

ABUNDANCE, AGE, SEX, AND SIZE STATISTICS
FOR SOCKEYE, CHUM AND PINK SALMON IN LOWER COOK INLET, 1996



by
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and
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ABSTRACT

Aerial and foot surveys were used to estimate the 1996 sockeye *Oncorhynchus nerka*, chum *O. keta*, and pink *O. gorbuscha* salmon escapements in the Lower Cook Inlet management area. Age, length, and weight samples were obtained from seven sockeye salmon stocks. A total of 449,685 sockeye, 3,764 chum, and 451,506 pink salmon were harvested in this management area. Another 64,572 sockeye, 117,517 chum, and 450,154 pink salmon were estimated in the spawning escapement. The dominant ages of sockeye salmon throughout Lower Cook Inlet were 1.2 and 1.3. The proportion of sockeye salmon males ranged from a low of 37% in Neptune Bay catch samples to a high of 58% in the Kirschner Subdistrict catch samples. Sockeye salmon ranged in mean size from 488 mm in China Poot Bay to 544 mm in English Bay and from 1.77 kg in Neptune Bay to 2.56 kg in English Bay. Limited age, length and weight samples were collected from the McNeil River escapement in 1996.

KEY WORDS: Age, chum salmon, escapement, length, Lower Cook Inlet, pink salmon, *Oncorhynchus*, sex, sockeye salmon, weight

INTRODUCTION

The Lower Cook Inlet (LCI) Management Area for salmon is composed of all waters west of Cape Fairfield in the Gulf of Alaska, north of Cape Douglas in Shelikof Straits, and south of Anchor Point in Cook Inlet. The area is divided into five management districts: Kamishak Bay, Barren Islands, Southern, Outer, and Eastern (Figure 1); fishing does not occur in the Barren Islands District. Purse seines and set gillnets are the only legal commercial gear types for salmon. Entry into the commercial fishery was limited in 1972.

In 1961, the Alaska Department of Fish and Game (ADF&G) began documenting LCI commercial catches of the five Pacific salmon species that occur in Alaska. Sockeye *Oncorhynchus nerka* and chum salmon *O. keta* catch sampling for age, weight, length (AWL) and sex began in 1970. AWL data between 1970 and 1986, and between 1988 and 1994, has been summarized by Schroeder (1984, 1985, 1986), Morrison (1987), Yuen et al. (1989, 1990, 1991, 1992), and Yuen and Bucher (1994a, 1994b, 1995). There was no catch-sampling program in 1987. Aerial and ground escapement surveys of pink salmon *O. gorbuscha* began in 1960, chum salmon in 1964, and sockeye salmon in 1969. Annual escapement data are summarized in annual management reports for the Lower Cook Inlet Area (e.g., Bucher and Hammarstrom 1996).

Historically, fishing for a single species within a bay or drainage has lasted three to six weeks. Sockeye salmon fisheries begin as early as June while pink and chum salmon fisheries begin in July. Both fisheries end in August. Commercial fishing for chinook salmon *O. tshawytscha* has begun as early as May, and fishing for coho salmon *O. kisutch* has extended into September. Current management strategy has established fishing districts and sub-districts to facilitate management of discrete stocks. Commercial harvests are managed to meet predetermined escapement goals and to obtain adequate escapement for all run segments of a stock.

The purpose of the Lower Cook Inlet salmon catch-sampling program is to collect sockeye and chum salmon AWL data from purse seine fisheries that target discrete stocks. These single-stock fisheries normally account for over 90% of the total sockeye and chum catch from Lower Cook Inlet. The purse seine fisheries in the Halibut Cove, Halibut Cove Lagoon, Tutka Bay, Douglas River, and the three set gillnet fisheries in Lower Cook Inlet were not sampled because they did not target specific local stocks. Chinook salmon samples also were not collected because total chinook salmon harvest is typically <1% of the total salmon catch. The coho and pink salmon catches normally are not sampled because they exhibit little inter-annual age composition variation.

This report summarizes the 1996 estimates of age and size composition of samples obtained from four discrete sockeye salmon fisheries and three sockeye salmon spawning populations. Monitoring changes in age composition allows fishery managers to prepare pre-season forecasts of abundance and evaluate spawning escapement goals. This report also summarizes methods used to estimate total escapement from aerial and ground surveys.

METHODS

The Lower Cook Inlet salmon harvest has been managed as 16 independent purse seine fisheries, most of which target individual discrete stocks of sockeye, pink or chum salmon, each with their own escapement goal. Individual stocks occurred within distinct geographical sampling strata (Figure 2).

Most catch samples were obtained dockside when tenders were delivering catches from a single fishery. If tenders were expected to gather fish from several fisheries before returning to port, then samples were obtained aboard the tender before salmon from the targeted fishery were placed in the hold. The catch sampling crew interviewed the fishers delivering salmon to determine the origin of the catch before taking samples. If none of the above were possible then samples were obtained from a tender hold provided the skipper was interviewed to confirm that no salmon from an earlier sampling period were present.

There were several sockeye and chum salmon runs which, due to expected low returns, were closed to commercial fishing this year. Thus, age composition estimates were based on a number of scales obtained from escapement samples from Chenik and Delight lakes sockeye salmon and McNeil Lagoon Chum Salmon.

Salmon were measured from mid-eye to fork of tail (± 1 mm) using a *Limnoterra*² electronic fish measuring board (FMB IV). An *Ohaus*² (Model CT6000-S) electronic balance was used to weigh salmon to the nearest gram. Sex was generally determined from external secondary sexual characteristics (*e.g.* kipe, humped back, etc.). If necessary, a small incision near the vent was made to inspect the gonads and confirm the sex.

Scales were collected from commercial catch and escapement sampled fish to determine age. When possible, scales were collected from the *preferred area* of each salmon: an area 2-3 rows above the lateral line, posterior to the dorsal fin and anterior to the anal fin. Scales were cleaned and mounted sculptured sides up on a gummed card and then heat-pressed onto acetate cards for reading and archival. Images of scale impressions were magnified 35x and projected on a microfiche reader so the number of annuli per scale could be counted to determine age.

We used the European age designation system (Koo 1962). The first digit in this system refers to the number of freshwater annuli, the second digit refers to the number of marine annuli, and the total age is the sum of the two digits plus one. For example, an age-1.2 salmon is a 4-year-old salmon that spent 2 years in fresh water (first winter spent in the gravel as an alevin) and 2 years at sea.

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

Age composition sample sizes for scale collections were set for each sampling stratum to estimate age proportions p_i from a population of k age groups simultaneously within a specified distance d of their true population age proportions π_i , 90% of the time ($1 - \alpha$). That is,

$$Pr\left(\bigcap_{i=1}^k |p_i - \pi_i| \leq d\right) \geq 1 - \alpha, \quad 1$$

where d and α were respectively chosen to be 0.05 and 0.10 for all scale samples; $\alpha_i = 2(1 - \Phi(z_i))$, $\sum \alpha_i < \alpha$, $\Phi(z_i)$ = area under the standard normal distribution; and $z_i = d \sqrt{n_i} / \sqrt{p_i(1-p_i)}$. Thompson (1987) calculated a maximum sample size of 403 for a worst-case scenario when three age groups were present in equal numbers, where $d = 0.05$, and $\alpha = 0.10$. Any deviation in the number of age groups or unequal contributions by age group would require a smaller sample size.

Sample sizes for mean weights ranged between 5 and 50 depending on σ . Most sample sizes were around 20 for a 200-salmon sample, or 1 in 10 salmon of each sex.

Estimates of standard errors by age group were derived according to procedures for stratified random sampling described by Snedecor and Cochran (1967):

$$SE = \sqrt{\sum C_h^2 \frac{s_h^2}{n_h}}, \quad 2$$

where C_h^2 = the salmon catch in the h th stratum, and s_h^2 = the sample variance in the h th stratum. Catch totals were obtained from harvest receipts (commonly referred to as fish tickets) which must be used to document each sale by a licensed fisher.

All pink and chum and most sockeye salmon escapement estimates in Lower Cook Inlet were based on periodic counts made by an observer either flying in a fixed-wing aircraft or walking along selected streams (Tables 1, 2, and 3). Sockeye salmon escapement estimates for English Bay, and Chenik Lake were based on counts made at weirs.

Pink and chum salmon generally accumulated in surveyed streams over time, however, many often died before the last survey was completed. Therefore, survey counts were usually adjusted for stream life: the average length of time a spawning pink or chum salmon was alive and available to surveyors. Our method of considering stream life in estimating total pink and chum salmon

escapements was similar to that described by Johnson and Barrett (1988). First, daily surveys were converted to fish-days:

$$fish - days = \frac{(x_i + x_{i-1})}{2} (d_i - d_{i-1}), \quad 3$$

where d_i = Julian calendar date of survey i ($1 < d < 365$) and x_i = number of live pink or chum salmon observed in the study stream during survey i . Then, the area under the fish-day curve is found by integration:

$$area = \sum_{i=1}^{n+1} \frac{(x_i + x_{i-1})}{2} (d_i - d_{i-1}), \quad 4$$

where n = total number of surveys, $x_0 = x_{n+1} = 0$. Pink and chum salmon were not expected to enter streams before 1 July (d_0 = Julian date 191) or after 15 September (d_{n+1} = Julian date 258) unless otherwise noted.

Finally, dividing fish-days by stream life, in this case 17.5 d, yielded total escapement in numbers of salmon:

$$escapement = \frac{\sum_{i=1}^{n+1} \frac{(x_i + x_{i-1})}{2} (d_i - d_{i-1})}{17.5}. \quad 5$$

If this estimate was less than the greatest number of salmon observed on any one survey, we used the peak survey count instead of the result from equation (5) as the total escapement estimate. If both aerial and ground surveys were available, we selected the survey we believed to be the most accurate estimate of total escapement.

Sockeye salmon tended to accumulate in surveyed lakes and most were often still alive after the last spawning surveys were completed. Accordingly, peak counts were used as an escapement index for this species, unless otherwise noted.

RESULTS

In 1996, Lower Cook Inlet salmon harvests included: 449,685 sockeye, 3,764 chum, and 451,506 pink salmon; total escapements were estimated to be 64,572 sockeye, 117,517 chum, and 450,154 pink salmon (Tables 4, 5, and 6, respectively).

Sockeye salmon catch or escapement age, weight, and length (AWL) samples were collected in four commercial fishing districts: Southern, Outer, Eastern and Kamishak (salmon do not return to streams in the Barren Islands District). Samples from sockeye salmon fisheries were obtained between 4 June and 29 July. The commercially harvested stocks sampled represented over 65% of the total Lower Cook Inlet sockeye salmon catch. All of the catch samples met or exceeded the 90% confidence level where $d = 0.05$. Three escapement samples (Chenik Lake, Delight Lake and English Bay) also met this criterion. A total of 3,549 readable scales was collected (Table 7).

Southern District Sockeye Salmon

The only Southern District fisheries assumed to be harvesting discrete sockeye salmon runs occur in China Poot and Neptune bays. The runs originating from Leisure Lake, which drains into China Poot Bay, and Hazel Lake, which drains into Neptune Bay, supported the 2 largest sockeye fisheries in Lower Cook Inlet in 1996. Both of these runs were enhanced by ongoing lake stocking programs that began in 1976 and 1988 respectively. The 1996 common property commercial fisheries in China Poot and Neptune bays harvested 110,445 and 100,500 sockeye salmon respectively, while their respective hatchery cost recovery harvests accounted for an additional 12,064 and 2,171 fish. Biological data on sockeye salmon returning to China Poot and Neptune bays have been collected since 1980 and 1993, respectively (Appendix A). The mean sockeye weight in our catch samples was 1.79 kg ($n=56$) for China Poot and 1.77 kg ($n=31$) for Neptune. The mean sockeye length in our catch samples was 488 mm ($n=562$) for China Poot and 492 mm ($n=394$) for Neptune. China Poot catch samples consisted of 89.0% age-1.2 sockeye salmon and 52.7% females; whereas Neptune samples consisted of 90.4% age-1.2 fish and 63.5% females (Tables 8 and 9, respectively). Since a barrier falls prevents upstream spawning migration into Leisure Lake, efforts were made to harvest all returning sockeye salmon in that terminal fishery.

The Halibut Cove purse seine and set gill net fishery exploits mixed stocks and harvested 75,300 sockeye salmon in 1996. Mixed stocks were also harvested in various set gillnet fisheries. The reported harvest of sockeye salmon near Barabara Creek was 7,539; 20,300 sockeyes were harvested in Kasitsna/Tutka bays, and 11,926 and 6,981 in Seldovia and English bays, respectively. The only large spawning escapement of sockeye salmon in the Southern District occurred in the English Bay River drainage where 12,380 sockeye salmon passed through the weir and an additional 5,734 sockeyes were harvested for the cost recovery program (Paul McCollum, Chugach Regional Resources Commission, personal communication).

Outer District Sockeye Salmon

Wild runs in Nuka Bay supported a commercial harvest of 14,999 sockeye salmon in 1996. Biological data on sockeye salmon returning to Nuka Bay have been collected since 1984 (Appendix B). Escapement scale samples were obtained from 54 sockeye salmon in Delight Lake on 18-19 July. Delight Lake had an escapement index of 7,700 sockeye salmon. The sample from this lake consisted of 60.0% age-1.2 and 40.0% age-1.3 sockeye salmon with an overall mean length of 539 mm and a weight of 2.45 kg (n=86; Table 10). No appreciable harvests occurred elsewhere in the Outer District in 1996; escapement indices to Desire and Delusion (a.k.a. Ecstasy) lakes were 9,400 and 720 respectively.

Eastern District Sockeye Salmon

Few wild sockeye salmon returned to Aialik Lake in Aialik Bay this year. The commercial fishery harvested only 1,037 sockeye salmon and the escapement index was 3,500. Biological data on sockeye salmon returning to Aialik Lake have been collected since 1983 although no commercial catch samples were collected in 1996 (Appendix C).

The enhanced run in Resurrection Bay supported a commercial harvest of 35,944 and a hatchery cost recovery harvest of 7,938 fish; 8,004 sockeye salmon were counted through the weir into Bear Lake (Jeff Hetrick, CIAA, personal communication). The commercial catch sample (n=1,117) consisted of 46.8% aged 1.2 fish at 485 mm and 42.7% aged 1.3 fish at 571 mm (Table 11).

Kamishak Bay District Sockeye Salmon

Two sockeye salmon stocks in the Kamishak Bay District were sampled in 1996. The enhanced Kirschner Lake run produced a common property fishery harvest of 18,093 and a hatchery cost recovery harvest of 13,511 with no escapement associated with this terminal fishery. The Chenik Subdistrict remained closed due to the small run of 2,990 sockeye salmon counted past the Chenik Creek weir. No commercial fishing effort (and no catch sampling occurred) within the McNeil River, Kamishak and Douglas River Subdistricts in 1996.

A catch sample from Kirschner Lake was obtained on 14 July. Females comprised 42.0% of the sample. The mean length of sampled fish was 495 mm (n=572) and the mean weight was 1.96 kg (n=57; Table 12). Age-1.2 sockeye salmon comprised 92.7% of the sample, followed by age-1.3 (6.0%) and age-2.2 (<1.0 %) returnees.

Chenik Lake's natural run was supplemented with hatchery-reared sockeye juveniles as early as 1978, however, the run has been extremely weak in recent years due to an IHN epizootic. Between 3-25 July 1996 we live sampled 564 fish at the Chenik Lake weir. Age-1.3 and -1.2 sockeye salmon comprised 34.0% and 65.1% of the samples respectively (Table 13). Males represented 48.7% of the sampled run. Sampled fish averaged 519 mm in length and 1.95 kg in weight

(n=564). Biological data on sockeye salmon returning to Chenik Lake have been collected since 1985 (Appendix D).

Escapement indices to other Kamishak District streams included 900 sockeyes in Ursus Cove Lagoon Creek, 650 in Bruin Bay, 200 in Bruin River, and 2,930 in Amakdedori Creek.

LOWER COOK INLET CHUM SALMON

A combination of poor market conditions and reduced returns to most drainages precluded many fishers from targeting chum salmon in 1996. The LCI commercial chum salmon harvest of 3,800 fish (Table 5.) represented less than 4% of the 20-year average and marked the eighth successive below-average season in Lower Cook Inlet. Consequently, the only chum AWL sample collected was from the McNeil River escapement 16-18 July, in concert with tag recovery efforts while conducting stream life studies. Age 0.3 and 0.4 fish comprised 67.3% and 30.8% of the sample (n=46) and measured 602 mm and 638 mm respectively. The McNeil River system failed to attain the lower end of its escapement goal range of 20,000 to 40,000 fish for the seventh straight year.

LOWER COOK INLET PINK SALMON

Virtually all pink salmon exhibit a two-year life cycle so catch samples typically are not collected to determine age composition of returning stocks. However, catch and escapement data are compiled to facilitate in-season management of the commercial fishery and to forecast the following year's return (Otis 1997). In contrast with last years 2.85 million pink salmon harvest (the third highest on record), the 1996 LCI harvest totaled only 451,500 fish, the third lowest in 20 years. (Table 6). Over 98% of the total harvest occurred in the Southern District largely as a result of Tutka Hatchery production (Table 6). Over 95% of the Southern District catch went to Tutka Hatchery cost recovery and brood stock collection; the common property harvest totaled just 6,941 fish. The catch of wild fish in the remaining districts; Outer, Eastern and Kamishak totaled 7,270 fish. Only 13 of 21 pink salmon streams that were surveyed for escapement abundance achieved their desired escapement levels; no streams in the Southern District attained the minimum escapement goal.

DISCUSSION

Sockeye salmon mean lengths and weights within a brood year are expected to increase with increasing ocean age. For example, age-1.1, -1.2, and -1.3 Aialik Lake male sockeye salmon from the 1980 brood year had mean lengths progressing from 355 mm to 515 mm to 569 mm, while those from the 1981 return had mean lengths progressing from 400 to 500 to 566 mm (Appendix C). Whenever this trend was not observed, data were examined for keypunch errors, and scales were re-examined for aging errors. Some apparent size trend discrepancies resulted from sampling inadequacies. For instance, the mean weight of age-1.3 sockeye salmon from Resurrection Bay was 2.88 kg, while age-2.3 sockeyes weighed only 2.23 kg (Table 11). This apparent discrepancy was probably not due to aging or keypunch errors. It was more likely related to the age-2.3 sample consisting of just one small fish, which, by itself did not provide a representative sample.

Occasional anomalies occurred in the freshwater residency period for some stocks. For example, Aialik Bay returns have been dominated by age-1. fish since catch sampling began there in 1983. However, 52.9% and 65.5% of juvenile sockeye remained in Aialik Lake a second year and smolted as age-2. fish in 1990 and 1991, respectively. East Nuka Bay returns experienced similar occurrences in 1988 and 1994. Inter-annual variation in age compositions is relatively common within sockeye salmon stocks (Burgner 1991), however, causal mechanisms are not fully understood. While size may not be the sole determinant for smoltification, Weatherly and Gill (1995) report that growth is an important component influencing the duration of freshwater residence of sockeye salmon. Burgner (1991) lists several factors which may influence the freshwater growth of sockeye salmon, including: abundance and availability of food, temperature conditions, length of growing season, intensity of available light, competition, disease, feeding behavior in relation to predators, and movements to favorable habitats for feeding and survival.

While the overall sex ratio of returning adult salmon is typically even, males generally dominate the early portion of a run and females the latter, particularly for chum and pink salmon. Thus, the date samples are collected relative to the timing of the spawning run can influence the observed sex ratio of the sample. This temporal bias probably caused the skewed sex ratio observed in our 1996 sample from Neptune Bay (63.5% females; Table 12). These samples were collected from 25-29 July, late in the Neptune return. Because temporal biases can occur and size-at-age differences exist between male and female sockeye salmon (Burgner 1991), sampling dates are reported and age-weight-length data are stratified by sex in the appendices.

Escapement indices reported herein are primarily based on area-under-the-curve estimates that incorporate a 17.5-day streamlife. This streamlife estimate has been used for Lower Cook Inlet pink salmon for almost 30 years (Davis and Valentine 1970). While streamlife is recognized as a dynamic parameter, often varying by sex, segment of the run, and year, recent pink salmon streamlife work conducted in Prince William Sound suggests 17.5 days may be outside the commonly observed range of values (Bue et al. 1998). Until streamlife studies are conducted to confirm these data for Lower Cook Inlet streams, we are reluctant to modify our escapement

indices. Nonetheless, readers should be aware that the historical escapement indices presented in this document could change in the future when a more appropriate streamlife estimate is adopted for Lower Cook Inlet pink and chum salmon.

