak District Chinook Salmon Run**

Of the 2,801 chinook salmon caught in the Togiak District, most (2,682) were harvested in the Togiak River Section (Appendix A.20). Age-1.4 (33%), age-1.3 (33%), and age-1.2 (31%) chinook salmon dominated the Togiak River Section catch. Mean length of chinook salmon in the catch was 655 mm.

### ***Bristol Bay Chum Salmon Run***

In 2002 the total number of chum salmon commercially harvested in Bristol Bay was 468,320 fish. Most (389,832) were caught in the Nushagak and Togiak Districts.

#### **Nushagak District Chum Salmon Run**

An estimated 276,845 chum salmon were caught in the Nushagak District. Age-0.3 (66%) and age-0.4 (26%) chum salmon predominated the catch (Appendix A.21). Mean length of chum salmon in the catch was 574 mm and mean weight was 3.4 kg. An estimated 419,964 chum salmon passed the Nushagak River sonar site (Appendix A.22). The escapement sample was primarily composed of 54% age-0.3, 40% age-0.4, and 4% age-0.2 fish. Mean length of chum salmon in the escapement sample was 589 mm.

#### **Togiak District Chum Salmon Run**

Of the 112,987 chum salmon caught in the Togiak District, most (104,800) were harvested in the Togiak River Section (Appendix A.23). The Togiak River Section chum salmon catch was composed primarily of age-0.4 (51%), and age-0.3 (48%) fish. Mean length of chum salmon commercially harvested was 589 mm and mean weight was 3.9 kg.

### ***Bristol Bay Coho Salmon Run***

The total number of coho salmon commercially harvested in Bristol Bay in 2002 was 8,410. Most (7,099) were caught in Egegik District. No coho salmon catches were sampled.

#### **Nushagak District Coho Salmon Run**

In 2002, an estimated 93 coho salmon were harvested in the Nushagak District. An estimated 42,343 coho salmon passed the Nushagak River sonar site (Appendix A.24). The limited escapement sample (n=133) was composed of 90% age-2.1, 6% age-1.1 and 4% age-3.1 fish. Mean length of coho salmon in the escapement was 565 mm.

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Table 1. Number of sockeye salmon by age class and river system in the catch and escapement of 10 river systems in Bristol Bay, Alaska, 2002.

System <sup>a</sup>		Age Group														Total	
		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		3.4
Kvichak	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	3,729	1,057	1,603	312,541	1,057	767	103,900	254,850	0	8,416	15,897	0	267	0	0	0
	I	3,729	1,057	1,603	312,541	1,057	767	103,900	254,850	0	8,416	15,897	0	267	0	0	0
	S	128	36	55	10,720	36	26	3,564	8,734	0	289	545	0	9	0	0	0
	%	0.5	0.2	0.2	44.4	0.2	0.1	14.8	36.2	0.0	1.2	2.3	0.0	0.0	0.0	0.0	0.0
Alagnak <sup>b</sup>	C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	0	8,868	0	356,882	1,255	0	263,661	113,275	0	3,568	19,453	0	0	0	0	0
	I	0	8,868	0	356,882	1,255	0	263,661	113,275	0	3,568	19,453	0	0	0	0	0
	S	0	304	0	12,241	43	0	9,043	3,885	0	122	667	0	0	0	0	0
	%	0.0	1.2	0.0	46.5	0.2	0.0	34.4	14.8	0.0	0.5	2.5	0.0	0.0	0.0	0.0	0.0
Naknek	C	233	0	0	260,126	0	0	448,597	471,588	0	46,007	189,990	971	1,137	289	0	0
	E	0	0	0	344,223	2,931	0	376,602	325,250	0	58,947	152,324	0	3,641	0	0	0
	I	233	0	0	604,349	2,931	0	825,199	796,838	0	104,954	342,314	971	4,778	289	0	0
	S	8	0	0	20,728	101	0	28,302	27,330	0	3,600	11,741	33	164	10	0	0
	%	0.6	0.0	0.0	22.5	0.1	0.0	30.8	29.7	0.0	3.9	12.8	0.0	0.2	0.0	0.0	0.0
Egegik	C	0	0	0	94,823	1,608	0	273,125	2,881,303	1,608	31,122	1,291,565	23,445	4,878	6,997	0	0
	E	745	0	0	5,597	11,430	0	38,476	572,467	6,857	7,188	378,642	3,904	6,059	4,727	0	0
	I	745	0	0	100,420	13,038	0	311,601	3,453,770	8,465	38,310	1,670,207	27,349	10,937	11,624	0	0
	S	26	0	0	3,444	447	0	10,687	118,458	290	1,314	57,285	938	375	399	0	0
	%	0.0	0.0	0.0	1.8	0.2	0.0	5.5	61.2	0.1	0.7	29.6	0.5	0.2	0.2	0.0	0.0
Ugashik	C	0	0	0	44,748	1,095	51	418,091	1,022,097	0	14,695	71,209	1,095	153	0	0	0
	E	0	5,440	0	152,676	210	0	259,180	479,440	0	704	7,230	0	704	0	0	0
	I	0	5,440	0	197,424	1,305	51	677,271	1,501,537	0	15,399	78,439	1,095	857	0	0	0
	S	0	187	0	6,771	45	2	23,229	51,500	0	528	2,690	38	29	0	0	0
	%	0.0	0.2	0.0	8.0	0.1	0.0	27.3	60.6	0.0	0.6	3.2	0.0	0.0	0.0	0.0	0.0
Wood	C	3,830	0	10,971	1,814,697	336	3,617	446,833	98,079	0	45,591	7,396	0	0	0	0	0
	E	0	1,936	0	998,746	337	337	205,533	60,950	0	10,298	5,645	0	0	0	0	0
	I	3,830	1,936	10,971	2,813,443	673	3,954	652,166	158,929	0	55,889	13,041	0	0	0	0	0
	S	131	66	376	96,497	23	136	22,368	5,451	0	1,917	447	0	0	0	0	0
	%	0.1	0.1	0.3	75.7	0.0	0.1	17.6	4.3	0.0	1.5	0.4	0.0	0.0	0.0	0.0	0.0
Igushik	C	0	0	333	55,877	0	0	20,458	4,292	0	1,783	912	0	0	0	0	0
	E	0	0	97	82,824	0	0	29,948	5,556	0	2,000	2,731	0	0	0	0	0
	I	0	0	430	138,701	0	0	50,406	9,848	0	3,783	3,643	0	0	0	0	0
	S	0	0	15	4,756	0	0	1,729	338	0	130	125	0	0	0	0	0
	%	0.0	0.0	0.2	67.1	0.0	0.0	24.4	4.8	0.0	1.8	1.8	0.0	0.0	0.0	0.0	0.0
Nuyakuk	E	1,454	0	1,677	16,110	0	111	44,399	822	0	4,355	0	0	0	0	0	0
	Total	1,454	0	1,677	16,110	0	111	44,399	822	0	4,355	0	0	0	0	0	0
Nush-Mul	C	478	0	1,776	234,918	0	628	67,055	11,895	0	7,534	942	0	0	0	0	0
	E	3,492	0	7,683	67,047	0	4,889	178,793	1,397	0	48,888	3,492	0	0	0	0	0
	I	3,970	0	9,459	301,965	0	5,517	245,848	13,292	0	56,422	4,434	0	0	0	0	0
	S	136	0	324	10,358	0	189	8,432	456	0	1,935	152	0	0	0	0	0
	%	0.6	0.0	1.5	47.1	0.0	0.9	38.4	2.1	0.0	8.8	0.7	0.0	0.0	0.0	0.0	0.0
Togiak	C	0	0	1,380	20,838	0	0	161,469	8,532	0	5,099	16,121	761	40	0	0	0
	E	0	0	0	31,366	0	0	133,533	6,934	0	2,274	4,470	0	0	0	0	0
	I	0	0	1,380	52,204	0	0	295,002	15,466	0	7,373	20,591	761	40	0	0	0
	S	0	0	47	1,790	0	0	10,120	530	0	253	706	26	1	0	0	0
	%	0.0	0.0	0.4	13.3	0.0	0.0	75.1	3.9	0.0	1.9	5.2	0.2	0.0	0.0	0.0	0.0
Summary	C	4,541	0	14,460	2,526,027	3,039	4,296	1,835,428	4,497,786	1,608	151,831	1,578,135	26,272	6,208	7,186	0	0
	E	7,966	17,301	9,383	2,351,902	17,220	5,993	1,589,626	1,819,819	6,857	142,283	589,884	3,904	10,671	4,727	0	0
	I	12,507	17,301	23,843	4,877,929	20,259	10,289	3,425,054	6,317,605	8,465	294,114	2,168,019	30,176	16,879	11,913	0	0
	S	429	593	817	167,305	695	353	117,474	216,682	290	10,088	74,358	1,035	578	409	0	0
	%	0.1	0.1	0.1	28.3	0.1	0.1	19.9	36.7	0.0	1.7	12.6	0.2	0.1	0.1	0.0	0.0

<sup>a</sup> C = Catch, E = Escapement, I = Inshore Return, S = South Alaska Peninsula Catch, and T = Total. Ugashik escapement includes King Salmon and Dog Salmon Rivers; Togiak catch is Togiak River Section only and Togiak escapement includes the tower counts, and lower river and tributaries aerial survey estimate. Nuyakuk escapement is not totaled because it is a tributary of Nushagak. Nush-Mul = Nushagak-Mulchatna River drainage.

<sup>b</sup> The Alagnak tower escapement estimate of 766,962 is used to calculate the total run. The aerial survey escapement estimate of 335,661 is used in the brood table to maintain consistency with previous brood years.

Table 2. Age, sex, and size (length in mm and weight in kg) composition of sockeye salmon commercial catch and escapement, Bristol Bay, 2002.

	Age Group														Total
	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	2.1	1.4	2.3	3.2	2.4	3.3	
<b>Males</b>															
Percent	0.06	0.03	0.06	13.29	0.09	0.02	10.06	19.60	0.04	1.03	6.74	0.05	0.06	0.04	51.17
Sample Size	33	13	22	3,853	17	6	3,732	4,208	9	349	1,668	10	17	7	13,944
Mean Length	408	373	559	499	355	619	583	526	368	606	594	527	605	592	540
Std. Error	18	7	9	1	8	7	1	0	5	2	1	8	12	5	0
Sample Size	33	13	22	3,833	17	6	3,728	4,201	9	349	1,666	10	17	7	13,911
Mean Weight	1.34		3.71	2.17			3.29	2.38		3.88	3.55	2.58	3.95		2.64
Std. Error	0.17			0.02			0.04	0.02		0.09	0.04				0.01
Sample Size	4		1	445			553	692		54	303	4	1		2,057
<b>Females</b>															
Percent	0.02	0.02	0.09	14.14	0.03	0.05	9.33	17.90	0.01	0.75	6.27	0.14	0.04	0.04	48.83
Sample Size	10	6	40	4,118	8	11	3,445	3,766	1	248	1,542	27	14	10	13,246
Mean Length	422	388	561	486	364	586	559	510	381	575	573	508	570	580	522
Std. Error	5	10	6	0	15	17	1	0		3	1	5	3	3	0
Sample Size	9	6	40	4,101	8	11	3,443	3,760	1	246	1,540	27	14	10	13,216
Mean Weight	1.25		2.84	1.98			3.67	2.92		3.15	2.91	1.90	2.47		2.31
Std. Error				0.03			0.03	0.02		0.14	0.03	0.27			0.01
Sample Size	3		3	413		3	467	543		32	224	5	2		1,695
<b>Both Sexes</b>															
Percent	0.08	0.05	0.16	27.44	0.11	0.06	19.39	37.50	0.05	1.79	13.00	0.18	0.10	0.07	100.00
Sample Size	43	19	62	7,971	25	17	7,177	7,974	10	597	3,210	37	31	17	27,190
Mean Length	412	378	560	492	357	595	571	518	370	593	584	513	590	586	531
Std. Error	15	6	5	0	7	11	0	0	5	2	1	5	8	4	0
Sample Size	42	19	62	7,934	25	17	7,171	7,961	10	595	3,206	37	31	17	27,127
Mean Weight	1.31		3.49	2.07			3.67	3.11		3.63	3.24	2.30	2.64		2.48
Std. Error	0.17			0.02			0.02	0.01		0.08	0.03	0.27			0.01
Sample Size	7		4	858		3	1,020	1,235		86	527	9	3		3,752

Table 3. Annual total returns, harvests, escapement and harvest rates for Bristol Bay sockeye salmon, 1956-2002.

Year	Total Run	Harvests				Total	Escapement	Inshore Return	Harvest Rate (%)	
		Inshore	S. Pen. <sup>a</sup>	Other <sup>b</sup>	Total				Total	Inshore
1956	24,178,393	8,921,467	330,349		9,251,816	14,966,577	23,888,044	38	37	
1957	18,522,510	6,225,502	164,222	7,349,000	13,738,724	4,733,786	10,959,288	74	57	
1958	6,281,052	2,985,666	135,000	377,000	3,497,666	2,783,386	5,769,052	56	52	
1959	13,534,132	4,608,119	78,463	598,000	5,284,582	8,280,450	12,888,569	39	36	
1960	40,225,936	13,705,002	156,000	3,727,000	17,588,002	22,637,934	36,342,936	44	38	
1961	24,416,100	11,854,073	254,000	6,129,000	18,237,073	6,179,027	18,033,100	75	66	
1962	11,665,502	4,702,364	326,000	960,000	5,988,364	5,677,138	10,379,502	51	45	
1963	8,013,969	2,850,639	149,000	1,001,000	4,000,639	4,013,330	6,863,969	50	42	
1964	11,438,331	5,558,683	244,000	314,000	6,116,683	5,321,648	10,880,331	53	51	
1965	60,822,808	24,249,092	775,000	6,943,000	31,967,092	28,855,716	53,104,808	53	46	
1966	20,032,492	9,305,921	582,000	1,935,000	11,822,921	8,209,571	17,515,492	59	53	
1967	11,485,059	4,301,109	255,000	922,000	5,478,109	6,006,950	10,308,059	48	42	
1968	9,455,405	2,784,739	575,000	885,000	4,244,739	5,210,666	7,995,405	45	35	
1969	21,918,143	6,617,061	857,000	2,031,000	9,505,061	12,413,082	19,030,143	43	35	
1970	45,039,815	20,720,137	1,683,000	3,968,000	26,371,137	18,668,678	39,388,815	59	53	
1971	18,462,272	9,575,434	610,000	2,049,000	12,234,434	6,227,838	15,803,272	66	61	
1972	7,194,044	2,392,326	519,000	1,302,000	4,213,326	2,980,718	5,373,044	59	45	
1973	3,516,869	741,292	262,000	839,000	1,842,292	1,674,577	2,415,869	52	31	
1974	11,502,364	1,334,070	60,000	510,000	1,904,070	9,598,294	10,932,364	17	12	
1975	25,811,149	4,894,757	239,000	1,353,000	6,486,757	19,324,392	24,219,149	25	20	
1976	12,827,413	5,610,425	307,000	1,001,000	6,918,425	5,908,988	11,519,413	54	49	
1977	10,671,057	4,860,433	239,000	768,000	5,867,433	4,803,624	9,664,057	55	50	
1978	20,798,730	9,898,223	487,000	452,000	10,837,223	9,961,507	19,859,730	52	50	
1979	40,974,911	21,360,960	862,000	304,000	22,526,960	18,447,951	39,808,911	55	54	
1980	66,292,853	23,718,655	3,303,000	590,000	27,611,655	38,681,198	62,399,853	42	38	
1981	37,039,596	25,583,662	1,825,000	818,000	28,226,662	8,812,934	34,396,596	76	74	
1982	24,705,700	15,090,413	2,121,000	443,000	17,654,413	7,051,287	22,141,700	71	68	
1983	48,107,873	37,313,599	1,961,000	324,000	39,598,599	8,509,274	45,822,873	82	81	
1984	42,630,124	24,601,393	1,388,000	291,200	26,280,593	16,349,531	40,950,924	62	60	
1985	38,714,171	23,626,380	1,709,000	259,900	25,595,280	13,118,891	36,745,271	66	64	
1986	24,313,787	15,658,526	466,000	298,000	16,422,526	7,891,261	23,549,787	68	66	
1987	28,377,096	16,000,656	794,859	165,000	16,960,515	11,416,581	27,417,237	60	58	
1988	23,996,394	13,841,078	756,667		14,597,765	9,398,629	23,239,707	61	60	
1989	45,754,092	28,714,749	1,744,505		30,459,254	15,294,838	44,009,587	67	65	
1990	49,323,010	33,493,550	1,346,295		34,839,845	14,483,165	47,976,715	71	70	
1991	43,364,381	25,794,049	1,548,930		27,342,979	16,021,402	41,815,451	63	62	
1992	47,415,171	31,763,805	2,457,856		34,221,661	13,193,510	44,957,315	72	71	
1993	54,696,386	40,397,990	2,973,744		43,371,734	11,324,652	51,722,842	79	78	
1994	51,752,387	35,125,526	1,461,263		36,586,789	15,165,598	50,291,124	71	70	
1995	62,692,143	44,185,372	2,105,321		46,290,693	16,401,450	60,586,822	74	73	
1996	37,892,861	29,510,279	1,037,360		30,547,639	7,345,222	36,855,501	81	80	
1997	20,349,687	12,107,847	1,568,326		13,676,173	6,673,514	18,781,361	67	64	
1998	19,662,531	9,958,132	1,301,020		11,259,152	8,403,379	18,361,511	57	54	
1999	41,167,019	25,619,227	1,405,478		27,024,705	14,142,314	39,761,541	66	64	
2000	29,477,140	20,411,342	1,271,585		21,682,927	7,794,213	28,205,555	74	72	
2001	22,328,293	14,186,935	150,632		14,317,567	8,010,726	22,177,661	64	64	
2002	17,825,459	10,656,817	591,106		11,247,923	6,577,536	17,234,353	63	62	
<b>Averages</b>										
1956-61	21,193,021	8,049,972	186,339	3,636,000	11,266,311	9,930,193	17,980,165	53	45	
1962-71	21,833,380	9,066,518	605,600	2,100,800	11,772,918	10,060,462	19,126,980	54	47	
1972-81	23,662,899	10,039,480	810,300	793,700	11,643,480	12,019,418	22,058,899	49	46	
1982-91	36,928,663	23,413,439	1,383,628	296,850	24,975,177	11,953,486	35,366,925	68	66	
1992-01	38,743,362	26,324,646	1,573,259		27,897,904	10,845,458	37,170,103	72	71	

<sup>a</sup> S. Pen. = South Alaska Peninsula. The South Alaska Peninsula harvest refers to all sockeye salmon caught during June fisheries around Unimak and Shumagin Islands.

<sup>b</sup> Other harvest refers to estimated high seas interception of Bristol Bay sockeye salmon.

Table 4. Size-at-age for sockeye salmon commercial catch and escapement, Bristol Bay, return years 1957 - 2002 (length in mm, weight in kg).

Return Year	Age 1.2				Age 1.3				Age 2.2				Age 2.3				Bay Wide <sup>a</sup>			
	Length		Weight		Length		Weight		Length		Weight		Length		Weight		Length		Weight	
	Mean	SE <sup>b</sup>	Mean	SE <sup>b</sup>	Mean	SE <sup>b</sup>	Mean	SE <sup>b</sup>	Mean	SE <sup>b</sup>	Mean	SE <sup>b</sup>	Mean	SE <sup>b</sup>	Mean	SE <sup>b</sup>	Mean	SE <sup>b</sup>	Mean	SE <sup>b</sup>
1957	524	6.8			564	1.0			518	1.6			572	1.4			554	1.3		
1958	510	4.9			571	5.5			531	3.6			578	1.7			551	3.4		
1959	506	2.4			571	3.5			520	0.7			581	1.2			526	1.2		
1960	489	3.8			561	19.4			505	12.6			570	6.6			498	7.7		
1961	515	14.8			571	5.8			519	2.4			576	11.0			554	6.2		
1962	515	17.3			575	9.8			524	1.4			574	2.4			536	5.4		
1963	514	2.9	2.3	0.1	577	3.9	3.1	0.1	531	2.7	2.5	0.1	584	2.0	3.2	0.1	547	2.4	2.8	0.1
1964	501	0.9			571	1.7			517	1.4			578	2.3			517	1.1		
1965	507	1.8			560	1.5			497	2.3			567	2.2			502	1.9		
1966	496	2.0			565	1.2			516	2.0			571	1.1			555	1.3		
1967	505	1.5			576	1.6			531	1.1			584	1.7			544	1.4		
1968	508	1.5			578	1.5			523	1.4			589	1.9			535	1.5		
1969	515	0	2.3	0	577	0	3.1	0	524	0	2.4	0	585	0	3.1	0	520	0	2.5	0
1970	497	0	2.1	0	557	0	2.8	0	507	0	2.2	0	567	0	2.8	0	511	0	2.3	0
1971	513	0	2.1	0	572	0	3.1	0	526	0	2.3	0	574	0	3.0	0	552	0	2.7	0
1972	501	24.2	2.2	0.7	574	22.6	3.1	0.9	520	24.2	2.3	0.6	577	21.8	3.1	0.8	544	17.2	2.8	0.3
1973	511	4.3	2.5	0.2	583	2.3	3.5	0.5	529	4.9	2.6	0.3	592	2.4	3.4	0.2	573	2.3	3.3	0.2
1974	515	2.7	2.2	0.1	569	4.2	3.2	0.2	519	2.0	2.5	0.1	583	5.8	3.4	0.3	528	2.2	2.6	0.1
1975	512	3.3	2.4	0.2	573	1.9	3.2	0.2	509	2.0	2.3	0.1	575	2.8	3.1	0.3	523	2.0	2.4	0.1
1976	519	2.5	2.5	0.1	580	1.7	3.4	0.1	524	1.7	2.5	0.0	576	3.5	3.1	0.1	544	1.8	2.8	0.1
1977	511	3.5	2.3	0.1	586	2.0	3.7	0.1	534	2.4	2.6	0.1	586	2.5	3.5	0.1	558	2.1	3.0	0.1
1978	511	2.0	2.3	0.0	580	2.2	3.3	0.1	524	3.4	2.4	0.1	591	2.3	3.5	0.0	537	2.1	2.8	0.1
1979	525	0.89	2.64	0.05	575	1.02	3.44	0.03	538	1.39	2.70	0.15	525	5.65	3.16	0.13	537	0.03	2.82	0.00
1980	500	0.34	2.31	0.02	551	0.26	3.23	0.03	514	0.28	2.35	0.02	561	0.82	2.88	0.06	520	0.16	2.57	0.01
1981	520	0.34	2.40	0.02	570	0.21	3.22	0.02	534	0.26	2.44	0.02	577	0.39	3.25	0.03	552	0.14	2.85	0.01
1982	506	1.43	2.25	0.00	566	0.71	3.22	0.06	531	12.28	2.46	0.00	582	1.58	3.33	0.20	554	0.04	3.03	0.00
1983	518	0.91	2.38	0.03	563	1.38	3.10	0.05	534	1.61	2.54	0.05	579	8.44	3.16	0.23	530	0.03	2.55	0.00
1984	486	1	2.10	0.09	560	1	2.99	0.06	514	0	2.34	0.05	571	1	3.07	0.05	524	0	2.54	0.03
1985	508	1	2.18	0.04	567	1	2.93	0.03	523	0	2.27	0.02	580	1	2.96	0.04	541	0	2.54	0.01

-Continued-

Table 4. (Page 2 of 2)

Return Year	Age 1.2				Age 1.3				Age 2.2				Age 2.3				Bay Wide <sup>a</sup>			
	Length		Weight		Length		Weight													
	Mean	SE <sup>b</sup>	Mean	SE <sup>b</sup>	Mean	SE <sup>b</sup>	Mean	SE <sup>b</sup>	Mean	SE <sup>b</sup>	Mean	SE <sup>b</sup>	Mean	SE <sup>b</sup>	Mean	SE <sup>b</sup>	Mean	SE <sup>b</sup>	Mean	SE <sup>b</sup>
1986	497	1	2.23	0.05	567	0	2.95	0.10	531	0	2.36	0.05	575	1	3.07	0.06	548	0	2.69	0.02
1987	501	0	2.06	0.03	563	0	2.99	0.02	518	1	2.32	0.13	574	1	2.93	0.03	530	0	2.47	0.01
1988	501	0	2.06	0.02	577	0	3.07	0.02	528	0	2.29	0.03	587	0	3.18	0.02	549	0	2.70	0.01
1989	489	0	2.07	0.02	572	0	2.98	0.03	518	0	2.18	0.01	578	1	3.05	0.04	529	0	2.38	0.01
1990	481	0	1.95	0.02	563	0	2.96	0.02	503	0	2.10	0.02	573	0	2.98	0.02	528	0	2.45	0.01
1991	490	0	1.91	0.03	558	0	2.80	0.02	501	0	2.12	0.02	565	1	2.78	0.04	533	0	2.49	0.01
1992	487	0	1.77	0.03	553	0	2.73	0.02	507	0	2.01	0.02	562	0	2.85	0.03	530	0	2.40	0.01
1993	498	0	2.10	0.02	566	0	2.94	0.02	526	0	2.28	0.02	572	0	3.00	0.02	545	0	2.62	0.01
1994	472	1	2.09	0.03	554	0	2.74	0.02	507	0	2.05	0.03	567	0	2.74	0.04	522	0	2.29	0.01
1995	502	0	2.17	0.01	560	0	2.90	0.09	513	0	2.21	0.01	573	0	2.92	0.02	526	0	2.37	0.01
1996	494	1	2.03	0.02	565	0	3.05	0.01	512	1	2.29	0.03	573	0	2.97	0.03	552	0	2.83	0.01
1997	494	1	1.99	0.02	561	0	2.95	0.02	517	0	2.18	0.02	582	1	3.18	0.03	536	0	2.54	0.01
1998	494	0	1.97	0.01	556	0	2.78	0.02	513	1	2.37	0.03	568	0	2.75	0.02	531	0	2.45	0.01
1999	507	0	1.72	0.02	564	1	2.82	0.03	519	0	1.91	0.02	574	1	3.01	0.06	525	0	2.91	0.01
2000	470	1	2.22	0.07	564	0	3.04	0.01	506	1	2.34	0.07	567	1	3.02	0.03	542	0	2.84	0.04
2001	499	1	2.06	0.06	577	0	3.12	0.01	518	1	2.32	0.04	582	0	3.17	0.02	573	0	3.09	0.01
2002	492	0	2.07	0.02	571	0	3.11	0.02	518	0	2.23	0.01	584	1	3.24	0.03	531	0	2.48	0.01
<b>Averages</b>																				
56-61	509				568				519				575				537			
62-71	507		2.20		571		3.03		519		2.35		577		3.03		532		2.58	
72-81	512		2.38		574		3.33		525		2.47		574		3.24		541		2.79	
82-91	498		2.12		566		3.00		520		2.30		576		3.05		537		2.58	
92-01	492		2.01		563		2.91		515		2.20		573		2.96		539		2.63	
56-01	503		2.17		568		3.07		519		2.32		575		3.08		537		2.66	

<sup>a</sup> Weighted average for all age classes combined.

<sup>b</sup> SE=standard error; Standard error and mean weight is taken directly from annual reports. The number of significant digits used varies among years.

Table 5. Daily sockeye salmon escapement counts by river system, Bristol Bay, 2002

Date	Kvichak River		Alagnak River <sup>a</sup>		Naknek River		Egegik River <sup>b</sup>		Ugashik River <sup>b</sup>		Nushagak River <sup>c</sup>		Wood River		Igushik River		Togiak River <sup>b</sup>		Nuyakuk River		
	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	
6/08											0	0									
6/09											0	0									
6/10											0	0									
6/11											0	0									
6/12											0	0									
6/13											221	221									
6/14											0	221									
6/15											0	221									
6/16											47	268									
6/17											3	271									
6/18							8,952	8,952			269	540									
6/19					7,374	7,374	4,464	13,416			1,530	2,070									
6/20					12,360	19,734	23,076	36,492			8,598	10,668									
6/21	162	162			1,056	20,790	22,464	58,956			6,099	16,767	12,318	12,318							
6/22	348	510			5,760	26,550	15,198	74,154			6,998	23,765	7,476	19,794							
6/23	570	1,080			4,842	31,392	5,034	79,188			6,149	29,914	15,246	35,040							
6/24	270	1,350			13,662	45,054	26,742	105,930			8,488	38,402	14,334	49,374		0	0				
6/25	54	1,404			62,736	107,790	97,776	203,706			4,840	43,242	27,156	76,530	18	18					
6/26	210	1,614			65,766	173,556	134,112	337,818			4,097	47,339	19,398	95,928	0	18					
6/27	162	1,776			80,622	254,178	104,328	442,146			15,018	62,357	135,234	231,162	0	18					
6/28	3,978	5,754	5,832	5,832	135,066	389,244	35,664	477,810			32,821	95,178	102,714	333,876	0	18					
6/29	11,796	17,550	20,934	26,766	119,064	508,308	32,274	510,084	828	828	20,799	115,977	239,436	573,312	0	18					
6/30	37,830	55,380	24,522	51,288	86,928	595,236	37,704	547,788	54	882	42,266	158,242	112,038	685,350	166	204			3,186	3,186	
7/01	37,494	92,874	23,616	74,904	125,976	721,212	17,142	564,930	432	1,314	14,095	172,337	132,132	817,482	912	1,116			3,528	6,714	
7/02	69,504	162,378	75,150	150,054	117,834	839,046	46,686	611,616	528	1,842	16,136	188,473	127,842	945,324	3,846	4,962			4,968	11,652	
7/03	137,400	299,778	57,312	207,366	30,576	869,622	83,286	694,902	7,620	9,462	4,484	192,957	69,366	1,014,690	9,480	14,442	2,100	2,100	4,968	16,620	
7/04	63,054	362,832	30,606	237,972	91,500	961,122	66,132	761,034	8,760	18,222	6,760	199,717	72,834	1,087,524	12,582	27,024	4,356	6,456	7,716	24,336	
7/05	26,184	389,016	45,054	283,026	79,674	1,040,796	10,422	771,456	4,722	22,944	5,315	205,032	46,458	1,133,982	5,766	32,790	1,620	8,076	7,272	31,608	
7/06	55,704	444,720	48,432	331,458	57,702	1,098,498	26,892	798,348	7,494	30,438	7,548	212,580	37,524	1,171,506	7,854	40,644	1,350	9,426	3,528	35,136	
7/07	31,824	476,544	33,048	364,506	40,314	1,138,812	27,528	825,876	34,380	64,818	9,636	222,216	23,904	1,195,410	7,452	48,096	1,266	10,692	3,102	38,238	
7/08	22,872	499,416	45,966	410,472	22,404	1,161,216	44,352	870,228	9,756	74,574	10,991	233,207	9,846	1,205,256	9,156	57,252	1,452	12,144	2,376	40,614	
7/09	47,868	547,284	49,116	459,588	15,786	1,177,002	48,060	918,288	5,106	79,680	22,223	255,430	7,902	1,213,158	9,132	66,384	1,176	13,320	2,190	42,804	
7/10	27,036	574,320	26,514	486,102	15,006	1,192,008	33,642	951,930	10,482	90,162	14,826	270,256	6,180	1,219,338	10,068	76,452	4,872	18,192	1,986	44,790	
7/11	11,394	585,714	19,200	505,302	28,530	1,220,538	20,460	972,390	124,362	214,524	9,110	279,366	10,830	1,230,168	5,448	81,900	6,162	24,354	1,848	46,638	
7/12	22,290	608,004	100,452	605,754	15,882	1,236,420	4,548	976,938	297,156	511,680	5,593	284,959	11,106	1,241,274	4,854	86,754	2,682	27,036	3,300	49,938	
7/13	58,614	666,618	43,752	649,506	11,556	1,247,976	5,388	982,326	206,850	718,530	4,584	289,543	11,448	1,252,722	7,902	94,656	2,364	29,400	4,116	54,054	
7/14	20,736	687,354	27,594	677,100	9,474	1,257,450	10,992	993,318	52,458	770,988	4,029	293,572	7,008	1,259,730	7,892	102,348	1,380	30,780	2,220	56,274	
7/15	7,626	694,980	17,698	694,788	6,468	1,263,918	28,914	1,022,232	27,084	798,072	3,955	297,527	4,776	1,264,506	6,216	108,564	3,732	34,512	1,596	57,870	
7/16	5,616	700,596	11,736	706,524			13,860	1,036,092	21,552	819,624	3,631	301,158	3,738	1,268,244	4,200	112,764	5,682	40,194	1,896	59,766	
7/17	2,940	703,536	9,042	715,566					29,130	848,754	4,255	305,413	1,830	1,270,074	2,124	114,888	9,438	49,632	2,370	62,136	
7/18	348	703,884	4,860	720,426					18,792	867,546	464	305,877	3,102	1,273,176	2,208	117,096	9,348	58,980	2,130	64,266	
7/19			9,828	730,254					9,600	877,146	658	306,535	3,312	1,276,488	774	117,870	10,278	69,258	1,476	65,742	
7/20			18,468	748,722					2,676	879,822	1,016	307,551	4,104	1,280,592	1,782	119,652	7,404	76,662	756	66,498	
7/21			11,892	760,614					5,556	885,378	1,393	308,934	3,090	1,283,682	1,122	120,774	7,002	83,664	270	66,768	
7/22			6,348	766,962					3,018	888,396	1,097	310,031			1,248	122,022	7,656	91,320	450	67,218	
7/23									1,428	889,824	845	310,876				246	122,268	11,184	102,504	384	67,602
7/24									2,280	892,104	714	311,590				384	122,652	11,838	114,342	258	67,860
7/25											1,183	312,773				504	123,156	9,432	123,774	324	68,184

-Continued-

Table 5. (Page 2 of 2)

Date	Kvichak River		Alagnak River <sup>a</sup>		Naknek River		Egegik River <sup>b</sup>		Ugashik River <sup>b</sup>		Nushagak River <sup>c</sup>		Wood River		Igushik River		Togiak River <sup>b</sup>		Nuyakuk River		
	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	
7/26												334	313,107					3,204	126,978	294	68,478
7/27												0	313,107					4,506	131,484	228	68,706
7/28												0	313,107					3,540	135,024	222	68,928
7/29												0	313,107					1,968	136,992		
7/30												1,842	314,949					3,006	139,998		
7/31												331	315,280					5,922	145,920		
8/01												278	315,558					8,202	154,122		
8/02												123	315,681					4,122	158,244		
8/03												0	315,681					2,610	160,854		
8/04												0	315,681					1,014	161,868		
8/05												0	315,681					534	162,402		
8/06												0	315,681								
8/07												0	315,681								
8/08												0	315,681								
8/09												0	315,681								
8/10												0	315,681								
8/11												0	315,681								
8/12												0	315,681								

<sup>a</sup> The Alagnak tower escapement estimate of 766,962 is used to calculate the total run. The aerial survey escapement estimate of 335,661 is used in the brood table to maintain consistency with previous brood years.

<sup>b</sup> Escapements do not include aerial survey estimates of fish counted in the lower tributaries and below the tower sites.

<sup>c</sup> Count includes Nuyakuk and Mulchatna river drainages

Table 6. Total returns, harvests, escapement and harvest rates for Bristol Bay fishing districts and river systems, 2002.

District	River System	Total Run	Harvests			Escapement	Inshore Return	Harvest Rate (%)	
			Inshore	S. Pen. <sup>a</sup>	Total			Total	Inshore
<b>Naknek-Kvichak</b>									
	Kvichak	728,026	0	24,142	24,142	703,884	703,884	3	0
	Alagnak	793,267	0	26,305	26,305	766,962	766,962	3	0
	<b>Naknek</b>	<b>2,774,873</b>	<b>1,418,938</b>	<b>92,017</b>	<b>1,510,955</b>	<b>1,263,918</b>	<b>2,682,856</b>	<b>54</b>	<b>53</b>
	All combined	4,296,166	1,418,938	142,464	1,561,402	2,734,764	4,153,702	36	34
Egegik		5,840,129	4,610,374	193,663	4,804,037	1,036,092	5,646,466	82	82
Ugashik		2,563,837	1,573,234	85,019	1,658,253	905,584	2,478,818	65	63
<b>Nushagak</b>									
	Wood	3,842,244	2,431,150	127,412	2,558,562	1,283,682	3,714,832	67	65
	Igushik	213,904	83,655	7,093	90,748	123,156	206,811	42	40
	<b>Nush-Mul<sup>b</sup></b>	<b>662,889</b>	<b>325,226</b>	<b>21,982</b>	<b>347,208</b>	<b>315,681</b>	<b>640,907</b>	<b>52</b>	<b>51</b>
	All combined	4,719,037	2,840,031	156,487	2,996,518	1,722,519	4,562,550	63	62
Togiak		406,290	214,240	13,473	227,713	178,577	392,817	56	55
<b>Bay-wide totals</b>		<b>17,825,459</b>	<b>10,656,817</b>	<b>591,106</b>	<b>11,247,923</b>	<b>6,577,536</b>	<b>17,234,353</b>	<b>63</b>	<b>62</b>

<sup>a</sup> S. Pen. = South Alaska Peninsula. The South Alaska Peninsula harvest refers to all sockeye salmon caught during June fisheries around Unimak and Shumagin Islands.

<sup>b</sup> Nush-Mul = Nushagak-Mulchatna River drainage.

Table 7. Annual inshore harvests, escapement, and harvest rates for Bristol Bay sockeye salmon, by district, 1956-2002.

Year	Inshore Catch					Escapement										Inshore Harvest Rate(%)					
	Nak-Kvichak	Egegik	Ugashik	Nushagak	Togiak	Kvichak	Alagnak	Naknek	Egegik	Ugashik	Wood	Igushik	Snake	Nushagak	Togiak	Nak-Kvi	Egegik	Ugashik	Nushagak	Togiak	
1956	5,987,750	1,187,099	341,499	1,303,186	101,933	9,443,318	784,000	1,772,595	1,104,268	425,295	773,101	400,000	4,000	35,000	225,000	33	52	45	52	31	
1957	4,578,643	814,459	350,858	441,499	40,044	2,842,810	126,595	634,645	391,207	214,802	288,727	130,000	3,000	77,000	25,000	56	68	62	47	62	
1958	922,611	500,684	433,813	1,092,156	36,402	534,785	94,650	278,118	246,354	279,546	960,455	107,478	9,000	201,000	72,000	50	67	61	46	34	
1959	1,689,425	662,391	423,414	1,719,887	113,202	680,000	825,431	2,231,807	1,072,459	219,228	2,209,266	643,808	139,950	48,881	209,640	31	208	66	36	35	
1960	9,847,848	1,446,884	752,634	1,517,988	139,848	14,630,000	1,240,530	828,381	1,798,764	2,304,200	1,016,073	495,087	16,589	145,500	162,810	37	45	25	48	46	
1961	8,166,983	2,686,076	357,223	455,003	188,788	3,705,849	90,036	351,078	701,538	348,639	460,737	294,252	4,856	99,788	122,254	66	79	51	35	61	
1962	2,281,284	638,862	243,159	1,446,786	92,273	2,580,884	90,630	723,066	1,027,482	255,426	873,888	15,660	1,760	46,390	61,952	40	38	49	61	60	
1963	957,902	695,582	188,695	822,954	185,506	338,760	203,304	905,358	997,602	388,254	721,404	92,184	37,960	212,308	116,196	40	41	33	44	61	
1964	2,243,701	1,103,935	576,768	1,391,790	242,489	957,120	248,700	1,349,604	849,576	472,770	1,076,112	128,532	12,436	121,924	104,874	47	57	55	51	70	
1965	19,139,567	3,179,559	925,690	793,323	210,953	24,325,926	175,020	717,798	1,444,608	996,612	675,156	180,840	12,000	231,270	96,486	43	69	48	42	69	
1966	5,397,538	2,101,174	445,458	1,170,272	191,479	3,775,184	174,336	1,016,445	804,246	704,436	1,208,682	206,360	4,500	211,184	104,198	52	72	39	42	65	
1967	2,337,200	1,070,942	163,744	657,711	71,512	3,216,208	202,626	755,640	636,864	238,830	515,772	281,772	11,000	66,908	81,330	36	63	41	43	47	
1968	1,216,858	695,582	82,457	749,281	64,589	2,557,440	193,872	1,023,222	338,654	70,896	649,344	194,508	4,100	128,712	49,918	24	66	54	43	56	
1969	4,655,072	889,322	169,845	773,207	129,615	8,394,204	182,490	1,331,202	1,015,554	160,380	604,338	512,328	9,300	86,620	116,666	32	47	51	39	53	
1970	17,803,805	1,403,509	171,541	1,188,534	152,748	13,935,306	177,060	732,502	919,734	735,024	1,161,964	370,920	23,800	409,472	202,896	55	60	19	38	43	
1971	5,857,378	1,306,682	954,068	1,256,799	200,507	2,327,392	187,302	935,754	634,014	529,752	851,202	210,960	8,500	282,720	200,242	63	67	64	48	50	
1972	1,102,365	839,820	17,440	381,347	51,354	1,009,962	151,188	586,618	546,402	79,428	430,602	60,018	2,000	36,030	78,570	39	61	18	42	40	
1973	168,249	221,337	3,920	272,092	75,694	226,554	35,894	356,676	328,842	38,988	330,474	59,508	9,915	190,410	106,930	21	40	9	32	41	
1974	538,163	172,253	2,151	510,571	110,932	4,433,844	214,848	1,241,058	1,275,630	61,854	1,708,836	358,752	15,266	184,614	103,592	8	12	3	18	52	
1975	3,085,416	964,024	14,558	645,903	184,856	13,140,450	100,480	2,026,686	1,173,840	429,336	1,270,116	241,096	9,518	752,318	180,562	17	45	3	22	51	
1976	2,547,276	1,329,788	174,923	1,265,422	293,016	1,965,282	81,822	1,320,750	509,160	356,308	817,008	186,120	12,728	470,420	189,390	43	72	33	46	61	
1977	2,167,214	1,780,567	92,623	619,025	201,904	1,341,144	100,000	1,085,856	692,514	201,520	561,828	95,970	8,304	552,954	162,534	46	72	31	34	55	
1978	5,123,658	1,207,294	7,995	3,137,166	422,100	4,149,288	229,400	813,378	895,698	82,435	2,267,238	536,154	18,074	663,666	306,176	50	57	9	47	58	
1979	14,991,826	2,257,332	391,118	3,327,347	393,337	11,218,434	294,200	925,362	1,032,042	1,706,904	1,706,352	659,580	8,439	498,420	198,238	55	69	19	52	66	
1980	15,120,457	2,623,066	885,875	4,497,787	591,470	22,505,268	297,900	2,644,698	1,060,860	3,335,284	2,969,040	1,987,530	36,500	3,317,368	526,750	73	71	21	35	53	
1981	10,992,809	4,361,406	2,116,066	7,493,093	620,288	17,543,558	82,210	1,796,220	694,680	1,327,699	1,233,318	591,144	14,571	1,008,604	307,130	37	66	61	72	67	
1982	5,005,802	2,447,514	1,139,192	5,916,187	581,718	1,134,840	239,300	1,155,552	1,034,628	1,185,551	976,470	423,768	11,640	600,864	288,674	66	70	49	75	67	
1983	21,559,372	6,755,256	3,349,451	5,119,744	529,776	3,569,982	96,220	888,294	792,282	1,001,364	1,360,968	180,438	3,080	404,006	212,640	83	90	77	72	71	
1984	14,546,710	5,190,413	2,859,376	1,992,681	213,213	10,490,670	215,370	1,242,474	1,165,345	1,270,318	1,002,792	184,872	33,840	592,872	150,978	55	82	68	52	59	
1985	8,179,093	7,537,273	6,468,862	1,307,689	133,263	7,211,048	118,030	1,849,938	1,095,182	1,006,407	939,000	212,454	34,880	498,462	153,482	47	87	87	44	46	
1986	2,892,171	4,852,935	5,002,949	2,719,313	191,158	1,179,322	230,180	1,977,645	1,151,750	1,015,582	818,652	307,728	16,780	990,238	203,384	46	81	83	56	48	
1987	4,986,002	5,356,869	2,128,652	3,254,720	274,613	6,065,880	154,210	1,061,806	1,273,553	686,894	1,337,172	169,236	1,520	388,034	278,276	41	81	76	63	50	
1988	3,480,836	6,456,599	1,523,520	1,706,716	673,408	4,065,216	194,630	1,037,862	1,612,745	654,412	866,778	170,454	4,320	483,200	309,012	40	80	70	53	69	
1989	13,809,956	8,901,994	3,146,239	2,788,165	68,375	8,317,500	196,760	1,161,984	1,611,566	1,713,267	1,186,410	461,610	28,060	513,421	104,240	59	85	65	56	40	
1990	17,272,224	10,371,762	2,149,009	3,532,543	168,012	6,970,020	168,760	2,092,578	2,191,912	749,478	1,069,440	385,802	28,840	680,368	166,297	65	83	74	62	50	
1991	10,475,206	6,797,166	2,945,742	5,053,845	522,090	4,222,788	277,589	3,578,508	2,786,965	2,482,016	1,159,920	756,126	10,920	492,522	254,088	56	71	54	68	67	
1992	9,395,948	15,646,575	3,320,866	2,789,741	610,575	4,725,864	224,643	1,606,650	1,945,632	2,194,927	1,286,250	304,920		695,108	209,516	59	89	60	55	74	
1993	8,907,876	21,600,858	4,176,900	5,236,557	475,799	4,025,166	347,975	1,535,658	1,517,000	1,413,454	1,176,126	405,564		715,099	188,610	60	93	75	70	72	
1994	16,327,858	10,750,213	4,352,797	3,393,143	321,121	8,337,840	242,595	990,810	1,897,977	1,095,068	1,471,890	445,920	22,480	509,326	174,172	63	85	80	58	65	
1995	20,279,581	14,425,979	4,509,446	4,445,900	527,142	10,038,720	215,713	1,111,140	1,266,692	1,321,108	1,482,162	473,382	17,380	281,307	211,226	64	92	77	66	71	
1996	8,211,983	10,809,115	4,411,055	5,693,523	384,603	1,450,578	306,750	1,078,098	1,076,460	692,167	1,649,598	400,746		503,651	187,174	74	91	86	69	87	
1997	589,311	7,517,389	1,402,690	2,506,818	91,639	1,503,732	218,115	1,025,664	1,104,004	656,641	1,512,396	127,704	8,394	373,035	152,223	18	87	68	55	38	
1998	2,595,439	3,528,845	730,238	2,990,597	113,012	2,296,074	252,200	1,202,172	1,110,938	924,853	1,755,768	215,904	11,120	458,874	175,476	41	76	44	55	39	
1999	9,452,972	7,388,080	2,256,007	6,175,419	346,749	6,196,914	463,600	1,625,364	1,728,397	1,662,042	1,512,426	445,536		311,899	196,136	53	81	58	73	64	
2000	4,727,081	7,050,899	1,538,790	6,367,208	727,384	1,827,780	451,300	1,375,488	1,032,138	638,420	1,300,026	413,316		403,500	352,245	56	87	71	75	67	
2001	5,280,538	2,872,662	480,509	4,734,800	798,426	1,095,348	267,000	1,830,360	968,872	866,368	1,458,732	409,596		811,104	363,346	62	75	36	64	72	
2002	1,418,938	4,610,374	1,573,234	2,840,031	214,240	703,884	766,962	1,263,918	1,036,092	905,584	1,283,682	123,156		315,681	178,577	34	82	63	62	55	
<b>Averages</b>																					
1956-61	5,188,877	1,216,266	443,240	1,088,253	103,336	5,306,127	526,874	1,016,104	885,765	631,952	951,393	345,104	29,566	101,192	136,117	43	58	41	43	43	
1962-71	6,189,031	1,306,112	392,143	1,025,066	154,167	8,246,842	183,534	949,059	866,833	455,238	833,786	219,406	12,536	179,751	113,476	46	60	46	45	58	
1972-81	5,583,744	1,575,689	370,667	2,214,975	294,405	6,174,458	158,733	1,279,720	820,967	761,978	1,329,481	497,584	12,732	767,480	215,987	42	66	33	46	58	
1982-91	10,220,																				

Table 8. Summary of age composition in the catch and escapement by district and river system for major age classes of Bristol Bay sockeye salmon, 2002.

District	River System	Percent of Total by Age Class											
		1.2			2.2			1.3			2.3		
		Catch	Esc.	Total <sup>a</sup>	Catch	Esc.	Total <sup>a</sup>	Catch	Esc.	Total <sup>a</sup>	Catch	Esc.	Total <sup>a</sup>
<b>Naknek-Kvichak</b>													
	Kvichak	0.0	44.4	44.4	0.0	36.2	36.2	0.0	14.8	14.8	0.0	2.3	2.3
	Alagnak	0.0	46.5	46.5	0.0	14.8	14.8	0.0	34.4	34.4	0.0	2.5	2.5
	Naknek	18.3	27.2	22.5	33.2	25.7	29.7	31.6	29.8	30.8	13.4	12.1	12.8
	All combined	18.3	37.1	30.7	33.2	25.3	28.0	31.6	27.2	28.7	13.4	6.9	9.1
Egegik		2.1	0.5	1.8	62.5	55.3	61.2	5.9	3.7	5.5	28.0	36.5	29.6
Ugashik		2.8	16.9	8.0	65.0	52.9	60.6	26.6	28.6	27.3	4.5	0.8	3.2
<b>Nushagak</b>													
	Wood	74.6	77.8	75.7	4.0	4.7	4.3	18.4	16.0	17.6	0.3	0.4	0.4
	Igushik	66.8	67.3	67.1	5.1	4.5	4.8	24.5	24.3	24.4	1.1	2.2	1.8
	Nush-Mul <sup>b</sup>	72.2	21.2	47.1	3.7	0.4	2.1	20.6	56.6	38.4	0.3	1.1	0.7
	All combined	74.1	66.7	71.3	4.0	3.9	4.0	18.8	24.1	20.8	0.3	0.7	0.5
Togiak		9.7	17.6	13.3	4.0	3.9	3.9	75.4	74.8	75.1	7.5	2.5	5.2
<b>Bay-wide totals</b>		<b>23.7</b>	<b>35.8</b>	<b>28.3</b>	<b>42.2</b>	<b>27.7</b>	<b>36.7</b>	<b>17.2</b>	<b>24.2</b>	<b>19.9</b>	<b>14.8</b>	<b>9.0</b>	<b>12.6</b>

<sup>a</sup> The total column represents the age composition of the total inshore return (catch and escapement).

<sup>b</sup> Nush-Mul = Nushagak-Mulchatna River drainage.

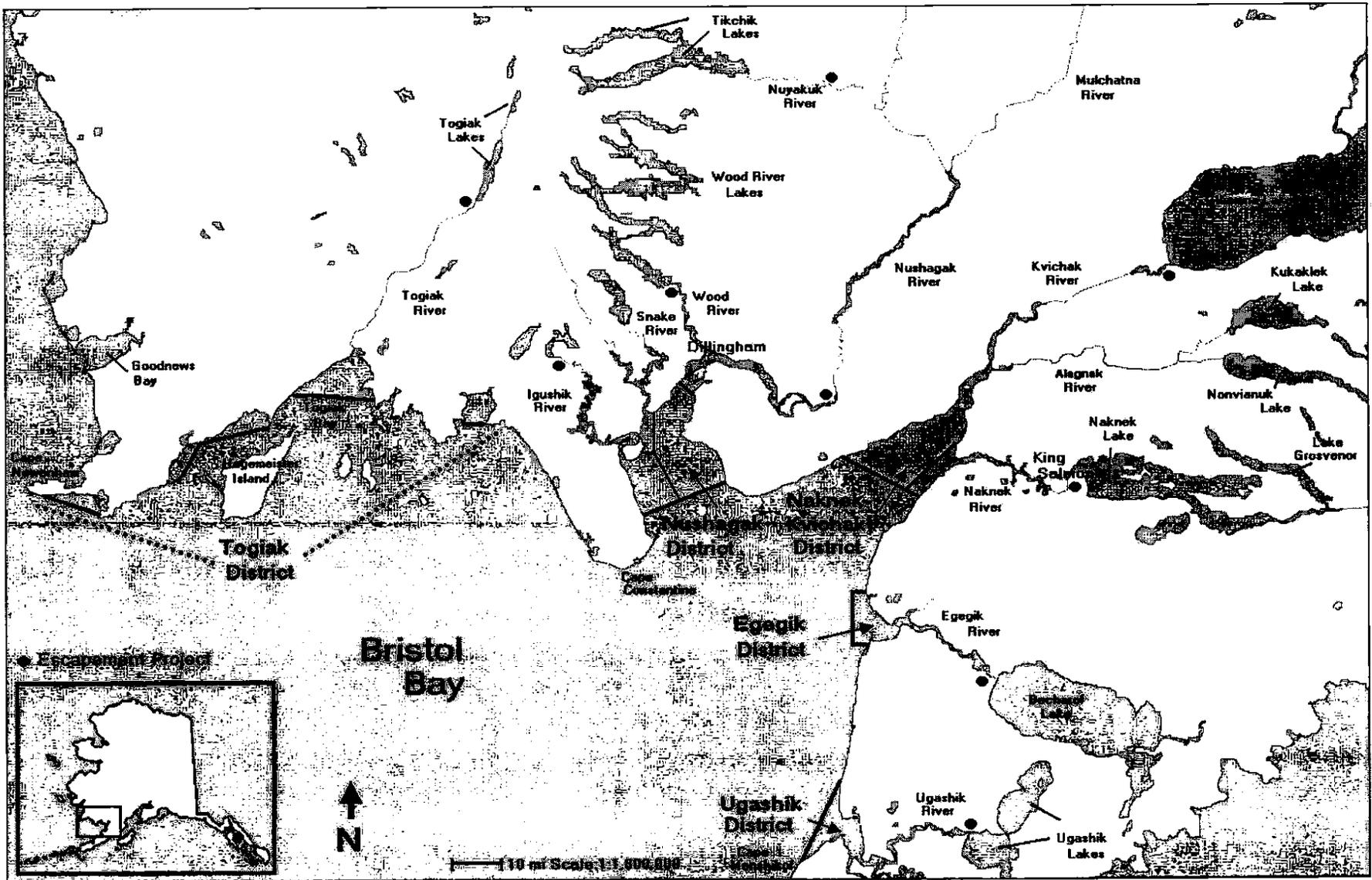


Figure 1. Bristol Bay major river systems and commercial salmon fishing districts.