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Table 1. Survey methods and total escapement algorithms used for sockeye salmon streams in Lower Cook Inlet, 1996.

| Stream | Survey Method | Total Escapement Algorithm |
|------------------------------|---------------|----------------------------|
| <i>Southern District</i> | | |
| English Bay | weir | sum of daily weir counts |
| <i>Outer District</i> | | |
| Desire Lake | aerial | peak live count |
| Delight Lake | aerial | peak live count |
| Ecstasy Lake | aerial | peak live count |
| <i>Eastern District</i> | | |
| Aialik Lake | aerial | peak live count |
| Salmon Creek | ground | peak live count |
| Grouse Creek | ground | peak live count |
| Bear Creek | weir | sum of daily weir counts |
| <i>Kamishak Bay District</i> | | |
| Ursus Lagoon | aerial | peak live count |
| Bruin Lake Creek | aerial | peak live count |
| Bruin Bay | aerial | peak live count |
| Amakdedori Creek | aerial | peak live count |
| Chenik Lake | weir | sum of daily weir counts |
| Paint River | aerial | peak live count |
| Mikfik Creek | aerial | peak live count |
| Little Kamishak River | aerial | peak live count |
| Douglas Reef | aerial | peak live count |

Table 2. Survey methods and total escapement algorithms used for chum salmon streams in Lower Cook Inlet, 1995.

| Stream | Survey Method | Total Escapement Algorithm | Start/Stop Dates Area-Under-Curve |
|------------------------------|---------------|-----------------------------|-----------------------------------|
| <i>Southern District</i> | | | |
| Humpy Creek | ground | 17.5 d stream life | 7/1 - 9/15 |
| Seldovia River | ground | 17.5 d stream life | 7/1 - 9/20 |
| Port Graham Left | ground | peak live and carcass count | |
| Port Graham River | ground | 17.5 d stream life | 7/1 - 9/15 |
| <i>Outer District</i> | | | |
| Dogfish Bay | ground | 17.5 d stream life | 7/1 - 9/15 |
| Port Chatham | ground | 17.5 d stream life | 7/1 - 9/15 |
| Windy River Left | ground | 17.5 d stream life | 7/1 - 9/15 |
| Windy River Right | ground | 17.5 d stream life | 7/1 - 9/15 |
| Rocky River | aerial | 17.5 d stream life | 7/1 - 9/15 |
| Port Dick-Head End Creek | ground | 17.5 d stream life | 7/1 - 9/15 |
| Port Dick-Slide Creek | ground | 17.5 d stream life | 7/1 - 9/15 |
| Port Dick-Middle Creek | aerial | 17.5 d stream life | 7/1 - 9/15 |
| Port Dick-Island Creek | ground | 17.5 d stream life | 7/1 - 9/30 |
| Petrof River | aerial | 17.5 d stream life | 7/1 - 9/15 |
| Nuka Island South Creek | ground | 17.5 d stream life | 7/1 - 9/15 |
| James Lagoon | aerial | 17.5 d stream life | 7/1 - 9/15 |
| <i>Eastern District</i> | | | |
| Tonsina Creek | ground | 17.5 d stream life | 7/1 - 9/30 |
| Tonsina Left Creek | ground | 17.5 d stream life | 7/1 - 9/30 |
| Salmon Creek | ground | peak carcass count | |
| Clear Creek | ground | 17.5 d stream life | 7/1 - 9/15 |
| Sawmill Creek | ground | 17.5 d stream life | 7/1 - 9/15 |
| Spring Creek | ground | 17.5 d stream life | 7/1 - 9/15 |
| <i>Kamishak Bay District</i> | | | |
| Iniskin River | aerial | 17.5 d stream life | 7/1 - 9/30 |
| Sugarloaf Creek | aerial | 17.5 d stream life | 8/1 - 9/30 |
| North Head Creek | aerial | 17.5 d stream life | 8/1 - 9/30 |
| Cottonwood Creek | aerial | 17.5 d stream life | 8/1 - 9/30 |
| Brown Peak Creek | aerial | 17.5 d stream life | 7/1 - 9/15 |
| Ursus Lagoon Right-hand | aerial | 17.5 d stream life | 7/26 - 9/30 |

Table 2 cont'd. (page 2 of 2)

| Stream | Survey Method | Total Escapement Algorithm | Start/Stop Dates Area-Under-Curve |
|------------------------------|---------------|----------------------------|-----------------------------------|
| <i>Kamishak Bay District</i> | | | |
| Ursus Lagoon | aerial | 17.5 d stream life | 7/26 - 9/30 |
| Sunday Creek | aerial | 17.5 d stream life | 7/1 - 9/15 |
| Bruin Bay | aerial | 17.5 d stream life | 7/1 - 9/15 |
| McNeil River ^a | aerial | 17.5 d stream life | 6/13 - 9/15 |
| Little Kamishak River | aerial | 17.5 d stream life | 6/29 - 9/15 |
| Strike Creek | aerial | 17.5 d stream life | 7/1 - 9/15 |
| Big Kamishak River | aerial | 17.5 d stream life | 7/1 - 9/15 |
| Douglas Reef | aerial | 17.5 d stream life | 7/1 - 9/15 |
| Douglas Beach | aerial | 17.5 d stream life | 6/29 - 9/15 |

^aMcNeil River chum salmon aerial survey counts are only considered to be an index of abundance. In some years, the estimated number of salmon consumed by bears in McNeil River Wildlife Sanctuary has exceeded the peak aerial survey count.

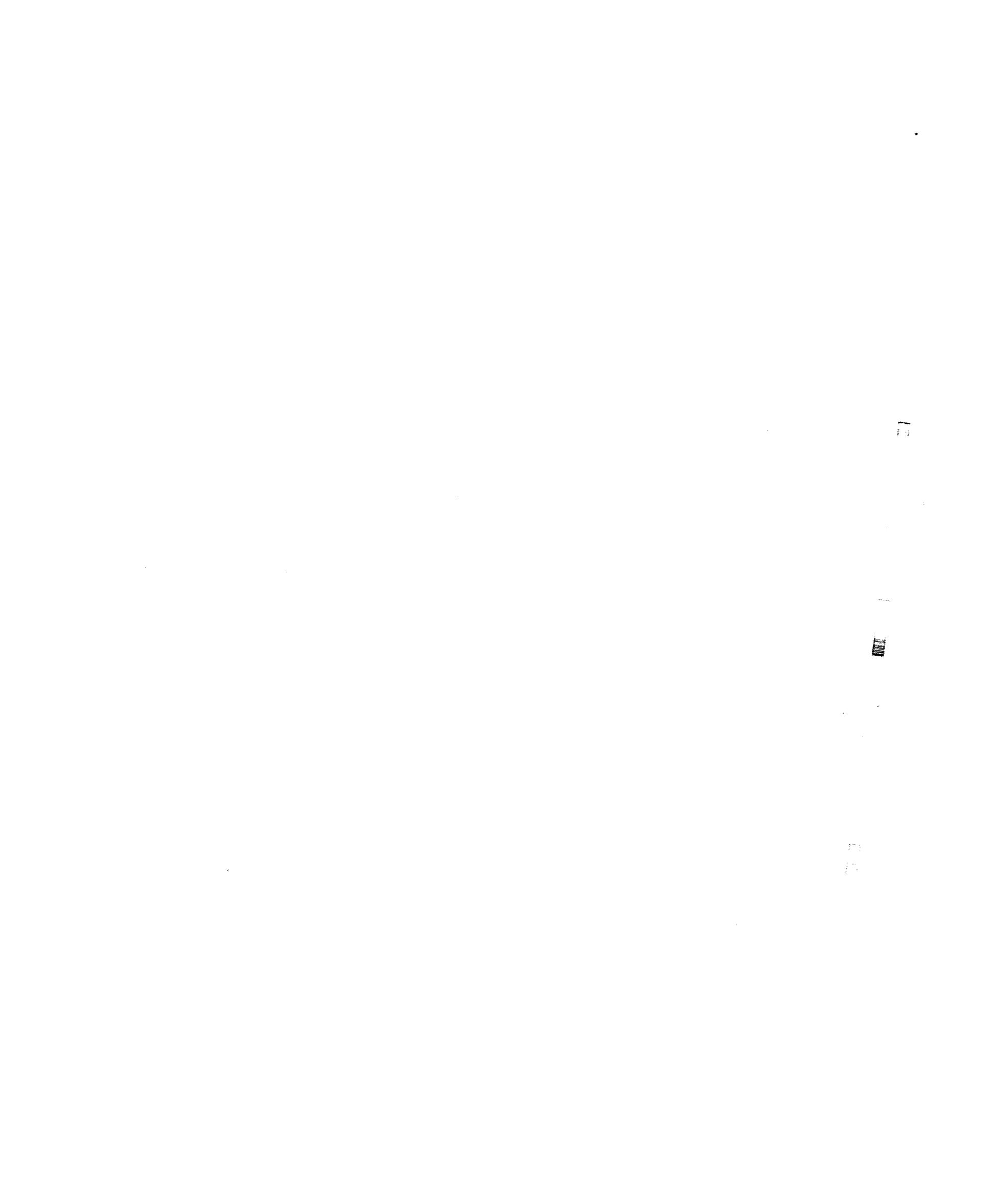


Table 3. Survey methods and total escapement algorithms used for pink salmon streams in Lower Cook Inlet, 1995.

| Stream | Survey Method | Total Escapement Algorithm | Start/Stop Dates Area Under Curve |
|--------------------------|---------------|----------------------------|-----------------------------------|
| <i>Southern District</i> | | | |
| Humpy Creek | ground | 17.5-d stream life | 7/15 - 9/15 |
| China Poot Bay | ground | 17.5-d stream life | 8/1 - 9/15 |
| Tutka Creek | ground | 17.5-d stream life | 7/1 - 9/15 |
| Seldovia River | ground | 17.5-d stream life | 7/1 - 9/20 |
| Barabara Creek | ground | 17.5-d stream life | 7/1 - 9/30 |
| Port Graham Left | ground | 17.5-d stream life | 8/1 - 8/30 |
| Port Graham River | ground | 17.5-d stream life | 7/1 - 9/15 |
| <i>Outer District</i> | | | |
| Dogfish Bay | ground | 17.5-d stream life | 7/1 - 9/15 |
| Port Chatham | ground | 17.5-d stream life | 7/1 - 9/15 |
| Chugach Bay | aerial | 17.5-d stream life | 7/1 - 9/15 |
| Windy River Left | ground | 17.5-d stream life | 7/27 - 9/15 |
| Windy River Right | ground | peak live = carcass count | |
| Scurvy Creek | ground | 17.5-d stream life | 7/1 - 9/15 |
| Rocky River | aerial | 17.5-d stream life | 7/1 - 9/15 |
| Port Dick-Head End Creek | ground | 17.5-d stream life | 7/1 - 9/30 |
| Port Dick-Slide Creek | ground | 17.5-d stream life | 7/1 - 9/15 |
| Port Dick-Middle Creek | aerial | 17.5-d stream life | 7/1 - 9/15 |
| Port Dick-Island Creek | ground | 17.5-d stream life | 7/1 - 9/30 |
| Nuka Island South Creek | ground | 17.5-d stream life | 7/1 - 9/15 |
| Berger Bay | aerial | 17.5-d stream life | 7/1 - 9/15 |
| James Lagoon | aerial | 17.5-d stream life | 7/1 - 9/15 |
| <i>Eastern District</i> | | | |
| Humpy Cove | ground | 17.5-d stream life | 8/1 - 9/30 |
| Tonsina Creek | ground | 17.5-d stream life | 7/1 - 9/30 |
| Tonsina Left Creek | ground | 17.5-d stream life | 8/1 - 9/30 |
| Salmon Creek | ground | 17.5-d stream life | 8/1 - 9/30 |
| Grouse Creek | ground | peak live + carcass count | |
| Lost Creek | ground | peak live + carcass count | |
| Clear Creek | ground | 17.5-d stream life | 8/1 - 9/20 |
| Sawmill Creek | ground | 17.5-d stream life | 8/1 - 9/30 |
| Spring Creek | ground | 17.5-d stream life | 8/1 - 9/30 |
| Thumb Cove | ground | 17.5-d stream life | 7/15 - 9/30 |

Table 3 cont'd. (page 2 of 2)

| Stream | Survey Method | Total Escapement Algorithm | Start/Stop Dates Area Under Curve |
|------------------------------|---------------|----------------------------|-----------------------------------|
| <i>Kamishak Bay District</i> | | | |
| Sugarloaf Creek | aerial | peak live count | |
| North Head Creek | aerial | 17.5-d stream life | 8/1 - 9/15 |
| Brown Peak Creek | aerial | 17.5-d stream life | 7/1 - 9/15 |
| Ursus Lagoon Righthand | aerial | peak live count | |
| Ursus Lagoon | aerial | 17.5-d stream life | 7/1 - 9/15 |
| Sunday Creek | aerial | 17.5-d stream life | 7/1 - 9/15 |
| Bruin Bay | aerial | 17.5-d stream life | 7/1 - 9/15 |
| Amakdedori Creek | aerial | 17.5-d stream life | 7/1 - 9/15 |

Table 4. Commercial sockeye salmon catches (including hatchery cost recovery) and escapements in numbers of fish by subdistrict, Lower Cook Inlet, 1996*.

| Subdistrict/System | Catch | Escapement ^a | Total Run |
|-----------------------------------|---------------------|-------------------------|----------------|
| SOUTHERN DISTRICT | | | |
| Humpy Creek | | 9 | 9 |
| Halibut Cove | 75,300 | | 75,300 |
| China Poot Bay | | | |
| Common Property Fishery | 110,445 | | |
| Hatchery Cost Recovery | 12,064 | | |
| China Poot Creek | | 441 ^b | |
| Total Run | | | 122,950 |
| Neptune Bay | | | |
| Common Property Fishery | 100,500 | | |
| Hatchery Cost Recovery | 2,171 | | |
| Total Run | | | 102,671 |
| Tutka/Kasitsna Bays & Tutka Creek | 20,300 ^c | 1 | 20,301 |
| Barabara Creek | 7,539 | | 7,539 |
| Seldovia Bay | 11,926 | | 11,926 |
| Port Graham Bay/River | 5,203 | 8 | 5,211 |
| English Bay | | | |
| Common Property Fishery | 6,981 | | |
| Hatchery Cost Recovery | 5,734 | | |
| English Bay Lakes | | 12,380 ^d | |
| Total Run | | | 25,095 |
| SOUTHERN DISTRICT TOTAL | 358,163 | 12,839 | 371,002 |
| OUTER DISTRICT | | | |
| Dogfish Bay | | 2 | 2 |
| Port Chatham | | 4 | 4 |
| Windy Bay/Windy Right Creek | | 1 | 1 |
| Nuka Island/S. Nuka Island Creek | | 1 | 1 |
| East Arm Nuka Bay (McCarty Fiord) | 14,999 | | |
| Delight Lake | | 7,700 | |
| Desire Lake | | 9,400 | |
| Delusion Lake | | 720 | |
| Total Run | | | 32,819 |
| OUTER DISTRICT TOTAL | 14,999 | 17,828 | 32,827 |

-continued-

Table 4. (page 2 of 2)

| Subdistrict/System | Catch | Escapement ^a | Total Run |
|------------------------------------|----------------|-------------------------|----------------|
| EASTERN DISTRICT | | | |
| Aialik Bay/Aialik Lake | 1,037 | 3,500 | 4,537 |
| Resurrection Bay North | | | |
| Common Property Fishery | 35,944 | | |
| Hatchery Cost Recovery | 7,938 | | |
| Bear Lake | | 8,004 ^d | |
| Salmon Creek | | 821 | |
| Grouse Creek | | 800 | |
| Clear Creek | | 4 | |
| Total Run | | | 53,511 |
| EASTERN DISTRICT TOTAL | 44,919 | 13,129 | 58,048 |
| KAMISHAK BAY DISTRICT | | | |
| Ursus Cove | | | |
| Brown's Peak Creek | | 6 | |
| Ursus Cove Lagoon Creek | | 900 | |
| Total Run | | | 906 |
| Kirschner Lake | | | |
| Common Property Fishery | 18,093 | | |
| Hatchery Cost Recovery | 13,511 | | |
| Total Run | | | 31,604 |
| Bruin Bay | | | |
| Bruin Lake Creek | | 650 ^b | |
| Bruin River | | 200 | |
| Total Run | | | 850 |
| Chenik Lake | | | |
| Amakdedori Creek | | 2,930 | |
| Chenik Creek/Lake | | 2,990 ^d | |
| Total Run | | | 5,920 |
| Paint River | | 200 ^e | 200 |
| McNeil Cove (Mikfik Creek/Lake) | | 10,500 | 10,500 |
| Kamishak/Douglas Reef | | | |
| Little Kamishak River | | 200 | |
| Big Kamishak River | | 1,590 | |
| Douglas Reef Creek | | 600 | |
| Total Run | | | 2,390 |
| KAMISHAK BAY DISTRICT TOTAL | 31,604 | 20,766 | 52,370 |
| TOTAL LOWER COOK INLET | 449,685 | 64,572 | 514,247 |

*Source: Bucher and Hammarstrom (1997).

a Escapement estimates derived from limited aerial surveys. Numbers represent unexpanded aerial live counts.

b No freshwater escapement, prevented by barrier falls.

c Figure includes 74 sockeyes taken during hatchery pink salmon cost recovery.

d Weir counts.

e No freshwater escapement, ladder not opened during 1996.

Table 5. Commercial chum salmon catches and escapements in numbers of fish by subdistrict, Lower Cook Inlet, 1996*.

| Subdistrict/System | Catch | Escapement ^a | Total Run |
|--------------------------------|--------------|-------------------------|---------------|
| SOUTHERN DISTRICT | | | |
| Humpy Creek | | 278 | 278 |
| Halibut Cove | 268 | | 268 |
| China Poot Bay | 101 | | 101 |
| Neptune Bay | 386 | | 386 |
| Tutka Bay/Tutka Lagoon Creek | 961 | 20 | 981 |
| Barabara Creek | 486 | | 486 |
| Seldovia Bay & River | 627 | 2,560 | 3,187 |
| Port Graham & River | 448 | 3,742 | 4,190 |
| English Bay | 234 | | 234 |
| SOUTHERN DISTRICT TOTAL | 3,511 | 6,600 | 10,111 |
| OUTER DISTRICT | | | |
| Dogfish Bay | | 6,699 | 6,699 |
| Port Chatham | | 558 | 558 |
| Windy Bay | | | |
| Windy Right Creek | | 296 | |
| Windy Left Creek | | 121 | |
| Total Run | | | 417 |
| Rocky Bay & River | | 1,966 | 1,966 |
| Port Dick | | | |
| Port Dick (head end) Creek | | 2,254 | |
| Slide Creek | | 1,932 | |
| Middle Creek | | 1,332 | |
| Island Creek | | 6,945 | |
| Total Run | | | 12,463 |
| Nuka Island/Petrof River | | 32 | 32 |
| East Arm Nuka Bay | 3 | | 3 |
| OUTER DISTRICT TOTAL | 3 | 22,135 | 22,138 |
| EASTERN DISTRICT | | | |
| Aialik Bay | 5 | | 5 |
| Resurrection Bay North | 218 | | |
| Sawmill Creek | | 707 | |
| Spring Creek | | 462 | |
| Tonsina Creek | | 3,720 | |
| Thumb Cove | | 139 | |
| Clear Creek | | 88 | |
| Total Run | | | 5,334 |
| Renard Island/Humpy Cove | | 2 | 2 |
| EASTERN DISTRICT TOTAL | 223 | 5,118 | 5,341 |

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Table 5. (page 2 of 2)

| Subdistrict/System | Catch | Escapement ^a | Total Run |
|--------------------|-------|-------------------------|-----------|
|--------------------|-------|-------------------------|-----------|

| KAMISHAK BAY DISTRICT | | | |
|------------------------------------|--------------|----------------|----------------|
| Inisksin Bay | | | |
| Iniskin River | | 7,840 | |
| Sugarloaf Creek | | 467 | |
| North Head Creek | | 880 | |
| Total Run | | | 9,187 |
| Cottonwood Bay & Creek | | 16,089 | 16,089 |
| Ursus Cove | | | |
| Brown's Peak Creek | | 978 | |
| Ursus Lagoon Right Creek | | 5,018 | |
| Ursus Cove Lagoon Creek | | 2,617 | |
| Total Run | | | 8,613 |
| Rocky Cove/Sunday Creek | | 2,080 | 2,080 |
| Kirschner Lake | 27b | | 27 |
| Bruin Bay & River | | 14,933 | 14,933 |
| McNeil River | | 16,096 | 16,096 |
| Kamishak/Douglas Reef | | | |
| Little Kamishak River | | 4,378 | |
| Big Kamishak River | | 11,118 | |
| Douglas Reef Creek | | 424 | |
| Total Run | | | 15,920 |
| Douglas River/Douglas Beach Creek | | 746 | 746 |
| KAMISHAK BAY DISTRICT TOTAL | 27 | 83,664 | 83,691 |
| <hr/> | | | |
| TOTAL LOWER COOK INLET | 3,764 | 117,517 | 121,281 |

*Source: Bucher and Hammarstrom (1997).

a Escapement estimates are derived from periodic ground or aerial surveys with stream life factors applied.

b Kirschner Lake catches include 26 chums taken during hatchery sockeye salmon cost recovery.

Table 6. Commercial pink salmon catches (including hatchery cost recovery) and escapements in numbers of fish by subdistrict, Lower Cook Inlet, 1996*.

| Subdistrict/System | Catch | Escapement ^a | Total Run |
|-----------------------------------|--------------------|-------------------------|----------------|
| SOUTHERN DISTRICT | | | |
| Humpy Creek | | 9,000 | 9,000 |
| Halibut Cove | 2,298 | | 2,298 |
| China Poot Bay/Creek | 1,192 ^b | 2,803 | 3,995 |
| Neptune Bay | 6,982 ^b | | 6,982 |
| Tutka/Kasitsna Bays | | | |
| Common Property Fishery | 6,941 | | |
| Hatchery Cost Recovery | 419,160 | | |
| Hatchery Brood Stock | | 138,021 | |
| Tutka Lagoon Creek | | 3,456 | |
| Total Run | | | 567,578 |
| Barabara Creek | 2,096 | 2,394 | 4,490 |
| Seldovia Bay & River | 4,088 | 17,757 | 21,845 |
| Port Graham | 821 | | |
| Hatchery Brood Stock | | 1,879 | |
| Port Graham River | | 7,039 | |
| Port Graham Left | | 450 | |
| Total Run | | | 10,189 |
| English Bay | 658 | | 658 |
| SOUTHERN DISTRICT TOTAL | 444,236 | 182,799 | 627,035 |
| OUTER DISTRICT | | | |
| Dogfish Bay | | 2,347 | 2,347 |
| Port Chatham | | 8,598 | 8,598 |
| Chugach Bay | | 8,251 | 8,251 |
| Windy Bay | | | |
| Windy Right Creek | | 2,492 | |
| Windy Left Creek | | 9,944 | |
| Total Run | | | 12,436 |
| Rocky Bay/River | | 80,057 | 80,057 |
| Port Dick | | | |
| Port Dick (head end) Creek | | 23,175 | |
| Slide Creek | | 13,099 | |
| Island Creek | | 40,070 | |
| Total Run | | | 76,344 |
| Nuka Island/South Nuka Isl. Creek | | 6,776 | 6,776 |
| East Arm Nuka Bay (McCarty Fiord) | 7,199 | ^c | 7,199 |
| OUTER DISTRICT TOTAL | 7,199 | 194,809 | 202,008 |

-continued-

Table 6. (page 2 of 2)

| Subdistrict/System | Catch | Escapement ^a | Total Run |
|------------------------------------|-----------------|-------------------------|----------------|
| EASTERN DISTRICT | | | |
| Aialik Bay | 19 | | 19 |
| Resurrection Bay North | 16 | | |
| Bear/Salmon Creeks | | 7,963 | |
| Clear Creek | | 633 | |
| Sawmill Creek | | 199 | |
| Spring Creek | | 144 | |
| Tonsina Creek | | 449 | |
| Thumb Cove | | 9,464 | |
| Total Run | | | 18,868 |
| Renard Island/Humpy Cove | | 3,405 | 3,405 |
| EASTERN DISTRICT TOTAL | 35 | 22,257 | 22,292 |
| KAMISHAK BAY DISTRICT | | | |
| Inisksin Bay | | | |
| North Head Creek | | 400 | |
| Sugarloaf Creek | | 158 | |
| Total Run | | | 558 |
| Ursus Cove | | | |
| Brown's Peak Creek | | 2,446 | |
| Ursus Lagoon Creek | | 200 | |
| Total Run | | | 2,646 |
| Rocky Cove/Sunday Creek | | 2,846 | 2,846 |
| Kirschner Lake | 36 ^d | | 36 |
| Bruin Bay & River | | 27,562 | 27,562 |
| Kamishak Bay/ Big Kamishak River | | 16,677 | 16,677 |
| KAMISHAK BAY DISTRICT TOTAL | 36 | 50,289 | 50,325 |
| TOTAL LOWER COOK INLET | 451,506 | 450,154 | 901,660 |

*Source: Bucher and Hammarstrom (1997).

^aEscapement estimates are derived from periodic ground or aerial surveys with stream life factors applied.

^b China Poot and Neptune catches include 1 and 2 pinks (respectively) caught during hatchery sockeye salmon cost recovery.

^cInsufficient survey data to generate escapement estimate.

^dKirschner Lake catches include 17 pinks caught during hatchery sockeye salmon cost recovery.

Table 7. Number of readable salmon scales and corresponding confidence levels, for age composition estimates of Lower Cook Inlet sockeye and chum salmon samples, 1996.

| Fishery | Sample | | | Confidence Interval ($d = 0.05$) ^a |
|-----------------------|-------------------|-------|-------|---|
| | Dates | Size | Type | |
| <u>Sockeye Salmon</u> | | | | |
| China Poot Bay | 23 July - 25 July | 562 | scale | 1.000 |
| Neptune Bay | 25 July - 29 July | 394 | scale | 0.999 |
| Delight Lake | 18 July | 375 | scale | 0.904 |
| Resurrection Bay | 17 June | 562 | scale | 0.998 |
| Kirschner Lake | 14 July | 572 | scale | 1.000 |
| Chenik Lake | 03 July - 25 July | 564 | scale | 0.975 |
| English Bay | 04 July - 16 July | 520 | scale | 0.958 |
| Total | | 3,549 | | |
| <u>Chum Salmon</u> | | | | |
| McNeil River | 16 July - 18 July | 46 | scale | 0.054 |

^a Simultaneous confidence interval for multiple age classes (Thompson 1987).

Table 8. Age, sex, and size composition of sockeye salmon commercial catch from China Poot Bay, 23-25 July, 1996.

| | Age Group | | | | total |
|-----------------------------------|-----------|-------|------|------|--------|
| | 1.1 | 1.2 | 1.3 | 2.2 | |
| Sample Period : 23 July - 25 July | | | | | |
| Males | 27 | 240 | 18 | 2 | 287 |
| Percent | 4.45 | 39.54 | 2.97 | 0.33 | 47.28 |
| Sample Size | 25 | 222 | 17 | 2 | 266 |
| Mean Length | 394 | 488 | 541 | 504 | 483 |
| Std. Error | 6 | 1 | 5 | 4 | 1 |
| Sample Size | 25 | 222 | 17 | 2 | 266 |
| Mean Weight | 0.87 | 1.92 | 2.68 | | 1.87 |
| Std. Error | 0.12 | 0.06 | | | 0.05 |
| Sample Size | 3 | 21 | 1 | | 25 |
| Females | | 300 | 19 | 1 | 320 |
| Percent | | 49.42 | 3.13 | 0.16 | 52.72 |
| Sample Size | | 277 | 18 | 1 | 296 |
| Mean Length | | 490 | 542 | 493 | 493 |
| Std. Error | | 1 | 5 | | 1 |
| Sample Size | | 277 | 18 | 1 | 296 |
| Mean Weight | | 1.71 | | | 1.71 |
| Std. Error | | 0.04 | | | 0.04 |
| Sample Size | | 31 | | | 31 |
| Both Sexes | 27 | 540 | 37 | 3 | 607 |
| Percent | 4.45 | 88.96 | 6.10 | 0.49 | 100.00 |
| Sample Size | 25 | 499 | 35 | 3 | 562 |
| Mean Length | 394 | 489 | 542 | 500 | 488 |
| Std. Error | 6 | 1 | 3 | 4 | 0 |
| Sample Size | 25 | 499 | 35 | 3 | 562 |
| Mean Weight | 0.87 | 1.80 | 2.68 | | 1.79 |
| Std. Error | 0.12 | 0.03 | | | 0.03 |
| Sample Size | 3 | 52 | 1 | | 56 |

Table 9. Age, sex, and size composition of sockeye salmon commercial catch from Neptune Bay, 1996.

| | Age Group | | | | total |
|-----------------------------------|-----------|-------|------|------|--------|
| | 1.1 | 1.2 | 1.3 | 2.2 | |
| Sample Period : 25 July - 29 July | | | | | |
| Males | 7 | 146 | 3 | | 156 |
| Percent | 1.64 | 34.19 | 0.70 | | 36.53 |
| Sample Size | 6 | 135 | 3 | | 144 |
| Mean Length | 396 | 491 | 549 | | 487 |
| Std. Error | 6 | 1 | 16 | | 1 |
| Sample Size | 6 | 135 | 3 | | 144 |
| Mean Weight | | 1.77 | | | 1.77 |
| Std. Error | | 0.09 | | | 0.09 |
| Sample Size | | 8 | | | 8 |
| Females | 3 | 240 | 24 | 4 | 271 |
| Percent | 0.70 | 56.21 | 5.62 | 0.94 | 63.47 |
| Sample Size | 3 | 221 | 22 | 4 | 250 |
| Mean Length | 411 | 491 | 538 | 489 | 494 |
| Std. Error | 0 | 1 | 5 | 8 | 1 |
| Sample Size | 3 | 221 | 22 | 4 | 250 |
| Mean Weight | | 1.71 | 2.40 | | 1.77 |
| Std. Error | | 0.04 | 0.01 | | 0.04 |
| Sample Size | | 21 | 2 | | 23 |
| Both Sexes | 10 | 386 | 27 | 4 | 427 |
| Percent | 2.34 | 90.40 | 6.32 | 0.94 | 100.00 |
| Sample Size | 9 | 356 | 25 | 4 | 394 |
| Mean Length | 401 | 491 | 539 | 489 | 492 |
| Std. Error | 4 | 1 | 5 | 8 | 1 |
| Sample Size | 9 | 356 | 25 | 4 | 394 |
| Mean Weight | | 1.73 | 2.40 | | 1.77 |
| Std. Error | | 0.04 | 0.01 | | 0.04 |
| Sample Size | | 29 | 2 | | 31 |



Table 10. Age, sex, and size composition of sockeye salmon escapement from Delight Lake, Nuka Bay, 1996.

| | Age Group | | |
|-----------------------------------|-----------|-------|--------|
| | 1.2 | 1.3 | total |
| Sample Period : 18 July - 19 July | | | |
| Males | 101 | 77 | 178 |
| Percent | 24.94 | 19.01 | 43.95 |
| Sample Size | 94 | 71 | 165 |
| Mean Length | 531 | 585 | 555 |
| Std. Error | 2 | 3 | 2 |
| Sample Size | 94 | 71 | 165 |
| Mean Weight | 2.23 | 3.24 | 2.67 |
| Std. Error | 0.06 | 0.27 | 0.12 |
| Sample Size | 12 | 7 | 19 |
| Females | 142 | 85 | 227 |
| Percent | 35.06 | 20.99 | 56.05 |
| Sample Size | 131 | 79 | 210 |
| Mean Length | 508 | 558 | 527 |
| Std. Error | 2 | 3 | 1 |
| Sample Size | 131 | 79 | 210 |
| Mean Weight | 2.02 | 2.71 | 2.28 |
| Std. Error | 0.06 | 0.10 | 0.05 |
| Sample Size | 18 | 17 | 35 |
| Both Sexes | 243 | 162 | 405 |
| Percent | 60.00 | 40.00 | 100.00 |
| Sample Size | 225 | 150 | 375 |
| Mean Length | 518 | 571 | 539 |
| Std. Error | 1 | 2 | 1 |
| Sample Size | 225 | 150 | 375 |
| Mean Weight | 2.11 | 2.96 | 2.45 |
| Std. Error | 0.04 | 0.14 | 0.06 |
| Sample Size | 30 | 24 | 54 |

Table 11. Age, sex, and size composition of sockeye salmon commercial catch from Resurrection Bay 1996.

| | Age Group | | | | | | | | | | total |
|---------------------------------|-----------|------|-------|------|------|-------|------|------|------|--------|-------|
| | 1.1 | 0.3 | 1.2 | 2.1 | 0.4 | 1.3 | 2.2 | 1.4 | 2.3 | | |
| Sample Period: 4 June - 17 June | | | | | | | | | | | |
| Males | | | | | | | | | | | |
| Percent | 0.10 | 0.60 | 19.40 | 0.10 | 0.10 | 24.30 | 2.40 | 0.10 | 0.60 | 47.60 | |
| Sample Size | 1 | 7 | 217 | 1 | 1 | 271 | 27 | 1 | 7 | 532 | |
| Mean Length | 340 | 512 | 483 | 599 | 580 | 527 | 561 | 613 | 537 | 532 | |
| Std. Error | | 14 | 2 | 1 | 1 | 5 | 5 | 5 | 1 | 1 | |
| Sample Size | 1 | 7 | 217 | 1 | 1 | 271 | 27 | 1 | 7 | 532 | |
| Mean Weight | | | 2.19 | | | 3.11 | 2.69 | | | 2.70 | |
| Std. Error | | | 0.10 | | | 0.09 | 0.13 | | | 0.06 | |
| Sample Size | | | 20 | | | 28 | 2 | | | 50 | |
| Females | | | | | | | | | | | |
| Percent | 0.20 | 0.70 | 27.40 | 0.10 | 0.20 | 18.40 | 4.90 | 0.20 | 0.30 | 52.40 | |
| Sample Size | 2 | 8 | 307 | 1 | 2 | 205 | 55 | 2 | 3 | 585 | |
| Mean Length | 468 | 491 | 483 | 426 | 532 | 558 | 513 | 598 | 578 | 513 | |
| Std. Error | 66 | 13 | 1 | 17 | 2 | 4 | 16 | 16 | 16 | 1 | |
| Sample Size | 2 | 8 | 307 | 1 | 2 | 205 | 55 | 2 | 3 | 585 | |
| Mean Weight | | | 1.80 | | | 2.58 | 2.08 | | | 2.11 | |
| Std. Error | | | 0.04 | | | 0.08 | 0.08 | | | 0.04 | |
| Sample Size | | | 31 | | 1 | 24 | 7 | | 1 | 64 | |
| Both Sexes | | | | | | | | | | | |
| Percent | 0.30 | 1.30 | 46.80 | 0.10 | 0.30 | 42.70 | 7.30 | 0.30 | 0.90 | 100.00 | |
| Sample Size | 3 | 15 | 524 | 1 | 3 | 476 | 82 | 3 | 10 | 1,117 | |
| Mean Length | 425 | 501 | 483 | 426 | 554 | 571 | 518 | 585 | 601 | 525 | |
| Std. Error | 66 | 10 | 1 | 17 | 1 | 3 | 16 | 16 | 6 | 0 | |
| Sample Size | 3 | 15 | 524 | 1 | 3 | 476 | 82 | 3 | 10 | 1,117 | |
| Mean Weight | | | 1.96 | | | 2.88 | 2.28 | | | 2.39 | |
| Std. Error | | | 0.05 | | | 0.06 | 0.07 | | | 0.04 | |
| Sample Size | | | 51 | | 1 | 52 | 9 | | 1 | 114 | |

Table 12. Age, sex, and size composition of sockeye salmon commercial catch from Kirschner, 1996.

| | Age Group | | | | total |
|-------------------------|-----------|-------|------|------|--------|
| | 1.1 | 1.2 | 1.3 | 2.2 | |
| Sample Period : 14 July | | | | | |
| Males | 7 | 326 | 14 | 1 | 348 |
| Percent | 1.17 | 54.33 | 2.33 | 0.17 | 58.00 |
| Sample Size | 7 | 311 | 13 | 1 | 332 |
| Mean Length | 445 | 493 | 543 | 481 | 494 |
| Std. Error | 4 | 1 | 4 | | 1 |
| Sample Size | 7 | 311 | 13 | 1 | 332 |
| Mean Weight | 1.40 | 1.95 | 2.54 | | 1.96 |
| Std. Error | 0.15 | 0.05 | 0.14 | | 0.05 |
| Sample Size | 2 | 31 | 3 | | 36 |
| Females | | 230 | 22 | | 252 |
| Percent | | 38.33 | 3.67 | | 42.00 |
| Sample Size | | 219 | 21 | | 240 |
| Mean Length | | 493 | 539 | | 497 |
| Std. Error | | 1 | 5 | | 1 |
| Sample Size | | 219 | 21 | | 240 |
| Mean Weight | | 1.90 | 2.46 | | 1.95 |
| Std. Error | | 0.06 | 0.21 | | 0.06 |
| Sample Size | | 18 | 3 | | 21 |
| Both Sexes | 7 | 556 | 36 | 1 | 600 |
| Percent | 1.17 | 92.67 | 6.00 | 0.17 | 100.00 |
| Sample Size | 7 | 530 | 34 | 1 | 572 |
| Mean Length | 445 | 493 | 541 | 481 | 495 |
| Std. Error | 4 | 1 | 3 | | 0 |
| Sample Size | 7 | 530 | 34 | 1 | 572 |
| Mean Weight | 1.40 | 1.93 | 2.49 | | 1.96 |
| Std. Error | 0.15 | 0.04 | 0.14 | | 0.04 |
| Sample Size | 2 | 49 | 6 | | 57 |

Table 13. Age, sex, and size composition of sockeye salmon escapement from Chenik Lake, 1996.

| | Age Group | | | | total |
|---------------------------------|-----------|-------|-------|------|--------|
| | 1.1 | 1.2 | 1.3 | 2.2 | |
| Sample Period: 3 July - 25 July | | | | | |
| Males | 1 | 201 | 105 | 1 | 308 |
| Percent | 0.16 | 31.80 | 16.61 | 0.16 | 48.73 |
| Sample Size | 1 | 179 | 94 | 1 | 275 |
| Mean Length | 436 | 513 | 565 | 519 | 531 |
| Std. Error | | 1 | 2 | | 1 |
| Sample Size | 1 | 179 | 94 | 1 | 275 |
| Mean Weight | 2.00 | 1.94 | 2.55 | 2.00 | 2.15 |
| Std. Error | | 0.02 | 0.04 | | 0.02 |
| Sample Size | 1 | 179 | 94 | 1 | 275 |
| Females | | 213 | 110 | 1 | 324 |
| Percent | | 33.70 | 17.41 | 0.16 | 51.27 |
| Sample Size | | 190 | 98 | 1 | 289 |
| Mean Length | | 488 | 543 | 530 | 507 |
| Std. Error | | 1 | 2 | | 1 |
| Sample Size | | 190 | 98 | 1 | 289 |
| Mean Weight | | 1.57 | 2.13 | 2.00 | 1.76 |
| Std. Error | | 0.02 | 0.03 | | 0.02 |
| Sample Size | | 190 | 98 | 1 | 289 |
| Both Sexes | 1 | 414 | 215 | 2 | 632 |
| Percent | 0.16 | 65.51 | 34.02 | 0.32 | 100.00 |
| Sample Size | 1 | 369 | 192 | 2 | 564 |
| Mean Length | 436 | 500 | 554 | 524 | 519 |
| Std. Error | | 1 | 1 | | 0 |
| Sample Size | 1 | 369 | 192 | 2 | 564 |
| Mean Weight | 2.00 | 1.75 | 2.34 | 2.00 | 1.95 |
| Std. Error | | 0.01 | 0.02 | | 0.01 |
| Sample Size | 1 | 369 | 192 | 2 | 564 |

Table 14. Age, sex and size composition of sockeye salmon commercial catches from English Bay, 1996.