Appendix A.1. Age, sex, and size (length in mm and weight in kg) composition of sockeye salmon commercial catch, Naknek River Special Harvest Area, Naknek-Kvichak District, 2002.

	Age Group									Total
	0.2	1.2	1.3	2.2	1.4	2.3	3.2	2.4	3.3	
<u>Sample Period 1: June 28</u>										
Males	6,617	11,994	7,237	1,654	6,410			207		34,119
Percent	7.60	13.78	8.31	1.90	7.36			0.24		39.19
Sample Size	32	58	35	8	31			1		165
Mean Length	495	571	514	593	586			547		548
Std. Error	6	4	8	19	4					3
Sample Size	32	58	35	8	31			1		165
Mean Weight	2.01	3.26	2.80		3.84					3.02
Std. Error	0.16	0.13	0.26		0.22					0.09
Sample Size	9	13	7		5					34
Females	12,407	17,369	13,027	2,895	7,030		207			52,935
Percent	14.25	19.95	14.96	3.33	8.08		0.24			60.81
Sample Size	60	84	63	14	34		1			256
Mean Length	479	559	490	567	574		537			526
Std. Error	5	3	4	14	5					2
Sample Size	60	84	62	14	34		1			255
Mean Weight	1.81	2.78	1.78	3.27	3.11		1.45			2.37
Std. Error	0.11	0.09	0.11	0.30	0.12					0.05
Sample Size	10	15	6	4	7		1			43
Both Sexes	19,024	29,363	20,264	4,549	13,440		207	207		87,054
Percent	21.85	33.73	23.28	5.23	15.44		0.24	0.24		100.00
Sample Size	92	142	98	22	65		1	1		421
Mean Length	485	564	498	577	580		537	547		534
Std. Error	4	3	4	11	3					2
Sample Size	92	142	97	22	65		1	1		420
Mean Weight	1.88	2.98	2.14	3.27	3.46		1.45			2.62
Std. Error	0.09	0.07	0.12	0.30	0.12					0.05
Sample Size	19	28	13	4	12		1			77
<u>Sample Period 2: June 29</u>										
Males	13,026	20,552	18,526	3,474	5,211					60,789
Percent	10.64	16.78	15.13	2.84	4.26					49.65
Sample Size	45	71	64	12	18					210
Mean Length	492	583	513	619	598					545
Std. Error	5	3	4	8	6					2
Sample Size	45	71	64	12	18					210
Mean Weight	1.99	3.25	2.53	3.35	3.69					2.80
Std. Error	0.15	0.12	0.10	0.13	0.33					0.07
Sample Size	9	17	8	3	4					41
Females	8,105	29,238	12,158	2,026	9,553		289	289		61,658
Percent	6.62	23.88	9.93	1.65	7.80		0.24	0.24		50.35
Sample Size	28	101	42	7	33		1	1		213
Mean Length	490	560	506	592	569		573	555		543
Std. Error	5	2	5	12	3					2
Sample Size	28	101	42	7	33		1	1		213
Mean Weight	1.81	2.70	2.18		3.17					2.54
Std. Error	0.14	0.07	0.10		0.08					0.05
Sample Size	7	24	10		7					48
Both Sexes	21,131	49,790	30,684	5,500	14,764		289	289		122,447
Percent	17.26	40.66	25.06	4.49	12.06		0.24	0.24		100.00
Sample Size	73	172	106	19	51		1	1		423
Mean Length	491	570	510	609	579		573	555		544
Std. Error	4	2	3	7	3					1
Sample Size	73	172	106	19	51		1	1		423
Mean Weight	1.92	2.93	2.38	3.35	3.35					2.68
Std. Error	0.11	0.06	0.07	0.13	0.13					0.04
Sample Size	16	41	18	3	11					89

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Appendix A.I. (Page 2 of 5)

	Age Group								Total	
	0.2	1.2	1.3	2.2	1.4	2.3	3.2	2.4		3.3
<u>Sample Period 3: June 30</u>										
Males	26,130	27,789	31,729	2,281	8,917	207				97,053
Percent	14.35	15.26	17.43	1.25	4.90	0.11				53.30
Sample Size	126	134	153	11	43	1				468
Mean Length	499	572	517	592	579	549				535
Std. Error	3	3	3	7	5					1
Sample Size	126	133	153	11	43	1				467
Mean Weight	2.20	3.15	2.27	3.32	3.60					2.65
Std. Error	0.12	0.10	0.09	0.42	0.22					0.06
Sample Size	22	36	36	2	6					102
Females	14,309	29,656	23,019	2,281	15,346	207	207			85,025
Percent	7.86	16.29	12.64	1.25	8.43	0.11	0.11			46.70
Sample Size	69	143	111	11	74	1	1			410
Mean Length	498	557	510	570	572	536	587			537
Std. Error	5	2	3	11	3					1
Sample Size	69	143	109	10	74	1	1			407
Mean Weight	2.02	2.77	2.15	2.81	2.57					2.44
Std. Error	0.13	0.09	0.08	0.57	0.16					0.05
Sample Size	14	31	29	3	10					87
Both Sexes	40,439	57,445	54,748	4,562	24,263	414	207			182,078
Percent	22.21	31.55	30.07	2.51	13.33	0.23	0.11			100.00
Sample Size	195	277	264	22	117	2	1			878
Mean Length	498	564	514	581	575	543	587			536
Std. Error	2	2	2	7	3					1
Sample Size	195	276	262	21	117	2	1			874
Mean Weight	2.14	2.95	2.22	3.07	2.95					2.55
Std. Error	0.09	0.07	0.06	0.36	0.13					0.04
Sample Size	36	67	65	5	16					189
<u>Sample Period 4: July 1</u>										
Males	29,556	37,079	41,379	3,224	14,509					125,747
Percent	12.64	15.86	17.70	1.38	6.21					53.79
Sample Size	55	69	77	6	27					234
Mean Length	480	564	492	588	568					521
Std. Error	5	4	4	5	8					2
Sample Size	55	69	77	6	27					234
Mean Weight	2.20	3.06	2.16	3.40	3.25					2.59
Std. Error	0.10	0.21	0.14	0.45	0.12					0.08
Sample Size	9	8	15	2	7					41
Females	19,883	37,079	37,617	1,612	11,822					108,013
Percent	8.51	15.86	16.09	0.69	5.06					46.21
Sample Size	37	69	70	3	22					201
Mean Length	472	555	492	543	557					518
Std. Error	4	4	3	24	6					2
Sample Size	37	69	70	3	22					201
Mean Weight	1.86	2.89	1.89	3.78	2.77					2.35
Std. Error	0.06	0.07	0.08		0.25					0.05
Sample Size	8	17	19	1	4					49
Both Sexes	49,439	74,158	78,996	4,836	26,331					233,760
Percent	21.15	31.72	33.79	2.07	11.26					100.00
Sample Size	92	138	147	9	49					435
Mean Length	477	559	492	573	563					520
Std. Error	3	3	2	9	5					2
Sample Size	92	138	147	9	49					435
Mean Weight	2.06	2.98	2.03	3.53	3.03					2.48
Std. Error	0.07	0.11	0.08	0.45	0.13					0.05
Sample Size	17	25	34	3	11					90

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Appendix A.1. (Page 3 of 5)

	Age Group								Total	
	0.2	1.2	1.3	2.2	1.4	2.3	3.2	2.4		3.3
<u>Sample Period 5: July 2</u>										
Males	6,260	22,025	12,979	2,753	10,226					56,243
Percent	8.68	23.14	13.64	2.89	10.74					59.09
Sample Size	42	112	66	14	52					286
Mean Length	501	578	516	627	578					555
Std. Error	5	3	5	7	6					2
Sample Size	42	112	66	14	52					286
Mean Weight	2.39	3.42	2.49	4.17	3.59					3.12
Std. Error	0.16	0.08	0.15	0.29	0.10					0.06
Sample Size	13	35	25	5	22					100
Females	7,670	12,192	11,209	787	7,080					38,938
Percent	8.06	12.81	11.78	0.83	7.44					40.91
Sample Size	39	62	57	4	36					198
Mean Length	501	563	499	535	568					533
Std. Error	7	4	4	41	4					2
Sample Size	39	62	57	4	36					198
Mean Weight	2.08	3.10	2.02	3.29	2.94					2.56
Std. Error	0.25	0.12	0.09	0.13	0.13					0.07
Sample Size	11	18	22	1	7					59
Both Sexes	15,930	34,217	24,188	3,540	17,306					95,181
Percent	16.74	35.95	25.41	3.72	18.18					100.00
Sample Size	81	174	123	18	88					484
Mean Length	501	573	508	606	574					546
Std. Error	4	2	3	11	4					2
Sample Size	81	174	123	18	88					484
Mean Weight	2.24	3.31	2.27	3.97	3.32					2.89
Std. Error	0.15	0.07	0.09	0.29	0.08					0.04
Sample Size	24	53	47	6	29					159
<u>Sample Period 6: July 4</u>										
Males	21,687	46,845	43,809	4,771	10,844		434			128,390
Percent	9.58	20.69	19.35	2.11	4.79		0.19			56.71
Sample Size	50	108	101	11	25		1			296
Mean Length	497	574	512	607	575		532			541
Std. Error	4	3	3	8	8					2
Sample Size	50	108	101	11	24		1			295
Mean Weight	2.29	3.45	2.33		3.62					2.86
Std. Error	0.26	0.13	0.14		0.13					0.08
Sample Size	2	21	21		4					48
Females	13,012	36,002	32,965	4,337	11,711					98,027
Percent	5.75	15.90	14.56	1.92	5.17					43.29
Sample Size	30	83	76	10	27					226
Mean Length	491	557	504	592	563					533
Std. Error	7	2	4	7	5					2
Sample Size	30	83	76	10	27					226
Mean Weight	2.04	2.85	1.93	3.49	3.42					2.53
Std. Error	0.35	0.09	0.07	0.22	0.13					0.06
Sample Size	4	17	11	4	1					37
Both Sexes	34,699	82,847	76,774	9,108	22,555		434			226,417
Percent	15.33	36.59	33.91	4.02	9.96		0.19			100.00
Sample Size	80	191	177	21	52		1			522
Mean Length	495	567	508	600	569		532			537
Std. Error	4	2	2	5	5					1
Sample Size	80	191	177	21	51		1			521
Mean Weight	2.20	3.19	2.16	3.49	3.52					2.71
Std. Error	0.21	0.09	0.08	0.22	0.13					0.05
Sample Size	6	38	32	4	5					85

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Appendix A.1. (Page 4 of 5)

	Age Group									Total
	0.2	1.2	1.3	2.2	1.4	2.3	3.2	2.4	3.3	
<u>Sample Period 7: July 5 - 6</u>										
Males	15,030	19,924	24,817	2,796	11,185					73,752
Percent	9.79	12.98	16.17	1.82	7.29					48.06
Sample Size	43	57	71	8	32					211
Mean Length	500	584	512	601	592					544
Std. Error	4	4	4	11	6					2
Sample Size	43	57	71	8	32					211
Mean Weight	2.09	3.71	2.45	4.63	3.63					2.98
Std. Error	0.09	0.12	0.08	0.46	0.18					0.06
Sample Size	8	15	12	3	6					44
Females	10,836	19,574	33,554	1,049	14,331	350				79,694
Percent	7.06	12.76	21.87	0.68	9.34	0.23				51.94
Sample Size	31	56	96	3	41	1				228
Mean Length	485	561	497	553	566	413				524
Std. Error	4	4	3	39	3					2
Sample Size	31	56	96	3	41	1				228
Mean Weight	1.79	2.99	1.94		2.9					2.36
Std. Error	0.12	0.10	0.07		0.11					0.05
Sample Size	5	12	20		5					42
Both Sexes	25,866	39,498	58,371	3,845	25,516	350				153,446
Percent	16.86	25.74	38.04	2.51	16.63	0.23				100.00
Sample Size	74	113	167	11	73	1				439
Mean Length	494	573	504	588	577	413				534
Std. Error	3	3	2	13	3					1
Sample Size	74	113	167	11	73	1				439
Mean Weight	1.96	3.35	2.16	4.63	3.22					2.66
Std. Error	0.07	0.08	0.05	0.46	0.10					0.04
Sample Size	13	27	32	3	11					86
<u>Sample Period 8: July 7 - 10</u>										
Males	24,859	26,678	47,293	6,669	18,189					123,688
Percent	11.55	12.39	21.97	3.10	8.45					57.46
Sample Size	41	44	78	11	30					204
Mean Length	491	574	515	582	580					536
Std. Error	5	6	4	10	5					2
Sample Size	41	44	78	11	30					204
Mean Weight	2.24	3.57	2.37	4.06	3.68					2.89
Std. Error	0.14	0.18	0.12	0.26	0.21					0.07
Sample Size	7	9	13	2	8					39
Females	11,520	26,678	40,016	606	12,733					91,553
Percent	5.35	12.39	18.59	0.28	5.92					42.54
Sample Size	19	44	66	1	21					151
Mean Length	472	560	502	560	554					523
Std. Error	7	4	4		9					3
Sample Size	19	44	66	1	21					151
Mean Weight	1.75	2.96	1.98		2.93					2.37
Std. Error	0.10	0.10	0.09		0.19					0.06
Sample Size	3	8	16		7					34
Both Sexes	36,379	53,356	87,309	7,275	30,922					215,241
Percent	16.90	24.79	40.56	3.38	14.37					100.00
Sample Size	60	88	144	12	51					355
Mean Length	485	567	509	580	570					530
Std. Error	4	3	3	10	5					2
Sample Size	60	88	144	12	51					355
Mean Weight	2.08	3.27	2.19	4.06	3.37					2.67
Std. Error	0.10	0.10	0.07	0.26	0.15					0.05
Sample Size	10	17	29	2	15					73

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Appendix A.1. (Page 5 of 5)

	Age Group									Total
	0.2	1.2	1.3	2.2	1.4	2.3	3.2	2.4	3.3	
<u>Sample Period 9: July 11 - 24</u>										
Males		8,842	13,729	16,521	1,396	6,283				46,771
Percent		8.56	13.29	15.99	1.35	6.08				45.27
Sample Size		38	59	71	6	27				201
Mean Length		499	582	519	608	594				546
Std. Error		5	3	4	5	4				2
Sample Size		38	59	70	6	27				200
Mean Weight		2.39	3.47	2.21	4.15	3.40				2.83
Std. Error		0.44	0.11	0.11		0.12				0.1
Sample Size		7	19	24	1	8				59
Females	233	8,377	14,194	23,733	1,396	8,610				56,543
Percent	0.23	8.11	13.74	22.97	1.35	8.33				54.73
Sample Size	1	36	61	102	6	37				243
Mean Length	393	492	559	502	585	571				527
Std. Error		5	3	2	10	3				2
Sample Size	1	35	61	100	6	37				240
Mean Weight	0.90	1.99	2.81	2.07	3.21	2.97				2.40
Std. Error		0.24	0.11	0.07		0.10				0.06
Sample Size	1	9	16	30	1	12				69
Both Sexes	233	17,219	27,923	40,254	2,792	14,893				103,314
Percent	0.23	16.67	27.03	38.96	2.70	14.42				100.00
Sample Size	1	74	120	173	12	64				444
Mean Length	393	496	571	509	596	580				536
Std. Error		3	2	2	5	2				1
Sample Size	1	73	120	170	12	64				440
Mean Weight	0.90	2.20	3.13	2.13	3.68	3.15				2.60
Std. Error		0.25	0.08	0.06		0.08				0.05
Sample Size	1	16	35	54	2	20				128
<u>All Periods Combined:</u>										
Males		154,007	226,615	244,290	29,018	91,774	207	641		746,552
Percent		10.85	15.97	17.22	2.05	6.47	0.01	0.05		52.61
Sample Size		472	712	716	87	285	1	2		2,275
Mean Length		493	574	511	600	561	549	537		539
Std. Error		2	1	1	3	2				1
Sample Size		472	711	715	87	284	1	2		2,272
Mean Weight		2.20	3.36	2.34	3.87	3.57				2.82
Std. Error		0.06	0.05	0.05	0.14	0.06				0.03
Sample Size		86	173	161	18	70				508
Females	233	106,119	221,982	227,298	16,989	98,216	764	496	289	672,386
Percent	0.02	7.48	15.64	16.02	1.20	6.92	0.05	0.03	0.02	47.39
Sample Size	1	349	703	683	59	325	3	2	1	2,126
Mean Length	393	485	558	500	573	565	480	579	555	528
Std. Error		2	1	1	5	2				1
Sample Size	1	348	703	678	58	325	3	2	1	2,119
Mean Weight	0.90	1.90	2.86	1.98	3.32	2.95	1.45			2.43
Std. Error		0.06	0.03	0.03	0.19	0.06				0.02
Sample Size	1	71	158	163	14	60	1			468
Both Sexes	233	260,126	448,597	471,588	46,007	189,990	971	1,137	289	1,418,938
Percent	0.02	18.33	31.61	33.24	3.24	13.39	0.07	0.08	0.02	100.00
Sample Size	1	821	1,415	1,399	146	610	4	4	1	4,401
Mean Length	393	490	567	506	590	573	495	555	555	534
Std. Error		1	1	1	3	1				1
Sample Size	1	820	1,414	1,393	145	609	4	4	1	4,391
Mean Weight	0.90	2.08	3.11	2.17	3.67	3.25	1.45			2.64
Std. Error		0.04	0.03	0.03	0.11	0.04				0.02
Sample Size	1	157	331	324	32	130	1			976

Appendix A.2. Age, sex, and size (length in mm) composition of sockeye salmon escapement, Kvichak River, 2002.

	Age Group											Total
	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	2.4	
<u>Sample Period 1: June 1 - July 6</u>												
Males				82,913			31,407	72,864		8,794		195,978
Percent				18.64			7.06	16.38		1.98		44.07
Sample Size				66			25	58		7		156
Mean Length				515			575	537		588		536
Std. Error				4			10	4		7		3
Sample Size				66			25	58		7		156
Females				95,477			46,482	97,989	5,025	3,769		248,742
Percent				21.47			10.45	22.03	1.13	0.85		55.93
Sample Size				76			37	78	4	3		198
Mean Length				504			561	523	554	545		524
Std. Error				3			6	4	32	35		2
Sample Size				76			37	78	4	3		198
Both Sexes				178,390			77,889	170,853	5,025	12,563		444,720
Percent				40.11			17.51	38.42	1.13	2.82		100.00
Sample Size				142			62	136	4	10		354
Mean Length				509			567	529	554	575		529
Std. Error				2			5	3	32	12		2
Sample Size				142			62	136	4	10		354
<u>Sample Period 2: July 7 - 10</u>												
Males	256	256		29,907	256	511	5,112	23,262	767	1,278		61,605
Percent	0.20	0.20		23.08	0.20	0.39	3.94	17.95	0.59	0.99		47.53
Sample Size	1	1		117	1	2	20	91	3	5		241
Mean Length	412	342		524	379	610	593	543	638	626		539
Std. Error				3		34	7	4	7	6		2
Sample Size	1	1		117	1	2	20	91	3	5		241
Females				28,375		256	10,480	26,073	1,022	1,789		67,995
Percent				21.89		0.20	8.09	20.12	0.79	1.38		52.47
Sample Size				111		1	41	102	4	7		266
Mean Length				509		621	578	525	598	578		530
Std. Error				2			4	2	14	15		1
Sample Size				111		1	41	102	4	7		266
Both Sexes	256	256		58,282	256	767	15,592	49,335	1,789	3,067		129,600
Percent	0.20	0.20		44.97	0.20	0.59	12.03	38.07	1.38	2.37		100.00
Sample Size	1	1		228	1	3	61	193	7	12		507
Mean Length	412	342		517	379	613	583	534	615	598		534
Std. Error				2		34	3	2	9	9		1
Sample Size	1	1		228	1	3	61	193	7	12		507

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Appendix A.2. (Page 2 of 2)

	Age Group										Total	
	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3		2.4
<b>Sample Period 3: July 11 - 18</b>												
Males	2,404	267	1,069	34,729	267		3,206	12,556	801	267		55,566
Percent	1.86	0.21	0.83	26.8	0.21		2.47	9.69	0.62	0.21		42.89
Sample Size	9	1	4	130	1		12	47	3	1		208
Mean Length	373	349	612	493	392		586	540	610	560		507
Std. Error	46		32	5			8	4	15			4
Sample Size	9	1	4	111	1		11	46	3	1		187
Females	1,069	534	534	41,140	534		7,213	21,906	801		267	73,998
Percent	0.83	0.41	0.41	31.75	0.41		5.57	16.91	0.62		0.21	57.11
Sample Size	4	2	2	154	2		27	82	3		1	277
Mean Length	426	372	556	492	340		576	521	564		531	508
Std. Error	6	10	6	3	15		5	3	3			2
Sample Size	3	2	2	141	2		27	82	2		1	262
Both Sexes	3,473	801	1,603	75,869	801		10,419	34,462	1,602	267	267	129,564
Percent	2.68	0.62	1.24	58.56	0.62		8.04	26.6	1.24	0.21	0.21	100.00
Sample Size	13	3	6	284	3		39	129	6	1	1	485
Mean Length	390	364	593	493	357		579	528	587	560	531	507
Std. Error	32	10	21	3	15		4	2	8			2
Sample Size	12	3	6	252	3		38	128	5	1	1	449
<b>All Periods Combined:</b>												
Males	2,660	523	1,069	147,549	523	511	39,725	108,682	1,568	10,339		313,149
Percent	0.38	0.07	0.15	20.96	0.07	0.07	5.64	15.44	0.22	1.47		44.49
Sample Size	10	2	4	313	2	2	57	196	6	13		605
Mean Length	377	346	612	511	386	610	578	538	624	592		531
Std. Error	46		32	3		34	8	3	8	6		2
Sample Size	10	2	4	294	2	2	56	195	6	13		584
Females	1,069	534	534	164,992	534	256	64,175	145,968	6,848	5,558	267	390,735
Percent	0.15	0.08	0.08	23.44	0.08	0.04	9.12	20.74	0.97	0.79	0.04	55.51
Sample Size	4	2	2	341	2	1	105	262	11	10	1	741
Mean Length	426	372	556	502	340	621	565	523	561	555	531	522
Std. Error	6	10	6	2	15		4	3	23	24		2
Sample Size	3	2	2	328	2	1	105	262	10	10	1	726
Both Sexes	3,729	1,057	1,603	312,541	1,057	767	103,900	254,650	8,416	15,897	267	703,884
Percent	0.53	0.15	0.23	44.40	0.15	0.11	14.76	36.18	1.20	2.26	0.04	100.00
Sample Size	14	4	6	654	4	3	162	458	17	23	1	1,346
Mean Length	391	359	593	506	362	613	570	530	573	579	531	526
Std. Error	32	10	21	2	15	34	4	2	19	9		1
Sample Size	13	4	6	622	4	3	161	457	16	23	1	1,310

Appendix A.3. Age, sex, and size (length in mm) composition of sockeye salmon escapement, Naknek River, 2002.

	Age Group						Total	
	1.2	2.1	1.3	2.2	1.4	2.3		2.4
<u>Sample Period 1: June 19 - 27</u>								
Males	30,788		60,143	23,628	16,468	22,912	2,148	156,087
Percent	12.11		23.66	9.30	6.48	9.01	0.85	61.41
Sample Size	43		84	33	23	32	3	218
Mean Length	451		591	482	608	585	615	548
Std. Error	5		2	6	7	6	5	2
Sample Size	43		84	33	23	32	3	218
Females	5,012		48,687	12,172	13,604	17,900	716	98,091
Percent	1.97		19.15	4.79	5.35	7.04	0.28	38.59
Sample Size	7		68	17	19	25	1	137
Mean Length	478		563	494	588	569	567	555
Std. Error	7		3	8	5	5		2
Sample Size	7		68	17	19	25	1	137
Both Sexes	35,800		108,830	35,800	30,072	40,812	2,864	254,178
Percent	14.08		42.82	14.08	11.83	16.06	1.13	100.00
Sample Size	50		152	50	42	57	4	355
Mean Length	455		579	486	599	578	603	551
Std. Error	4		2	5	5	4	5	1
Sample Size	50		152	50	42	57	4	355
<u>Sample Period 2: June 28 - July 1</u>								
Males	83,149	777	70,716	90,919	12,434	30,307	777	289,079
Percent	17.80	0.17	15.14	19.47	2.66	6.49	0.17	61.90
Sample Size	107	1	91	117	16	39	1	372
Mean Length	461	395	585	479	619	585	645	517
Std. Error	3		3	3	6	5		2
Sample Size	107	1	91	117	16	39	1	372
Females	21,759		75,378	24,090	13,211	43,517		177,955
Percent	4.66		16.14	5.16	2.83	9.32		38.10
Sample Size	28		97	31	17	56		229
Mean Length	470		560	494	591	569		545
Std. Error	4		2	3	5	3		2
Sample Size	28		97	31	17	56		229
Both Sexes	104,908	777	146,094	115,009	25,645	73,824	777	467,034
Percent	22.46	0.17	31.28	24.63	5.49	15.81	0.17	100.00
Sample Size	135	1	188	148	33	95	1	601
Mean Length	463	395	572	482	604	576	645	528
Std. Error	3		2	3	4	3		1
Sample Size	135	1	188	148	33	95	1	601

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	Age Group							Total
	1.2	2.1	1.3	2.2	1.4	2.3	2.4	
<u>Sample Period 3: July 2 - 15</u>								
Males	115,218	2,154	50,609	79,683	3,230	15,075		265,969
Percent	21.23	0.40	9.33	14.68	0.60	2.78		49.01
Sample Size	107	2	47	74	3	14		247
Mean Length	476	358	579	495	592	570		507
Std. Error	3	3	4	4	20	13		2
Sample Size	107	2	47	74	3	14		247
Females	88,297		71,069	94,758		22,613		276,737
Percent	16.27		13.10	17.46		4.17		50.99
Sample Size	82		66	88		21		257
Mean Length	474		558	499		561		511
Std. Error	2		3	3		4		1
Sample Size	82		66	88		21		257
Both Sexes	203,515	2,154	121,678	174,441	3,230	37,688		542,706
Percent	37.50	0.40	22.42	32.14	0.60	6.94		100.00
Sample Size	189	2	113	162	3	35		504
Mean Length	475	358	567	497	592	565		509
Std. Error	2	3	2	3	20	6		1
Sample Size	189	2	113	162	3	35		504
<u>All Periods Combined:</u>								
Males	229,155	2,931	181,468	194,230	32,132	68,294	2,925	711,135
Percent	18.13	0.23	14.36	15.37	2.54	5.40	0.23	56.26
Sample Size	257	3	222	224	42	85	4	837
Mean Length	467	367	585	486	611	582	623	520
Std. Error	2	3	2	2	5	4	5	1
Sample Size	257	3	222	224	42	85	4	837
Females	115,068		195,134	131,020	26,815	84,030	716	552,783
Percent	9.10		15.44	10.37	2.12	6.65	0.06	43.74
Sample Size	117		231	136	36	102	1	623
Mean Length	474		560	498	589	567	567	530
Std. Error	2		2	2	4	2		1
Sample Size	117		231	136	36	102	1	623
Both Sexes	344,223	2,931	376,602	325,250	58,947	152,324	3,641	1,263,918
Percent	27.23	0.23	29.80	25.73	4.66	12.05	0.29	100.00
Sample Size	374	3	453	360	78	187	5	1,460
Mean Length	469	367	572	491	601	574	612	524
Std. Error	2	3	1	2	3	2	5	1
Sample Size	374	3	453	360	78	187	5	1,460

Appendix A.4. Age, sex, and size (length in mm and weight in kg) composition of sockeye salmon commercial catch, Egegik District, 2002.