| | Age Group | | | | | total |
|-----------------------------|-----------|-------|------|------|------|--------|
| | 1.2 | 1.3 | 2.2 | 1.4 | 2.3 | |
| Sample period: 4,6,16 July. | | | | | | |
| Males | 73 | 200 | 5 | 1 | 1 | 280 |
| Percent | 12.17 | 33.33 | 0.83 | 0.17 | 0.17 | 46.67 |
| Sample Size | 63 | 173 | 5 | 1 | 1 | 243 |
| Mean Length | 522 | 592 | 539 | 596 | 570 | 573 |
| Std. Error | 2 | 2 | 7 | | | 1 |
| Sample Size | 63 | 173 | 5 | 1 | 1 | 243 |
| Mean Weight | 2.33 | 3.20 | | | | 2.95 |
| Std. Error | 0.09 | 0.14 | | | | 0.10 |
| Sample Size | 11 | 17 | | | | 28 |
| Females | 172 | 143 | 5 | | | 320 |
| Percent | 28.67 | 23.83 | 0.83 | | | 53.33 |
| Sample Size | 149 | 124 | 4 | | | 277 |
| Mean Length | 497 | 564 | 508 | | | 527 |
| Std. Error | 1 | 2 | 12 | | | 1 |
| Sample Size | 149 | 124 | 4 | | | 277 |
| Mean Weight | 1.74 | 2.61 | 1.51 | | | 2.11 |
| Std. Error | 0.06 | 0.10 | | | | 0.05 |
| Sample Size | 19 | 17 | 1 | | | 37 |
| Both Sexes | 245 | 343 | 10 | 1 | 1 | 600 |
| Percent | 40.83 | 57.17 | 1.67 | 0.17 | 0.17 | 100.00 |
| Sample Size | 212 | 297 | 9 | 1 | 1 | 520 |
| Mean Length | 504 | 581 | 524 | 596 | 570 | 548 |
| Std. Error | 1 | 1 | 7 | | | 1 |
| Sample Size | 212 | 297 | 9 | 1 | 1 | 520 |
| Mean Weight | 1.91 | 2.94 | 1.51 | | | 2.47 |
| Std. Error | 0.05 | 0.09 | | | | 0.05 |
| Sample Size | 30 | 34 | 1 | | | 65 |

Table 15. Age, sex, and size composition of chum salmon escapement from McNeil River, 1996.

| | Age Group | | | total |
|--------------------------|-----------|-------|-------|--------|
| | 0.2 | 0.3 | 0.4 | |
| Sample Period : 1 August | | | | |
| Males | 1 | 20 | 5 | 26 |
| Percent | 1.92 | 38.46 | 9.62 | 50.00 |
| Sample Size | 1 | 18 | 4 | 23 |
| Mean Length | 539 | 604 | 611 | 603 |
| Std. Error | | 8 | 11 | 6 |
| Sample Size | 1 | 18 | 4 | 23 |
| Females | | 15 | 11 | 26 |
| Percent | | 28.85 | 21.15 | 50.00 |
| Sample Size | | 13 | 10 | 23 |
| Mean Length | | 600 | 651 | 621 |
| Std. Error | | 7 | 8 | 5 |
| Sample Size | | 13 | 10 | 23 |
| Both Sexes | 1 | 35 | 16 | 52 |
| Percent | 1.92 | 67.31 | 30.77 | 100.00 |
| Sample Size | 1 | 31 | 14 | 46 |
| Mean Length | 539 | 602 | 638 | 612 |
| Std. Error | | 5 | 6 | 4 |
| Sample Size | 1 | 31 | 14 | 46 |

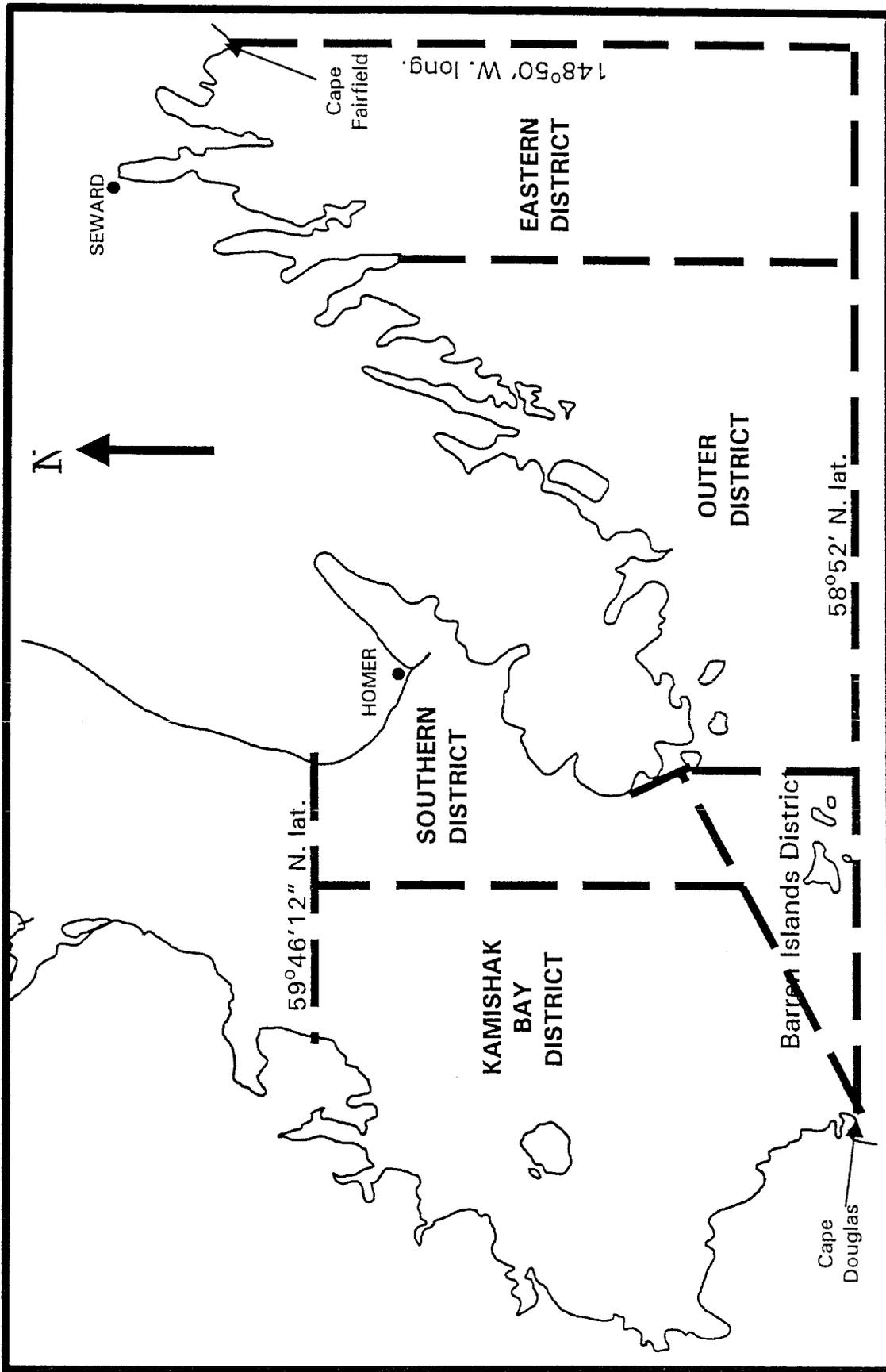


Figure 1. Lower Cook Inlet salmon management districts (not drawn to scale)

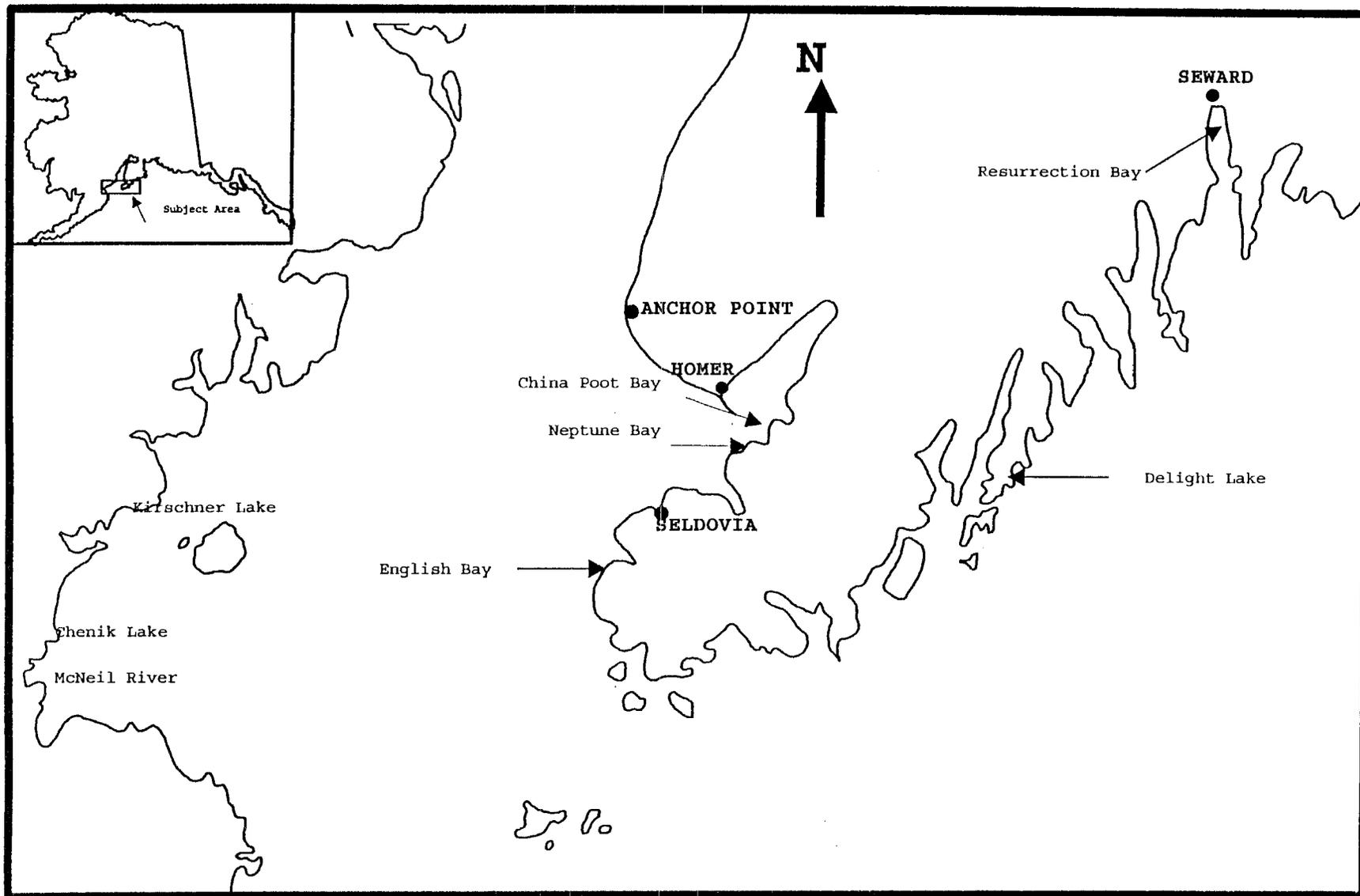


Figure 2. Location of 8 Lower Cook Inlet salmon catch and escapement areas sampled in 1996.

APPENDICES

Appendix A. China Pool: age, and mean length and weight (\pm Standard Error, SE) of the commercial sockeye salmon catch by brood year and age group. Dashed line indicates missing data; italics indicate escapement data. Calculated means reflect corrections made to previously reported data.

| Brood Year | Age Group | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------------|-----------|-------|------|------|-------|-----|-------|-------|----|------|------|------|------|-------|------|------|-------|-----|------|-------|-------|------|------|------|------|------|------|------|------|-------|------|
| | 1.1 | SE | n | 1.2 | SE | n | 1.3 | SE | n | 1.4 | SE | n | 2.1 | SE | n | 2.2 | SE | n | 2.3 | SE | n | 2.4 | SE | n | 3.1 | SE | n | 3.2 | SE | n | |
| Male mean length (mm) by brood year | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1975 | | | | | | | 512 | NA | 1 | | | | | | | | | | | | | | | | | | | | | | |
| 1976 | | | | 515 | 4.11 | 37 | 540 | na | 1 | ---- | | | | | | | | | | | | | | | | | | | | | |
| 1977 | | | | 489 | 12.22 | 25 | ---- | | | | | | 436 | 11.00 | 2 | ---- | | | | 580 | 35.00 | 2 | | | | | | | | | |
| 1978 | | | | ---- | | | 542 | NA | 1 | | | | 507 | 20.00 | 2 | | | | 565 | NA | 1 | | | | | | | | | | |
| 1979 | ---- | | | 514 | 1.24 | 247 | 526 | 13.63 | 9 | 568 | NA | 1 | | | | 513 | | | | | | | | | | | | | | | |
| 1980 | 422 | 29.61 | 5 | 494 | 1.36 | 258 | 539 | 3.15 | 34 | | | | 497 | 3.38 | 45 | | | | | | | | | | | | | | | | |
| 1981 | | | | 481 | 2.24 | 80 | 504 | 15.26 | 5 | ---- | | | | | | | | | | | | | | | | | | | | | |
| 1982 | | | | 498 | 10.48 | 7 | ---- | | | | | | | | | | | | | | | | | | | | | | | | |
| 1983 | | | | ---- | | | 534 | 7.00 | 19 | | | | | | | 510 | 1.00 | 256 | 558 | 9.00 | 8 | | | | | | | | | | |
| 1984 | ---- | | | 498 | 2.00 | 204 | 560 | 5.00 | 35 | | | | 379 | 12.00 | 20 | 513 | 2.00 | 70 | 530 | NA | 1 | | | | | | | | 437 | 22.00 | 2 |
| 1985 | 351 | 4.00 | 20 | 489 | 1.00 | 439 | 554 | 5.00 | 27 | | | | 407 | NA | 1 | 479 | 4.00 | 43 | 554 | 15.00 | 4 | | | | | | | | | | |
| 1986 | 366 | 7.00 | 4 | 474 | 2.00 | 110 | 524 | 12.00 | 22 | | | | 352 | 5.00 | 3 | 485 | 2.00 | 171 | 541 | 9.00 | 3 | | | | | | | | | | |
| 1987 | 361 | 4.00 | 8 | 478 | 2.00 | 259 | 546 | 5.00 | 9 | | | | 359 | 7.00 | 7 | 493 | 2.00 | 117 | | | | | | | | | | | | | |
| 1988 | | | | 484 | 2.00 | 125 | 541 | | | | | | 398 | 11.00 | 5 | 518 | | | 503 | NA | 1 | | | | | | | | | | |
| 1989 | 383 | 3.00 | 12 | 495 | | | 523 | 3.00 | 32 | | | | 394 | | | 483 | 6.00 | 11 | | | | | | | | | | | | | |
| 1990 | | | | 465 | 1.00 | 150 | 520 | 4.00 | 19 | | | | | | | 497 | 9.00 | 4 | | | | | | | | | | | | | |
| 1991 | | | | 478 | 1.00 | 128 | | | | | | | 403 | 4.00 | 3 | | | | | | | | | | | | | | | | |
| 1992 | 391 | 3.00 | 21 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1993 | 394 | 6.00 | 25 | 407 | 1.00 | 210 | 525 | 8.00 | 11 | | | | ---- | ---- | ---- | 489 | 11.00 | 8 | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- |
| Female mean length (mm) by brood year | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1975 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1976 | | | | | | | 523 | 24.51 | 3 | | | | | | | 508 | 14.00 | 2 | | | | | | | | | | | | | |
| 1977 | | | | 511 | 4.16 | 36 | | | | ---- | | | | | | | | | | | | | | | | | | | | | |
| 1978 | | | | 490 | 6.72 | 51 | ---- | | | | | | 512 | 22.00 | 2 | ---- | | | 569 | NA | 1 | | | | | | | | | | |
| 1979 | | | | ---- | | | 573.5 | 28.50 | 2 | 511 | NA | 1 | ---- | | | 525 | 10.00 | 2 | | | | | | | | | | | | | |
| 1980 | ---- | | | 513 | 1.09 | 296 | 549 | 9.41 | 3 | | | | | | | 501 | 6.00 | 19 | 547 | 13.32 | 3 | | | | | | | | | | |
| 1981 | | | | 494 | 1.62 | 186 | 539 | 4.53 | 27 | | | | | | | 493 | 3.46 | 35 | | | | | | | | | | | | | |
| 1982 | | | | 482 | 1.68 | 78 | | | | ---- | | | | | | 496 | NA | 1 | ---- | | | | | | | | | | | | |
| 1983 | | | | 493 | 32.46 | 3 | ---- | | | 632 | NA | 1 | | | | | | | 525 | 15.00 | 8 | | | | | | | | | | |
| 1984 | | | | ---- | | | 551 | 4.00 | 23 | | | | ---- | | | 507 | 1.00 | 217 | 562 | 10.00 | 6 | | | | | | | | | | |
| 1985 | ---- | | | 494 | 1.00 | 197 | 565 | 5.00 | 23 | | | | 441 | 56.00 | 2 | 517 | 4.00 | 41 | 574 | NA | 1 | | | | | | | 486 | NA | 1 | |
| 1986 | 340 | NA | 1 | 488 | 1.00 | 319 | 546 | 6.00 | 19 | | | | | | | 473 | 2.00 | 66 | 550 | 23.00 | 4 | | | | | | | | | | |
| 1987 | | | | 472 | 2.00 | 163 | 533 | 7.00 | 25 | | | | | | | 478 | 2.00 | 151 | 538 | NA | 1 | | | | | | | | | | |
| 1988 | | | | 477 | 2.00 | 193 | 524 | 9.00 | 8 | | | | | | | 491 | 2.00 | 112 | | | | | | | | | | | | | |
| 1989 | | | | 485 | 2.00 | 103 | 539 | | | | | | | | | 521 | | | 513 | NA | 1 | | | | | | | | | | |
| 1990 | | | | 495 | | | 521 | 2.00 | 40 | 492 | NA | 1 | | | | 472 | 4.00 | 15 | | | | | | | | | | | | | |
| 1991 | | | | 464 | 2.00 | 79 | 528 | 4.00 | 46 | | | | 384 | 2.00 | 2 | 466 | 8.00 | 4 | | | | | | | | | | | | | |
| 1992 | | | | 481 | 1.00 | 330 | | | | | | | 387 | NA | 1 | | | | | | | | | | | | | | | | |
| 1993 | ---- | ---- | ---- | 492 | 1.00 | 183 | 535 | 11.00 | 6 | ---- | ---- | ---- | 514 | ---- | 1 | 496 | 6.00 | 13 | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- |

-continued-

| Brood Year | Age Group | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------------|-----------|------|---|------|------|------|------|------|----|------|----|------|------|------|------|------|------|----|------|------|---|------|----|---|-----|----|---|-----|----|
| | 1.1 | SE | n | 1.2 | SE | n | 1.3 | SE | n | 1.4 | SE | n | 2.1 | SE | n | 2.2 | SE | n | 2.3 | SE | n | 2.4 | SE | n | 3.1 | SE | n | 3.2 | SE |
| Male mean weight (kg) by brood year | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1975 | | | | | | 2.20 | NA | 1 | | | | | | | | | | | | | | | | | | | | | |
| 1976 | | | | 2.17 | 0.06 | 26 | 2.61 | NA | 1 | ---- | | | | | | | | | | | | | | | | | | | |
| 1977 | | | | 2.17 | 0.14 | 18 | ---- | | | | | 1.14 | NA | 1 | ---- | | | | 2.95 | 0.55 | 2 | | | | | | | | |
| 1978 | | | | ---- | | | 2.65 | NA | 1 | | | ---- | | | 2.03 | 0.13 | 2 | | 2.90 | NA | 1 | | | | | | | | |
| 1979 | ---- | | | 2.14 | 0.02 | 193 | 2.66 | 0.12 | 8 | 3.85 | NA | 1 | | | 2.26 | 0.11 | 7 | | | | | | | | | | | | |
| 1980 | 0.94 | 0.07 | 5 | 2.02 | 0.02 | 178 | 2.91 | 0.05 | 23 | | | | | | 2.43 | 0.04 | 24 | | | | | ---- | | | | | | | |
| 1981 | | | | 2.26 | 0.03 | 40 | 2.14 | 0.21 | 5 | ---- | | | | | | | | | | | | | | | | | | | |
| 1982 | | | | 1.96 | 0.12 | 7 | ---- | | | | | | | | | | | | 2.83 | 0.03 | 2 | | | | | | | | |
| 1983 | | | | ---- | | | 2.70 | NA | 1 | | | | ---- | | 2.45 | 0.18 | 11 | | | | | | | | | | | | |
| 1984 | ---- | | | 2.38 | 0.23 | 20 | 3.63 | NA | 2 | | | | 1.80 | 0.07 | 4 | 2.00 | 0.10 | 2 | | | | | | | | | | | |
| 1985 | 0.70 | 0.06 | 3 | 1.83 | 0.06 | 22 | 2.83 | 0.59 | 5 | | | | | | 1.70 | 0.23 | 3 | | 2.10 | NA | 1 | | | | | | | | |
| 1986 | 0.50 | NA | 1 | 1.54 | 0.06 | 11 | 2.46 | 0.15 | 3 | | | | | | 1.80 | 0.09 | 23 | | | | | | | | | | | | |
| 1987 | 0.70 | NA | 2 | 1.69 | 0.05 | 23 | 2.40 | NA | 2 | | | | 0.50 | NA | 1 | 1.81 | 0.03 | 25 | | | | | | | | | | | |
| 1988 | | | | 1.79 | 0.06 | 19 | | | | | | | | | 2.17 | | | | | | | | | | | | | | |
| 1989 | 0.82 | 0.03 | 2 | 1.57 | | | 1.63 | 0.21 | 5 | | | | | | 1.16 | NA | 1 | | | | | | | | | | | | |
| 1990 | | | | 1.23 | 0.06 | 17 | | | | | | | | | | | | | | | | | | | | | | | |
| 1991 | | | | 1.70 | 0.06 | 12 | | | | | | | | | | | | | | | | | | | | | | | |
| 1992 | 0.99 | 0.04 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1993 | 0.87 | 6.00 | 3 | 1.94 | 0.06 | 15 | 2.09 | ---- | 1 | ---- | | | | | | 1.84 | ---- | 1 | ---- | | | | | | | | | | |
| Female mean weight (kg) by brood year | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1975 | | | | | | | 2.40 | 0.40 | 2 | | | | | | 1.95 | 0.15 | 2 | | | | | ---- | | | | | | | |
| 1976 | | | | 2.00 | 0.06 | 31 | | | | ---- | | | | | | | | | | | | ---- | | | | | | | |
| 1977 | | | | 1.98 | 0.11 | 24 | ---- | | | | | | | | | | | | 2.70 | NA | 1 | | | | | | | | |
| 1978 | | | | ---- | | | 2.85 | 0.55 | 2 | 2.50 | NA | 1 | ---- | | 2.03 | 0.18 | 2 | | | | | | | | | | | | |
| 1979 | ---- | | | 1.98 | 0.02 | 231 | 2.80 | 0.15 | 3 | | | | | | 1.97 | 0.09 | 14 | | 2.88 | 0.08 | 3 | | | | | | | | |
| 1980 | | | | 1.90 | 0.03 | 118 | 2.91 | 0.08 | 16 | | | | | | 2.26 | 0.06 | 26 | | | | | ---- | | | | | | | |
| 1981 | | | | 2.11 | 0.02 | 32 | | | | ---- | | | | | 1.70 | NA | 1 | | | | | | | | | | | | |
| 1982 | | | | 1.80 | 0.46 | 3 | ---- | | | | | | | | ---- | | | | 2.20 | NA | 2 | | | | | | | | |
| 1983 | | | | ---- | | | | | | | | | | | ---- | | | | | | | | | | | | | | |
| 1984 | ---- | | | 1.77 | 0.06 | 13 | | | | | | | | | 2.07 | 0.12 | 22 | | | | | | | | | | | | |
| 1985 | | | | 1.76 | 0.05 | 8 | | | | | | | | | 2.75 | NA | 1 | | 2.60 | NA | 1 | | | | | | | | |
| 1986 | | | | 1.49 | 0.05 | 17 | 2.10 | 0.30 | 2 | | | | | | 1.51 | 0.06 | 6 | | | | | | | | | | | | |
| 1987 | | | | 1.57 | 0.04 | 22 | 2.10 | 0.09 | 3 | | | | | | 1.63 | 0.09 | 16 | | | | | | | | | | | | |
| 1988 | | | | 1.67 | 0.05 | 16 | 2.51 | | | | | | | | 1.72 | 0.03 | 15 | | | | | | | | | | | | |
| 1989 | | | | 1.54 | | | 1.66 | 0.16 | 7 | | | | | | | | | | 1.25 | 0.11 | 2 | | | | | | | | |
| 1990 | | | | 1.15 | 0.07 | 11 | 2.13 | 0.21 | 5 | | | | | | 1.33 | 0.11 | 2 | | | | | | | | | | | | |
| 1991 | | | | 1.65 | 0.03 | 33 | | | | | | | 0.77 | NA | 1 | | | | | | | | | | | | | | |
| 1992 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1993 | ---- | | | 1.85 | 0.04 | 20 | ---- | | | ---- | | | | | 1.92 | ---- | 1 | | 1.69 | 0.10 | 3 | ---- | | | | | | | |

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| Brood Year | Age Group | | | | | | | | | | | | |
|---|-----------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|-------|-------|
| | 0.3 | 0.4 | 1.1 | 1.2 | 1.3 | 1.4 | 2.1 | 2.2 | 2.3 | 2.4 | 3.1 | 3.2 | 3.3 |
| Male harvest (number of fish) by brood year | | | | | | | | | | | | | |
| 1975 | | | | | 152 | | | | | | | | |
| 1976 | | | | 5,620 | 136 | ---- | | | ---- | | | | |
| 1977 | | ---- | | 3,394 | ---- | | 272 | ---- | 266 | | | | |
| 1978 | ---- | | | ---- | 133 | | ---- | 266 | 216 | | | | |
| 1979 | | | ---- | 32,845 | 1,941 | 190 | | 1,509 | | | | | ---- |
| 1980 | | | 655 | 55,632 | 6,444 | | | 8,528 | | ---- | | ---- | |
| 1981 | | | | 15,161 | 4,781 | ---- | | | ---- | | | ---- | |
| 1982 | | ---- | | 6,694 | ---- | | | ---- | 1,406 | | | | |
| 1983 | ---- | | | ---- | 1,326 | | ---- | 17,249 | 307 | | | | |
| 1984 | | | ---- | 12,862 | 1,324 | | 1,174 | 2,592 | 68 | | | 384 | |
| 1985 | | | 1,126 | 16,595 | 1,823 | | 35 | 2,904 | 322 | | | | |
| 1986 | | | 153 | 7,429 | 2,141 | | 203 | 16,172 | 386 | | | | |
| 1987 | | | 540 | 25,628 | 1,157 | | 452 | 15,044 | | | | | |
| 1988 | | | | 16,073 | 2,295 | | 643 | 2,868 | 88 | | | | |
| 1989 | | | 1,543 | 19,789 | 2,821 | | 287 | 970 | | | | | |
| 1990 | | | 287 | 13,225 | 3,147 | | | 662 | | | | | |
| 1991 | | | | 21,200 | | | 497 | | | | | | |
| 1992 | | | 3,478 | | | | | | | | | | |
| 1993 | ----- | ----- | 27 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| Female harvest (number of fish) by brood year | | | | | | | | | | | | | |
| 1975 | | | | | 456 | | | 304 | | ---- | | | ---- |
| 1976 | | | | 5,468 | | ---- | | | ---- | | | | ---- |
| 1977 | | ---- | | 6,926 | ---- | | 272 | ---- | 133 | | | | |
| 1978 | ---- | | | ---- | 266 | 216 | ---- | 266 | | | | | |
| 1979 | | | ---- | 39,360 | 647 | | | 4,097 | 569 | | | | ---- |
| 1980 | | | | 40,106 | 5,117 | | | 6,633 | | ---- | | ---- | |
| 1981 | | | | 14,783 | | | | 956 | | | | ---- | |
| 1982 | | ---- | | 2,869 | ---- | 56 | | ---- | 514 | | | | |
| 1983 | ---- | | | ---- | 1,567 | | ---- | 14,203 | 229 | | | | |
| 1984 | | | ---- | 11,876 | 915 | | 113 | 1,567 | 68 | | | | 192 |
| 1985 | | | 56 | 12,078 | 1,283 | | | 4,457 | 619 | | | | |
| 1986 | | | | 11,008 | 3,015 | | | 17,386 | 129 | | | | |
| 1987 | | | | 22,622 | 1,029 | | | 14,400 | | | | | |
| 1988 | | | | 13,244 | 2,008 | | | 2,008 | 88 | | | | |
| 1989 | | | | 38,146 | 3,527 | 166 | | 1,322 | | | | | |
| 1990 | | | | 6,966 | 7,619 | | | 176 | 662 | | | | |
| 1991 | | | | 54,656 | | | | 166 | | | | | |
| 1992 | | | | | | | | | | | | | |
| 1993 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |

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Appendix A cont'd (China Poot: page 4 of 4)

| Age Group | | | | | | | | | | | | | | | | | | | | | | |
|--|------|----|-------|-----|-------|----|------|---|------|----|-------|-----|------|----|-----|---|-----|---|------|---|-----|---|
| Year | 1.1 | n | 1.2 | n | 1.3 | n | 1.4 | n | 2.1 | n | 2.2 | n | 2.3 | n | 2.4 | n | 3.1 | n | 3.2 | n | 3.3 | n |
| Male age composition by harvest year | | | | | | | | | | | | | | | | | | | | | | |
| 1980 | | | 46.83 | 37 | 1.27 | 1 | | | | | | | | | | | | | | | | |
| 1981 | | | 30.85 | 25 | 1.24 | 1 | | | 2.47 | 2 | | | | | | | | | | | | |
| 1982 | | | | | | | | | | | | | | | | | | | | | | |
| 1983 | 0.90 | 5 | 44.27 | 247 | 0.18 | 1 | | | | | 0.36 | 2 | 0.36 | 2 | | | | | | | | |
| 1984 | | | 53.31 | 258 | 1.86 | 9 | | | | | 1.45 | 7 | 0.21 | 1 | | | | | | | | |
| 1985 | | | 26.40 | 80 | 11.22 | 34 | 0.33 | 1 | | | 14.85 | 45 | | | | | | | | | | |
| 1986 | | | 43.75 | 7 | 31.25 | 5 | | | | | | | | | | | | | | | | |
| 1987 | | | | | | | | | | | | | | | | | | | | | | |
| 1988 | 1.77 | 20 | 20.25 | 204 | 2.09 | 19 | | | 1.85 | 20 | 27.15 | 256 | 2.21 | 21 | | | | | | | | |
| 1989 | 0.43 | 4 | 46.36 | 439 | 3.70 | 35 | | | 0.10 | 1 | 7.24 | 70 | 0.86 | 8 | | | | | | | | |
| 1990 | 1.81 | 8 | 24.94 | 110 | 6.12 | 27 | | | 0.68 | 3 | 9.75 | 43 | 0.23 | 1 | | | | | | | | |
| 1991 | | | 28.82 | 259 | 2.41 | 22 | | | 0.51 | 7 | 18.18 | 171 | 0.36 | 4 | | | | | 0.43 | 2 | | |
| 1992 | 2.42 | 12 | 25.25 | 125 | 1.82 | 9 | | | 1.01 | 5 | 23.64 | 117 | 0.61 | 3 | | | | | | | | |
| 1993 | | | | | | | | | | | | | | | | | | | | | | |
| 1994 | | | 45.32 | 150 | 9.67 | 32 | | | | | 3.32 | 11 | 0.30 | 1 | | | | | | | | |
| 1995 | 3.77 | 21 | 22.98 | 128 | 3.41 | 19 | | | 0.54 | 3 | 0.72 | 4 | | | | | | | | | | |
| 1996 | 4.45 | 25 | 39.54 | 222 | 2.97 | 17 | | | | | 0.33 | 2 | | | | | | | | | | |
| Female age composition by harvest year | | | | | | | | | | | | | | | | | | | | | | |
| 1980 | | | 45.57 | 36 | 3.80 | 3 | | | | | 2.53 | 2 | | | | | | | | | | |
| 1981 | | | 62.96 | 51 | | | | | 2.47 | 2 | | | | | | | | | | | | |
| 1982 | | | | | | | | | | | | | | | | | | | | | | |
| 1983 | | | 53.05 | 296 | 0.36 | 2 | | | | | 0.36 | 2 | 0.18 | 1 | | | | | | | | |
| 1984 | | | 38.43 | 186 | 0.62 | 3 | 0.21 | 1 | | | 3.93 | 19 | | | | | | | | | | |
| 1985 | | | 25.74 | 78 | 8.91 | 27 | | | | | 11.55 | 35 | 0.99 | 3 | | | | | | | | |
| 1986 | | | 18.75 | 3 | | | | | | | 6.25 | 1 | | | | | | | | | | |
| 1987 | | | | | | | | | | | | | | | | | | | | | | |
| 1988 | 0.09 | 1 | 18.69 | 197 | 2.47 | 23 | 0.09 | 1 | 0.18 | 2 | 22.36 | 217 | 0.81 | 8 | | | | | | | | |
| 1989 | | | 33.74 | 319 | 2.56 | 23 | | | | | 4.38 | 41 | 0.64 | 6 | | | | | | | | |
| 1990 | | | 36.96 | 163 | 4.31 | 19 | | | | | 14.96 | 66 | 0.23 | 1 | | | | | | | | |
| 1991 | | | 25.44 | 193 | 3.39 | 25 | | | | | 19.55 | 151 | 0.70 | 4 | | | | | 0.22 | 1 | | |
| 1992 | | | 20.81 | 103 | 1.62 | 8 | | | | | 22.62 | 112 | 0.2 | 1 | | | | | | | | |
| 1993 | | | | | | | | | | | | | | | | | | | | | | |
| 1994 | | | 23.87 | 79 | 12.09 | 40 | | | 0.6 | 2 | 4.53 | 15 | 0.3 | 1 | | | | | | | | |
| 1995 | | | 59.25 | 330 | 8.26 | 46 | 0.18 | 1 | 0.18 | 1 | 0.72 | 4 | | | | | | | | | | |
| 1996 | | | 49.42 | 277 | 3.13 | 18 | | | | | 0.16 | 1 | | | | | | | | | | |
| Both Sexes | | | | | | | | | | | | | | | | | | | | | | |
| 1980 | | | 92.40 | 73 | 5.07 | 4 | | | | | 2.53 | 2 | | | | | | | | | | |
| 1981 | | | 93.81 | 76 | 1.24 | 1 | | | 4.94 | 4 | | | | | | | | | | | | |
| 1982 | | | | | | | | | | | | | | | | | | | | | | |
| 1983 | | | | | | | | | | | | | | | | | | | | | | |
| 1984 | | | 91.74 | 444 | 2.48 | 12 | 0.21 | 1 | | | 5.38 | 26 | 0.21 | 1 | | | | | | | | |
| 1985 | | | 52.14 | 158 | 20.13 | 61 | 0.33 | 1 | | | 26.40 | 80 | 0.99 | 3 | | | | | | | | |
| 1986 | | | 62.50 | 10 | 31.25 | 5 | | | | | 6.25 | 1 | | | | | | | | | | |
| 1987 | | | | | | | | | | | | | | | | | | | | | | |
| 1988 | 1.86 | 21 | 38.94 | 401 | 4.56 | 42 | 0.09 | 1 | 2.03 | 22 | 49.51 | 473 | 3.02 | 29 | | | | | | | | |
| 1989 | 0.43 | 4 | 80.10 | 758 | 6.26 | 58 | | | 0.10 | 1 | 11.62 | 111 | 1.50 | 14 | | | | | | | | |
| 1990 | 1.81 | 8 | 61.90 | 273 | 10.43 | 46 | | | 0.68 | 3 | 24.71 | 109 | 0.46 | 2 | | | | | | | | |
| 1991 | | | 54.26 | 452 | 5.80 | 47 | | | 0.51 | 7 | 37.73 | 322 | 1.06 | 8 | | | | | 0.65 | 3 | | |
| 1992 | 2.42 | 12 | 46.06 | 228 | 3.44 | 17 | | | 1.01 | 5 | 46.26 | 229 | 0.81 | 4 | | | | | | | | |
| 1993 | | | | | | | | | | | | | | | | | | | | | | |
| 1994 | | | 69.19 | 229 | 21.76 | 72 | | | 0.60 | 2 | 7.85 | 26 | 0.60 | 2 | | | | | | | | |
| 1995 | 3.77 | 21 | 82.23 | 458 | 11.67 | 65 | 0.18 | 1 | 0.72 | 4 | 1.44 | 8 | | | | | | | | | | |
| 1996 | 4.45 | 25 | 88.98 | 499 | 6.10 | 35 | | | | | 0.49 | 3 | | | | | | | | | | |

Appendix B cont'd (Nuka Bay; page 2 of 3).

| Year | Age Group | | | | | | | | | | | | | | | | |
|-------------------------------------|-----------|------|------|-----|-----|------|------|-----|------|------|------|------|------|------|------|------|---|
| | 0.2 | 0.3 | 0.4 | 0.5 | 1.1 | 1.2 | 1.3 | 1.4 | 2.1 | 2.2 | 2.3 | 2.4 | 3.1 | 3.2 | 3.3 | | |
| SE | n | SE | n | SE | n | SE | n | SE | n | SE | n | SE | n | SE | n | | |
| Male mean weight (kg) by brood year | | | | | | | | | | | | | | | | | |
| 1977 | | | | | | | | | | | 3.37 | 0.15 | 3 | | | | |
| 1978 | | | | | | | | | | 2.35 | 0.05 | 23 | 3.16 | 0.15 | 10 | | |
| 1979 | | 2.87 | 0.49 | 3 | | | | | 2 | 2.10 | 0.05 | 2 | 3.13 | 0.12 | 10 | | |
| 1980 | 2.55 | NA | 1 | | | | | | | 2.27 | 0.12 | 6 | | | | | |
| 1981 | | | | | | | | | | | | | | | | | |
| 1982 | | | | | | | | | | | 3.55 | 0.25 | 6 | | | | |
| 1983 | | | | | | 3.53 | 0.10 | 3 | | 2.33 | 0.47 | 2 | | | | | |
| 1984 | | | | | | 2.20 | 0.45 | 2 | 2.58 | 0.33 | 10 | 3.70 | NA | 2 | | | |
| 1985 | | | | | | 2.25 | 0.27 | 4 | 3.57 | 0.12 | 15 | 2.68 | 0.18 | 4 | 2.33 | 0.24 | 4 |
| 1986 | 2.10 | NA | 1 | | | 2.34 | 0.12 | 8 | 2.35 | 0.16 | 14 | 1.76 | 0.04 | 5 | | | |
| 1987 | | | | | | 1.61 | 0.27 | 2 | | | 2.72 | | | | | | |
| 1988 | | | | | | 2.76 | | | | | 1.85 | | | | | | |
| 1989 | | | | | | 3.07 | 0.19 | 8 | | | 1.80 | 0.05 | 10 | | | | |
| 1990 | | | | | | 1.78 | 0.10 | 7 | 3.21 | 0.08 | 22 | | | | | | |
| 1991 | | | | | | 2.35 | 0.07 | 15 | | 0.63 | 0.01 | 2 | | | | | |
| 1992 | | | | | | | | | | | | | | | | | |
| 1993 | | | | | | | | | | | | | | | | | |

| Year | Female mean weight (kg) by brood year | | | | | | | | | | | | | | |
|------|---------------------------------------|------|------|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|
| | 0.2 | 0.3 | 0.4 | 0.5 | 1.1 | 1.2 | 1.3 | 1.4 | 2.1 | 2.2 | 2.3 | 2.4 | 3.1 | 3.2 | 3.3 |
| SE | n | SE | n | SE | n | SE | n | SE | n | SE | n | SE | n | SE | n |
| 1977 | | | | | | | | | | | | | | | |
| 1978 | | | | | | | | | | | | | | | |
| 1979 | | 2.65 | 0.34 | 3 | | | | | | | | | | | |
| 1980 | | | | | | | | | 0.65 | NA | | | | | |
| 1981 | | | | | | | | | | | | | | | |
| 1982 | | | | | | | | | | | | | | | |
| 1983 | | | | | | | | | | | | | | | |
| 1984 | | | | | | | | | | | | | | | |
| 1985 | | | | | | | | | | | | | | | |
| 1986 | | | | | | | | | | | | | | | |
| 1987 | | | | | | | | | | | | | | | |
| 1988 | | | | | | | | | | | | | | | |
| 1989 | | | | | | | | | | | | | | | |
| 1990 | | | | | | | | | | | | | | | |
| 1991 | | | | | | | | | | | | | | | |
| 1992 | | | | | | | | | | | | | | | |
| 1993 | | | | | | | | | | | | | | | |

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Appendix B. cont'd (Nuka Bay: page 3 of 4).