	Age Group									Total	
	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4		3.3
<b>Sample Period 1: June 5 - 25</b>											
Males	767		8,815	48,291		1,150	44,460	767	767	383	105,400
Percent	0.45		5.22	28.57		0.68	26.30	0.45	0.45	0.23	62.36
Sample Size	2		23	126		3	116	2	2	1	275
Mean Length	494		586	526		597	590	522	605	600	559
Std. Error	30		5	2		5	3	8	6		2
Sample Size	2		23	125		3	116	2	2	1	274
Mean Weight	2.75		3.58	2.40		3.47	3.45				2.97
Std. Error			0.23	0.10			0.12				0.07
Sample Size	1		5	30		1	21				58
Females	383		5,749	21,847		767	32,961	383	767	767	63,624
Percent	0.23		3.40	12.93		0.45	19.50	0.23	0.45	0.45	37.64
Sample Size	1		15	57		2	86	1	2	2	166
Mean Length	517		574	513		575	580	530	548	566	555
Std. Error			6	3		20	2		11	2	2
Sample Size	1		15	57		2	85	1	2	2	165
Mean Weight	2.34		2.84	2.12			2.95		2.32		2.63
Std. Error			0.16	0.09			0.08				0.06
Sample Size	1		6	11			14		1		33
Both Sexes	1,150		14,564	70,138		1,917	77,421	1,150	1,534	1,150	169,024
Percent	0.68		8.62	41.50		1.13	45.80	0.68	0.91	0.68	100.00
Sample Size	3		38	183		5	202	3	4	3	441
Mean Length	502		582	522		588	586	524	576	577	558
Std. Error	30		4	2		9	2	8	6	2	1
Sample Size	3		38	182		5	201	3	4	3	439
Mean Weight	2.61		3.29	2.31		3.47	3.24		2.32		2.84
Std. Error			0.15	0.08			0.08				0.05
Sample Size	2		11	41		1	35		1		91
<b>Sample Period 2: June 26</b>											
Males	2,551		13,392	66,324		1,913	76,527	638	1,913		163,258
Percent	0.88		4.64	22.96		0.66	26.49	0.22	0.66		56.51
Sample Size	4		21	104		3	120	1	3		256
Mean Length	510		590	526		606	592	500	629		564
Std. Error	8		4	2		21	2		14		2
Sample Size	4		21	103		3	119	1	3		254
Mean Weight			3.46	2.32		5.05	3.68	1.91			3.10
Std. Error				0.12			0.13				0.08
Sample Size			1	12		1	11	1			26
Females	1,275		12,755	46,554		3,826	60,584			638	125,632
Percent	0.44		4.42	16.11		1.32	20.97			0.22	43.49
Sample Size	2		20	73		6	95			1	197
Mean Length	512		566	513		579	573			564	550
Std. Error			5	2		8	2				1
Sample Size	1		20	73		6	94			1	195
Mean Weight	1.96		3.16	2.12			2.91				2.62
Std. Error	0.34		0.19	0.09			0.07				0.05
Sample Size	2		3	5			16				26
Both Sexes	3,826		26,147	112,878		5,739	137,111	638	1,913	638	288,890
Percent	1.32		9.05	39.07		1.99	47.46	0.22	0.66	0.22	100.00
Sample Size	6		41	177		9	215	1	3	1	453
Mean Length	511		578	520		588	584	500	629	564	558
Std. Error	8		3	2		9	2		14		1
Sample Size	5		41	176		9	213	1	3	1	449
Mean Weight	1.96		3.31	2.24		5.05	3.34	1.91			2.90
Std. Error	0.34		0.19	0.08			0.08				0.05
Sample Size	2		4	17		1	27	1			52

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	Age Group									Total	
	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4		3.3
<u>Sample Period 3: June 27</u>											
Males	1,108		4,987	56,519		1,108	37,679	554		1,108	103,063
Percent	0.49		2.20	24.94		0.49	16.63	0.24		0.49	45.48
Sample Size	2		9	102		2	68	1		2	186
Mean Length	490		594	527		621	596	544		606	557
Std. Error	30		11	3		1	3			8	2
Sample Size	2		9	102		2	68	1		2	186
Mean Weight	1.64		4.07	2.23		3.88	3.53	2.50			2.81
Std. Error			0.11	0.08			0.10				0.08
Sample Size	1		2	12		1	13	1			30
Females	554		8,312	50,423		1,108	62,059	554		554	123,564
Percent	0.24		3.67	22.25		0.49	27.38	0.24		0.24	54.52
Sample Size	1		15	91		2	112	1		1	223
Mean Length	483		574	503		560	579	494		592	546
Std. Error			10	5		18	2				2
Sample Size	1		15	91		2	112	1		1	223
Mean Weight			2.54	1.79			2.95	1.88			2.44
Std. Error			0.46	0.04			0.13				0.08
Sample Size			3	36			15	1			55
Both Sexes	1,662		13,299	106,942		2,216	99,738	1,108		1,662	226,627
Percent	0.73		5.87	47.19		0.98	44.01	0.49		0.73	100.00
Sample Size	3		24	193		4	180	2		3	409
Mean Length	487		581	515		590	585	519		601	551
Std. Error	30		7	3		9	2			8	2
Sample Size	3		24	193		4	180	2		3	409
Mean Weight	1.64		3.11	2.02		3.88	3.17	2.19			2.61
Std. Error			0.29	0.05			0.09				0.05
Sample Size	1		5	48		1	28	2			85
<u>Sample Period 4: June 28</u>											
Males	897		26,021	124,723		1,795	96,010	897			250,343
Percent	0.23		6.62	31.74		0.46	24.43	0.23			63.70
Sample Size	1		29	139		2	107	1			279
Mean Length	514		597	531		610	596	522			563
Std. Error			4	2		8	3				2
Sample Size	1		29	139		2	107	1			279
Mean Weight			3.16	2.45			3.61				2.98
Std. Error			0.19	0.07			0.11				0.06
Sample Size			6	27			20				53
Females			9,870	65,503		3,589	63,707				142,669
Percent			2.51	16.67		0.91	16.21				36.30
Sample Size			11	73		4	71				159
Mean Length			584	511		594	577				548
Std. Error			5	3		11	2				2
Sample Size			11	73		4	71				159
Mean Weight			3.16	2.10		2.71	2.96				2.57
Std. Error			0.09	0.14		0.24	0.07				0.07
Sample Size			5	7		3	16				31
Both Sexes	897		35,891	190,226		5,384	159,717	897			393,012
Percent	0.23		9.13	48.40		1.37	40.64	0.23			100.00
Sample Size	1		40	212		6	178	1			438
Mean Length	514		594	524		599	588	522			558
Std. Error			3	2		8	2				1
Sample Size	1		40	212		6	178	1			438
Mean Weight			3.16	2.33		2.71	3.35				2.83
Std. Error			0.14	0.07		0.24	0.07				0.05
Sample Size			11	34		3	36				84

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	Age Group									Total	
	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4		3.3
<u>Sample Period 5: June 29</u>											
Males	4,152		12,456	109,340		1,384	33,909	692			161,933
Percent	1.34		4.03	35.35		0.45	10.96	0.22			52.35
Sample Size	6		18	158		2	49	1			234
Mean Length	511		583	526		602	592	490			544
Std. Error	11		7	2		6	4				2
Sample Size	6		18	158		2	49	1			234
Mean Weight			3.47	2.66		3.15	3.49				2.91
Std. Error			0.49	0.15			0.18				0.12
Sample Size			2	14		1	11				28
Females	4,844		13,840	81,659		2,076	43,597	1,384			147,400
Percent	1.57		4.47	26.40		0.67	14.09	0.45			47.65
Sample Size	7		20	118		3	63	2			213
Mean Length	507		566	513		599	575	513			537
Std. Error	4		5	2		20	3	11			2
Sample Size	7		20	118		3	63	2			213
Mean Weight			2.96	2.01			2.89				2.38
Std. Error			0.25	0.10			0.14				0.08
Sample Size			3	11			10				24
Both Sexes	8,996		26,296	190,999		3,460	77,506	2,076			309,333
Percent	2.91		8.50	61.75		1.12	25.06	0.67			100.00
Sample Size	13		38	276		5	112	3			447
Mean Length	509		574	520		600	582	505			541
Std. Error	5		4	2		12	2	11			1
Sample Size	13		38	276		5	112	3			447
Mean Weight			3.20	2.38		3.15	3.15				2.66
Std. Error			0.27	0.09			0.11				0.07
Sample Size			5	25		1	21				52
<u>Sample Period 6: June 30 - July 1</u>											
Males	9,586		15,063	245,116			84,901	1,369			356,035
Percent	1.57		2.46	40.04			13.87	0.22			58.17
Sample Size	7		11	179			62	1			260
Mean Length	520		585	529			591	540			546
Std. Error	16		12	2			3				2
Sample Size	7		11	179			62	1			260
Mean Weight			3.37	2.56			3.41	2.8			2.8
Std. Error			0.24	0.06			0.19				0.07
Sample Size			3	32			10	1			46
Females	1,369		12,324	171,171			71,207				256,071
Percent	0.22		2.01	27.96			11.63				41.83
Sample Size	1		9	125			52				187
Mean Length	427		556	511			573				530
Std. Error			8	2			3				2
Sample Size	1		9	125			52				187
Mean Weight	1.31		2.77	1.99			2.81				2.25
Std. Error			0.30	0.05			0.08				0.04
Sample Size	1		2	26			16				45
Both Sexes	10,955		27,387	416,287			156,108	1,369			612,106
Percent	1.79		4.47	68.01			25.50	0.22			100.00
Sample Size	8		20	304			114	1			447
Mean Length	508		572	522			583	540			539
Std. Error	16		8	1			2				1
Sample Size	8		20	304			114	1			447
Mean Weight	1.31		3.10	2.33			3.14	2.8			2.57
Std. Error			0.19	0.04			0.11				0.04
Sample Size	1		5	58			26	1			91

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	Age Group										Total
	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	
<u>Sample Period 7: July 2 - 3</u>											
Males	18,605		37,209	383,543		2,862	113,059			2,862	558,140
Percent	1.95		3.89	40.12		0.30	11.83			0.30	58.38
Sample Size	13		26	268		2	79			2	390
Mean Length	515		580	527		574	592			586	544
Std. Error	4		6	2		3	2			9	1
Sample Size	13		26	268		2	79			2	390
Mean Weight	2.48		3.7	2.39		3.26	3.38				2.69
Std. Error	0.08		0.15	0.08			0.14				0.06
Sample Size	3		6	34		1	17				61
Females	12,880		28,623	238,999		4,293	104,472	7,156	1,431		397,854
Percent	1.35		2.99	25.00		0.45	10.93	0.75	0.15		41.62
Sample Size	9		20	167		3	73	5	1		278
Mean Length	488		553	513		569	569	516	553		530
Std. Error	3		5	2		15	3	11			1
Sample Size	9		20	167		3	73	5	1		278
Mean Weight	1.67		2.56	1.99			2.98				2.29
Std. Error			0.22	0.12			0.12				0.08
Sample Size	1		4	9			11				25
Both Sexes	31,485		65,832	622,542		7,155	217,531	7,156	1,431	2,862	955,994
Percent	3.29		6.89	65.12		0.75	22.75	0.75	0.15	0.30	100.00
Sample Size	22		46	435		5	152	5	1	2	668
Mean Length	504		568	521		571	581	516	553	586	538
Std. Error	3		4	1		9	2	11		9	1
Sample Size	22		46	435		5	152	5	1	2	668
Mean Weight	2.15		3.20	2.24		3.26	3.19				2.52
Std. Error	0.08		0.13	0.07			0.09				0.05
Sample Size	4		10	43		1	28				86
<u>Sample Period 8: July 4</u>											
Males	1,731		6,922	142,768		865	50,185				202,471
Percent	0.46		1.83	37.84		0.23	13.30				53.67
Sample Size	2		8	165		1	58				234
Mean Length	537		573	525		643	589				543
Std. Error	20		9	2			4				2
Sample Size	2		8	165		1	58				234
Mean Weight			3.33	2.25			3.62				2.63
Std. Error			0.43	0.08			0.12				0.07
Sample Size			3	33			14				50
Females	6,057		5,192	115,080			47,589	865			174,783
Percent	1.61		1.38	30.50			12.61	0.23			46.33
Sample Size	7		6	133			55	1			202
Mean Length	498		578	514			565	521			529
Std. Error	9		5	2			5				2
Sample Size	7		6	133			55	1			202
Mean Weight	1.91			2.14			2.98				2.37
Std. Error	0.06			0.07			0.09				0.05
Sample Size	3			26			11				40
Both Sexes	7,788		12,114	257,848		865	97,774	865			377,254
Percent	2.06		3.21	68.35		0.23	25.92	0.23			100.00
Sample Size	9		14	298		1	113	1			436
Mean Length	507		575	520		643	577	521			537
Std. Error	9		6	1			3				1
Sample Size	9		14	298		1	113	1			436
Mean Weight	1.91		3.33	2.20			3.31				2.51
Std. Error	0.06		0.43	0.05			0.08				0.04
Sample Size	3		3	59			25				90

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	Age Group										Total
	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	
<b>Sample Period 9: July 5 - 8</b>											
Males	12,864		9,648	332,862		3,216	93,265	1,608			453,463
Percent	1.30		0.97	33.60		0.32	9.42	0.16			45.78
Sample Size	8		6	207		2	58	1			282
Mean Length	512		581	530		600	592	533			544
Std. Error	10		10	2		8	4				2
Sample Size	8		6	207		2	58	1			282
Mean Weight	1.47		3.60	2.45		2.93	3.84				2.74
Std. Error			0.45	0.06			0.19				0.06
Sample Size	1		2	41		1	9				54
Females	6,432	1,608	20,904	405,223	1,608		96,481	4,824			537,080
Percent	0.65	0.16	2.11	40.91	0.16		9.74	0.49			54.22
Sample Size	4	1	13	252	1		60	3			334
Mean Length	501	349	562	513	381		574	504			525
Std. Error	8		5	1			2	6			1
Sample Size	4	1	13	252	1		60	3			334
Mean Weight	1.99		2.82	2.04			2.96				2.24
Std. Error			0.11	0.03			0.09				0.03
Sample Size	1		6	47			9				63
Both Sexes	19,296	1,608	30,552	738,085	1,608	3,216	189,746	6,432			990,543
Percent	1.95	0.16	3.08	74.51	0.16	0.32	19.16	0.65			100.00
Sample Size	12	1	19	459	1	2	118	4			616
Mean Length	508	349	568	521	381	600	583	511			534
Std. Error	7		5	1		8	2	6			1
Sample Size	12	1	19	459	1	2	118	4			616
Mean Weight	1.64		3.07	2.22		2.93	3.39				2.47
Std. Error			0.16	0.03			0.10				0.03
Sample Size	2		8	88		1	18				117
<b>Sample Period 10: July 9 - August 16</b>											
Males	5,261		7,599	80,080		585	43,256				136,781
Percent	1.83		2.64	27.85		0.20	15.04				47.56
Sample Size	9		13	137		1	74				234
Mean Length	503		583	528		599	590				550
Std. Error	7		6	2			3				2
Sample Size	9		13	137		1	74				234
Mean Weight	1.93		3.09	2.22			3.33				2.61
Std. Error	0.14		0.12	0.08			0.13				0.06
Sample Size	3		3	30			20				56
Females	3,507		13,444	95,278		585	35,657	1,754		585	150,810
Percent	1.22		4.67	33.13		0.20	12.4	0.61		0.20	52.44
Sample Size	6		23	163		1	61	3		1	258
Mean Length	498		562	513		592	570	511		550	531
Std. Error	8		5	2			3	21			1
Sample Size	6		23	163		1	61	3		1	258
Mean Weight	1.95		2.66	2.03			2.56	1.96			2.21
Std. Error			0.15	0.06			0.16	0.27			0.06
Sample Size	1		3	19			7	3			33
Both Sexes	8,768		21,043	175,358		1,170	78,913	1,754		585	287,591
Percent	3.05		7.32	60.97		0.41	27.44	0.61		0.20	100.00
Sample Size	15		36	300		2	135	3		1	492
Mean Length	501		569	520		596	581	511		550	540
Std. Error	5		4	2			2	21			1
Sample Size	15		36	300		2	135	3		1	492
Mean Weight	1.94		2.82	2.12			2.98	1.96			2.40
Std. Error	0.14		0.11	0.05			0.10	0.27			0.04
Sample Size	4		6	49			27	3			89

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	Age Group										Total
	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	
<u>All Periods Combined:</u>											
Males	57,522		142,112	1,589,566		14,878	673,251	6,525	2,680	4,353	2,490,887
Percent	1.25		3.08	34.48		0.32	14.60	0.14	0.06	0.09	54.03
Sample Size	54		164	1,585		18	791	8	5	5	2,630
Mean Length	513		586	528		601	592	525	622	592	549
Std. Error	4		3	1		4	1	8	10	7	1
Sample Size	54		164	1,583		18	790	8	5	5	2,627
Mean Weight	2.05		3.47	2.42		3.53	3.55	2.51			2.79
Std. Error	0.07		0.09	0.03			0.05				0.02
Sample Size	9		33	265		6	146	3			462
Females	37,301	1,608	131,013	1,291,737	1,608	16,244	618,314	16,920	2,198	2,544	2,119,487
Percent	0.81	0.03	2.84	28.02	0.03	0.35	13.41	0.37	0.05	0.06	45.97
Sample Size	38	1	152	1,252	1	21	728	16	3	5	2,217
Mean Length	494	349	564	512	381	581	573	512	551	567	533
Std. Error	3		2	1		6	1	6	11	2	1
Sample Size	37	1	152	1,252	1	21	726	16	3	5	2,214
Mean Weight	1.82		2.80	2.03		2.71	2.91	1.94	2.32		2.34
Std. Error	0.08		0.08	0.03		0.24	0.03	0.27			0.02
Sample Size	10		35	197		3	125	4	1		375
Both Sexes	94,823	1,608	273,125	2,881,303	1,608	31,122	1,291,565	23,445	4,878	6,897	4,610,374
Percent	2.06	0.03	5.92	62.50	0.03	0.68	28.01	0.51	0.11	0.15	100.00
Sample Size	92	1	316	2,837	1	39	1,519	24	8	10	4,847
Mean Length	506	349	575	521	381	591	583	515	590	583	542
Std. Error	3		2	1		4	1	6	8	6	0
Sample Size	91	1	316	2,835	1	39	1,516	24	8	10	4,841
Mean Weight	1.94		3.16	2.25		3.34	3.24	2.24	2.32		2.58
Std. Error	0.06		0.06	0.02		0.24	0.03	0.27			0.02
Sample Size	19		68	462		9	271	7	1		837

Appendix A.5. Age, sex, and size (length in mm) composition of sockeye salmon escapement, Egegik River, 2002.

	Age Group										Total
	0.2	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	
<u>Sample Period 1: June 18 - 26</u>											
Males	1,385	1,385	13,845	74,071	2,077	2,769	98,297		1,385		195,214
Percent	0.41	0.41	4.10	21.93	0.61	0.82	29.10		0.41		57.79
Sample Size	2	2	20	107	3	4	142		2		282
Mean Length	523	342	624	513	348	634	614		602		571
Std. Error	37	1	9	4	9	19	3		49		2
Sample Size	2	2	20	106	3	4	142		2		281
Females			7,615	35,305		692	96,915		1,385	692	142,604
Percent			2.25	10.45		0.20	28.89		0.41	0.20	42.21
Sample Size			11	51		1	140		2	1	206
Mean Length			580	501		675	584		577	655	564
Std. Error			8	5			2		6		2
Sample Size			11	50		1	140		2	1	205
Both Sexes	1,385	1,385	21,460	109,376	2,077	3,461	195,212		2,770	692	337,818
Percent	0.41	0.41	6.35	32.38	0.81	1.02	57.79		0.82	0.20	100.00
Sample Size	2	2	31	158	3	5	282		4	1	488
Mean Length	523	342	608	509	348	642	599		589	655	568
Std. Error	37	1	7	3	9	19	2		25		2
Sample Size	2	2	31	156	3	5	282		4	1	486
<u>Sample Period 2: June 27 - July 3</u>											
Males	745	2,982	10,437	100,640	3,727	1,491	54,420		745	1,491	176,678
Percent	0.21	0.84	2.92	28.18	1.04	0.42	15.24		0.21	0.42	49.48
Sample Size	1	4	14	135	5	2	73		1	2	237
Mean Length	557	351	607	516	374	645	613		587	592	548
Std. Error		4	4	4	7	18	3			5	2
Sample Size	1	4	14	134	5	2	73		1	2	236
Females		745	4,473	111,823		2,236	57,402	745	1,491	1,491	180,406
Percent		0.21	1.25	31.32		0.63	16.08	0.21	0.42	0.42	50.52
Sample Size		1	6	150		3	77	1	2	2	242
Mean Length		375	575	501		588	586	520	590	588	532
Std. Error			4	2		21	3		3	5	2
Sample Size		1	6	150		3	77	1	2	2	242
Both Sexes	745	3,727	14,910	212,463	3,727	3,727	111,822	745	2,236	2,982	357,084
Percent	0.21	1.04	4.18	59.50	1.04	1.04	31.32	0.21	0.63	0.84	100.00
Sample Size	1	5	20	285	5	5	150	1	3	4	479
Mean Length	557	356	597	509	374	610	599	520	589	590	540
Std. Error		4	3	2	7	15	2		3	4	1
Sample Size	1	5	20	284	5	5	150	1	3	4	478

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	Age Group											Total
	0.2	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	
<b>Sample Period 3: July 4 - 16</b>												
Males			6,318		89,510	1,053		49,494		1,053		147,428
Percent			1.85		26.23	0.31		14.51		0.31		43.21
Sample Size			6		85	1		47		1		140
Mean Length			351		529	385		606		566		546
Std. Error			16		4			4				3
Sample Size			6		85	1		47		1		140
Females		4,212		2,106	161,118			22,114	3,159		1,053	193,762
Percent		1.23		0.62	47.22			6.48	0.93		0.31	56.79
Sample Size		4		2	153			21	3		1	184
Mean Length		497		586	504			576	492		556	513
Std. Error		24		15	2			4	9			2
Sample Size		4		2	153			21	3		1	184
Both Sexes		4,212	6,318	2,106	250,628	1,053		71,608	3,159	1,053	1,053	341,190
Percent		1.23	1.85	0.62	73.46	0.31		20.99	0.93	0.31	0.31	100.00
Sample Size		4	6	2	238	1		68	3	1	1	324
Mean Length		497	351	586	513	385		597	492	566	556	528
Std. Error		24	16	15	2			3	9			2
Sample Size		4	6	2	238	1		68	3	1	1	324
<b>All Periods Combined:</b>												
Males	745	1,385	10,685	24,282	264,221	6,857	4,260	202,211		3,183	1,491	519,320
Percent	0.07	0.13	1.03	2.34	25.5	0.66	0.41	19.52		0.31	0.14	50.12
Sample Size	1	2	12	34	327	9	6	262		4	2	659
Mean Length	557	523	350	616	520	368	638	612		587	592	556
Std. Error		37	9	5	2	5	14	2		49	5	1
Sample Size	1	2	12	34	325	9	6	262		4	2	657
Females		4,212	745	14,194	308,246		2,928	176,431	3,904	2,876	3,236	516,772
Percent		0.41	0.07	1.37	29.75		0.28	17.03	0.38	0.28	0.31	49.88
Sample Size		4	1	19	354		4	238	4	4	4	632
Mean Length		497	375	580	503		608	584	497	583	592	534
Std. Error		24		5	1		21	2	9	3	5	1
Sample Size		4	1	19	353		4	238	4	4	4	631
Both Sexes	745	5,597	11,430	38,476	572,467	6,857	7,188	378,642	3,904	6,059	4,727	1,036,092
Percent	0.07	0.54	1.10	3.71	55.25	0.66	0.69	36.55	0.38	0.58	0.46	100.00
Sample Size	1	6	13	53	681	9	10	500	4	8	6	1,291
Mean Length	557	504	351	603	511	368	626	599	497	585	592	545
Std. Error		20	9	4	1	5	12	1	9	16	4	1
Sample Size	1	6	13	53	678	9	10	500	4	8	6	1,288

Appendix A.6. Age, sex, and size (length in mm and weight in kg) composition of sockeye salmon commercial catch, Ugashik District, 2002.

	Age Group									Total
	1.2	2.1	0.4	1.3	2.2	1.4	2.3	3.2	2.4	
<b>Sample Period 1: June 11 - 22</b>										
Males	762			7,564	6,498	1,371	5,838		102	22,135
Percent	2.57			25.47	21.88	4.62	19.66		0.34	74.53
Sample Size	15			149	128	27	115		2	436
Mean Length	508			588	523	604	593		609	569
Std. Error	7			2	2	5	2		13	1
Sample Size	15			149	128	27	115		2	436
Mean Weight	2.13			3.46	2.27	3.73	3.46		3.95	3.08
Std. Error	0.12			0.07	0.05	0.22	0.07			0.04
Sample Size	8			85	57	8	70		1	229
Females	102		51	3,350	2,031	203	1,777		51	7,565
Percent	0.34		0.17	11.28	6.84	0.68	5.98		0.17	25.47
Sample Size	2		1	66	40	4	35		1	149
Mean Length	490		561	569	507	589	580		604	554
Std. Error	4			2	4	4	3			2
Sample Size	2		1	66	40	4	35		1	149
Mean Weight			2.69	3.41	2.10	3.27	3.18			2.99
Std. Error				0.60	0.10	0.03	0.10			0.27
Sample Size			1	33	16	3	15			68
Both Sexes	864		51	10,914	8,529	1,574	7,615		153	29,700
Percent	2.91		0.17	36.75	28.72	5.30	25.64		0.52	100.00
Sample Size	17		1	215	168	31	150		3	585
Mean Length	506		561	582	519	602	590		607	565
Std. Error	6			2	2	4	2		13	1
Sample Size	17		1	215	168	31	150		3	585
Mean Weight	2.13		2.69	3.44	2.23	3.67	3.39		3.95	3.06
Std. Error	0.12			0.19	0.05	0.19	0.06			0.07
Sample Size	8		1	118	73	11	85		1	297
<b>Sample Period 2: June 23 - July 8</b>										
Males	14,569			163,170	275,835	3,885	9,712			467,171
Percent	2.14			23.93	40.46	0.57	1.42			68.52
Sample Size	15			168	284	4	10			481
Mean Length	516			592	534	623	578			556
Std. Error	16			2	2	6	12			1
Sample Size	15			168	284	4	10			481
Mean Weight	1.89			3.62	2.50	4.14	4.00			2.92
Std. Error	0.44			0.09	0.06		0.12			0.05
Sample Size	3			43	57	1	2			106
Females	1,942			78,671	122,378	4,856	6,799			214,646
Percent	0.28			11.54	17.95	0.71	1.00			31.48
Sample Size	2			81	126	5	7			221
Mean Length	495			571	518	577	551			540
Std. Error	9			2	2	8	14			1
Sample Size	2			81	126	5	7			221
Mean Weight	1.82			2.98	2.13	2.89	2.62			2.47
Std. Error				0.07	0.05					0.04
Sample Size	1			20	27	1	1			50
Both Sexes	16,511			241,841	398,213	8,741	16,511			681,817
Percent	2.42			35.47	58.4	1.28	2.42			100.00
Sample Size	17			249	410	9	17			702
Mean Length	513			585	529	597	567			551
Std. Error	14			1	1	5	9			1
Sample Size	17			249	410	9	17			702
Mean Weight	1.88			3.41	2.39	3.45	3.43			2.78
Std. Error	0.44			0.06	0.05		0.12			0.04
Sample Size	4			63	84	2	3			156

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	Age Group									Total
	1.2	2.1	0.4	1.3	2.2	1.4	2.3	3.2	2.4	
<u>Sample Period 3: July 9 - August 16</u>										
Males	10,949			73,361	263,880		22,994	1,095		372,279
Percent	1.27			8.51	30.62		2.67	0.13		43.20
Sample Size	10			67	241		21	1		340
Mean Length	512			594	539		593	539		553
Std. Error	16			4	2		5			1
Sample Size	10			67	241		21	1		340
Mean Weight	2.00			3.45	2.58		3.31	2.74		2.78
Std. Error	0.39			0.14	0.05		0.23			0.05
Sample Size	4			18	71		6	1		100
Females	16,424	1,095		91,975	351,475	4,380	24,089			489,438
Percent	1.91	0.13		10.67	40.79	0.51	2.80			56.80
Sample Size	15	1		84	321	4	22			447
Mean Length	495	379		569	517	589	567			529
Std. Error	7			3	1	7	4			1
Sample Size	15	1		84	321	4	22			447
Mean Weight	1.90			2.85	2.02	3.32	2.81			2.22
Std. Error	0.17			0.06	0.03		0.12			0.03
Sample Size	7			36	96	1	7			147
Both Sexes	27,373	1,095		165,336	615,355	4,380	47,083	1,095		861,717
Percent	3.18	0.13		19.19	71.41	0.51	5.46	0.13		100.00
Sample Size	25	1		151	562	4	43	1		787
Mean Length	502	379		580	526	589	580	539		539
Std. Error	8			2	1	7	3			1
Sample Size	25	1		151	562	4	43	1		787
Mean Weight	1.94			3.12	2.26	3.32	3.05	2.74		2.46
Std. Error	0.19			0.07	0.03		0.13			0.03
Sample Size	11			54	167	1	13	1		247
<u>All Periods Combined:</u>										
Males	26,280			244,095	546,213	5,256	38,544	1,095	102	861,585
Percent	1.67			15.52	34.72	0.33	2.45	0.07	0.01	54.77
Sample Size	40			384	653	31	146	1	2	1,257
Mean Length	514			592	537	618	589	539	609	555
Std. Error	11			2	1	4	5		13	1
Sample Size	40			384	653	31	146	1	2	1,257
Mean Weight	1.94			3.56	2.54	4.03	3.51	2.74	3.95	2.86
Std. Error	0.29			0.07	0.04	0.22	0.14			0.03
Sample Size	15			146	185	9	78	1	1	435
Females	18,468	1,095	51	173,996	475,884	9,439	32,865		51	711,649
Percent	1.17	0.07	0.00	11.06	30.25	0.60	2.08		0.00	45.23
Sample Size	19	1	1	231	487	13	64		1	817
Mean Length	495	379	561	570	517	583	565		604	532
Std. Error	6			2	1	5	4			1
Sample Size	19	1	1	231	487	13	64		1	817
Mean Weight	1.89		2.69	2.92	2.05	3.10	2.79			2.31
Std. Error	0.17			0.05	0.03	0.03	0.11			0.02
Sample Size	8		1	89	139	5	23			265
Both Sexes	44,748	1,095	51	418,091	1,022,097	14,695	71,209	1,095	153	1,573,234
Percent	2.84	0.07	0.00	26.58	64.97	0.93	4.53	0.07	0.01	100.00
Sample Size	59	1	1	615	1,140	44	210	1	3	2,074
Mean Length	506	379	561	583	528	595	578	539	607	545
Std. Error	7			1	1	4	3		13	1
Sample Size	59	1	1	615	1,140	44	210	1	3	2,074
Mean Weight	1.92		2.69	3.30	2.31	3.43	3.18	2.74	3.95	2.61
Std. Error	0.19			0.05	0.02	0.19	0.10			0.02
Sample Size	23		1	235	324	14	101	1	1	700

Appendix A.7. Age, sex, and size (length in mm) composition of sockeye salmon escapement, Ugashik River, 2002.

	Age Group								Total <sup>a</sup>	
	1.1	1.2	2.1	1.3	2.2	1.4	2.3	2.4		
<u>Sample Period: June 29 - July 11</u>										
Males	1,389	29,159		24,299	65,953		2,083			122,883
Percent	0.65	13.59		11.33	30.74		0.97			57.28
Sample Size	2	42		35	95		3			177
Mean Length	348	477		601	541		592			536
Std. Error	2	7		5	3		24			3
Sample Size	2	42		35	94		3			176
Females	694	9,025		31,936	47,209	694	1,389	694		91,641
Percent	0.32	4.21		14.89	22.01	0.32	0.65	0.32		42.72
Sample Size	1	13		46	68	1	2	1		132
Mean Length	378	495		575	515	536	539	589		534
Std. Error		8		3	2		32			2
Sample Size	1	13		46	68	1	2	1		132
Both Sexes	2,083	38,184		56,235	113,162	694	3,472	694		214,524
Percent	0.97	17.80		26.21	52.75	0.32	1.62	0.32		100.00
Sample Size	3	55		81	163	1	5	1		309
Mean Length	358	481		587	530	536	571	589		535
Std. Error	2	6		3	2		19			2
Sample Size	3	55		81	162	1	5	1		308
<u>Sample Period 2: July 12 - 16</u>										
Males	913	46,546		63,887	128,686		1,825			241,857
Percent	0.15	7.69		10.56	21.27		0.30			39.97
Sample Size	1	51		70	141		2			265
Mean Length	430	493		607	543		593			550
Std. Error		6		3	2		34			2
Sample Size	1	51		70	141		2			265
Females	913	42,895		109,520	208,090		1,825			363,243
Percent	0.15	7.09		18.10	34.39		0.30			60.03
Sample Size	1	47		120	228		2			398
Mean Length	405	498		572	512		559			529
Std. Error		2		2	1		2			1
Sample Size	1	47		120	228		2			398
Both Sexes	1,826	89,441		173,407	336,776		3,650			605,100
Percent	0.30	14.78		28.66	55.66		0.60			100.00
Sample Size	2	98		190	369		4			663
Mean Length	418	495		585	524		576			537
Std. Error		3		2	1		17			1
Sample Size	2	98		190	369		4			663

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	Age Group								Total <sup>a</sup>	
	1.1	1.2	2.1	1.3	2.2	1.4	2.3	2.4		
<u>Sample Period 3: July 17 - 24</u>										
Males	1,243	12,424		10,976	7,662					32,305
Percent	1.71	17.14		15.14	10.57					44.57
Sample Size	6	60		53	37					156
Mean Length	400	495		604	528					536
Std. Error	15	5		3	4					2
Sample Size	6	60		53	37					156
Females	207	10,354	207	14,704	14,703					40,175
Percent	0.29	14.29	0.29	20.29	20.29					55.43
Sample Size	1	50	1	71	71					194
Mean Length	384	491	384	571	507					525
Std. Error		3		2	3					2
Sample Size	1	50	1	71	71					194
Both Sexes	1,450	22,778	207	25,680	22,365					72,480
Percent	2.00	31.43	0.29	35.43	30.86					100.00
Sample Size	7	110	1	124	108					350
Mean Length	398	493	384	585	514					530
Std. Error	15	3		2	2					1
Sample Size	7	110	1	124	108					350
<u>All Periods Combined:</u>										
Males	3,545	88,129		99,162	202,301		3,908			397,045
Percent	0.40	9.88		11.12	22.68		0.44			44.51
Sample Size	9	153		158	273		5			598
Mean Length	387	488		605	542		592			545
Std. Error	7	4		2	2		20			1
Sample Size	9	153		158	272		5			597
Females	1,814	62,274	207	156,160	270,002	694	3,214	694		495,059
Percent	0.20	6.98	0.02	17.50	30.27	0.08	0.36	0.08		55.49
Sample Size	3	110	1	237	367	1	4	1		724
Mean Length	392	497	384	573	513	536	550	589		530
Std. Error		2		1	1		14			1
Sample Size	3	110	1	237	367	1	4	1		724
Both Sexes	5,359	150,403	207	255,322	472,303	694	7,122	694		892,104
Percent	0.60	16.86	0.02	28.62	52.94	0.08	0.80	0.08		100.00
Sample Size	12	263	1	395	640	1	9	1		1,322
Mean Length	389	491	384	586	525	536	573	589		536
Std. Error	7	3		1	1		13			1
Sample Size	12	263	1	395	639	1	9	1		1,321

<sup>a</sup> Total does not include escapement (13,480) to King Salmon and Dog Salmon Rivers.

Appendix A.8. Age, sex, and size (length in mm and weight in kg) composition of sockeye salmon commercial catch, Nushagak District, 2002.

	Age Group								Total <sup>a</sup>
	0.2	0.3	1.2	0.4	1.3	2.2	1.4	2.3	
<u>Sample Period 1: June 21 - 29</u>									
Males	1,151	4,602	337,114		135,766	11,506	17,258	4,602	511,999
Percent	0.14	0.55	40.41		16.28	1.38	2.07	0.55	61.38
Sample Size	1	4	293		118	10	15	4	445
Mean Length	398	559	498		561	517	595	586	520
Std. Error		7	2		3	11	11	7	1
Sample Size	1	4	293		118	10	15	4	445
Mean Weight	1.19	3.71	2.23		3.46	2.33	4.27	2.36	2.64
Std. Error			0.03		0.09	0.27	0.15		0.03
Sample Size	1	1	112		44	4	7	1	170
Females	1,151	1,151	215,153	2,301	81,690	12,656	8,054		322,156
Percent	0.14	0.14	25.79	0.28	9.79	1.52	0.97		38.62
Sample Size	1	1	187	2	71	11	7		280
Mean Length	422	537	484	600	541	492	564		501
Std. Error			2	35	3	13	17		2
Sample Size	1	1	187	2	71	11	7		280
Mean Weight	1.39		2.08	4.18	2.89	2.00	3.19		2.32
Std. Error			0.15		0.08	0.10	0.40		0.11
Sample Size	1		65	1	28	5	3		103
Both Sexes	2,302	5,753	552,267	2,301	217,456	24,162	25,312	4,602	834,155
Percent	0.28	0.69	66.21	0.28	26.07	2.90	3.03	0.55	100.00
Sample Size	2	5	480	2	189	21	22	4	725
Mean Length	410	555	493	600	554	504	585	586	513
Std. Error		7	1	35	2	8	9	7	1
Sample Size	2	5	480	2	189	21	22	4	725
Mean Weight	1.29	3.71	2.17	4.18	3.25	2.16	3.93	2.36	2.52
Std. Error			0.06		0.07	0.14	0.16		0.05
Sample Size	2	1	177	1	72	9	10	1	273
<u>Sample Period 2: June 30 - July 1</u>									
Males	928	1,856	219,004		76,095	11,136	11,136	928	321,083
Percent	0.13	0.25	29.69		10.31	1.51	1.51	0.13	43.52
Sample Size	1	2	236		82	12	12	1	346
Mean Length	429	522	502		578	517	613	618	525
Std. Error		11	2		3	9	5		2
Sample Size	1	2	236		82	12	12	1	346
Mean Weight	1.41		2.19		3.62	2.46	3.86		2.60
Std. Error			0.09		0.16	0.16	0.23		0.07
Sample Size	1		25		10	1	4		41
Females		3,712	325,722	928	67,743	14,848	3,712		416,665
Percent		0.50	44.15	0.13	9.18	2.01	0.50		56.48
Sample Size		4	351	1	73	16	4		449
Mean Length		549	482	609	546	482	544		494
Std. Error		8	1		3	7	10		1
Sample Size		4	351	1	73	16	4		449
Mean Weight			1.70		2.79	1.83			1.89
Std. Error			0.02		0.14	0.11			0.03
Sample Size			82		9	2			93
Both Sexes	928	5,568	544,726	928	143,838	25,984	14,848	928	737,748
Percent	0.13	0.75	73.84	0.13	19.50	3.52	2.01	0.13	100.00
Sample Size	1	6	587	1	155	28	16	1	795
Mean Length	429	540	490	609	563	497	595	618	507
Std. Error		7	1		2	5	5		1
Sample Size	1	6	587	1	155	28	16	1	795
Mean Weight	1.41		1.90		3.23	2.10	3.86		2.20
Std. Error			0.04		0.11	0.11	0.23		0.04
Sample Size	1		107		19	3	4		134

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	Age Group							Total <sup>a</sup>	
	0.2	0.3	1.2	0.4	1.3	2.2	1.4		2.3
<u>Sample Period 3: July 2 - 11</u>									
Males			295,555		59,924	20,313	7,110		382,902
Percent			42.98		8.71	2.95	1.03		55.69
Sample Size			291		59	20	7		377
Mean Length			507		556	500	571		515
Std. Error			1		5	5	21		1
Sample Size			291		59	20	7		377
Mean Weight			2.16		3.22	2.13	3.22		2.34
Std. Error			0.05		0.21	0.16	0.42		0.05
Sample Size			60		11	4	4		79
Females		1,016	239,693	1,016	44,689	12,188	5,078	1,016	304,696
Percent		0.15	34.86	0.15	6.50	1.77	0.74	0.15	44.31
Sample Size		1	236	1	44	12	5	1	300
Mean Length		560	488	535	542	479	558	560	498
Std. Error			2		3	5	16		1
Sample Size		1	236	1	44	12	5	1	300
Mean Weight		3.27	1.88	2.58	2.68	1.94	3.03		2.03
Std. Error			0.07		0.06	0.01	0.03		0.05
Sample Size		1	39	1	5	2	2		50
Both Sexes		1,016	535,248	1,016	104,613	32,501	12,188	1,016	687,598
Percent		0.15	77.84	0.15	15.21	4.73	1.77	0.15	100.00
Sample Size		1	527	1	103	32	12	1	677
Mean Length		560	498	535	550	492	565	560	507
Std. Error			1		3	4	14		1
Sample Size		1	527	1	103	32	12	1	677
Mean Weight		3.27	2.03	2.58	2.99	2.06	3.14		2.20
Std. Error			0.04		0.12	0.10	0.25		0.04
Sample Size		1	99	1	16	6	6		129
<u>All Periods Combined:</u>									
Males	2,079	6,458	851,673		271,785	42,955	35,504	5,530	215,984
Percent	0.09	0.29	37.69		12.03	1.90	1.57	0.24	53.82
Sample Size	2	6	820		259	42	34	5	1,168
Mean Length	412	548	502		565	509	596	591	520
Std. Error		6	1		2	4	7	7	1
Sample Size	2	6	820		259	42	34	5	1,168
Mean Weight	1.29	3.71	2.20		3.45	2.27	3.93	2.36	2.54
Std. Error			0.03		0.08	0.14	0.13		0.03
Sample Size	2	1	197		65	9	15	1	290
Females	1,151	5,879	780,568	4,245	194,122	39,692	16,844	1,016	43,517
Percent	0.05	0.26	34.55	0.19	8.59	1.76	0.75	0.04	46.18
Sample Size	1	6	774	4	188	39	16	1	1,029
Mean Length	422	548	484	586	543	484	558	560	497
Std. Error		8	1	35	2	5	10		1
Sample Size	1	6	774	4	188	39	16	1	1,029
Mean Weight	1.39	3.27	1.86	3.69	2.81	1.92	3.13		2.06
Std. Error			0.05		0.06	0.05	0.24		0.04
Sample Size	1	1	186	2	42	9	5		246
Both Sexes	3,230	12,337	1,632,241	4,245	465,907	82,647	52,348	6,546	2,259,501
Percent	0.14	0.55	72.24	0.19	20.62	3.66	2.32	0.29	100.00
Sample Size	3	12	1,594	4	447	81	50	6	2,197
Mean Length	415	548	494	586	556	497	583	587	509
Std. Error		5	1	35	1	3	6	7	1
Sample Size	3	12	1,594	4	447	81	50	6	2,197
Mean Weight	1.32	3.63	2.04	3.69	3.18	2.10	3.71	2.36	2.32
Std. Error			0.03		0.05	0.07	0.12		0.02
Sample Size	3	2	383	2	107	18	20	1	536

<sup>a</sup> Total does not include Igushik Beach setnet catch (22,786) or Wood River Special Harvest Area (557,744).

Appendix A.9. Age, sex, and size (length in mm and weight in kg) composition of sockeye salmon commercial catch, Wood River Special Harvest Area, Nushagak District, 2002.

	Age Group							Total	
	0.2	0.3	1.2	2.1	1.3	2.2	1.4		2.3
<u>Sample Period 1: July 5 - 6</u>									
Males			12,215		3,979	6,015	185	370	22,764
Percent			26.45		8.62	13.03	0.40	0.80	49.30
Sample Size			132		43	65	2	4	246
Mean Length			499		572	530	604	593	522
Std. Error			2		6	4	4	10	2
Sample Size			132		43	65	2	4	246
Mean Weight			2.68		3.50	2.74	3.70	3.43	2.86
Std. Error			0.19		0.22	0.05	0.26	0.21	0.11
Sample Size			7		20	56	2	4	89
Females			16,935		2,961	3,146	185	185	23,412
Percent			36.67		6.41	6.81	0.40	0.40	50.70
Sample Size			183		32	34	2	2	253
Mean Length			483		556	502	525	585	496
Std. Error			2		5	5	35	5	1
Sample Size			181		32	34	2	2	251
Mean Weight			2.24		2.82	2.42	2.70	3.16	2.35
Std. Error					0.11	0.10			0.02
Sample Size			1		18	22	1	1	43
Both Sexes			29,150		6,940	9,161	370	555	46,176
Percent			63.13		15.03	19.84	0.80	1.20	100.00
Sample Size			315		75	99	4	6	499
Mean Length			490		565	520	564	590	509
Std. Error			1		4	3	18	7	1
Sample Size			313		75	99	4	6	497
Mean Weight			2.42		3.21	2.63	3.20	3.34	2.60
Std. Error			0.19		0.13	0.05	0.26	0.21	0.06
Sample Size			8		38	78	3	5	132
<u>Sample Period 2: July 7 - 9</u>									
Males			117,751		12,223	6,112	815		136,901
Percent			40.65		4.22	2.11	0.28		47.26
Sample Size			289		30	15	2		336
Mean Length			500		559	501	524		505
Std. Error			1		6	7	6		1
Sample Size			289		30	15	2		336
Mean Weight			2.27		2.98	2.10			2.33
Std. Error			0.04		0.33	0.08			0.04
Sample Size			68		6	5			79
Females	407	407	135,681		11,001	4,889		407	152,792
Percent	0.14	0.14	46.84		3.80	1.69		0.14	52.74
Sample Size	1	1	333		27	12		1	375
Mean Length	405	505	478		533	479		540	482
Std. Error			1		4	4			1
Sample Size	1	1	333		27	12		1	375
Mean Weight	1.07		1.77		2.61	1.76			1.83
Std. Error			0.03		0.12	0.11			0.03
Sample Size	1		61		3	3			68
Both Sexes	407	407	253,432		23,224	11,001	815	407	289,693
Percent	0.14	0.14	87.48		8.02	3.80	0.28	0.14	100.00
Sample Size	1	1	622		57	27	2	1	711
Mean Length	405	505	488		547	491	524	540	493
Std. Error			1		4	4	6		1
Sample Size	1	1	622		57	27	2	1	711
Mean Weight	1.07		2.00		2.80	1.95			2.06
Std. Error			0.02		0.18	0.07			0.03
Sample Size	1		129		9	8			147

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	Age Group <sup>a</sup>							Total	
	0.2	0.3	1.2	2.1	1.3	2.2	1.4		2.3
<u>Sample Period 3: July 10 - 22</u>									
Males	671		70,155		20,140	4,364	671	671	96,672
Percent	0.30		31.62		9.08	1.97	0.30	0.30	43.57
Sample Size	2		209		60	13	2	2	288
Mean Length	443		504		569	513	574	586	518
Std. Error	21		2		4	9	14	9	2
Sample Size	2		209		60	13	2	2	288
Mean Weight	1.52		2.10		3.51	2.16			2.40
Std. Error	0.17		0.08		0.14	0.37			0.07
Sample Size	2		22		4	2			30
Females		336	108,754	336	10,070	5,035	336	336	125,203
Percent		0.15	49.02	0.15	4.54	2.27	0.15	0.15	56.43
Sample Size		1	324	1	30	15	1	1	373
Mean Length		539	480	360	534	478	560	522	484
Std. Error			1		7	4			1
Sample Size		1	324	1	30	15	1	1	373
Mean Weight		1.52	1.75		2.53	1.69		2.46	1.61
Std. Error			0.04		0.43	0.07			0.05
Sample Size		1	53		4	6		1	65
Both Sexes	671	336	178,909	336	30,210	9,399	1,007	1,007	221,875
Percent	0.30	0.15	80.64	0.15	13.62	4.24	0.45	0.45	100.00
Sample Size	2	1	533	1	90	28	3	3	661
Mean Length	443	539	489	360	558	495	569	565	499
Std. Error	21		1		4	5	14	9	1
Sample Size	2	1	533	1	90	28	3	3	661
Mean Weight	1.52	1.52	1.89		3.18	1.91		2.46	2.07
Std. Error	0.17		0.04		0.17	0.18			0.04
Sample Size	2	1	75		8	8		1	95
<u>All Periods Combined:</u>									
Males	671		200,121		36,342	16,491	1,671	1,041	256,337
Percent	0.12		35.88		6.52	2.96	0.30	0.19	45.96
Sample Size	2		630		133	93	6	6	870
Mean Length	443		501		566	515	553	588	512
Std. Error	21		1		3	4	6	7	1
Sample Size	2		630		133	93	6	6	870
Mean Weight	1.52		2.24		3.33	2.35	3.70	3.43	2.40
Std. Error	0.17		0.04		0.14	0.11	0.26	0.21	0.04
Sample Size	2		97		30	63	2	4	198
Females	407	743	261,370	336	24,032	13,070	521	928	301,407
Percent	0.07	0.13	46.86	0.06	4.31	2.34	0.09	0.17	54.04
Sample Size	1	2	840	1	89	61	3	4	1,001
Mean Length	405	520	479	360	536	484	548	542	484
Std. Error			1		4	2	35	5	1
Sample Size	1	2	838	1	89	61	3	4	999
Mean Weight	1.07	1.52	1.79		2.60	1.89	2.70	2.71	1.86
Std. Error			0.03		0.19	0.05			0.03
Sample Size	1	1	115		25	31	1	2	176
Both Sexes	1,078	743	461,491	336	60,374	29,561	2,192	1,969	557,744
Percent	0.19	0.13	82.74	0.06	10.82	5.30	0.39	0.35	100.00
Sample Size	3	2	1,470	1	222	154	9	10	1,871
Mean Length	429	520	489	360	554	501	552	567	497
Std. Error	21		1		2	2	7	6	1
Sample Size	3	2	1,468	1	222	154	9	10	1,869
Mean Weight	1.35	1.52	1.98		3.04	2.15	3.20	3.01	2.11
Std. Error	0.17		0.02		0.11	0.06	0.26	0.21	0.02
Sample Size	3	1	212		55	94	3	6	374

Appendix A.10. Age, sex, and size (length in mm and weight in kg) composition of sockeye salmon commercial catch, Igushik Beach setnet fishery, Nushagak District, 2002.

	Age Group					Total
	1.2	1.3	2.2	1.4	2.3	
<u>Sample Period: June 21 - July 2</u>						
Males	6,983	4,410	1,176	368	441	13,378
Percent	30.65	19.35	5.16	1.62	1.94	58.71
Sample Size	95	60	16	5	6	182
Mean Length	522	585	538	577	585	548
Std. Error	2	3	9	11	14	2
Sample Size	95	60	16	5	6	182
Mean Weight	2.50	3.53	2.61	3.61		2.89
Std. Error	0.04	0.12	0.08			0.05
Sample Size	22	16	4	1		43
Females	4,777	3,455	882		294	9,408
Percent	20.96	15.16	3.87		1.29	41.29
Sample Size	65	47	12		4	128
Mean Length	499	548	513		571	521
Std. Error	3	3	4		15	2
Sample Size	65	47	12		4	128
Mean Weight	2.12	2.96	2.19			2.45
Std. Error	0.06	0.08				0.04
Sample Size	14	11	1			26
Both Sexes	11,760	7,865	2,058	368	735	22,786
Percent	51.61	34.52	9.03	1.62	3.23	100.00
Sample Size	160	107	28	5	10	310
Mean Length	513	569	527	577	579	537
Std. Error	2	2	5	11	10	1
Sample Size	160	107	28	5	10	310
Mean Weight	2.35	3.28	2.43	3.61		2.71
Std. Error	0.03	0.07	0.08			0.03
Sample Size	36	27	5	1		69

Appendix A.11. Age, sex, and size (length in mm) composition of sockeye salmon escapement, Wood River, 2002.