| Year | Age Group | | | | | | | | | | | | | |
|---|-----------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 0.2 | 0.3 | 0.4 | 1.1 | 1.2 | 1.3 | 1.4 | 2.1 | 2.2 | 2.3 | 2.4 | 3.1 | 3.2 | 3.3 |
| Male harvest (number of fish) by brood year | | | | | | | | | | | | | | |
| 1977 | | | | | | | | | | | | | | 209 |
| 1978 | | | | | | | | | | | | | | --- |
| 1979 | | | | | | | | | | 2,713 | --- | | --- | --- |
| 1980 | | | | | | 30,057 | --- | 2,922 | --- | --- | --- | --- | --- | 28 |
| 1981 | | | --- | | 3,757 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1982 | | --- | --- | | --- | --- | --- | --- | --- | 1,993 | --- | | | --- |
| 1983 | --- | --- | | --- | --- | 1,123 | --- | 562 | 466 | --- | --- | | | 7 |
| 1984 | --- | | | --- | 281 | 2,579 | | 93 | 242 | | | | 4 | --- |
| 1985 | | 31 | | | 1,398 | 1,401 | | 453 | 216 | --- | | | --- | --- |
| 1986 | 31 | 14 | | | 408 | 358 | --- | 82 | --- | --- | | --- | | --- |
| 1987 | | | --- | | 56 | --- | | --- | 728 | | | | | --- |
| 1988 | | --- | | | --- | 478 | --- | 166 | 196 | | | | | --- |
| 1989 | --- | 28 | | --- | 353 | 1,054 | | 588 | 22 | | | | | --- |
| 1990 | | | | | 710 | 4,508 | 24 | 22 | | | | | | --- |
| 1991 | | | | | 2,588 | | | | | | | | | --- |
| 1992 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| 1993 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| Female harvest (number of fish) by brood year | | | | | | | | | | | | | | |
| 1977 | | | | | | | | | | | | | | 209 |
| 1978 | | | | | | | | | | | | | | --- |
| 1979 | | | | | | | | | | 4,592 | --- | | --- | --- |
| 1980 | | | | | | 33,395 | --- | 6,053 | --- | --- | --- | --- | --- | 28 |
| 1981 | | 209 | --- | | 7,514 | --- | --- | --- | --- | --- | 28 | --- | 28 | --- |
| 1982 | | --- | --- | | --- | --- | --- | --- | --- | 1,854 | --- | | | --- |
| 1983 | --- | --- | | --- | --- | 1,544 | --- | 1,011 | 870 | --- | --- | | | 15 |
| 1984 | --- | | | --- | 674 | 2,734 | 5 | 28 | 280 | 320 | | | 4 | --- |
| 1985 | | 31 | | | 1,740 | 1,789 | 4 | 501 | 279 | --- | | | --- | --- |
| 1986 | 31 | 28 | | | 567 | 494 | --- | 142 | --- | --- | | --- | | --- |
| 1987 | | | --- | | 112 | --- | | --- | 713 | | | | | --- |
| 1988 | | --- | | | --- | 471 | --- | 208 | 220 | | | | 12 | --- |
| 1989 | --- | | | --- | 367 | 1,053 | 22 | 968 | 67 | | | | | --- |
| 1990 | 7 | | | | 1,103 | 6,403 | | 67 | | | | | | --- |
| 1991 | | | | | 3,917 | | | | | | | | | --- |
| 1992 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| 1993 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |

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| Year | Age Group | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-----------|---|------|---|-----|---|------|-------|-------|-------|-------|------|------|------|------|-------|-------|-------|-------|------|------|---|-----|---|------|---|------|---|
| | 0.2 | n | 0.3 | n | 0.4 | n | 1.1 | n | 1.2 | n | 1.3 | n | 1.4 | n | 2.1 | n | 2.2 | n | 2.3 | n | 2.4 | n | 3.1 | n | 3.2 | n | 3.3 | n |
| Male age composition by harvest year | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1977 | | | 0.65 | 2 | | | | 1.29 | 4 | 18.06 | 56 | | | | | 1.61 | 5 | 19.03 | 59 | 0.32 | 1 | | | | 0.65 | 2 | | |
| 1983 | 0.38 | 1 | 1.13 | 3 | | | | 13.21 | 35 | 19.25 | 51 | | | | | 8.68 | 23 | 1.13 | 3 | | | | | | | | | |
| 1984 | | | | | | | | 29.90 | 154 | 11.46 | 59 | 0.39 | 2 | | | 1.55 | 8 | 3.69 | 19 | | | | | | | | | |
| 1985 | | | | | | | | 4.10 | 18 | 32.80 | 144 | | | | | 3.19 | 14 | 2.96 | 13 | | | | | | | | 0.23 | 1 |
| 1986 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1987 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1988 | | | | | | | | 3.06 | 10 | 12.23 | 40 | | | | | 6.12 | 20 | 21.71 | 71 | | | | | | | | 0.30 | 1 |
| 1989 | 0.30 | 1 | 0.30 | 1 | | | | 13.60 | 45 | 25.09 | 83 | | | | | 0.90 | 3 | 4.53 | 15 | | | | | | | | | |
| 1990 | | | 0.24 | 3 | | | | 7.12 | 65 | 24.46 | 229 | | | | | 7.91 | 76 | 4.22 | 43 | | | | | | | | | |
| 1991 | | | | | | | | 3.16 | 15 | 20.19 | 96 | | | | | 4.62 | 22 | 12.18 | 58 | | | | | | 0.23 | 1 | 0.39 | 2 |
| 1992 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1993 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1994 | | | | | | | | 11.98 | 58 | 17.78 | 86 | | | 0.40 | 2 | 9.92 | 48 | 3.31 | 16 | | | | | | | | | |
| 1995 | | | | | | | | 14.68 | 116 | 25.58 | 202 | | | | | 0.12 | 1 | 0.12 | 1 | | | | | | | | | |
| 1996 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Female age composition by harvest year | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1977 | | | 0.65 | 2 | | | 0.32 | 1 | 2.58 | 8 | 29.67 | 92 | 0.32 | 579 | | | 1.29 | 4 | 22.90 | 71 | 0.32 | 1 | | | 0.32 | 1 | | |
| 1983 | | | 1.13 | 3 | | | | | 18.12 | 48 | 26.41 | 70 | 0.38 | 1 | 0.38 | 1 | 8.68 | 23 | 1.13 | 3 | | | | | | | | |
| 1984 | | | 0.19 | 1 | | | | | 30.88 | 159 | 15.92 | 82 | 0.39 | 2 | | | 3.30 | 17 | 1.94 | 10 | 0.39 | 2 | | | | | | |
| 1985 | | | 0.23 | 1 | | | | | 8.20 | 36 | 36.45 | 160 | | | | | 6.61 | 29 | 5.01 | 22 | | | | | | | 0.23 | 1 |
| 1986 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1987 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1988 | | | | | | | | 7.34 | 24 | 16.82 | 55 | | | 0.30 | 1 | 11.01 | 36 | 20.19 | 66 | 0.30 | 1 | | | | 0.30 | 1 | 0.30 | 1 |
| 1989 | 0.30 | 1 | 0.30 | 1 | | | | 16.91 | 56 | 26.60 | 88 | | | | | 2.71 | 9 | 8.46 | 28 | | | | | | | | | |
| 1990 | | | 0.49 | 6 | | | | 9.90 | 93 | 31.23 | 296 | 0.09 | 1 | | | 8.75 | 87 | 5.59 | 56 | | | | | | | | | |
| 1991 | | | | | | | | 6.32 | 30 | 27.86 | 133 | 0.23 | 1 | | | 8.01 | 38 | 15.74 | 75 | | | | | | 0.23 | 1 | 0.85 | 4 |
| 1992 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1993 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1994 | | | | | | | | 18.61 | 90 | 17.76 | 86 | | | | | 16.33 | 79 | 3.71 | 18 | | | | | | 0.20 | 1 | | |
| 1995 | | | | | | | | 22.28 | 176 | 36.33 | 287 | 0.12 | 1 | | | 0.38 | 3 | 0.38 | 3 | | | | | | | | | |
| 1996 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Both Sexes | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1977 | | | 1.30 | 4 | | | 0.32 | 1 | 3.87 | 12 | 47.73 | 148 | 0.32 | 579 | | | 2.90 | 9 | 41.93 | 130 | 0.64 | 2 | | | 0.97 | 3 | | |
| 1983 | 0.38 | 1 | 2.26 | 6 | | | | | 31.33 | 83 | 45.66 | 121 | 0.38 | 1 | 0.38 | 1 | 17.36 | 46 | 2.26 | 6 | | | | | | | | |
| 1984 | | | 0.19 | 1 | | | | | 60.78 | 313 | 27.38 | 141 | 0.78 | 4 | | | 4.85 | 25 | 5.63 | 29 | 0.39 | 2 | | | | | | |
| 1985 | | | 0.23 | 1 | | | | | 12.30 | 54 | 69.25 | 304 | | | | | 9.80 | 43 | 7.97 | 35 | | | | | | | 0.46 | 2 |
| 1986 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1987 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1988 | | | | | | | | 10.40 | 34 | 29.05 | 95 | | | 0.30 | 1 | 17.13 | 56 | 41.90 | 137 | 0.30 | 1 | | | | 0.30 | 1 | 0.60 | 2 |
| 1989 | 0.60 | 2 | 0.60 | 2 | | | | 30.51 | 101 | 51.69 | 171 | | | | | 3.61 | 12 | 12.99 | 43 | | | | | | | | | |
| 1990 | | | 0.73 | 9 | | | | 17.02 | 158 | 55.69 | 525 | 0.09 | 1 | | | 16.66 | 163 | 9.81 | 99 | | | | | | | | | |
| 1991 | | | | | | | | 9.48 | 45 | 48.05 | 229 | 0.23 | 1 | | | 12.63 | 60 | 27.92 | 133 | | | | | | 0.46 | 2 | 1.24 | 6 |
| 1992 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1993 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1994 | | | | | | | | 30.59 | 148 | 35.54 | 172 | | | 0.40 | 2 | 26.25 | 127 | 7.02 | 34 | | | | | | 0.20 | 1 | | |
| 1995 | | | | | | | | 36.96 | 292 | 61.91 | 489 | 0.12 | 1 | | | 0.50 | 4 | 0.50 | 4 | | | | | | | | | |
| 1996 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Appendix C. Aialik Bay: age, and mean length and weight (\pm Standard Error; SE) of the commercial sockeye salmon catch by brood year and age group. Dashed line indicates missing data; italics indicate escapement data. Calculated means reflect corrections made to previously reported data.

| Year | Age Group | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------------|-----------|----|---|-----|----|---|-----|----|---|-----|-----|-------|-----|------|------|------|------|------|-------|------|---|-----|-----|----|-----|------|------|-----|------|-------|----|
| | 0.2 | SE | n | 0.3 | SE | n | 0.4 | SE | n | 1.1 | SE | n | 1.2 | SE | n | 1.3 | SE | n | 1.4 | SE | n | 2.1 | SE | n | 2.2 | SE | n | 2.3 | SE | n | |
| Male mean length (mm) by brood year | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1978 | | | | | | | | | | | | | | | 581 | 4.90 | 22 | | | | | | | | | 534 | 7.28 | 4 | 586 | 12.59 | 6 |
| 1979 | | | | | | | | | | | | | 502 | 3.56 | 89 | 581 | 2.43 | 93 | 648 | NA | 1 | | | | | 529 | 7.06 | 8 | 582 | 6.34 | 20 |
| 1980 | | | | | | | | | | | 355 | 25.00 | 2 | 515 | 2.78 | 116 | 569 | 2.71 | 85 | | | | | | | 510 | 7.14 | 30 | 571 | | |
| 1981 | | | | | | | | | | | 400 | NA | 1 | 500 | 9.98 | 17 | 566 | | | | | | 380 | NA | 1 | 498 | | | | | |
| 1982 | | | | | | | | | | | | | 496 | | | | | | | | | | | | | | | | 581 | 5.00 | 33 |
| 1983 | | | | | | | | | | | | | | | 581 | 4.00 | 73 | | | | | | | | | 512 | 10.0 | 9 | 607 | 5.00 | 39 |
| 1984 | | | | | | | 561 | NA | 1 | | | | 517 | 3.00 | 58 | 590 | 2.00 | 214 | 610 | 4.00 | 2 | | | | 539 | 5.00 | 19 | 610 | 9.00 | 12 | |
| 1985 | | | | | | | | | | | | | 521 | 3.00 | 65 | 613 | 4.00 | 50 | | | | | | | 545 | 2.00 | 126 | 571 | 3.00 | 103 | |
| 1986 | | | | 659 | NA | 1 | | | | | 367 | 4.00 | 2 | 541 | 5.00 | 73 | 566 | 4.00 | 38 | | | | | | 498 | 7.00 | 22 | | | | |
| 1987 | 478 | NA | 1 | | | | | | | | | | 496 | 8.00 | 29 | | | | | | | | | | | | | | | | |
| 1988 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1989 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 611 | NA | 1 |
| 1990 | | | | | | | | | | | | | | | 568 | 2.00 | 110 | | | | | | | | 534 | NA | 1 | | | | |
| 1991 | | | | | | | | | | | | | 513 | 3.00 | 64 | | | | | | | | | | | | | | | | |
| 1992 | | | | | | | | | | | 337 | NA | 1 | | | | | | | | | | | | | | | | | | |
| 1993 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Female mean length (mm) by brood year | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1978 | | | | | | | | | | | | | | | 557 | 2.85 | 43 | 546 | 10.82 | 5 | | | | | 530 | na | 1 | 565 | 6.25 | 3 | |
| 1979 | | | | | | | | | | | | | 499 | 2.27 | 119 | 557 | 2.22 | 100 | | | | | | | 512 | 7.75 | 4 | 548 | 5.25 | 24 | |
| 1980 | | | | | | | | | | | | | 493 | 2.23 | 117 | 551 | 1.76 | 103 | | | | | | | 493 | 4.11 | 19 | 547 | | | |
| 1981 | | | | 539 | NA | 1 | | | | | | | 497 | 4.59 | 17 | 544 | | | | | | | | | 501 | | | | | | |
| 1982 | | | | | | | | | | | | | 496 | | | | | | | | | | | | | | | | 564 | 3.00 | 53 |
| 1983 | | | | | | | | | | | | | | | 555 | 2.00 | 110 | | | | | | | | 506 | 9.00 | 17 | 579 | 6.00 | 21 | |
| 1984 | | | | 516 | NA | 1 | | | | | | | 502 | 2.00 | 110 | 563 | 1.00 | 274 | 632 | NA | 1 | | | | 526 | 4.00 | 27 | 594 | 6.00 | 6 | |
| 1985 | | | | | | | | | | | | | 506 | 3.00 | 70 | 579 | 4.00 | 56 | | | | | | | 520 | 2.00 | 137 | 547 | 2.00 | 149 | |
| 1986 | | | | | | | | | | | | | 529 | 3.00 | 66 | 544 | 3.00 | 68 | | | | | | | 501 | 4.00 | 37 | | | | |
| 1987 | | | | | | | | | | | | | 496 | 5.00 | 29 | | | | | | | | | | | | | | | | |
| 1988 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1989 | | | | | | | | | | | | | | | | | | | 542 | NA | 1 | | | | | | | | 518 | NA | 1 |
| 1990 | | | | | | | | | | | | | | | 548 | 1.00 | 191 | | | | | | | | 496 | 15.0 | 5 | | | | |
| 1991 | | | | | | | | | | | | | 497 | 1.00 | 154 | | | | | | | | | | | | | | | | |
| 1992 | | | | | | | | | | | 515 | NA | 1 | | | | | | | | | | | | | | | | | | |
| 1993 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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Age Group

| Year | 0.2 | SE | n | 0.3 | SE | n | 0.4 | SE | n | 1.1 | SE | n | 1.2 | SE | n | 1.3 | SE | n | 1.4 | SE | n | 2.1 | SE | n | 2.2 | SE | n | 2.3 | SE | n | |
|---------------------------------------|------|----|---|------|----|---|------|----|------|------|----|---|------|-------|------|------|------|----|------|----|---|------|------|----|------|------|------|------|------|------|----|
| Male mean weight (kg) by brood year | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1978 | | | | | | | | | | | | | | 3.16 | 0.10 | 8 | | | | | | | | | | 2.67 | 0.21 | 3 | 2.90 | NA | 1 |
| 1979 | | | | | | | | | | | | | 0.06 | 38.00 | | 3.34 | 0.07 | 38 | 4.80 | NA | 1 | | | | | 2.37 | 0.28 | 2 | 3.76 | 0.14 | 14 |
| 1980 | | | | | | | | | | | | | 2.42 | 0.06 | 54 | 3.50 | 0.07 | 51 | | | | | | | | 2.56 | 0.12 | 17 | 2.86 | | |
| 1981 | | | | | | | | | | | | | 2.63 | 0.16 | 5 | 2.96 | | | ---- | | | | 1.30 | NA | 1 | 2.11 | | | ---- | | |
| 1982 | | | | | | | ---- | | | | | | 2.10 | | | ---- | | | | | | | | | ---- | | | 3.76 | 0.17 | 4 | |
| 1983 | | | | ---- | | | | | | | | | ---- | | | 3.37 | 0.35 | 9 | | | | ---- | | | 1.55 | NA | 1 | 3.45 | 0.50 | 2 | |
| 1984 | ---- | | | | | | | | | ---- | | | 2.44 | 0.19 | 6 | 3.80 | 0.16 | 20 | | | | | | | 2.45 | NA | 1 | 3.10 | NA | 1 | |
| 1985 | | | | | | | | | | | | | 1.59 | 0.22 | 4 | 3.69 | 0.19 | 7 | | | | | | | 2.61 | 0.10 | 15 | 2.86 | 0.08 | 17 | |
| 1986 | | | | | | | | | | | | | 2.48 | 0.52 | 4 | 2.96 | 0.13 | 5 | | | | | | | 2.11 | 0.18 | 3 | | | | |
| 1987 | | | | | | | | | 0.80 | | | | 2.10 | 0.22 | 6 | | | | | | | | | | | | | | | | |
| 1988 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1989 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1990 | | | | | | | | | | | | | | | | 3.28 | 0.10 | 16 | | | | | | | | | | | | | |
| 1991 | | | | | | | | | | | | | 2.47 | 0.14 | 4 | | | | | | | | | | | | | | | | |
| 1992 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1993 | ---- | | | ---- | | | ---- | | | ---- | | | ---- | | | ---- | | | ---- | | | ---- | | | ---- | | | ---- | | | |
| Female mean weight (kg) by brood year | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1978 | | | | | | | | | | | | | | 2.94 | 0.09 | 14 | 2.85 | NA | 1 | | | | | | | 2.55 | 0.00 | 1 | 3.00 | 0.05 | 2 |
| 1979 | | | | | | | | | | | | | 2.03 | 0.05 | 43 | 2.93 | 0.05 | 59 | | | | | | | | 2.33 | 0.08 | 2 | 3.20 | 0.10 | 12 |
| 1980 | | | | | | | | | | | | | 2.01 | 0.04 | 56 | 3.04 | 0.04 | 54 | | | | | | | | 2.66 | 0.21 | 7 | | | |
| 1981 | | | | 2.95 | NA | 1 | | | | | | | 2.28 | 0.08 | 9 | | | | ---- | | | | | | | | | | | | |
| 1982 | | | | | | | ---- | | | | | | | | | ---- | | | | | | | | | | ---- | | | 3.40 | 0.13 | 3 |
| 1983 | | | | ---- | | | | | | | | | ---- | | | 2.91 | 0.31 | 7 | | | | ---- | | | 2.20 | 0.50 | 2 | 2.95 | NA | 1 | |
| 1984 | ---- | | | | | | | | | ---- | | | 1.88 | 0.13 | 13 | 2.99 | 0.07 | 31 | | | | | | | 1.80 | 0.05 | 2 | 3.10 | NA | 1 | |
| 1985 | | | | | | | | | | | | | 1.97 | 0.14 | 9 | 3.10 | 0.21 | 3 | | | | | | | 2.02 | 0.08 | 18 | 2.37 | 0.05 | 25 | |
| 1986 | | | | | | | | | | | | | 1.85 | 0.04 | 6 | 2.42 | 0.09 | 11 | | | | | | | 1.96 | 0.14 | 5 | | | | |
| 1987 | | | | | | | | | | | | | 1.76 | 0.08 | 5 | | | | | | | | | | | | | | | | |
| 1988 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1989 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1990 | | | | | | | | | | | | | | | | 2.52 | 0.07 | 22 | | | | | | | 1.81 | NA | 1 | | | | |
| 1991 | | | | | | | | | | | | | 2.02 | 0.05 | 13 | | | | | | | | | | | | | | | | |
| 1992 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1993 | ---- | | | ---- | | | ---- | | | ---- | | | ---- | | | ---- | | | ---- | | | ---- | | | ---- | | | ---- | | | |

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Appendix C. cont'd (Aialik Bay: page 3 of 4)

| Year | Age Group | | | | | | | | | | | | | |
|---|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 0.2 | 0.3 | 0.4 | 1.1 | 1.2 | 1.3 | 1.4 | 2.1 | 2.2 | 2.3 | 2.4 | 3.1 | 3.2 | 3.3 |
| Male harvest (number of fish) by brood year | | | | | | | | | | | | | | |
| 1978 | | | | | | | | | | | | | | |
| 1979 | | | | | | | | | | | | | | |
| 1980 | | | | | | | | | | | | | | |
| 1981 | | | | | | | | | | | | | | |
| 1982 | | | | | | | | | | | | | | |
| 1983 | | | | | | | | | | | | | | |
| 1984 | | | | | | | | | | | | | | |
| 1985 | | | | | | | | | | | | | | |
| 1986 | | | | | | | | | | | | | | |
| 1987 | | | | | | | | | | | | | | |
| 1988 | | | | | | | | | | | | | | |
| 1989 | | | | | | | | | | | | | | |
| 1990 | | | | | | | | | | | | | | |
| 1991 | | | | | | | | | | | | | | |
| 1992 | | | | | | | | | | | | | | |
| 1993 | | | | | | | | | | | | | | |
| Female harvest (number of fish) by brood year | | | | | | | | | | | | | | |
| 1978 | | | | | | | | | | | | | | |
| 1979 | | | | | | | | | | | | | | |
| 1980 | | | | | | | | | | | | | | |
| 1981 | | | | | | | | | | | | | | |
| 1982 | | | | | | | | | | | | | | |
| 1983 | | | | | | | | | | | | | | |
| 1984 | | | | | | | | | | | | | | |
| 1985 | | | | | | | | | | | | | | |
| 1986 | | | | | | | | | | | | | | |
| 1987 | | | | | | | | | | | | | | |
| 1988 | | | | | | | | | | | | | | |
| 1989 | | | | | | | | | | | | | | |
| 1990 | | | | | | | | | | | | | | |
| 1991 | | | | | | | | | | | | | | |
| 1992 | | | | | | | | | | | | | | |
| 1993 | | | | | | | | | | | | | | |

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| Year | Age Group | | | | | | | | | | | | | | | | | | | |
|--|-----------|---|------|---|------|---|------|---|-------|-----|-------|-----|------|---|------|---|-------|-----|-------|-----|
| | 0.2 | n | 0.3 | n | 0.4 | n | 1.1 | n | 1.2 | n | 1.3 | n | 1.4 | n | 2.1 | n | 2.2 | n | 2.3 | n |
| Male age composition by harvest year | | | | | | | | | | | | | | | | | | | | |
| 1983 | | | | | | | 0.71 | 2 | 31.79 | 89 | 7.86 | 22 | | | | | 1.43 | 4 | | |
| 1984 | | | | | | | 0.22 | 1 | 25.61 | 116 | 20.53 | 93 | | | | | 1.77 | 8 | 1.32 | 6 |
| 1985 | | | | | | | | | 5.35 | 17 | 26.73 | 85 | 0.32 | 1 | 0.32 | 1 | 9.43 | 30 | 6.29 | 20 |
| 1986 | | | | | | | | | 7.55 | | 9.90 | | | | | | 5.70 | | 26.85 | |
| 1987 | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | |
| 1988 | | | | | | | | | 12.50 | 58 | 15.73 | 73 | | | | | 1.94 | 9 | 7.11 | 33 |
| 1989 | | | | | 0.05 | 1 | 0.11 | 2 | 4.06 | 65 | 30.12 | 214 | | | | | 0.97 | 19 | 1.99 | 39 |
| 1990 | 0.18 | 1 | 0.18 | 1 | | | | | 13.75 | 73 | 9.41 | 50 | 0.38 | 2 | | | 23.74 | 126 | 2.27 | 12 |
| 1991 | | | | | | | | | 6.10 | 29 | 7.99 | 38 | | | | | 4.64 | 22 | 21.69 | 103 |
| 1992 | | | | | | | | | 2.68 | | 44.60 | | | | | | | | 2.72 | |
| 1993 | | | | | | | | | | | | | | | | | | | | |
| 1994 | | | | | | | | | | | | | | | | | | | | |
| 1995 | | | | | | | 0.20 | 1 | 12.08 | 64 | 20.70 | 110 | | | | | 0.20 | 1 | 0.20 | 1 |
| 1996 | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | |
| Female age composition by harvest year | | | | | | | | | | | | | | | | | | | | |
| 1983 | | | | | | | | | 42.50 | 119 | 15.36 | 43 | | | | | 0.36 | 1 | | |
| 1984 | | | | | | | | | 25.83 | 117 | 22.07 | 100 | 1.10 | 5 | | | 0.88 | 4 | 0.66 | 3 |
| 1985 | | | 0.32 | 1 | | | | | 5.35 | 17 | 32.39 | 103 | | | | | 5.97 | 19 | 7.55 | 24 |
| 1986 | | | | | | | | | 5 | | 12 | | | | | | 7 | | 26 | |
| 1987 | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | |
| 1988 | | | 0.22 | 1 | | | | | 23.71 | 110 | 23.70 | 110 | | | | | 3.67 | 17 | 11.42 | 53 |
| 1989 | | | | | | | | | 4.32 | 70 | 49.92 | 274 | | | | | 1.33 | 27 | 1.08 | 21 |
| 1990 | | | | | | | | | 12.43 | 66 | 10.54 | 56 | 0.18 | 1 | | | 25.80 | 137 | 1.13 | 6 |
| 1991 | | | | | | | | | 6.10 | 29 | 14.31 | 68 | | | | | 7.78 | 37 | 31.38 | 149 |
| 1992 | | | | | | | | | 3 | | 45 | | | | | | | | 3 | |
| 1993 | | | | | | | | | | | | | | | | | | | | |
| 1994 | | | | | | | | | | | | | | | | | | | | |
| 1995 | | | | | | | 0.20 | 1 | 29.07 | 154 | 35.97 | 191 | 0.20 | 1 | | | 0.96 | 5 | 0.20 | 1 |
| 1996 | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | |
| Both sexes | | | | | | | | | | | | | | | | | | | | |
| 1983 | | | | | | | 0.71 | 2 | 74.29 | 208 | 23.22 | 65 | | | | | 1.79 | 5 | | |
| 1984 | | | | | | | 0.22 | 1 | 51.44 | 233 | 42.60 | 193 | 1.10 | 5 | | | 2.65 | 12 | 1.98 | 9 |
| 1985 | | | 0.32 | 1 | | | | | 10.70 | 34 | 59.12 | 188 | 0.32 | 1 | 0.32 | 1 | 15.40 | 49 | 13.84 | 44 |
| 1986 | | | | | | | | | | | | | | | | | | | | |
| 1987 | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | |
| 1988 | | | 0.22 | 1 | | | | | 36.21 | 168 | 39.43 | 183 | | | | | 5.61 | 26 | 18.53 | 86 |
| 1989 | | | | | | | | | | | | | | | | | | | | |
| 1990 | 0.18 | 1 | 0.18 | 1 | | | | | 26.18 | 139 | 19.95 | 106 | 0.56 | 3 | | | 49.54 | 263 | 3.40 | 18 |
| 1991 | | | | | | | | | 12.20 | 58 | 22.30 | 106 | | | | | 12.42 | 59 | 53.07 | 252 |
| 1992 | | | | | | | | | 5.40 | 2 | 89.20 | 33 | | | | | | | 5.40 | 2 |
| 1993 | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | |
| 1994 | | | | | | | | | 70.37 | 190 | 18.89 | 51 | | | | | 7.78 | 21 | 2.96 | 8 |
| 1995 | | | | | | | 0.40 | 2 | 41.15 | 218 | 56.67 | 301 | 0.20 | 1 | | | 1.16 | 6 | 0.40 | 2 |
| 1996 | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | | --- | |

Appendix D. Chenik: age, and mean length and weight (\pm Standard Error; SE) of the commercial sockeye salmon catch by brood year and age group. Dashed line indicates missing data; italics indicate escapement data. Calculated means reflect corrections made to previously reported data.

| Year | Age Group | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------------|-----------|----|---|-----|----|---|-----|----|---|-----|----|---|-----|----|-----|------|-----|-----|-----|-----|----|-----|----|-----|-----|-----|-----|-----|-----|-----|-----|----|---|
| | 0.2 | SE | n | 0.3 | SE | n | 0.4 | SE | n | 1.1 | SE | n | 1.2 | SE | n | 1.3 | SE | n | 1.4 | SE | n | 2.1 | SE | n | 2.2 | SE | n | 2.3 | SE | n | | | |
| Male mean length (mm) by brood year | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1978 | | | | | | | | | | | | | | | 581 | 3.53 | 36 | | | | | | | | | | | | | | | | |
| 1979 | | | | | | | | | | | | | 533 | 5 | 20 | 574 | 14 | 4 | | | | | | | | | | | | | | | |
| 1980 | | | | | | | | | | | | | 508 | 2 | 122 | 568 | 2 | 93 | | | | | | | | | | | | | | | |
| 1981 | | | | | | | | | | | | | 498 | 5 | 18 | 569 | 9 | 12 | | | | | | | 509 | 6 | 22 | | | | | | |
| 1982 | | | | | | | | | | | | | 508 | 2 | 214 | | | | | 602 | NA | 1 | | | | | | 585 | NA | 3 | | | |
| 1983 | | | | | | | | | | | | | | | 565 | 1 | 441 | | | | | | | | | | | | | | | | |
| 1984 | | | | | | | | | | | | | 498 | 3 | 83 | 568 | 3 | 92 | | | | | | 370 | 5 | 8 | 508 | 3 | 21 | 571 | 4 | 26 | |
| 1985 | | | | | | | | | | | | | 518 | 2 | 46 | 554 | 3 | 114 | | | | | | | | 535 | 3 | 45 | 555 | 11 | 7 | | |
| 1986 | | | | 552 | 26 | 5 | | | | | | | 493 | 1 | 327 | 550 | 2 | 104 | | | | | | | | 502 | 6 | 16 | 562 | 5 | 9 | | |
| 1987 | 417 | NA | 1 | | | | | | | | | | 505 | 2 | 142 | 547 | 3 | 80 | | | | | | | | | | | | | | | |
| 1988 | | | | | | | | | | | | | 501 | 2 | 85 | 553 | 1 | 262 | 550 | NA | 1 | | | | | 549 | 5 | 6 | | | | | |
| 1989 | | | | | | | | | | | | | 516 | 5 | 32 | 548 | 3 | 44 | | | | | | 329 | NA | 1 | 509 | NA | 1 | 541 | 9 | 2 | |
| 1990 | | | | | | | | | | | | | 491 | 1 | 44 | 558 | 1 | 203 | | | | | | | | | | | | | | | |
| 1991 | | | | | | | | | | | | | 504 | 3 | 80 | | | | | | | | | | | | | | | | | | |
| 1992 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1993 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Female mean length (mm) by brood year | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1978 | | | | | | | | | | | | | | | 548 | 2.56 | 46 | | | | | | | | | | | | | | | | |
| 1979 | | | | | | | | | | | | | 497 | 3 | 57 | 538 | 11 | 4 | 515 | NA | 1 | | | | | | | | 537 | 24 | 3 | | |
| 1980 | | | | | | | | | | | | | 486 | 2 | 91 | 542 | 2 | 118 | | | | | | | | 467 | 20 | 3 | | | | | |
| 1981 | | | | 547 | 1 | 2 | | | | | | | 485 | 5 | 17 | 530 | 3 | 6 | | | | | | | | 489 | 3 | 16 | | | | | |
| 1982 | | | | | | | | | | | | | 486 | 2 | 132 | | | | | | | | | | | | | | 561 | 16 | 5 | | |
| 1983 | | | | | | | | | | | | | | | 536 | 1 | 520 | | | | | | | | | | | | 543 | 5 | 16 | | |
| 1984 | | | | | | | | | | | | | 484 | 2 | 111 | 542 | 2 | 69 | | | | | | | | 505 | 3 | 47 | 523 | 14 | 4 | | |
| 1985 | | | | | | | | | | | | | 494 | 3 | 62 | 534 | 2 | 125 | | | | | | | 324 | NA | 1 | 485 | 6 | 15 | 512 | 7 | 3 |
| 1986 | | | | 537 | 7 | 7 | | | | | | | 469 | 2 | 272 | 530 | 2 | 148 | | | | | | | | 492 | 10 | 8 | 537 | NA | 1 | | |
| 1987 | | | | | | | | | | | | | 481 | 2 | 94 | 512 | 3 | 55 | | | | | | | | | | | | | | | |
| 1988 | | | | | | | | | | | | | 487 | 3 | 70 | 532 | 1 | 203 | | | | | | | | 496 | NA | 1 | | | | | |
| 1989 | | | | | | | | | | | | | 492 | 4 | 32 | 530 | 3 | 39 | | | | | | | | 482 | 25 | 2 | 544 | NA | 1 | | |
| 1990 | | | | | | | | | | | | | 476 | 3 | 52 | 531 | 1 | 181 | | | | | | | | 470 | NA | 1 | | | | | |
| 1991 | | | | | | | | | | | | | 478 | 3 | 57 | | | | | | | | | | | | | | | | | | |
| 1992 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1993 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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Appendix D cont'd (Chenik: page 2 of 4).

| Year | Age Group | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------------|-----------|----|---|------|----|------|-----|----|---|-----|----|---|------|------|-----|------|------|-----|-----|----|---|------|----|------|------|------|-------|------|------|------|------|------|------|
| | 0.2 | SE | n | 0.3 | SE | n | 0.4 | SE | n | 1.1 | SE | n | 1.2 | SE | n | 1.3 | SE | n | 1.4 | SE | n | 2.1 | SE | n | 2.2 | SE | n | 2.3 | SE | n | | | |
| Male mean weight (kg) by brood year | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1978 | | | | | | | | | | | | | 2.05 | 0.06 | 20 | 2.58 | 0.03 | 2 | | | | | | | | | | | | | | | |
| 1979 | | | | | | | | | | | | | 1.76 | 0.03 | 56 | 2.81 | 0.07 | 27 | | | | | | | | | | | | | | | |
| 1980 | | | | | | | | | | | | | 2.08 | 0.06 | 8 | 2.20 | 0.28 | 4 | | | | | | | 1.75 | 0.09 | 12.00 | | | | | | |
| 1981 | | | | | | | | | | | | | 1.64 | 0.03 | 81 | | | | | | | | | | | | | | | | | | |
| 1982 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1983 | | | | | | | | | | | | | | | | 2.60 | 0.06 | 49 | | | | | | | | | | 1.98 | NA | 2.00 | 2.30 | NA | 1.00 |
| 1984 | | | | | | | | | | | | | 1.71 | 0.12 | 13 | 2.50 | 0.13 | 9 | | | | 0.90 | NA | 1.00 | 2.18 | 0.09 | 4.00 | | | | | | |
| 1985 | | | | | | | | | | | | | 2.05 | NA | 1 | 2.37 | 0.14 | 3 | | | | | | | | | | | | | 1.99 | 0.06 | 3.00 |
| 1986 | | | | | | | | | | | | | 1.82 | 0.06 | 25 | 1.71 | 0.05 | 21 | | | | | | | 1.59 | 0.03 | 3.00 | | | | | | |
| 1987 | | | | | | | | | | | | | 1.40 | 0.04 | 26 | 2.10 | 0.10 | 16 | | | | | | | | | | | | | | | |
| 1988 | | | | | | | | | | | | | 1.60 | 0.07 | 17 | 2.11 | 0.06 | 24 | | | | | | | | | | | | | 2.20 | NA | 1.00 |
| 1989 | | | | | | | | | | | | | 1.37 | 0.20 | 3 | 2.19 | 0.05 | 44 | | | | | | | 1.70 | NA | 1.00 | 2.05 | 0.25 | 2.00 | | | |
| 1990 | | | | | | | | | | | | | 1.56 | 0.02 | 144 | 2.25 | 0.02 | 203 | | | | | | | | | | | | | | | |
| 1991 | | | | | | | | | | | | | 1.65 | 0.03 | 80 | | | | | | | | | | | | | | | | | | |
| 1992 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1993 | | | | | | | | | | 2.0 | | 1 | 1.59 | 0.05 | 26 | | | | | | | | | | | | | | | | | | |
| Female mean weight (kg) by brood year | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1978 | | | | | | | | | | | | | | | | 2.05 | 0.04 | 46 | | | | | | | | | | | | | | | |
| 1979 | | | | | | | | | | | | | 1.52 | 0.03 | 57 | 2.02 | 0.06 | 3 | | | | | | | | | | | | | 3.60 | NA | 1.00 |
| 1980 | | | | | | | | | | | | | 1.39 | 0.03 | 55 | 2.44 | 0.06 | 27 | | | | | | | | | | | | | | | |
| 1981 | | | | 3.00 | NA | 1.00 | | | | | | | 1.88 | 0.09 | 3 | 1.83 | 0.09 | 3 | | | | | | | 1.46 | 0.07 | 9.00 | | | | | | |
| 1982 | | | | | | | | | | | | | 1.39 | 0.03 | 37 | | | | | | | | | | | | | | | | | | |
| 1983 | | | | | | | | | | | | | | | | 2.01 | 0.05 | 44 | | | | | | | | | | 1.55 | NA | 2.00 | 1.90 | NA | 1.00 |
| 1984 | | | | | | | | | | | | | 1.54 | 0.06 | 15 | 2.03 | 0.12 | 6 | | | | | | | 1.75 | 0.11 | 4.00 | | | | | | |
| 1985 | | | | | | | | | | | | | 1.53 | 0.09 | 4 | 2.10 | NA | 1 | | | | | | | 1.30 | NA | 1.00 | | | | | | |
| 1986 | | | | | | | | | | | | | 1.52 | 0.04 | 16 | 1.50 | 0.03 | 24 | | | | | | | 1.38 | NA | 1.00 | 1.89 | NA | 1.00 | | | |
| 1987 | | | | | | | | | | | | | 1.10 | 0.04 | 14 | 1.55 | 0.11 | 9 | | | | | | | | | | | | | | | |
| 1988 | | | | | | | | | | | | | 1.48 | 0.09 | 12 | 1.78 | 0.05 | 25 | | | | | | | | | | | | | | | |
| 1989 | | | | | | | | | | | | | 1.40 | NA | 1 | 1.81 | 0.05 | 39 | | | | | | | 1.35 | 0.05 | 2.00 | 1.80 | NA | 1.00 | | | |
| 1990 | | | | | | | | | | | | | 1.31 | 0.03 | 52 | 1.77 | 0.02 | 181 | | | | | | | 1.10 | NA | 1.00 | | | | | | |
| 1991 | | | | | | | | | | | | | 1.29 | 0.03 | 57 | | | | | | | | | | | | | | | | | | |
| 1992 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1993 | | | | | | | | | | | | | 1.32 | 0.04 | 34 | | | | | | | | | | | | | | | | | | |

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Appendix D cont'd (Chenik: page 3 of 4).

| Year | Age Group | | | | | | | | | | | | | |
|---|-----------|-----|-----|-----|--------|--------|-----|-------|-------|-------|-------|-----|-----|-----|
| | 0.2 | 0.3 | 0.4 | 1.1 | 1.2 | 1.3 | 1.4 | 2.1 | 2.2 | 2.3 | 2.4 | 3.1 | 3.2 | 3.3 |
| Male harvest (number of fish) by brood year | | | | | | | | | | | | | | |
| 1979 | | | | | | | | | | | | | | |
| 1980 | | | | | | 3,875 | | | | | | | | |
| 1981 | | | | | 750 | 3,322 | | | | 6,091 | | | | |
| 1982 | | | | | 59,250 | | 187 | | | | | | | |
| 1983 | | | | | | 63,150 | | | | 2,951 | 2,504 | | | |
| 1984 | | | | | 9,843 | 8,860 | | 1,079 | 4,333 | 588 | | | | |
| 1985 | | | | | 4,430 | 9,577 | | | 1,120 | 900 | | | | |
| 1986 | | 451 | | | 24,897 | 10,395 | | | | | | | | |
| 1987 | 90 | | | | 14,192 | 3,953 | | | | | | | | |
| 1988 | | | | | 4,199 | 11,986 | | | 274 | | | | | |
| 1989 | | | | | 1,464 | | | 46 | | | | | | |
| 1990 | | | | | | | | | | | | | | |
| 1991 | | | | | | | | | | | | | | |
| 1992 | | | | | | | | | | | | | | |
| 1993 | | | | 1 | | | | | | | | | | |
| Female harvest (number of fish) by brood year | | | | | | | | | | | | | | |
| 1979 | | | | | | | 42 | | | 125 | | | | |
| 1980 | | | | | | 4,916 | | | 125 | | | | | |
| 1981 | | 83 | | | 708 | 1,661 | | | 4,430 | | | | | |
| 1982 | | | | | 36,546 | | | | | | 904 | | | |
| 1983 | | | | | | 65,687 | | | | 6,063 | 1,541 | | | |
| 1984 | | | | | 13,882 | 6,644 | | | 4,526 | 361 | | | | |
| 1985 | | | | | 5,971 | 10,870 | | 96 | 1,159 | 300 | | | | |
| 1986 | | 632 | | | 20,602 | 14,792 | | | 800 | 49 | | | | |
| 1987 | | | | | 9,395 | 2,717 | | | | | | | | |
| 1988 | | | | | 3,460 | 9,287 | | | 46 | | | | | |
| 1989 | | | | | 1,464 | | | | | | | | | |
| 1990 | | | | | | | | | | | | | | |
| 1991 | | | | | | | | | | | | | | |
| 1992 | | | | | | | | | | | | | | |
| 1993 | | | | | | | | | | | | | | |