	Age Group							Total	
	1.1	1.2	2.1	0.4	1.3	2.2	1.4		2.3
<u>Sample Period: June 21 - 28</u>									
Males		92,050			32,764	7,021	1,560	1,560	134,955
Percent		27.57			9.81	2.10	0.47	0.47	40.42
Sample Size		118			42	9	2	2	173
Mean Length		528			601	539	585	603	548
Std. Error		3			7	10	85	48	3
Sample Size		118			42	9	2	2	173
Females		145,876			39,004	10,141	2,340	1,560	198,921
Percent		43.69			11.68	3.04	0.70	0.47	59.58
Sample Size		187			50	13	3	2	255
Mean Length		513			577	496	567	580	526
Std. Error		2			5	9	32	40	2
Sample Size		187			50	13	3	2	255
Both Sexes		237,926			71,768	17,162	3,900	3,120	333,876
Percent		71.26			21.5	5.14	1.17	0.93	100.00
Sample Size		305			92	22	5	4	428
Mean Length		519			588	514	574	591	535
Std. Error		2			4	7	39	31	2
Sample Size		305			92	22	5	4	428
<u>Sample Period 2: June 29 - July 4</u>									
Males	1,262	177,997			60,595	8,837	5,050	2,525	256,266
Percent	0.17	23.62			8.04	1.17	0.67	0.34	34.00
Sample Size	1	141			48	7	4	2	203
Mean Length	360	502			581	509	611	605	523
Std. Error		3			5	11	20	15	2
Sample Size	1	140			48	7	4	2	202
Females		425,425			44,184	27,773			497,382
Percent		56.45			5.86	3.69			66.00
Sample Size		337			35	22			394
Mean Length		481			546	472			486
Std. Error		1			5	6			1
Sample Size		337			35	22			394
Both Sexes	1,262	603,422			104,779	36,610	5,050	2,525	753,648
Percent	0.17	80.07			13.90	4.86	0.67	0.34	100.00
Sample Size	1	478			83	29	4	2	597
Mean Length	360	487			566	481	611	605	499
Std. Error		1			4	5	20	15	1
Sample Size	1	477			83	29	4	2	596

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	Age Group								Total
	1.1	1.2	2.1	0.4	1.3	2.2	1.4	2.3	
<u>Sample Period 3: July 5 - 21</u>									
Males	337	48,197		337	22,919	674	1,348		73,812
Percent	0.17	24.57		0.17	11.68	0.34	0.69		37.63
Sample Size	1	143		1	68	2	4		219
Mean Length	320	500		640	587	505	589		528
Std. Error		3			4	65	29		2
Sample Size	1	143		1	68	2	4		219
Females	337	109,201	337		6,067	6,404			122,346
Percent	0.17	55.67	0.17		3.09	3.26			62.37
Sample Size	1	324	1		18	19			363
Mean Length	390	474	400		530	467			476
Std. Error		1			9	4			1
Sample Size	1	324	1		18	19			363
Both Sexes	674	157,398	337	337	28,986	7,078	1,348		196,158
Percent	0.34	80.24	0.17	0.17	14.78	3.61	0.69		100.00
Sample Size	2	467	1	1	86	21	4		582
Mean Length	355	482	400	640	575	470	589		496
Std. Error		1			3	7	29		1
Sample Size	2	467	1	1	86	21	4		582
<u>All Periods Combined:</u>									
Males	1,599	318,244		337	116,278	16,532	7,958	4,085	465,033
Percent	0.12	24.79		0.03	9.06	1.29	0.62	0.32	36.23
Sample Size	2	402		1	158	18	10	4	595
Mean Length	352	509		640	588	522	602	604	531
Std. Error		2			3	8	22	20	2
Sample Size	2	401		1	158	18	10	4	594
Females	337	680,502	337		89,255	44,318	2,340	1,560	818,649
Percent	0.03	53.01	0.03		6.95	3.45	0.18	0.12	63.77
Sample Size	1	848	1		103	54	3	2	1,012
Mean Length	390	487	400		558	477	567	580	495
Std. Error		1			3	4	32	40	1
Sample Size	1	848	1		103	54	3	2	1,012
Both Sexes	1,936	998,746	337	337	205,533	60,850	10,298	5,645	1,283,682
Percent	0.15	77.80	0.03	0.03	16.01	4.74	0.80	0.44	100.00
Sample Size	3	1,250	1	1	261	72	13	6	1,607
Mean Length	358	494	400	640	575	489	594	597	508
Std. Error		1			2	4	18	18	1
Sample Size	3	1,249	1	1	261	72	13	6	1,606

Appendix A.12. Age, sex, and size (length in mm) composition of sockeye salmon escapement, Igushik River, 2002.

	Age Group						Total
	0.3	1.2	1.3	2.2	1.4	2.3	
<u>Sample Period 1: June 24 - July 10</u>							
Males		24,459	13,767	1,611	879	1,611	42,327
Percent		31.99	18.01	2.11	1.15	2.11	55.36
Sample Size		167	94	11	6	11	289
Mean Length		530	594	549	625	581	555
Std. Error		2	4	9	15	15	2
Sample Size		167	94	11	6	11	289
Females		23,727	8,202	1,318	439	439	34,125
Percent		31.04	10.73	1.72	0.57	0.57	44.64
Sample Size		162	56	9	3	3	233
Mean Length		489	536	519	523	524	502
Std. Error		2	5	10	17	12	2
Sample Size		162	56	9	3	3	233
Both Sexes		48,186	21,969	2,929	1,318	2,050	76,452
Percent		63.03	28.74	3.83	1.72	2.68	100.00
Sample Size		329	150	20	9	14	522
Mean Length		510	572	536	591	569	532
Std. Error		2	3	7	12	12	1
Sample Size		329	150	20	9	14	522
<u>Sample Period 2: July 11 - 25</u>							
Males		16,248	5,546	876	487	584	23,741
Percent		34.79	11.87	1.88	1.04	1.25	50.83
Sample Size		167	57	9	5	6	244
Mean Length		526	590	536	624	615	545
Std. Error		2	5	13	19	8	2
Sample Size		167	56	9	5	6	243
Females	97	18,390	2,433	1,751	195	97	22,963
Percent	0.21	39.38	5.21	3.75	0.42	0.21	49.17
Sample Size	1	189	25	18	2	1	236
Mean Length	566	498	535	502	567	566	503
Std. Error		2	8	6	23		2
Sample Size	1	189	25	18	2	1	236
Both Sexes	97	34,638	7,979	2,627	682	681	46,704
Percent	0.21	74.16	17.08	5.62	1.46	1.46	100.00
Sample Size	1	356	82	27	7	7	480
Mean Length	566	511	573	513	607	608	525
Std. Error		1	4	6	15	8	1
Sample Size	1	356	81	27	7	7	479

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	Age Group						Total
	0.3	1.2	1.3	2.2	1.4	2.3	
<u>All Periods Combined:</u>							
Males		40,707	19,313	2,487	1,366	2,195	66,068
Percent		33.05	15.68	2.02	1.11	1.78	53.65
Sample Size		334	151	20	11	17	533
Mean Length		528	593	544	625	590	552
Std. Error		2	3	7	12	11	1
Sample Size		334	150	20	11	17	532
Females	97	42,117	10,635	3,069	634	536	57,088
Percent	0.08	34.20	8.64	2.49	0.51	0.44	46.35
Sample Size	1	351	81	27	5	4	469
Mean Length	566	493	536	509	537	532	503
Std. Error		2	4	6	14	12	1
Sample Size	1	351	81	27	5	4	469
Both Sexes	97	82,824	29,948	5,556	2,000	2,731	123,156
Percent	0.08	67.25	24.32	4.51	1.62	2.22	100.00
Sample Size	1	685	232	47	16	21	1,002
Mean Length	566	510	573	525	597	578	529
Std. Error		1	2	4	9	9	1
Sample Size	1	685	231	47	16	21	1,001

Appendix A.13. Age, sex, and size (length in mm) composition of sockeye salmon escapement, Nushagak River, 2002.

	AgeGroup								Total
	0.2	0.3	1.2	0.4	1.3	2.2	1.4	2.3	
<b>Sample period: June 8 - August 17</b>									
Males	2,794	1,397	43,301	2,095	85,904		29,333	1,397	166,221
Percent	0.89	0.44	13.72	0.66	27.21		9.29	0.44	52.65
Sample Size	4	2	62	3	123		42	2	238
Mean Length	380	559	458	618	576		620	538	550
Std. Error	21	53	7	2	4		5	48	3
Sample Size	4	2	62	3	123		42	2	238
Females	698	6,286	23,746	2,794	92,889	1,397	19,555	2,095	149,460
Percent	0.22	1.99	7.52	0.89	29.42	0.44	6.19	0.66	47.35
Sample Size	1	9	34	4	133	2	28	3	214
Mean Length	440	585	465	583	544	488	568	510	536
Std. Error		10	8	8	2	8	5	20	2
Sample Size	1	9	34	4	132	2	28	3	213
Both Sexes	3,492	7,683	67,047	4,889	178,793	1,397	48,888	3,492	315,681
Percent	1.11	2.43	21.24	1.55	56.64	0.44	15.49	1.11	100.00
Sample Size	5	11	96	7	256	2	70	5	452
Mean Length	392	580	460	598	559	488	599	521	543
Std. Error	21	13	5	5	2	8	3	23	2
Sample Size	5	11	96	7	255	2	70	5	451

Appendix A.14. Age, sex, and size (length in mm) composition of sockeye salmon escapement, Nuyakuk River, 2002.

	Age Group							Total
	0.2	0.3	1.2	0.4	1.3	2.2	1.4	
<u>Sample Period 1: June 30 - July 9:</u>								
Males	557	557	4,459		13,822		1,561	20,956
Percent	1.30	1.30	10.42		32.29		3.65	48.96
Sample Size	5	5	40		124		14	188
Mean Length	425	585	490		594		624	569
Std. Error	6	18	10		3		10	3
Sample Size	5	5	40		124		14	188
Females	223	446	3,567	111	15,383	223	1,895	21,848
Percent	0.52	1.04	8.33	0.26	35.94	0.52	4.43	51.04
Sample Size	2	4	32	1	138	2	17	196
Mean Length	408	545	476	590	554	498	583	542
Std. Error	3	12	5		2	13	6	2
Sample Size	2	4	32	1	138	2	17	196
Both Sexes	780	1,003	8,026	111	29,205	223	3,456	42,804
Percent	1.82	2.34	18.75	0.26	68.23	0.52	8.07	100.00
Sample Size	7	9	72	1	262	2	31	384
Mean Length	420	567	484	590	573	498	602	555
Std. Error	4	11	6		2	13	6	2
Sample Size	7	9	72	1	262	2	31	384
<u>Sample Period 2: July 10 - 28</u>								
Males	674	150	2,620		6,960	225	225	10,854
Percent	2.58	0.57	10.03		26.64	0.86	0.86	41.55
Sample Size	9	2	35		93	3	3	145
Mean Length	420	573	495		589	525	658	556
Std. Error	5	13	9		3	8	17	3
Sample Size	9	2	35		93	3	3	145
Females		524	5,464		8,234	374	674	15,270
Percent		2.01	20.92		31.52	1.43	2.58	58.45
Sample Size		7	73		110	5	9	204
Mean Length		556	480		546	482	557	521
Std. Error		10	3		3	8	15	2
Sample Size		7	73		110	5	9	204
Both Sexes	674	674	8,084		15,194	599	899	26,124
Percent	2.58	2.58	30.94		58.16	2.29	3.44	100.00
Sample Size	9	9	108		203	8	12	349
Mean Length	420	560	485		565	498	582	536
Std. Error	5	8	4		2	6	12	2
Sample Size	9	9	108		203	8	12	349

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	Age Group							Total
	0.2	0.3	1.2	0.4	1.3	2.2	1.4	
<b>All Periods Combined:</b>								
Males	1,231	707	7,079		20,782	225	1,786	31,810
Percent	1.79	1.03	10.27		30.15	0.33	2.59	46.15
Sample Size	14	7	75		217	3	17	333
Mean Length	422	582	492		592	525	629	564
Std. Error	4	15	7		2	8	9	2
Sample Size	14	7	75		217	3	17	333
Females	223	970	9,031	111	23,617	597	2,569	37,118
Percent	0.32	1.41	13.1	0.16	34.26	0.87	3.73	53.85
Sample Size	2	11	105	1	248	7	26	400
Mean Length	408	551	478	590	551	488	576	533
Std. Error	3	8	3		1	7	6	1
Sample Size	2	11	105	1	248	7	26	400
Both Sexes	1,454	1,677	16,110	111	44,399	822	4,355	68,928
Percent	2.11	2.43	23.37	0.16	64.41	1.19	6.32	100.00
Sample Size	16	18	180	1	465	10	43	733
Mean Length	420	564	484	590	570	498	598	548
Std. Error	3	8	3		1	5	5	1
Sample Size	16	18	180	1	465	10	43	733

Appendix A.15. Age, sex, and size (length in mm and weight in kg) composition of sockeye salmon commercial catch, Togiak River Section, Togiak District, 2002.

	Age Group								Total
	0.3	1.2	1.3	2.2	1.4	2.3	3.2	2.4	
<u>Sample Period 1: June 11 - July 2</u>									
Males	40	1,031	9,595	119	476	278			11,539
Percent	0.18	4.52	42.08	0.52	2.09	1.22			50.61
Sample Size	1	26	242	3	12	7			291
Mean Length	570	499	584	520	602	579			577
Std. Error		6	2	20	7	6			2
Sample Size	1	26	242	3	12	7			291
Mean Weight		2.31	3.63		3.48				3.50
Std. Error		0.18	0.09		0.01				0.08
Sample Size		8	43		2				53
Females	198	397	9,913	40	436	238		40	11,262
Percent	0.87	1.74	43.48	0.18	1.91	1.04		0.18	49.39
Sample Size	5	10	250	1	11	6		1	284
Mean Length	545	499	556	505	578	559		548	554
Std. Error	7	13	1		7	7			1
Sample Size	5	10	249	1	11	6		1	283
Mean Weight	2.86	2.12	3.00	2.23	3.23	2.74		5.40	2.98
Std. Error		0.1	0.05			0.13			0.05
Sample Size	1	4	51	1	1	2		1	61
Both Sexes	238	1,428	19,508	159	912	516		40	22,801
Percent	1.04	6.26	85.56	0.70	4.00	2.26		0.18	100.00
Sample Size	6	36	492	4	23	13		1	575
Mean Length	549	499	570	516	591	570		548	566
Std. Error	7	6	1	20	5	5			1
Sample Size	6	36	491	4	23	13		1	574
Mean Weight	2.86	2.26	3.31	2.23	3.36	2.74		5.40	3.24
Std. Error		0.13	0.05		0.01	0.13			0.05
Sample Size	1	12	94	1	3	2		1	114
<u>Sample Period 2: July 3 - August 9</u>									
Males	381	7,992	68,126	5,709	3,045	6,851			92,104
Percent	0.20	4.17	35.59	2.98	1.59	3.58			48.11
Sample Size	1	21	179	15	8	18			242
Mean Length	555	507	583	533	601	588			574
Std. Error		7	2	7	7	4			2
Sample Size	1	21	179	15	8	18			242
Mean Weight		2.54	4.00	3.04	4.42	4.26			3.85
Std. Error		0.17	0.17	0.15		0.11			0.13
Sample Size		3	19	5	1	4			32
Females	761	11,418	73,835	2,664	1,142	8,754	761		99,335
Percent	0.40	5.96	38.57	1.39	0.60	4.57	0.40		51.89
Sample Size	2	30	194	7	3	23	2		261
Mean Length	521	491	552	513	583	554	503		544
Std. Error	3	5	2	8	9	5			1
Sample Size	2	30	194	7	3	23	2		261
Mean Weight		1.88	3.28	2.46		3.12			3.08
Std. Error		0.14	0.12	0.16		0.23			0.1
Sample Size		4	16	2		6			28
Both Sexes	1,142	19,410	141,961	8,373	4,187	15,605	761		191,439
Percent	0.60	10.14	74.15	4.37	2.19	8.15	0.40		100.00
Sample Size	3	51	373	22	11	41	2		503
Mean Length	532	498	567	527	596	569	503		559
Std. Error	3	4	1	6	6	3			1
Sample Size	3	51	373	22	11	41	2		503
Mean Weight		2.15	3.63	2.86	4.42	3.62			3.45
Std. Error		0.11	0.1	0.11		0.14			0.08
Sample Size		7	35	7	1	10			60

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	Age Group								Total	
	0.3	1.2	1.3	2.2	1.4	2.3	3.2	2.4		
<u>All Sections Combined:</u>										
Males	421	9,023	77,721	5,828	3,521	7,129				103,643
Percent	0.20	4.21	36.28	2.72	1.64	3.33				48.38
Sample Size	2	47	421	18	20	25				533
Mean Length	556	506	583	533	601	588				575
Std. Error		6	2	7	6	4				1
Sample Size	2	47	421	18	20	25				533
Mean Weight		2.51	3.95	3.04	4.29	4.26				3.81
Std. Error		0.15	0.15	0.15	0.01	0.11				0.11
Sample Size		11	62	5	3	4				85
Females	959	11,815	83,748	2,704	1,578	8,992	761	40		110,597
Percent	0.45	5.51	39.09	1.26	0.74	4.20	0.36	0.02		51.62
Sample Size	7	40	444	8	14	29	2	1		545
Mean Length	526	492	552	513	582	554	503	548		545
Std. Error	2	5	1	8	7	5				1
Sample Size	7	40	443	8	14	29	2	1		544
Mean Weight	2.86	1.89	3.25	2.46	3.23	3.11		5.40		3.07
Std. Error		0.14	0.11	0.16		0.22				0.09
Sample Size	1	8	67	3	1	8		1		89
Both Sexes	1,380	20,838	161,469	8,532	5,099	16,121	761	40		214,240
Percent	0.64	9.73	75.37	3.98	2.38	7.52	0.36	0.02		100.00
Sample Size	9	87	865	26	34	54	2	1		1,078
Mean Length	535	498	567	526	595	569	503	548		559
Std. Error	2	4	1	6	5	3				1
Sample Size	9	87	864	26	34	54	2	1		1,077
Mean Weight	2.86	2.16	3.59	2.85	4.18	3.61		5.40		3.43
Std. Error		0.1	0.09	0.11	0.01	0.13				0.07
Sample Size	1	19	129	8	4	12		1		174

Appendix A.16. Age, sex, and size (length in mm and weight in kg) composition of sockeye salmon commercial catch, Kulukak Section, Togiak District, 2002.

	Age Group							Total
	0.3	1.2	1.3	2.2	1.4	2.3	3.2	
<u>Sample Period: June 24 - July 11</u>								
Males	53	1,386	6,610	267	267	160		8,743
Percent	0.28	7.28	34.73	1.40	1.40	0.84		45.94
Sample Size	1	26	124	5	5	3		164
Mean Length	588	510	584	538	579	596		571
Std. Error		5	2	10	9	9		2
Sample Size	1	26	123	5	5	3		163
Mean Weight		2.45	3.79					3.56
Std. Error		0.19	0.11					0.09
Sample Size		8	28					36
Females	107	480	8,156	213	320	906	107	10,289
Percent	0.56	2.52	42.85	1.12	1.68	4.76	0.56	54.06
Sample Size	2	9	153	4	6	17	2	193
Mean Length	546	496	553	514	570	546	512	549
Std. Error	15	10	2	10	10	4	11	2
Sample Size	2	9	153	4	6	17	2	193
Mean Weight		2.44	3.18		3.28	2.92		3.12
Std. Error			0.06		0.35	0.08		0.05
Sample Size		1	40		3	6		50
Both Sexes	160	1,866	14,766	480	587	1,066	107	19,032
Percent	0.84	9.80	77.59	2.52	3.08	5.60	0.56	100.00
Sample Size	3	35	277	9	11	20	2	357
Mean Length	560	506	567	527	574	553	512	559
Std. Error	15	5	1	7	7	4	11	1
Sample Size	3	35	276	9	11	20	2	356
Mean Weight		2.45	3.45		3.28	2.92		3.32
Std. Error		0.19	0.06		0.35	0.08		0.05
Sample Size		9	68		3	6		86

Appendix A.17. Age, sex, and size (length in mm) composition of sockeye salmon escapement, Togiak River, 2002.

	Age Group					Total
	1.2	1.3	2.2	1.4	2.3	
<u>Sample Period 1: July 3 - 18</u>						
Males	4,775	27,383	983	562	562	34,265
Percent	8.10	46.43	1.67	0.95	0.95	58.10
Sample Size	34	195	7	4	4	244
Mean Length	532	597	551	611	601	587
Std. Error	6	2	11	7	3	2
Sample Size	34	195	7	4	4	244
Females	4,634	18,817	421	281	562	24,715
Percent	7.86	31.90	0.71	0.48	0.95	41.90
Sample Size	33	134	3	2	4	176
Mean Length	499	562	491	586	573	549
Std. Error	5	2	20	4	11	2
Sample Size	33	134	3	2	4	176
Both Sexes	9,409	46,200	1,404	843	1,124	58,980
Percent	15.95	78.33	2.38	1.43	1.91	100.00
Sample Size	67	329	10	6	8	420
Mean Length	516	583	533	602	587	571
Std. Error	4	1	9	5	6	1
Sample Size	67	329	10	6	8	420
<u>Sample Period 2: July 19 - August 5</u>						
Males	9,068	39,212	2,941	1,225	2,206	54,652
Percent	8.77	37.91	2.84	1.18	2.13	52.84
Sample Size	37	160	12	5	9	223
Mean Length	533	595	544	613	603	583
Std. Error	4	2	7	8	8	2
Sample Size	37	160	12	5	9	223
Females	10,048	36,026	1,961		735	48,770
Percent	9.72	34.83	1.90		0.71	47.16
Sample Size	41	147	8		3	199
Mean Length	503	564	511		573	550
Std. Error	5	2	9		11	2
Sample Size	41	147	8		3	199
Both Sexes	19,116	75,238	4,902	1,225	2,941	103,422
Percent	18.48	72.75	4.74	1.18	2.84	100.00
Sample Size	78	307	20	5	12	422
Mean Length	517	580	531	613	596	567
Std. Error	3	1	5	8	6	1
Sample Size	78	307	20	5	12	422

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	Age Group					Total
	1.2	1.3	2.2	1.4	2.3	
<u>All Periods Combined:</u>						
Males	13,843	66,595	3,924	1,787	2,768	88,917
Percent	8.52	41.01	2.42	1.10	1.70	54.75
Sample Size	71	355	19	9	13	467
Mean Length	533	596	546	612	603	584
Std. Error	3	1	6	6	6	1
Sample Size	71	355	19	9	13	467
Females	14,682	54,843	2,382	281	1,297	73,485
Percent	9.04	33.77	1.47	0.17	0.80	45.25
Sample Size	74	281	11	2	7	375
Mean Length	502	563	508	586	573	549
Std. Error	3	1	8	4	8	1
Sample Size	74	281	11	2	7	375
Both Sexes	28,525	121,438	6,306	2,068	4,065	162,402
Percent	17.56	74.78	3.88	1.27	2.50	100.00
Sample Size	145	636	30	11	20	842
Mean Length	517	581	531	609	593	569
Std. Error	2	1	5	5	5	1
Sample Size	145	636	30	11	20	842

Appendix A.18. Age, sex, and size (length in mm and weight in kg) composition of chinook salmon commercial catch, Nushagak District, 2002.

	Age Group				Total
	1.2	1.3	1.4	1.5	
<u>Sample period: June 21 - July 22</u>					
Both Sexes	2,990	17,088	18,540	855	39,473
Percent	7.57	43.29	46.97	2.17	100.00
Sample Size	35	200	217	10	462
Mean Length	572	730	816	862	761
Std. Error	11	4	4	12	3
Sample Size	35	200	217	10	462
Mean Weight	4.25	7.32	9.91	11.81	8.40
Std. Error	0.51	0.28	0.27	2.50	0.18
Sample Size	7	59	72	3	141

Appendix A.19. Age and size (length in mm) composition of chinook salmon escapement,  
Nushagak River, 2002.

	Age Group					Total
	1.1	1.2	1.3	1.4	1.5	
<u>Sample period: June 8 - August 17</u>						
Both Sexes	727	31,782	23,993	28,873	1,766	87,141
Percent	0.83	36.47	27.53	33.13	2.03	100.00
Sample Size	7	306	231	278	17	839
Mean Length	403	552	709	829	886	693
Std. Error	13	3	5	4	15	2
Sample Size	7	306	231	277	17	838

Appendix A.20. Age and size (length in mm) composition of chinook salmon commercial catch, Togiak River Section, Togiak District, 2002.

	Age Group				Total
	1.2	1.3	1.4	1.5	
<u>Sample period: June 11 - August 9</u>					
Both Sexes	840	872	872	98	2,682
Percent	31.32	32.51	32.51	3.65	100.00
Sample Size	51	53	53	6	163
Mean Length	514	643	781	849	655
Std. Error	7	10	11	33	5
Sample Size	51	53	53	6	163

Appendix A.21. Age, sex, and size (length in mm and weight in kg) composition of chum salmon commercial catch, Nushagak District, 2002.

	Age Group			Total
	0.2	0.3	0.4	
<u>Sample period: June 21 - July 22</u>				
Males	11,016	83,341	38,318	132,675
Percent	3.98	30.10	13.84	47.92
Sample Size	23	174	80	277
Mean Length	552	584	606	588
Std. Error	4	2	4	2
Sample Size	23	174	80	277
Mean Weight	2.86	3.77	4.28	3.84
Std. Error	0.19	0.11	0.16	0.09
Sample Size	3	37	20	60
Females	11,974	98,189	34,007	144,170
Percent	4.33	35.47	12.28	52.08
Sample Size	25	205	71	301
Mean Length	538	559	578	562
Std. Error	4	2	4	1
Sample Size	25	205	71	301
Mean Weight	2.57	2.89	3.31	2.96
Std. Error	0.24	0.06	0.26	0.08
Sample Size	5	45	9	59
Both Sexes	22,990	181,530	72,325	276,845
Percent	8.30	65.57	26.12	100.00
Sample Size	48	379	151	578
Mean Length	545	570	593	574
Std. Error	3	1	3	1
Sample Size	48	379	151	578
Mean Weight	2.71	3.29	3.82	3.38
Std. Error	0.15	0.06	0.15	0.06
Sample Size	8	82	29	119

Appendix A.22. Age, sex, and size (length in mm) composition of chum salmon escapement, Nushagak River, 2002.

	Age Group					Total
	0.2	0.3	0.4	1.3	0.5	
<u>Sample Period: June 8 - August 17</u>						
Males	9,882	113,637	101,285		4,941	229,745
Percent	2.35	27.06	24.12		1.18	54.71
Sample Size	8	92	82		4	186
Mean Length	533	600	617		632	605
Std. Error	10	3	4		18	2
Sample Size	8	92	82		4	186
Females	6,176	114,873	67,935	1,235		190,219
Percent	1.47	27.35	16.18	0.29		45.29
Sample Size	5	93	55	1		154
Mean Length	519	566	583	546		570
Std. Error	12	3	3			2
Sample Size	5	93	55	1		154
Both Sexes	16,058	228,510	169,220	1,235	4,941	419,964
Percent	3.82	54.41	40.29	0.29	1.18	100.00
Sample Size	13	185	137	1	4	340
Mean Length	527	583	603	546	632	589
Std. Error	8	2	3		18	2
Sample Size	13	185	137	1	4	340

Appendix A.23. Age, sex, and size (length in mm and weight in kg) composition of chum salmon commercial catch, Togiak River Section, Togiak District, 2002.

	Age Group				Total
	0.2	0.3	0.4	0.5	
<u>Sample period 1: June 11 - August 9</u>					
Males		23,433	19,962	868	44,263
Percent		22.36	19.05	0.83	42.24
Sample Size		108	92	4	204
Mean Length		597	621	609	608
Std. Error		3	4	25	2
Sample Size		108	91	4	203
Mean Weight		4.49	4.71		4.59
Std. Error		0.15	0.15		0.11
Sample Size		21	17		38
Females	217	26,471	33,198	651	60,537
Percent	0.21	25.26	31.68	0.62	57.76
Sample Size	1	122	153	3	279
Mean Length	530	567	582	583	575
Std. Error		2	2	4	1
Sample Size	1	121	153	3	278
Mean Weight		3.21	3.4		3.32
Std. Error		0.08	0.08		0.06
Sample Size		19	24		43
Both Sexes	217	49,904	53,160	1,519	104,800
Percent	0.21	47.62	50.73	1.45	100.00
Sample Size	1	230	245	7	483
Mean Length	530	581	596	598	589
Std. Error		2	2	14	1
Sample Size	1	229	244	7	481
Mean Weight		3.81	3.89		3.85
Std. Error		0.08	0.08		0.06
Sample Size		40	41		81

Appendix A.24. Age, sex, and size (length in mm) composition of coho salmon escapement, Nushagak River, 2002.

	Age Group			Total
	1.1	2.1	3.1	
<u>Sample period: June 8 - August 17</u>				
Males	955	19,739	955	21,649
Percent	2.26	46.62	2.26	51.13
Sample Size	3	62	3	68
Mean Length	596	561	533	561
Std. Error	23	6	22	6
Sample Size	3	62	3	68
Females	1,592	18,465	637	20,694
Percent	3.76	43.61	1.50	48.87
Sample Size	5	58	2	65
Mean Length	515	574	595	570
Std. Error	22	6	25	5
Sample Size	5	58	2	65
Both Sexes	2,547	38,204	1,592	42,343
Percent	6.02	90.23	3.76	100.00
Sample Size	8	120	5	133
Mean Length	545	567	558	565
Std. Error	16	4	16	4
Sample Size	8	120	5	133

Appendix B.1. Kvichak River sockeye salmon escapement and return by brood year including estimated interception catch (in thousands), 1950 - 2002.

		Return by Age Class																
Brood		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	3.4	Total	R/S <sup>a</sup>
Year	Escapement																	
1950	0 <sup>b</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0	248	0	0	0	0	248 <sup>d</sup>	
1951	0 <sup>b</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0	221	3,377	0	0	983	0	1	0	0	4,582 <sup>d</sup>	
1952	0 <sup>b</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0	9,954	0	0	6,681	2,956	0	0	654	1	0	1	0	20,247 <sup>d</sup>	
1953	0 <sup>b</sup>	0	0	0	91	0	0	62	365	0	0	60	0	0	0	16	594	
1954	0 <sup>b</sup>	0	0	0	81	17	0	29	638	0	0	0	0	0	29	0	794	
1955	0 <sup>b</sup>	0	0	0	249	14	0	100	588	0	0	531	20	0	0	0	1,502	
1956	9,443	0	14	0	24,246	0	0	6,968	6,472	0	0	1,308	0	0	0	0	39,008	4.13
1957	2,843	8	0	0	243	0	0	244	3,333	0	2	259	0	0	2	0	4,091	1.44
1958	535	0	0	0	76	0	0	48	135	0	0	26	0	0	3	0	288	0.54
1959	674	0	0	0	212	1	0	117	206	0	0	11	0	0	0	0	547	0.81
1960	14,602	0	0	1	1,314	134	0	563	46,746	0	0	6,472	10	0	6	0	55,246	3.78
1961	3,706	1	0	0	334	0	0	190	2,287	0	0	679	5	0	0	0	3,496	0.94
1962	2,581	0	0	0	104	2	0	152	4,675	0	0	408	12	0	4	0	5,357	2.08
1963	339	0	0	0	49	3	0	50	639	0	0	366	3	0	9	0	1,119	3.30
1964	957	0	8	0	2,232	105	0	407	2,341	0	0	647	8	0	3	0	5,751	6.01
1965	24,326	0	25	0	9,853	484	0	471	32,951	0	0	1,239	2	0	1	0	45,026	1.85
1966	3,755	4	11	6	497	11	0	1,086	4,262	0	0	385	0	1	0	0	6,263	1.67
1967	3,216	0	0	5	349	2	0	272	812	0	0	86	0	0	0	0	1,526	0.47
1968	2,557	0	0	0	293	0	0	34	77	0	5	132	0	0	2	0	543	0.21
1969	8,394	0	0	1	129	7	0	321	4,221	0	0	595	19	0	11	0	5,304	0.63
1970	13,935	0	1	0	43	40	0	13	14,463	6	0	848	412	0	7	0	15,832	1.14
1971	2,387	0	0	0	244	18	0	93	2,169	0	0	303	2	0	0	0	2,829	1.19
1972	1,010	0	0	0	255	1	0	159	1,206	0	22	297	0	0	0	0	1,940	1.92
1973	227	0	0	2	576	2	2	1,028	274	0	3	543	28	0	0	0	2,458	10.83
1974	4,434	0	9	1	6,328	309	0	2,009	16,725	0	8	763	23	0	5	0	26,180	5.90
1975	13,140	0	5	0	5,683	302	0	1,232	30,263	0	0	599	2	0	0	0	38,087	2.90
1976	1,965	0	5	11	5,298	43	0	826	4,115	0	4	273	0	0	0	0	10,575	5.38
1977	1,341	11	43	6	1,934	2	0	935	208	0	0	99	0	0	0	0	3,239	2.42
1978	4,149	0	0	0	1,835	16	0	1,157	1,318	0	0	817	11	0	6	0	5,180	1.24
1979	11,218	1	57	3	18,331	73	0	2,234	17,931	0	0	3,512	0	0	0	0	42,142	3.76
1980	17,505 <sup>b</sup>	0	2	5	2,889	20	0	1,641	8,076	0	2	413	0	0	0	0	13,048	0.75
1981	1,754	0	0	12	789	0	0	231	931	0	0	167	0	0	0	0	2,130	1.21
1982	1,135	25	0	2	445	1	0	544	524	0	6	139	0	0	0	0	1,686	1.49
1983	3,570	0	1	5	8,596	3	0	3,010	1,195	0	5	573	0	2	1	0	13,391	3.75
1984	10,491	0	0	4	2,532	44	1	1,924	16,952	0	0	2,483	8	0	2	0	23,950	2.28
1985	7,211	4	7	30	1,024	29	0	1,282	13,465	0	2	1,560	1	15	2	0	17,421	2.42
1986	1,179	10	0	27	688	0	1	1,079	1,390	0	25	1,332	2	0	4	0	4,558	3.87
1987	6,066	29	4	69	4,179	31	4	2,519	4,499	0	5	700	4	0	2	0	12,045	1.99
1988	4,065	11	5	19	2,503	19	1	2,470	4,385	0	5	557	11	0	6	0	9,991	2.46
1989	8,318	29	2	54	2,147	117	2	1,679	18,841	0	2	3,316	13	1	0	0	26,203	3.15
1990	6,970	6	8	11	1,542	83	0	1,192	21,105	0	0	1,162	0	1	0	0	25,110	3.60
1991	4,223	0	1	4	2,688	2	0	1,232	699	0	6	170	0	0	0	0	4,802	1.14
1992	4,726	2	0	13	429	2	0	226	567	0	0	175	0	0	6	0	1,420	0.30
1993	4,025	0	1	1	852	1	4	890	624	0	8	574	0	0	0	0	2,955	0.73
1994	8,356	0	3	0	1,811	29	0	1,204	3,777	0	1	250	1	0	0	0	7,076	0.85
1995	10,039	0	17	0	7,736	0	0	1,810	600	0	5	76	0	0	0	0 <sup>d</sup>	10,244 <sup>d</sup>	1.02
1996	1,451	4	0	0	369	0	0	1,203	19	0	9	16	0	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	1,620 <sup>d</sup>	1.12
1997	1,504	0	0	4	130	0	1	107	263	0	0 <sup>d</sup>	505 <sup>d</sup>	0.34					
1998	2,296	0	0	2	323	1	0 <sup>d</sup>	326 <sup>d</sup>										
1999	6,197	4	1	0 <sup>d</sup>	5 <sup>d</sup>													
2000	1,828	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	
2001	1,095	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	
2002	704	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	
56-97 Avg.																		2.31

<sup>a</sup> R/S = return per spawner.

<sup>b</sup> Escapement not available.

<sup>c</sup> Younger age groups not available.

<sup>d</sup> Incomplete returns from brood year escapement.

<sup>e</sup> The 1980 brood year escapement of 22.5 million was reduced to 17.5 million in the brood table to reflect the estimated 5 million sockeye salmon that did not spawn successfully because of the extreme velocity barrier at the falls on the Newhalen River.

Appendix B.2. Alagnak River sockeye salmon escapement and return by brood year including estimated interception catch (in thousands), 1950 - 2002.

Brood Year	Escapement <sup>a</sup>	Return by Age Class															Total	R/S <sup>b</sup>
		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	3.4		
1950	0 <sup>c</sup>	<sup>d</sup>	<sup>d</sup>	<sup>d</sup>	<sup>d</sup>	<sup>d</sup>	<sup>d</sup>	<sup>d</sup>	<sup>d</sup>	<sup>d</sup>	0	262	0	0	0	0	262 <sup>*</sup>	
1951	0 <sup>c</sup>	<sup>d</sup>	<sup>d</sup>	<sup>d</sup>	<sup>d</sup>	<sup>d</sup>	0	294	343	0	0	43	0	0	0	0	680 <sup>*</sup>	
1952	0 <sup>c</sup>	<sup>d</sup>	0	0	383	0	0	295	131	0	0	115	0	0	1	0	925 <sup>*</sup>	
1953	0 <sup>c</sup>	0	0	0	5	0	0	11	64	0	0	0	0	0	0	0	80	
1954	0 <sup>c</sup>	0	0	0	14	3	0	109	392	0	0	141	0	0	1	0	660	
1955	0 <sup>c</sup>	0	0	0	788	0	0	237	26	0	0	44	0	0	0	0	1,095	
1956	784	5	0	0	1,885	0	0	459	0	0	0	38	3	0	0	0	2,390	3.05
1957	127	0	0	0	5	0	0	23	43	0	0	13	0	0	1	0	85	0.67
1958	95	0	0	0	43	0	0	26	27	0	0	52	0	0	0	0	148	1.56
1959	825	0	0	0	302	0	0	265	122	0	0	76	1	0	2	0	768	0.93
1960	1,241	0	0	0	105	0	0	185	135	0	0	31	0	0	0	0	456	0.37
1961	90	0	10	1	89	1	0	185	7	0	0	0	0	0	0	0	293	3.25
1962	91	0	19	0	129	0	0	91	3	0	0	19	1	0	0	0	262	2.88
1963	203	0	0	0	199	1	0	140	34	0	0	1	0	0	0	0	375	1.85
1964	249	0	5	0	100	2	0	98	113	0	0	17	0	0	0	0	336	1.35
1965	175	0	6	0	104	1	0	161	10	0	0	17	0	0	0	0	299	1.71
1966	174	0	13	0	282	0	0	262	12	0	0	11	0	0	0	0	580	3.33
1967	203	0	9	8	291	1	0	51	46	0	0	7	0	0	0	0	413	2.04
1968	194	3	5	0	127	0	0	40	2	0	0	3	0	0	0	0	180	0.93
1969	182	0	0	0	4	1	0	54	105	0	0	25	0	0	0	0	189	1.04
1970	177	0	0	0	73	0	0	71	6	0	0	2	0	0	0	0	152	0.86
1971	187	0	2	0	26	0	0	28	31	0	0	37	0	0	2	0	128	0.67
1972	151	0	1	0	91	0	0	17	7	0	0	14	0	0	0	0	130	0.86
1973	35	0	0	0	97	1	0	130	18	0	0	2	0	0	0	0	248	7.09
1974	215	0	4	0	292	5	0	18	128	0	0	8	0	0	0	0	455	2.11
1975	100	0	15	0	415	0	0	340	3	0	1	1	0	0	0	0	775	7.75
1976	82	0	26	0	211	0	0	168	20	0	0	55	0	0	0	0	480	5.85
1977	100	0	27	0	141	1	0	700	0	0	4	9	0	0	0	0	881	8.81
1978	229	0	1	0	102	0	0	68	39	0	0	147	0	0	0	0	357	1.56
1979	294	0	3	2	459	2	0	297	32	0	0	3	0	0	0	0	798	2.71
1980	298	0	0	0	103	0	0	211	13	0	2	9	0	1	0	0	339	1.14
1981	82	0	0	0	55	0	0	171	53	0	2	11	0	0	0	0	292	3.56
1982	239	0	0	0	172	0	0	142	4	0	0	3	0	0	0	0	321	1.34
1983	96	0	0	0	148	0	0	131	33	0	0	3	0	0	0	0	315	3.29
1984	215	0	1	0	159	0	0	146	42	0	0	23	0	0	0	0	371	1.73
1985	118	0	3	0	357	0	0	113	92	0	0	8	0	0	0	0	574	4.86
1986	230	0	1	0	344	0	0	267	193	0	0	8	0	0	0	0	813	3.54
1987	154	0	0	0	158	0	0	170	172	0	3	80	0	0	0	0	583	3.79
1988	195	0	1	0	154	0	0	148	279	0	0	43	0	0	0	0	625	3.20
1989	197	0	5	0	354	2	0	172	178	0	0	16	0	0	0	0	727	3.69
1990	169	0	2	0	262	0	0	124	330	0	0	237	0	0	0	0	955	5.65
1991	278	0	0	0	200	4	0	220	165	0	0	0	0	0	0	0	589	2.12
1992	225	0	2	0	98	0	0	73	65	0	0	10	0	1	0	0	249	1.11
1993	348	0	4	0	127	0	0	161	83	0	2	47	0	0	0	0	424	1.22
1994	243	0	1	0	162	2	0	273	40	0	0	41	0	0	0	0	519	2.14
1995	216	0	4	0	711	0	0	195	127	0	6	26	0	0	0	0 <sup>*</sup>	1,069 <sup>*</sup>	4.95
1996	307	0	3	0	408	0	0	303	10	0	2	9	0	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	735 <sup>*</sup>	2.40
1997	218	0	2	0	66	0	0	119	51	0	0 <sup>*</sup>	238 <sup>*</sup>	1.09					
1998	252	0	2	0	162	1	0 <sup>*</sup>	165 <sup>*</sup>										
1999	464	0	4	0 <sup>*</sup>	4 <sup>*</sup>													
2000	451	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	
2001	267	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	
2002	336	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	0 <sup>*</sup>	

56-97 Avg.

2.72

<sup>a</sup> The 1956 - 1978 escapements based on Alagnak tower count. The 1977 - 2002 escapements based on aerial survey.

<sup>b</sup> R/S = return per spawner.

<sup>c</sup> Escapement not available.

<sup>d</sup> Younger age groups not available.

<sup>\*</sup> Incomplete returns from brood year escapement.

Appendix B.3. Naknek River sockeye salmon escapement and return by brood year including estimated interception catch (in thousands), 1950 - 2002.

Brood Year	Escapement	Return by Age Class															Total	R/S <sup>a</sup>	
		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	3.4			
1950	0 <sup>b</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0	1,093	0	2	5	0	1,100 <sup>d</sup>		
1951	0 <sup>b</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0	1,295	688	0	0	1,250	0	1	0	0	3,234 <sup>d</sup>		
1952	0 <sup>b</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0	79	0	0	1,199	108	0	7	176	1	0	2	0	1,572 <sup>d</sup>		
1953	0 <sup>b</sup>	0	0	0	24	0	0	135	177	3	0	206	42	0	1	1	589		
1954	0 <sup>b</sup>	0	0	0	85	19	0	302	2,129	0	0	587	0	13	3	0	3,138		
1955	0 <sup>b</sup>	0	0	0	720	1	0	820	214	0	0	88	2	4	2	0	1,851		
1956	1,773	0	1	0	473	0	0	1,701	3	0	17	304	0	0	0	0	2,499	1.41	
1957	635	0	0	0	53	2	0	329	505	0	1	674	5	0	3	0	1,572	2.48	
1958	278	0	0	0	112	4	0	211	539	0	0	168	3	0	2	0	1,039	3.74	
1959	2,232	0	0	0	349	7	0	351	742	0	0	705	0	0	0	0	2,154	0.97	
1960	828	0	1	1	1,408	9	0	625	696	0	0	1,278	1	1	2	0	4,022	4.86	
1961	351	0	0	0	239	3	0	744	315	0	3	640	0	0	8	0	1,952	5.56	
1962	723	0	0	0	76	4	0	230	351	0	2	397	13	0	1	0	1,074	1.49	
1963	905	0	0	0	136	8	0	390	833	0	0	627	7	0	1	0	2,002	2.21	
1964	1,350	0	1	0	447	24	0	264	1,135	0	0	177	11	0	1	0	2,060	1.53	
1965	718	0	5	0	540	44	0	360	732	0	0	437	1	0	1	0	2,120	2.95	
1966	1,016	1	4	0	728	2	0	2,304	167	0	1	630	0	1	0	0	3,839	3.78	
1967	756	0	0	2	326	6	0	825	401	0	0	356	0	1	0	0	1,717	2.27	
1968	1,023	0	3	0	152	0	0	234	83	0	0	269	2	0	2	0	745	0.73	
1969	1,331	0	0	0	47	3	0	307	976	0	0	1,211	5	0	3	0	2,552	1.92	
1970	733	0	1	0	154	19	0	318	1,845	0	0	370	12	0	0	0	2,718	3.71	
1971	936	0	1	0	397	24	0	559	1,428	0	0	1,844	3	9	8	0	4,273	4.57	
1972	587	0	3	0	245	3	0	241	161	0	3	599	9	0	1	0	1,264	2.15	
1973	357	0	0	0	494	0	0	618	524	0	0	598	0	0	0	0	2,234	6.26	
1974	1,241	0	2	0	232	3	0	228	1,026	0	1	783	5	0	5	0	2,284	1.84	
1975	2,027	0	1	0	425	11	0	1,746	1,393	0	0	1,641	1	8	0	0	5,226	2.58	
1976	1,321	0	4	0	1,084	3	0	4,048	1,575	0	21	1,491	0	28	1	0	8,255	6.25	
1977	1,086	2	10	7	635	0	0	2,272	95	0	64	401	0	1	5	0	3,492	3.22	
1978	813	0	1	0	331	4	0	1,695	1,121	0	11	530	2	0	0	0	3,695	4.55	
1979	925	0	4	1	2,438	4	0	973	792	0	9	408	4	0	3	0	4,636	5.01	
1980	2,645	0	1	1	723	14	0	1,505	1,192	0	9	828	0	2	0	0	4,275	1.62	
1981	1,796	0	4	0	782	9	0	2,568	473	0	12	937	0	3	0	0	4,789	2.67	
1982	1,156	0	3	3	185	0	0	1,172	191	0	23	457	0	9	0	0	2,043	1.77	
1983	888	0	0	1	163	7	0	484	336	0	5	480	0	0	1	0	1,477	1.66	
1984	1,242	0	1	0	469	23	0	911	1,214	0	21	1,828	5	1	4	0	4,477	3.60	
1985	1,850	0	2	6	656	20	1	3,533	1,293	0	44	1,441	0	28	10	0	7,034	3.80	
1986	1,978	0	3	6	1,981	6	1	7,167	1,276	0	367	2,817	1	38	2	0	13,665	6.91	
1987	1,062	3	0	12	336	4	1	1,251	565	0	95	3,225	2	12	0	0	5,506	5.18	
1988	1,038	0	0	0	273	13	0	796	516	0	37	544	2	2	1	0	2,184	2.10	
1989	1,162	0	1	0	226	5	0	930	1,154	0	0	566	4	0	1	0	2,887	2.48	
1990	2,093	0	0	0	405	46	0	1,236	1,345	0	12	1,316	3	12	0	0	4,375	2.09	
1991	3,579	1	13	0	546	1	0	5,209	250	0	45	343	0	1	0	0	6,408	1.79	
1992	1,607	0	0	16	268	1	0	552	250	1	10	379	5	2	0	0	1,484	0.92	
1993	1,536	0	0	2	293	12	0	1,390	473	0	23	692	0	0	0	0	2,885	1.88	
1994	991	0	6	0	503	15	0	631	553	0	7	526	4	7	0	0	2,251	2.27	
1995	1,111	0	9	0	2,067	1	1	3,896	156	0	65	280	0	5	0	0 <sup>d</sup>	6,479 <sup>d</sup>	5.83	
1996	1,078	1	1	0	345	0	0	6,117	83	0	109	354	1	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	7,011 <sup>d</sup>	6.50	
1997	1,026	0	0	2	119	9	0	854	824	0	0 <sup>d</sup>	1,808 <sup>d</sup>	1.76						
1998	1,202	0	1	0	625	3	0 <sup>d</sup>	629 <sup>d</sup>											
1999	1,625	0	0	0 <sup>d</sup>	0 <sup>d</sup>														
2000	1,375	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	
2001	1,830	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	
2002	1,264	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	

56-97 Avg.

3.12

<sup>a</sup> R/S = return per spawner.

<sup>b</sup> Escapement not available.

<sup>c</sup> Younger age groups not available.

<sup>d</sup> Incomplete returns from brood year escapement.

Appendix B.4. Egegik River sockeye salmon escapement and return by brood year including estimated interception catch (in thousands), 1949 - 2002.

Return by Age Class																		
Brood Year	Escapement	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	3.4	Total	R/S <sup>a</sup>
1949	0 <sup>b</sup>	0 <sup>c</sup>	0	0	0	0	14	0	14 <sup>d</sup>									
1950	0 <sup>b</sup>	0 <sup>c</sup>	0	0	0	0	0	274	70	4	23	0	371 <sup>d</sup>					
1951	0 <sup>b</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0	0	0	0	325	1,018	0	1	1,301	2	0	6	0	2,653 <sup>d</sup>	
1952	0 <sup>b</sup>	0	0	0	623	0	0	446	241	0	1	295	19	2	5	0	1,632	
1953	0 <sup>b</sup>	0	0	0	26	0	0	39	435	2	0	337	254	0	12	0	1,105	
1954	0 <sup>b</sup>	0	0	0	11	4	0	13	1,190	0	0	641	87	0	46	0	1,992	
1955	0 <sup>b</sup>	0	1	0	20	0	0	163	672	0	0	396	6	1	6	0	1,265	
1956	1,104	0	6	0	2,025	0	0	3,190	925	0	2	685	1	0	12	0	6,846	6.20
1957	391	0	0	0	37	0	0	43	1,096	0	0	927	70	0	62	0	2,235	5.72
1958	246	0	0	0	42	2	0	73	817	0	0	308	16	0	3	0	1,261	5.13
1959	1,053	0	0	0	73	2	0	164	1,037	0	0	467	14	0	24	0	1,781	1.69
1960	1,799	8	0	0	447	21	0	328	4,447	0	1	2,560	49	0	50	0	7,911	4.40
1961	702	0	0	3	82	0	0	229	446	0	1	791	28	0	10	0	1,580	2.27
1962	1,027	0	0	0	22	0	0	69	950	0	0	375	28	0	30	0	1,474	1.44
1963	998	0	0	1	16	2	0	112	538	1	1	506	74	0	7	0	1,258	1.26
1964	850	0	1	0	126	6	0	69	1,454	1	0	242	73	0	12	0	1,983	2.33
1965	1,445	0	0	0	104	35	0	72	2,016	0	4	845	6	2	20	0	3,104	2.15
1966	804	0	0	1	249	0	0	752	600	0	2	890	7	0	10	0	2,511	3.12
1967	637	0	0	2	60	2	0	257	665	0	0	622	1	1	2	0	1,612	2.53
1968	339	0	0	0	41	0	0	56	87	0	0	258	3	5	9	0	459	1.35
1969	1,016	0	0	0	12	1	0	111	1,096	0	0	1,141	279	2	113	0	2,755	2.71
1970	920	0	0	0	59	0	0	89	796	0	1	175	95	0	25	0	1,240	1.35
1971	634	0	0	0	45	2	0	109	1,477	0	0	970	74	1	55	0	2,733	4.31
1972	546	0	0	1	57	2	0	61	1,508	0	0	1,264	48	0	18	0	2,959	5.42
1973	329	0	0	0	76	0	0	135	578	0	0	851	35	0	4	0	1,679	5.10
1974	1,276	0	0	0	131	18	0	99	2,224	0	0	496	54	0	3	0	3,025	2.37
1975	1,174	0	0	0	148	9	0	241	2,449	2	0	787	14	2	1	0	3,664	3.12
1976	509	1	1	2	612	59	0	789	3,003	0	4	846	0	0	0	0	5,317	10.45
1977	693	0	2	0	823	1	0	1,969	688	0	14	655	52	0	13	0	4,217	6.09
1978	896	0	0	2	398	6	0	510	6,071	0	0	2,184	25	4	8	0	9,208	10.28
1979	1,032	0	3	0	712	9	3	520	3,036	0	4	1,659	0	0	0	0	5,947	5.76
1980	1,061	0	1	13	803	26	0	2,225	4,576	0	6	917	7	0	0	0	8,575	8.08
1981	695	0	0	6	544	64	0	953	3,284	0	11	1,438	9	0	7	0	6,316	9.09
1982	1,035	2	2	4	988	12	0	1,874	1,796	0	9	1,638	11	2	2	0	6,339	6.12
1983	782	0	3	0	1,748	7	1	2,763	3,235	0	7	2,822	21	23	16	0	10,646	13.44
1984	1,165	0	1	8	608	85	0	978	6,539	3	10	5,029	215	13	39	0	13,528	11.61
1985	1,095	4	0	9	567	32	0	1,404	4,358	0	9	1,262	8	0	18	0	7,671	7.01
1986	1,152	0	2	14	1,850	10	0	3,733	3,912	0	92	4,515	86	83	34	0	14,331	12.44
1987	1,274	2	0	9	886	86	0	4,561	8,863	3	101	11,239	133	31	57	0	25,951	20.37
1988	1,599	0	1	0	413	62	0	1,278	11,061	0	4	5,650	261	3	152	0	18,885	11.81
1989	1,612	1	0	6	513	34	0	456	6,063	1	6	3,979	170	1	31	0	11,261	6.99
1990	2,192	0	0	2	403	66	0	867	9,598	1	3	4,721	21	28	30	0	15,739	7.18
1991	2,787	4	1	3	1,397	20	2	3,939	3,113	0	47	2,607	19	2	9	0	11,163	4.01
1992	1,946	5	0	32	335	54	3	1,117	4,963	2	4	3,099	53	16	17	0	9,701	4.99
1993	1,517	0	2	10	497	31	0	573	880	0	11	992	6	0	1	0	3,002	1.98
1994	1,898	1	8	0	368	65	0	982	4,228	0	0	3,071	11	15	9	0	8,758	4.61
1995	1,267	0	7	0	3,151	4	0	3,175	1,644	0	16	1,455	10	11	12	0 <sup>d</sup>	9,485 <sup>d</sup>	7.49
1996	1,076	0	1	0	497	5	0	1,791	515	3	40	1,727	28	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	4,806 <sup>d</sup>	4.28
1997	1,104	0	0	0	34	19	0	322	3,572	9	0 <sup>d</sup>	4,412 <sup>d</sup>	4.00					
1998	1,111	0	0	0	104	13	0 <sup>d</sup>	117 <sup>d</sup>										
1999	1,728	1	0	0 <sup>d</sup>	1 <sup>d</sup>													
2000	1,032	0 <sup>d</sup>																
2001	969	0 <sup>d</sup>																
2002	1,036	0 <sup>d</sup>																

56-97 Avg.

5.76

<sup>a</sup> R/S = return per spawner.

<sup>b</sup> Escapement not available.

<sup>c</sup> Younger age groups not available.

<sup>d</sup> Incomplete returns from brood year escapement.

Appendix B.5. Ugashik River sockeye salmon escapement and return by brood year including estimated interception catch (in thousands), 1949 - 2002.