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| Year | Age Group | | | | | | | | | | | | | | | | | | | |
|--|-----------|---|------|----|-----|---|------|-------|-------|-------|-----|------|-----|------|------|---|-------|----|-------|----|
| | 0.2 | n | 0.3 | n | 0.4 | n | 1.1 | n | 1.2 | n | 1.3 | n | 1.4 | n | 2.1 | n | 2.2 | n | 2.3 | n |
| Male age composition by harvest year | | | | | | | | | | | | | | | | | | | | |
| 1983 | | | | | | | | 12.57 | 20 | 22.64 | 36 | | | | | | | | | |
| 1984 | | | | | | | | 55.20 | 122 | 1.81 | 4 | | | | | | | | | |
| 1985 | | | | | | | | 7.06 | 18 | 36.47 | 93 | | | | | | | | | |
| 1986 | | | | | | | | 53.23 | 214 | 2.98 | 12 | | | | | | 5.47 | 22 | | |
| 1987 | --- | | --- | | --- | | --- | | | | | | | | | | | | | |
| 1988 | | | | | | | | 6.00 | 83 | 38.47 | 441 | 0.11 | 1 | 0.66 | 8 | | 1.80 | 21 | 0.25 | 3 |
| 1989 | | | | | | | | 11.39 | 46 | 22.77 | 92 | | | | | | 11.14 | 45 | 6.44 | 26 |
| 1990 | 0.13 | 1 | 0.64 | 5 | | | | 35.39 | 327 | 13.61 | 114 | | | | | | 1.59 | 16 | 0.84 | 7 |
| 1991 | | | | | | | | 27.41 | 142 | 20.08 | 104 | | | | | | 1.93 | 10 | 1.74 | 9 |
| 1992 | | | | | | | | 29.20 | 85 | 27.49 | 80 | | | | | | | | | |
| 1993 | | | | | | | | 5.96 | 32 | 48.79 | 262 | | | | 0.19 | 1 | 1.12 | 6 | | |
| 1994 | | | | | | | | 50.74 | 144 | 15.59 | 44 | 0.37 | 1 | | | | 0.37 | 1 | | |
| 1995 | | | | | | | | 15.19 | 80 | 38.77 | 203 | | | | | | | | 0.37 | 2 |
| 1996 | --- | | --- | | --- | | 0.16 | 1 | 8.30 | 26 | | | | | | | | | | |
| Female age composition by harvest year | | | | | | | | | | | | | | | | | | | | |
| 1983 | | | | | | | | 35.86 | 57 | 28.93 | 46 | | | | | | | | | |
| 1984 | | | | | | | | 41.18 | 91 | 1.81 | 4 | | | | | | | | | |
| 1985 | | | 0.78 | 2 | | | | 6.66 | 17 | 46.27 | 118 | 0.40 | 1 | | | | 1.18 | 3 | 1.18 | 3 |
| 1986 | | | | | | | | 32.84 | 132 | 1.49 | 6 | | | | | | 3.98 | 16 | | |
| 1987 | --- | | --- | | --- | | --- | | | | | | | | | | | | | |
| 1988 | | | | | | | | 8.46 | 111 | 40.01 | 520 | | | | | | 3.69 | 48 | 0.55 | 5 |
| 1989 | | | | | | | | 15.35 | 62 | 17.08 | 69 | | | | 0.25 | 1 | 11.63 | 47 | 3.96 | 16 |
| 1990 | | | 0.90 | 7 | | | | 29.29 | 272 | 15.45 | 125 | | | | | | 1.65 | 15 | 0.51 | 4 |
| 1991 | | | | | | | | 18.15 | 94 | 28.57 | 148 | | | | | | 1.55 | 8 | 0.58 | 3 |
| 1992 | | | | | | | | 24.06 | 70 | 18.90 | 55 | | | | | | | | 0.34 | 1 |
| 1993 | | | | | | | | 5.96 | 32 | 37.80 | 203 | | | | | | 0.19 | 1 | | |
| 1994 | | | | | | | | 18.44 | 52 | 13.74 | 39 | | | | | | 0.74 | 2 | | |
| 1995 | | | | | | | | 10.87 | 57 | 34.44 | 181 | | | | | | 0.18 | 1 | 0.18 | 1 |
| 1996 | --- | | --- | | --- | | --- | 10.90 | 84 | | | | | | | | | | | |
| Both Sexes | | | | | | | | | | | | | | | | | | | | |
| 1983 | | | | | | | | 48.43 | 77 | 51.57 | 82 | | | | | | | | | |
| 1984 | | | | | | | | 96.38 | 213 | 3.62 | 8 | | | | | | | | | |
| 1985 | | | 0.78 | 2 | | | | 13.72 | 35 | 82.74 | 211 | 0.40 | 1 | | | | 1.18 | 3 | 1.18 | 3 |
| 1986 | | | | | | | | 86.07 | 346 | 4.47 | 18 | | | | | | 9.45 | 38 | | |
| 1987 | --- | | --- | | --- | | --- | | | | | | | | | | | | | |
| 1988 | | | | | | | | 14.46 | 194 | 78.48 | 961 | 0.11 | 1 | 0.66 | 8 | | 5.49 | 69 | 0.80 | 8 |
| 1989 | | | | | | | | 26.74 | 108 | 39.85 | 161 | | | | 0.25 | 1 | 22.77 | 92 | 10.40 | 42 |
| 1990 | 0.13 | 1 | 1.54 | 12 | | | | 64.68 | 599 | 29.06 | 239 | | | | | | 3.24 | 31 | 1.35 | 11 |
| 1991 | | | | | | | | 45.56 | 236 | 48.65 | 252 | | | | | | 3.48 | 18 | 2.32 | 12 |
| 1992 | | | | | | | | 53.26 | 155 | 46.39 | 135 | | | | | | | | 0.34 | 1 |
| 1993 | | | | | | | | 11.92 | 64 | 86.59 | 465 | | | | 0.19 | 1 | 1.31 | 7 | | |
| 1994 | | | | | | | | 69.18 | 196 | 29.33 | 83 | 0.37 | 1 | | | | 1.11 | 3 | | |
| 1995 | | | | | | | | 26.06 | 137 | 73.21 | 384 | | | | | | 0.18 | 1 | 0.55 | 3 |
| 1996 | --- | | --- | | --- | | 0.16 | 1 | 19.20 | 60 | | | | | | | | | | |

Appendix E. Mikfik: age, and mean length and weight (\pm Standard Error; SE) of the commercial sockeye salmon catch by brood year and age group. Dashed line indicates missing data; italics indicate escapement data. Calculated means reflect corrections made to previously reported data.

| Year | Age Group | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------------------|-----------|----|---|-----|----|---|-----|----|---|-----|----|---|-----|----|---|-----|----|---|-----|----|---|-----|----|---|-----|----|---|-----|----|---|-----|----|---|-----|----|---|-----|----|
| | 0.3 | SE | n | 0.4 | SE | n | 1.1 | SE | n | 1.2 | SE | n | 1.3 | SE | n | 1.4 | SE | n | 2.1 | SE | n | 2.2 | SE | n | 2.3 | SE | n | 2.4 | SE | n | 3.1 | SE | n | 3.2 | SE | n | 3.3 | SE |
| Male mean length (mm) by brood year | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1969 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1970 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1971 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1972 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1973 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1974 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1975 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1976 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1977 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1978 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1979 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1980 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1981 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1982 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1983 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1984 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1985 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1986 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1987 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1988 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1989 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1990 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1991 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1992 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1993 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Female mean length (mm) by brood year | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1969 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1970 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1971 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1972 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1973 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1974 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1975 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1976 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1977 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1978 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1979 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1980 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1981 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1982 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1983 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1984 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1985 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1986 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1987 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1988 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1989 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1990 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1991 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1992 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1993 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

54

| Year | Age Group | | | | | | | | | | | | | |
|---|-----------|-----|-----|-----|------|-------|-----|-----|------|------|-----|-----|-----|-----|
| | 0.2 | 0.3 | 0.4 | 1.1 | 1.2 | 1.3 | 1.4 | 2.1 | 2.2 | 2.3 | 2.4 | 3.1 | 3.2 | 3.3 |
| Male harvest (number of fish) by brood year | | | | | | | | | | | | | | |
| 1976 | | | | | | | | | | 1386 | | | | |
| 1977 | | | | | | 4552 | | | | | | | | |
| 1978 | | | | | 990 | | | | | | | | | |
| 1979 | | | | | | | | | | | | | | 93 |
| 1980 | | | | | | | 186 | | | 279 | | | | |
| 1981 | | | | | | 10869 | | | 1208 | | | | | |
| 1982 | | | | | 3995 | | | | | | | | | |
| 1983 | | | | | | 3892 | | | | | | | | |
| 1984 | | | | | 2676 | 2933 | | | 382 | 782 | | | | |
| 1985 | | | | | 355 | 1965 | | | 313 | 122 | | | | |
| 1986 | | | | | 2188 | 3897 | | | 950 | 252 | | | | |
| 1987 | | | | | 853 | 1730 | | | 37 | 37 | | | | |
| 1988 | | | | | 141 | 197 | | | 25 | | | | | |
| 1989 | | | | | 185 | | | | | 5 | | | | |
| 1990 | | | | 4 | | 36 | | | 2 | | | | | |
| 1991 | | | | | 21 | | | | | | | | | |
| 1992 | | | | 1 | | | | | | | | | | |
| 1993 | | | | | | | | | | | | | | |
| Female harvest (number of fish) by brood year | | | | | | | | | | | | | | |
| 1976 | | | | | | | | | | 1782 | | | | |
| 1977 | | | | | | 7324 | | | | | | | | |
| 1978 | | | | | 1979 | | | | | | | | | |
| 1979 | | | | | | | | | | | | | | |
| 1980 | | | | | | | | | | 372 | | | 93 | |
| 1981 | | | | | | 5852 | | | 1394 | | | | | |
| 1982 | | 93 | | | 3066 | | | | | 42 | | | | |
| 1983 | | | | | | 3746 | | | 381 | 164 | | | | |
| 1984 | | | | | 3420 | 2129 | | | 355 | 447 | | | | |
| 1985 | | | | | 368 | 1541 | | | 201 | 292 | | | | |
| 1986 | | | | | 1629 | 3776 | | | 1583 | 134 | | | | |
| 1987 | | | | | 1413 | 1469 | | | 37 | 29 | | | | |
| 1988 | | | | | 163 | 209 | | | 27 | | | | | |
| 1989 | | | | | 213 | | | | | 1 | | | | |
| 1990 | | | | 15 | | 35 | | | 3 | | | | | |
| 1991 | | 1 | | | 31 | | | | | | | | | |
| 1992 | | | | | | | | | | | | | | |
| 1993 | | | | | | | | | | | | | | |

-continued-

| Year | Age Group | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-----------|---|-----|------|-----|---|-------|-----|-------|-----|------|---|-----|---|-------|-----|-------|----|-----|---|-----|---|-----|---|------|---|------|---|
| | 0.3 | n | 0.4 | n | 1.1 | n | 1.2 | n | 1.3 | n | 1.4 | n | 2.1 | n | 2.2 | n | 2.3 | n | 2.4 | n | 3.1 | n | 3.2 | n | 3.3 | n | | |
| Male age composition by harvest year | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1975 | | | | | | | 55.56 | 5 | 11.11 | 1 | | | | | 11.11 | 1 | | | | | | | | | | | | |
| 1976 | | | | | | | 13.63 | 3 | 4.55 | 1 | | | | | 4.55 | 1 | | | | | | | | | | | | |
| 1977 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1978 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1979 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1980 | | | | | | | 22.10 | 15 | 17.60 | 12 | | | | | 1.50 | 1 | | | | | | | | | | | | |
| 1981 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1982 | | | | | | | 5.50 | 5 | 25.27 | 23 | | | | | | | 7.69 | 7 | | | | | | | | | | |
| 1983 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1984 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1985 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1986 | | | | | | | 14.53 | 43 | 39.52 | 117 | 0.68 | 2 | | | 4.39 | 13 | 1.01 | 3 | | | | | | | 0.34 | 1 | | |
| 1987 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1988 | | | | | | | 18.28 | 130 | 26.58 | 190 | | | | | 2.40 | 17 | 0.89 | 6 | | | | | | | | | | |
| 1989 | | | | | | | 5.07 | 26 | 41.90 | 215 | | | | | 5.46 | 28 | 4.49 | 23 | | | | | | | | | | |
| 1990 | | | | | | | 24.13 | 98 | 21.67 | 88 | | | | | 3.45 | 14 | 8.63 | 35 | | | | | | | | | | |
| 1991 | | | | | | | 6.62 | 35 | 30.24 | 160 | | | | | 7.37 | 39 | 0.95 | 5 | | | | | | | | | | |
| 1992 | | | | | | | 3.56 | 19 | 43.65 | 233 | | | | | 0.93 | 5 | 6.36 | 34 | | | | | | | | | | |
| 1993 | | | | 0.43 | 2 | | 19.66 | 96 | 20.94 | 102 | | | | | 2.66 | 13 | 3.93 | 19 | | | | | | | | | | |
| 1994 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1995 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1996 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Female age composition by harvest year | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1975 | | | | | | | 11.11 | 1 | 11.11 | 1 | | | | | | | | | | | | | | | | | | |
| 1976 | | | | | | | 45.45 | 10 | 18.18 | 4 | | | | | 13.6 | 3 | | | | | | | | | | | | |
| 1977 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1978 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1979 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1980 | | | | | | | 22.10 | 15 | 33.80 | 23 | | | | | 2.90 | 2 | | | | | | | | | | | | |
| 1981 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1982 | | | | | | | 10.99 | 10 | 40.66 | 37 | | | | | | | 9.89 | 9 | | | | | | | | | | |
| 1983 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1984 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1985 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1986 | 0.34 | 1 | | | | | 11.15 | 33 | 21.28 | 63 | | | | | 5.07 | 15 | 1.35 | 4 | | | | | | | 0.34 | 1 | | |
| 1987 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1988 | | | | | | | 23.36 | 161 | 25.59 | 181 | | | | | 2.60 | 18 | 0.29 | 2 | | | | | | | | | | |
| 1989 | | | | | | | 5.26 | 27 | 30.41 | 156 | | | | | 5.07 | 26 | 2.34 | 12 | | | | | | | | | | |
| 1990 | | | | | | | 17.97 | 73 | 17.00 | 69 | | | | | 2.22 | 9 | 4.93 | 20 | | | | | | | | | | |
| 1991 | | | | | | | 10.97 | 58 | 29.30 | 155 | | | | | 12.28 | 65 | 2.27 | 12 | | | | | | | | | | |
| 1992 | | | | | | | 4.11 | 22 | 37.07 | 198 | | | | | 0.93 | 5 | 3.38 | 18 | | | | | | | | | | |
| 1993 | | | | 1.59 | 8 | | 22.64 | 110 | 22.21 | 108 | | | | | 2.87 | 14 | 3.08 | 15 | | | | | | | | | | |
| 1994 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1995 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1996 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Both Sexes | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1975 | | | | | | | 66.67 | 6 | 22.22 | 2 | | | | | 11.11 | 1 | | | | | | | | | | | | |
| 1976 | | | | | | | 59.08 | 13 | 22.73 | 5 | | | | | 18.19 | 4 | | | | | | | | | | | | |
| 1977 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1978 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1979 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1980 | | | | | | | 44.20 | 30 | 51.40 | 35 | | | | | 4.40 | 3 | | | | | | | | | | | | |
| 1981 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1982 | | | | | | | 16.49 | 15 | 65.93 | 60 | | | | | | | 17.58 | 16 | | | | | | | | | | |
| 1983 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1984 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1985 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1986 | | | | | | | 25.68 | 76 | 60.80 | 180 | 0.68 | 2 | | | 9.46 | 28 | 2.36 | 7 | | | | | | | 0.34 | 1 | 0.34 | 1 |
| 1987 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1988 | | | | | | | 41.64 | 291 | 52.17 | 371 | | | | | 5.00 | 35 | 1.18 | 8 | | | | | | | | | | |
| 1989 | | | | | | | 10.33 | 53 | 72.31 | 371 | | | | | 10.53 | 54 | 6.83 | 35 | | | | | | | | | | |
| 1990 | | | | | | | 42.10 | 171 | 38.67 | 157 | | | | | 5.67 | 23 | 13.56 | 55 | | | | | | | | | | |
| 1991 | | | | | | | 17.59 | 93 | 59.54 | 315 | | | | | 19.65 | 104 | 3.22 | 17 | | | | | | | | | | |
| 1992 | | | | | | | 7.67 | 41 | 80.72 | 431 | | | | | 1.86 | 10 | 9.74 | 52 | | | | | | | | | | |
| 1993 | | | | 2.02 | 10 | | 42.30 | 206 | 43.15 | 210 | | | | | 5.53 | 27 | 7.01 | 34 | | | | | | | | | | |
| 1994 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1995 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1996 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Appendix F. Inventory of Lower Cook Inlet Sockeye and Chum salmon AWL data, 1983 through 1998.

| | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| SOCKEYE | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C |
| China Pool | | | | | | | | | | | | | | | | |
| Neptune Bay | C | | | | | | | | | E | | E | | | | |
| English Bay | C | | | | | | | | | E | | E | | | | |
| Chenik Iak | C | C | E | C | | | | | | E | E | E | | | | |
| E. Nuka Bay | | | | C | C | | | | | C | C | C | | | | |
| Delight Lake | | | | | | | | | | C | | E | E | E | E | E |
| Desire Iak | E | | | | | | | | | | | E | | | | |
| Kirschner Iak | C | C | | | | | | | | C | C | C | C | | | |
| Aialik | C | C | C | | | | | | | C | C | | | | | |
| Grouse Lake | | | | | | | | | | | | | | | | E |
| Resurrection Bay | | | | | | | | | | | | | | | | |
| Resurrection Bay (Bear Iak) | | | | | | | | | | | | | | | | C |
| Douglas River | | | | | | | | | | | | | | | | C |
| Silver Beach | C | | | | | | | | | | | | | | | C |
| Milkik Lake | C | | | | | | | | | | | | | | | C |
| CHUM | | | | | | | | | | | | | | | | |
| McNeil River | C | C | C | | | | | | | C | | C | C | E | | |
| Cottonwood Cr | | | | | | | | | | | | | | | | C |
| Silver Beach | | | | | | | | | | | | | | | | C |
| Inskim River | C | C | | | | | | | | | | | | | | C |
| Tonsina Cr. | C | | | | | | | | | | | | | | | C |
| Aialik Bay | | | | | | | | | | | | | | | | C |
| Kamishak River | C | C | | | | | | | | | | | | | | C |
| Resurrection Bay | | | | | | | | | | | | | | | | C |
| Port Dick Bay | | | | | | | | | | | | | | | | C |
| Bruin Bay | | | | | | | | | | | | | | | | C |
| Rocky Bay | | | | | | | | | | | | | | | | C |
| Ulsus Bay | | | | | | | | | | | | | | | | C |

Limited AWL data is available 1968 through 1982 from the following systems: English Bay River, Resurrection Bay, McDonald Spit, Milkik Lake, Port Dick Bay (chum), Island Cr (chum), Kasitsna Bay, Cottonwood Cr (chum), Ulsus Bay (chum), Delight and Desire Lakes, McNeil River and Silver Beach (chum)

C = Commercial catch sample E = Escapement sample

Appendix G. Names and locations of files used to generate this report. All files are stored on the hard drive of the Dell Dimension XPS H233 research computer (property number 10074778), and backed up on 3.5" floppy diskettes.

| File name | Subdirectory | Format | Description |
|---------------|-----------------------|---------|---|
| 96SALA.WL.RIR | D:\REPORTS\SALMON\AWL | Word 97 | Text, figures and tables (minus appendices) for the 1996 LCI salmon AWL Regional Information Report |
| 96APDA.DOC | D:\REPORTS\SALMON\AWL | Word 97 | Appendix A for the 1996 LCI salmon AWL Regional Information Report. |
| 96APDB-G.DOC | D:\REPORTS\SALMON\AWL | Word 97 | Appendices B-G for the 1996 LCI salmon AWL Regional Information Report. |

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