Brood Year	Return by Age Class																Total	R/S <sup>a</sup>
	Escapement	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	3.4		
1949	0 <sup>b</sup>	0 <sup>c</sup>	0	0	0	0	2	0	2 <sup>d</sup>									
1950	0 <sup>b</sup>	0 <sup>c</sup>	0	0	0	1	45	0	0	3	0	0	49 <sup>d</sup>					
1951	0 <sup>b</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0	0	0	1	47	174	0	2	118	1	0	0	0	343 <sup>d</sup>	
1952	0 <sup>b</sup>	0	0	1	508	0	0	391	209	0	0	78	2	0	0	0	1,189	
1953	0 <sup>b</sup>	0	0	0	216	0	0	249	420	0	0	216	7	0	0	0	1,108	
1954	0 <sup>b</sup>	0	0	0	24	3	0	28	395	0	0	61	0	0	0	0	511	
1955	0 <sup>b</sup>	0	0	1	17	1	0	33	118	0	0	7	0	0	0	0	178	
1956	425	1	12	0	3,165	0	0	837	80	0	2	35	0	0	0	0	4,132	9.72
1957	215	0	0	1	35	0	0	105	354	0	2	100	4	0	2	0	603	2.80
1958	280	0	0	0	63	0	0	105	444	0	0	66	0	0	0	0	678	2.42
1959	219	0	0	0	18	0	0	38	310	0	0	132	0	0	1	0	499	2.28
1960	2,304	0	0	0	674	11	0	296	1,563	0	0	487	0	0	0	0	3,031	1.32
1961	349	0	0	3	240	2	0	500	247	0	1	120	0	0	0	0	1,114	3.19
1962	255	0	0	2	77	2	0	130	185	0	0	27	0	0	0	0	423	1.66
1963	388	0	0	0	13	0	0	21	91	0	0	23	0	0	0	0	148	0.38
1964	473	0	0	0	31	9	0	16	245	0	0	18	0	0	2	0	322	0.68
1965	997	0	0	0	86	2	0	38	249	0	1	162	1	0	0	0	539	0.54
1966	704	1	0	2	723	0	0	1,478	90	0	0	21	0	0	0	0	2,315	3.29
1967	239	0	0	0	56	0	0	50	44	0	0	34	0	0	0	0	184	0.77
1968	71	0	0	0	14	0	0	7	15	0	0	3	0	0	0	0	39	0.55
1969	160	0	0	0	4	0	0	5	53	0	0	26	2	0	2	0	92	0.58
1970	735	0	0	0	4	1	0	2	256	0	1	28	2	0	1	0	295	0.40
1971	530	0	0	0	178	0	0	236	290	0	0	130	0	0	1	0	835	1.58
1972	79	0	0	0	35	0	0	58	119	0	0	41	2	0	3	0	258	3.27
1973	39	0	0	1	16	0	0	8	17	0	0	46	4	0	0	0	92	2.36
1974	62	0	0	0	13	10	0	15	602	0	0	83	2	0	0	0	725	11.69
1975	429	0	3	0	1,484	4	0	575	1,721	0	0	325	2	1	0	0	4,116	9.59
1976	356	0	0	2	2,027	58	0	1,527	1,248	0	7	437	0	0	3	0	5,309	14.91
1977	202	0	2	18	585	0	0	1,614	266	0	10	186	6	1	4	0	2,692	13.33
1978	82	0	0	5	247	7	0	413	863	0	6	523	1	0	0	0	2,065	25.18
1979	1,707	0	20	0	3,076	8	0	851	1,471	0	14	562	0	5	0	0	6,006	3.52
1980	3,335	0	1	13	1,183	39	0	2,309	3,371	0	10	850	3	2	0	0	7,781	2.33
1981	1,328	0	2	10	1,603	4	0	2,632	2,278	0	4	933	1	1	0	0	7,468	5.62
1982	1,186	0	1	15	423	1	1	713	606	0	9	737	0	2	0	0	2,508	2.11
1983	1,001	0	0	10	650	6	1	342	632	0	3	319	1	1	0	0	1,965	1.96
1984	1,270	0	0	5	472	55	0	568	3,635	0	13	709	3	0	4	0	5,464	4.30
1985	1,006	2	1	6	508	2	0	721	978	0	4	469	0	5	0	0	2,695	2.68
1986	1,016	5	1	46	503	1	0	2,427	1,874	0	71	1,750	4	15	0	0	6,696	6.59
1987	687	7	1	9	828	11	0	1,626	1,875	0	25	2,310	10	20	24	0	6,745	9.82
1988	654	1	2	1	463	27	0	692	2,144	0	37	2,252	22	3	7	0	5,650	8.64
1989	1,713	3	7	7	694	14	0	391	2,479	0	12	955	6	1	4	0	4,573	2.67
1990	749	0	1	13	345	15	2	709	2,302	0	2	1,218	2	2	0	0	4,611	6.16
1991	2,482	1	6	0	2,034	1	0	3,167	597	0	14	326	0	4	0	0	6,151	2.48
1992	2,195	6	3	49	191	4	1	597	1,013	0	1	827	0	10	1	0	2,703	1.23
1993	1,413	1	2	2	265	7	0	352	241	0	17	198	0	0	1	0	1,086	0.77
1994	1,095	0	12	4	333	12	0	327	689	0	6	274	1	2	0	0	1,660	1.52
1995	1,321	3	18	7	2,808	1	0	1,562	185	0	19	82	0	1	0	0 <sup>d</sup>	4,686 <sup>d</sup>	3.55
1996	692	0	0	40	231	0	3	978	36	0	16	81	1	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	1,386 <sup>d</sup>	2.00
1997	657	1	0	2	234	0	0	701	1,553	0	0 <sup>d</sup>	2,491 <sup>d</sup>	3.79					
1998	925	0	1	0	204	1	0 <sup>d</sup>	206 <sup>d</sup>										
1999	1,662	0	6	0 <sup>d</sup>	6 <sup>d</sup>													
2000	638	0 <sup>d</sup>																
2001	866	0 <sup>d</sup>																
2002	892	0 <sup>d</sup>																

56-97 Avg.

4.39

<sup>a</sup> R/S = return per spawner.

<sup>b</sup> Escapement not available.

<sup>c</sup> Younger age groups not available.

<sup>d</sup> Incomplete returns from brood year escapement.

Appendix B.6. Wood River sockeye salmon escapement and return by brood year including estimated interception catch (in thousands), 1950 - 2002.

		Return by Age Class																
Brood Year	Escapement	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	3.4	Total	R/S <sup>a</sup>
1950	0 <sup>b</sup>	0 <sup>b</sup>	0 <sup>c</sup>	1	57	0	0	0	0	58 <sup>d</sup>								
1951	0 <sup>b</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0	456	290	0	3	54	0	0	1	0	804 <sup>d</sup>	
1952	0 <sup>b</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0	690	0	0	558	29	0	2	34	0	0	0	0	1,313 <sup>d</sup>	
1953	0 <sup>b</sup>	0	0	0	301	0	0	331	139	0	2	34	0	0	1	0	808	
1954	0 <sup>b</sup>	0	0	0	1,237	0	0	140	1,085	0	1	66	0	0	0	0	2,529	
1955	0 <sup>b</sup>	0	0	0	2,407	0	0	833	401	0	5	143	0	0	0	0	3,789	
1956	773	0	0	48	774	0	0	627	24	0	0	0	0	0	0	0	1,473	1.91
1957	289	0	0	21	136	0	0	257	35	0	0	0	0	0	0	0	449	1.56
1958	960	0	1	0	2,145	1	0	389	75	0	0	32	0	0	0	0	2,643	2.75
1959	2,209	0	0	1	979	10	0	398	359	0	1	55	0	0	2	0	1,805	0.82
1960	1,016	0	6	0	1,474	0	0	1,039	106	0	2	105	1	0	0	0	2,734	2.69
1961	461	0	0	10	255	0	0	1,183	24	0	2	20	0	1	1	0	1,496	3.25
1962	874	1	2	0	992	1	2	340	116	0	6	43	0	0	0	0	1,503	1.72
1963	721	0	0	0	536	1	0	769	76	0	0	46	0	0	0	0	1,428	1.98
1964	1,076	0	1	6	452	0	0	347	338	0	0	74	0	0	2	0	1,220	1.13
1965	675	2	1	8	472	1	0	999	90	0	0	213	0	0	1	0	1,786	2.65
1966	1,209	0	7	29	974	0	0	988	46	0	7	69	0	0	1	0	2,121	1.75
1967	516	0	3	21	642	0	0	269	75	0	2	80	0	0	0	0	1,092	2.12
1968	649	0	1	0	514	0	0	565	5	0	4	19	0	0	0	0	1,108	1.71
1969	604	0	0	4	57	0	0	445	201	0	10	116	0	0	0	0	833	1.38
1970	1,162	0	2	0	1,539	0	0	1,002	231	0	0	26	0	0	0	0	2,800	2.41
1971	851	3	0	18	456	0	0	576	198	0	1	49	0	0	0	0	1,301	1.53
1972	431	2	1	22	779	0	0	631	32	0	20	27	0	0	0	0	1,514	3.51
1973	330	1	1	0	213	0	0	1,148	74	0	3	44	0	0	0	0	1,484	4.50
1974	1,709	0	3	6	2,956	4	0	1,698	421	0	5	71	0	0	0	0	5,164	3.02
1975	1,270	13	47	12	1,592	2	0	1,977	406	0	2	734	0	0	0	0	4,785	3.77
1976	817	0	3	0	2,278	3	0	2,589	572	0	10	265	0	0	0	0	5,720	7.00
1977	562	0	20	0	1,029	0	0	2,173	40	0	0	26	2	0	0	0	3,290	5.85
1978	2,267	0	0	0	1,364	3	0	1,029	784	0	12	96	0	0	0	0	3,288	1.45
1979	1,706	0	10	0	2,643	0	0	1,491	24	0	1	13	0	0	0	0	4,182	2.45
1980	2,969	0	0	0	453	0	0	978	72	0	1	101	0	0	0	0	1,605	0.54
1981	1,233	0	0	0	626	0	0	1,137	60	0	0	86	0	0	0	0	1,909	1.55
1982	976	0	4	0	522	0	0	765	121	0	12	14	0	0	0	0	1,438	1.47
1983	1,361	0	1	5	1,940	0	2	1,154	15	0	2	75	0	0	0	0	3,194	2.35
1984	1,003	0	0	0	586	0	2	1,340	32	0	15	23	0	0	0	0	1,998	1.99
1985	939	8	3	15	1,127	0	1	1,390	29	0	2	12	0	1	0	0	2,588	2.76
1986	819	7	2	25	1,179	0	1	1,970	70	0	12	64	0	0	0	0	3,330	4.07
1987	1,337	25	0	30	1,334	0	14	756	98	0	8	92	0	1	0	0	2,358	1.76
1988	867	4	1	8	1,613	0	3	1,425	90	0	15	34	0	0	0	0	3,193	3.68
1989	1,186	1	4	16	2,293	0	0	1,922	13	0	2	39	0	0	0	0	4,290	3.62
1990	1,089	10	1	10	1,104	1	3	1,208	286	0	2	169	0	0	0	0	2,794	2.61
1991	1,160	0	12	9	2,633	0	0	2,466	54	0	65	71	0	0	0	0	5,310	4.58
1992	1,286	10	1	57	2,398	0	2	1,674	90	0	0	49	0	0	1	0	4,282	3.33
1993	1,176	14	0	3	1,715	0	9	1,161	129	0	3	191	0	0	0	0	3,225	2.74
1994	1,472	0	10	0	2,747	1	0	1,993	448	0	2	91	0	0	0	0	5,292	3.59
1995	1,482	1	5	0	3,524	0	0	2,594	149	0	61	35	0	0	0	0 <sup>d</sup>	6,369 <sup>d</sup>	4.30
1996	1,650	0	0	0	2,705	0	0	3,676	3	0	58	13	0	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	6,455 <sup>d</sup>	3.91
1997	1,512	4	0	63	174	0	4	675	164	0	0 <sup>d</sup>	1,084 <sup>d</sup>	0.72					
1998	1,756	0	3	11	2,910	1	0 <sup>d</sup>	2,924 <sup>d</sup>										
1999	1,512	4	2	0 <sup>d</sup>	6 <sup>d</sup>													
2000	1,300	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	
2001	1,459	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	
2002	1,284	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	

56-97 Avg.

2.66

<sup>a</sup> R/S = return per spawner.

<sup>b</sup> Escapement not available.

<sup>c</sup> Younger age groups not available.

<sup>d</sup> Incomplete returns from brood year escapement.

Appendix B.7. Igushik River sockeye salmon escapement and return by brood year including estimated interception catch (in thousands), 1950 - 2002.

Brood Year	Return by Age Class																Total	R/S <sup>a</sup>
	Escapement	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	3.4		
1950	0 <sup>b</sup>	0 <sup>c</sup>	1	78	0	0	0	0	79 <sup>d</sup>									
1951	0 <sup>b</sup>	0 <sup>c</sup>	0	615	62	0	1	29	0	0	2	0	709 <sup>d</sup>					
1952	0 <sup>b</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0	147	0	0	303	9	0	5	73	0	0	0	0	537 <sup>d</sup>	
1953	0 <sup>b</sup>	0	0	0	98	0	0	1	20	0	3	65	0	0	1	0	188	
1954	0 <sup>b</sup>	0	0	0	175	0	0	269	204	0	0	113	0	1	0	0	762	
1955	0 <sup>b</sup>	0	0	0	454	0	0	781	113	0	0	94	0	0	0	0	1,442	
1956	400	0	0	0	169	0	0	523	12	0	3	36	0	0	0	0	743	1.86
1957	130	0	0	0	2	0	0	35	19	0	0	20	0	0	0	0	76	0.58
1958	107	0	0	0	14	0	0	71	20	0	0	28	0	0	0	0	133	1.24
1959	644	0	0	0	101	0	0	155	93	0	0	22	0	0	0	0	371	0.58
1960	495	0	0	1	61	0	0	310	44	0	0	57	0	0	0	0	473	0.96
1961	294	0	0	1	33	0	1	364	20	0	0	17	0	0	0	0	436	1.48
1962	16	0	0	8	20	0	0	280	9	0	0	9	0	0	0	0	326	20.38
1963	92	0	0	3	254	0	0	190	36	0	0	25	0	0	0	0	508	5.52
1964	129	0	0	1	162	0	0	585	133	0	0	49	0	0	0	0	930	7.21
1965	181	0	0	0	371	0	0	436	203	0	0	80	0	0	0	0	1,090	6.02
1966	206	0	0	0	66	0	0	383	6	0	0	15	0	0	0	0	470	2.28
1967	282	0	0	3	57	0	0	90	13	0	0	12	0	0	0	0	175	0.62
1968	195	0	0	0	43	0	0	120	0	0	2	10	0	0	0	0	175	0.90
1969	512	0	0	0	1	0	0	131	301	0	2	103	0	0	0	0	538	1.05
1970	371	0	0	1	26	0	0	170	41	0	0	71	0	0	0	0	309	0.83
1971	211	0	0	1	48	0	0	164	60	0	0	30	0	0	0	0	303	1.44
1972	60	0	0	4	89	0	0	109	6	0	8	13	0	0	0	0	229	3.82
1973	60	0	0	0	19	0	0	650	25	0	2	29	0	0	0	0	725	12.08
1974	359	0	0	7	441	1	0	750	346	0	4	25	0	0	0	0	1,574	4.39
1975	241	0	0	0	783	0	0	2,556	137	0	2	503	0	0	0	0	3,981	16.52
1976	186	0	0	0	551	3	0	1,411	194	0	20	215	0	0	0	0	2,394	12.87
1977	96	0	0	6	294	0	0	1,689	9	0	8	9	0	0	0	0	2,015	20.99
1978	536	0	0	0	96	0	0	330	84	0	1	15	0	0	0	0	526	0.98
1979	860	0	0	0	422	0	0	406	13	0	0	5	0	0	0	0	846	0.98
1980	1,988	0	0	0	20	0	0	271	25	0	0	56	0	0	0	0	372	0.19
1981	591	0	0	0	188	0	0	779	8	0	1	49	0	0	0	0	1,025	1.73
1982	424	0	0	7	57	0	0	434	9	0	2	10	0	0	0	0	519	1.22
1983	180	1	0	0	151	0	0	353	8	0	2	29	0	0	0	0	544	3.02
1984	185	0	0	0	41	0	0	641	56	0	5	36	0	1	0	0	780	4.22
1985	212	0	0	7	515	0	0	938	86	0	7	79	0	1	0	0	1,633	7.70
1986	308	3	0	14	236	0	1	2,231	27	0	15	30	0	0	0	0	2,557	8.30
1987	169	2	0	11	158	0	0	587	7	0	12	29	0	0	0	0	806	4.77
1988	170	0	0	1	189	0	1	1,056	41	0	3	36	0	0	0	0	1,327	7.81
1989	462	0	0	15	508	0	0	1,119	59	0	7	53	0	0	0	0	1,761	3.81
1990	366	1	0	3	159	0	0	1,429	183	0	4	146	0	0	0	0	1,925	5.26
1991	756	0	0	1	318	0	0	1,314	3	0	5	20	0	0	0	0	1,661	2.20
1992	305	0	0	3	44	0	0	148	8	0	0	26	0	0	0	0	229	0.75
1993	406	0	0	1	132	0	2	316	20	0	0	35	0	0	0	0	506	1.25
1994	446	0	0	0	238	0	0	846	92	0	1	26	0	0	0	0	1,203	2.70
1995	473	0	0	0	653	0	0	1,599	15	0	21	13	0	0	0	0 <sup>d</sup>	2,301 <sup>d</sup>	4.86
1996	401	0	0	0	171	0	0	1,237	1	0	4	4	0	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	1,417 <sup>d</sup>	3.53
1997	128	0	0	19	34	0	0	52	10	0	0 <sup>d</sup>	115 <sup>d</sup>	0.90					
1998	216	0	0	0	143	0	0 <sup>d</sup>	143 <sup>d</sup>										
1999	446	0	0	0 <sup>d</sup>														
2000	413	0 <sup>d</sup>																
2001	410	0 <sup>d</sup>																
2002	123	0 <sup>d</sup>																
56-97 Avg.																	4.52	

<sup>a</sup> R/S = return per spawner.

<sup>b</sup> Escapement not available.

<sup>c</sup> Younger age groups not available.

<sup>d</sup> Incomplete returns from brood year escapement.

Appendix B.8. Nushagak River sockeye salmon escapement and return by brood year including estimated interception catch (in thousands), 1974 - 2002.

Brood Year	Escapement <sup>a</sup>	Return by Age Class															Total	R/S <sup>b</sup>	
		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	3.4			
1974	185	c	c	o	o	c	c	c	c	c	c	c	c	c	c	0			
1975	752	o	c	c	c	c	c	c	c	c	c	c	c	c	1	0	0	1 <sup>d</sup>	
1976	470	o	c	c	c	c	c	c	c	c	c	c	c	c	1	0	0	319 <sup>d</sup>	
1977	553	c	c	c	c	c	67	1,946	3	0	134	11	1	0	0	0	0	2,162 <sup>d</sup>	
1978	664	c	c	436	100	0	149	779	20	0	1	6	0	1	0	0	0	1,491	2.24
1979	499	18	1	466	494	0	16	854	6	0	42	5	0	0	0	0	0	1,902	3.81
1980	3,317	19	0	447	84	0	67	344	162	0	4	156	0	0	0	0	0	1,284	0.39
1981	1,012	9	0	137	170	0	14	1,476	2	0	86	32	0	0	0	0	0	1,926	1.90
1982	601	35	0	351	164	0	49	894	2	0	62	7	0	0	0	0	0	1,563	2.60
1983	404	100	0	608	114	0	122	553	6	0	16	3	0	0	0	0	0	1,521	3.77
1984	593	10	0	226	51	0	32	566	2	0	20	6	0	0	0	0	0	912	1.54
1985	498	68	0	510	64	0	62	612	6	0	13	16	0	1	0	0	0	1,351	2.71
1986	990	68	0	837	114	0	58	676	0	0	182	64	0	0	0	0	0	1,999	2.02
1987	388	140	0	933	36	0	253	535	36	0	101	10	0	1	0	0	0	2,047	5.28
1988	483	68	0	546	214	0	120	1,426	12	0	62	8	0	0	0	0	0	2,457	5.09
1989	513	68	0	483	124	0	35	703	1	0	18	4	0	0	0	0	0	1,436	2.80
1990	680	53	0	761	36	0	104	253	18	0	11	7	0	4	0	0	0	1,247	1.83
1991	493	10	1	137	172	0	6	1,010	3	0	131	19	0	0	0	0	0	1,491	3.03
1992	695	85	0	496	228	0	11	650	9	0	63	11	0	0	0	0	0	1,551	2.23
1993	715	43	0	43	63	0	2	803	1	0	119	49	0	0	0	0	0	1,124	1.57
1994	509	0	0	55	81	0	2	665	6	0	9	53	0	0	0	0	0	872	1.71
1995	281	5	1	8	143	0	0	923	34	0	109	15	0	0	0	0	0 <sup>d</sup>	1,239 <sup>d</sup>	4.41
1996	504	0	0	6	502	0	5	1,795	3	0	58	5	0	0	0	0	0 <sup>d</sup>	2,374 <sup>d</sup>	4.71
1997	373	0	0	129	71	0	6	254	14	0	0 <sup>d</sup>	474 <sup>d</sup>	1.27						
1998	459	2	0	10	312	0	0 <sup>d</sup>	324 <sup>d</sup>											
1999	312	4	0	0 <sup>d</sup>	4 <sup>d</sup>														
2000	404	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	
2001	811	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	
2002	316	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	

78-97 Avg.

2.75

<sup>a</sup> Escapement for brood years 1974 - 1983 and 1985 - 1986 based on Nuyakuk tower plus aerial survey estimates. Escapement for brood years 1984 and 1987 - present based on Nushagak sonar estimates.

<sup>b</sup> R/S = return per spawner.

<sup>c</sup> Younger age groups not available.

<sup>d</sup> Incomplete returns from brood year escapement.

Appendix B.9. Togiak River sockeye salmon escapement and return by brood year including estimated interception catch (in thousands), 1950 - 2002.

		Return by Age Class																
Brood		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	3.4	Total	R/S <sup>a</sup>
Year	Escapement																	
1950	0 <sup>b</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0	28	0	0	0	0	28 <sup>d</sup>	
1951	0 <sup>b</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0	98	53	0	0	9	0	0	0	0	160 <sup>d</sup>	
1952	0 <sup>b</sup>	0 <sup>c</sup>	0 <sup>c</sup>	0	152	0	0	58	9	0	0	6	0	0	0	0	225 <sup>d</sup>	
1953	0 <sup>b</sup>	0	0	1	31	0	0	84	8	0	0	16	0	0	0	0	140	
1954	0 <sup>b</sup>	0	0	0	20	0	0	146	12	0	0	17	2	0	0	0	197	
1955	0 <sup>b</sup>	0	0	0	136	0	0	190	9	0	1	38	0	0	0	0	374	
1956	225	0	0	4	114	0	0	306	22	0	1	13	0	0	0	0	460	2.04
1957	25	2	0	5	48	0	0	70	20	0	0	36	1	0	0	0	182	7.29
1958	72	0	1	2	68	0	0	115	59	0	0	25	0	0	0	0	270	3.76
1959	210	0	0	0	141	0	0	92	56	0	0	7	0	0	0	0	296	1.41
1960	163	0	0	2	191	0	0	274	22	0	0	52	0	0	0	0	541	3.32
1961	122	1	0	3	85	0	0	216	15	0	1	19	0	0	0	0	340	2.79
1962	82	0	0	7	48	0	0	102	4	0	0	8	0	0	0	0	169	2.73
1963	116	0	0	2	43	0	0	65	18	0	0	24	0	0	0	0	152	1.31
1964	105	0	0	1	43	0	0	84	41	0	0	6	0	0	0	0	175	1.67
1965	98	0	0	2	154	0	0	181	31	0	0	37	0	0	0	0	405	4.22
1966	104	1	0	6	200	0	0	419	4	0	1	9	0	0	0	0	640	6.15
1967	81	1	0	6	18	0	0	99	16	0	1	40	0	0	0	0	181	2.23
1968	50	0	0	1	49	0	0	190	6	0	3	13	0	0	0	0	262	5.24
1969	117	0	0	5	28	0	0	142	25	0	3	13	0	0	0	0	216	1.85
1970	203	0	0	1	54	0	0	226	55	0	1	70	0	0	0	0	407	2.00
1971	200	0	0	4	106	0	0	317	62	0	1	68	0	0	0	0	558	2.79
1972	79	0	0	2	93	0	0	150	21	0	2	34	0	0	0	0	302	3.83
1973	107	1	0	10	151	0	0	442	18	0	1	31	0	0	0	0	654	6.11
1974	104	0	0	2	271	0	0	307	73	0	3	45	0	1	0	0	702	6.75
1975	181	1	0	7	195	0	0	848	87	0	2	59	0	0	0	0	1,199	6.62
1976	189	0	0	1	189	0	0	558	142	0	4	175	0	0	0	0	1,069	5.66
1977	163	0	0	5	232	0	0	617	14	0	4	14	0	0	0	0	886	5.44
1978	306	0	0	12	149	0	0	430	65	0	1	25	0	0	0	0	682	2.23
1979	198	1	0	1	270	0	0	293	12	0	2	5	0	0	0	0	584	2.95
1980	527	0	0	5	45	0	1	224	10	0	0	19	0	0	0	0	304	0.58
1981	307	2	0	11	53	0	0	245	15	0	1	16	0	0	0	0	343	1.12
1982	289	0	0	16	109	0	0	255	14	0	5	26	0	0	0	0	425	1.47
1983	213	1	0	3	285	0	2	924	9	0	2	21	0	0	0	0	1,247	5.86
1984	151	0	0	14	21	0	0	109	4	0	1	17	0	0	0	0	166	1.10
1985	153	0	0	7	35	0	0	194	35	0	1	77	0	1	0	0	350	2.29
1986	203	0	0	18	77	0	1	445	83	0	14	121	0	0	0	0	759	3.74
1987	278	0	0	7	190	0	1	575	31	0	7	81	0	0	0	0	892	3.21
1988	309	1	0	9	111	0	3	403	34	0	3	53	0	0	0	0	617	2.00
1989	104	0	0	36	132	0	1	328	7	0	1	41	0	0	0	0	546	5.25
1990	166	1	0	23	101	0	1	460	75	0	5	37	0	0	0	0	703	4.23
1991	254	1	3	3	189	0	1	429	28	0	8	29	0	0	0	0	691	2.72
1992	210	1	0	35	50	0	1	124	33	0	1	30	0	0	0	0	275	1.31
1993	189	0	0	4	64	0	0	229	6	0	4	15	0	0	0	0	322	1.71
1994	174	1	0	3	43	0	0	167	31	0	1	8	0	0	0	0	254	1.46
1995	211	0	1	6	341	0	1	1,010	11	0	5	66	0	0	0	0 <sup>d</sup>	1,441 <sup>d</sup>	6.83
1996	187	1	0	9	87	0	0	987	4	0	8	21	1	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	1,444 <sup>d</sup>	7.72
1997	152	0	0	5	43	0	0	305	16	0	0 <sup>d</sup>	369 <sup>d</sup>	2.43					
1998	175	0	0	1	54	0	0 <sup>d</sup>	55 <sup>d</sup>										
1999	196	0	0	0 <sup>d</sup>														
2000	352	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	
2001	303	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	
2002	162	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	0 <sup>d</sup>	

56-97 Avg.

3.46

<sup>a</sup> R/S = return per spawner.

<sup>b</sup> Escapement not available.

<sup>c</sup> Younger age groups not available.

<sup>d</sup> Incomplete returns from brood year escapement.