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Alaska Department of Fish and Game
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Alaska Peninsula and Aleutian Islands Management Areas Salmon Catch and Escapement Statistics, 1987

by

James N. McCullough

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ALASKA PENINSULA AND ALEUTIAN ISLANDS MANAGEMENT
AREAS SALMON CATCH AND ESCAPEMENT STATISTICS, 1987

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ABSTRACT

In 1987 the Alaska Peninsula and Aleutian Islands Management Areas salmon catch was 6,036,152 fish. The catch included 23,360 chinook (*Oncorhynchus tshawytscha*), 2,659,263 sockeye (*O. nerka*), 1,212,042 pink (*O. gorbuscha*), 1,744,963 chum (*O. keta*), and 396,524 coho (*O. kisutch*) salmon. The catch was 50% lower than the 1977-86 average of 12,101,491 salmon and 41% lower than the 1986 harvest. Only coho catches were above the 1977-86 average. A total of 405 Area M and 61 Area T permit holders operated in the Alaska Peninsula and Aleutian Islands Management Areas, and cumulatively they made 10,858 deliveries. The majority (71%) of the commercial salmon catch occurred in South Peninsula fisheries. North Peninsula fisheries accounted for most of the remainder of the harvest (29%); only 75 salmon were commercially harvested in the Aleutian Islands Area. The majority of the sockeye, pink, chum, and coho harvest occurred in South Peninsula fisheries, while the majority of the chinook catch was in North Peninsula fisheries. The Alaska Peninsula and Aleutian Islands Management Areas escapement was about 3,991,073 salmon composed of 18,729 chinook, 734,584 sockeye, 1,806,981 pink, 1,231,073 chum, and 199,706 coho.

The 1987 Alaska Peninsula Management Area escapement for all species combined was 26% below the 1977-86 average of 4,411,210 salmon. The chum escapement was 11% higher than the 1977-86 average, while the chinook, sockeye, and pink escapement was, respectively, 26%, 41%, and 35% lower than the 1977-86 average. The largest chinook escapements were on the North Peninsula at Meshik River, Nelson Lagoon, North Creek, and Black Hills Creek. The largest sockeye escapements were on the North Peninsula at Bear and Nelson Rivers. Pink escapements were largest on the South Peninsula at Suzy, Squaw Harbor, Mino, Settlement Point, Middle, and Southern Creeks. Chum escapements were largest at Canoe Bay River, Belkofski Bay River, Russel Creek, and Sandy Cove on the South Peninsula and Joshua Green River on the North Peninsula. Coho escapements were largest at Meshik River, Ilnik Lagoon, and Nelson River. Large shifts in the age composition of catches and escapements were apparent both spatially and temporally. North Peninsula chinook catches were mostly (65%) age-1.4. Most of the South Peninsula sockeye catch were age 1.3 (47%), 1.2 (21%), and 2.3 (19%), while most of the North Peninsula sockeye catch were age 2.3 (38%), 1.3 (28%), and 2.2 (16%). Almost all the South Peninsula chum catch was age 0.3 (49%) and age 0.4 (48%), while the North Peninsula chum catch was mostly age 0.3 (53%) and age 0.4 (42%). The North Peninsula coho catch was mainly age 2.1 (69%) and age 1.1 (26%). Among all salmon species males generally averaged a longer length than females within the same age class. The average chinook length in the North Peninsula catch was 777 mm, and the male to female ratio was 0.7:1. Sockeye lengths averaged 558 mm in the South Peninsula catch and 544 mm in the North Peninsula catch. The respective male to female sockeye ratios were 1.3:1 and 0.9:1. Chum lengths averaged 589 mm in the South Peninsula catch and 580 mm in the North Peninsula catch. The respective male to female chum ratios were 0.9:1 and 0.8:1. The average coho length in the North Peninsula catch was 585 mm, and the male to female ratio was 1.9:1. The North Peninsula sockeye escapement was mostly age 2.2 (54%), 2.3 (20%), and 1.3 (15%). The average sockeye escapement length for the North Peninsula was 521 mm, and the male to female ratio was 1.5:1.

KEY WORDS: Alaska Peninsula, Aleutian Islands, salmon, catch, escapement, age, length, sex

INTRODUCTION

The Alaska Peninsula and Aleutian Islands Management Areas (Figure 1) are divided into three sub-areas: (1) the South Peninsula, consisting of Pacific Ocean coastal waters extending west of Kupreanof Point to Scotch Cap; (2) the Aleutian Islands, consisting of Pacific Ocean and Bering Sea waters extending west of Unimak Pass to the international dateline; and (3) the North Peninsula, consisting of Bering Sea coastal waters extending west from Cape Menshikof to Cape Sarichef (Figures 2-6).

The Aleutian Islands Management Area has about 444 salmon streams, while the Alaska Peninsula Management Area has about 275 salmon streams (ADF&G 1985). The most productive salmon streams are in the Alaska Peninsula Management Area. Commercial salmon fishing occurs only east of Unalaska Island.

Five salmon species are commercially harvested in the Alaska Peninsula and Aleutian Islands Management Areas: chinook salmon (*Oncorhynchus tshawytscha*), sockeye salmon (*O. nerka*), pink salmon (*O. gorbuscha*), chum salmon (*O. keta*), and coho salmon (*O. kisutch*). Annual 1977-86 salmon harvests have ranged from 2,646,800 to 21,073,500 and average 12,101,491 (Table 1). Commercial fishing gear is limited to purse seines, hand purse seines, drift gill nets, and set gill nets. The catch by each gear type within a district varies depending on other fishing opportunities, weather, and gear regulations (Table 2; ADF&G 1987). The fishing areas and their corresponding statistical areas are listed in Table 3. Sockeye and pink salmon are of primary economic importance in South Peninsula and Aleutian Islands fisheries, while sockeye and chum salmon are of most importance in North Peninsula fisheries.

The South Peninsula is comprised of four districts and 43 statistical areas, while the Aleutian Islands is comprised of four districts and 40 statistical areas. The North Peninsula is comprised of two districts and 21 statistical areas. In the South Peninsula commercial salmon fishing normally begins during the first week of June, in the Aleutian Islands during the last week of June, and in North Peninsula waters during the last week of May. In June the majority of the drift gill net effort occurs in the South Unimak fishery, while the purse seine effort occurs in the Shumagin Islands Section and the South Unimak fisheries. The major set gill net effort is in the Southeast District Mainland, Shumagin Islands Section and Nelson Lagoon Section fisheries. After June the majority of the purse seine effort is in the South Peninsula pink and chum salmon fisheries; the drift gill net effort is in the Port Moller to Strogonof Point fisheries; and the set gill net effort is in the Southeast District Mainland, Shumagin Islands Section and Nelson Lagoon Section fisheries. Purse seine fishing occurs in the Aleutian Islands beginning in late July when the local salmon stocks are large enough to warrant a fishery.

The North Peninsula and the Bristol Bay Management Area overlap in the Port Heiden and Cinder River Sections of the Northern District in May, June, August, and September and in the Ilnik Section of the Northern District after July. The Board of Fish and Game created the overlap area in 1960 to allow Port Heiden residents the opportunity to fish in traditional areas. Historically Port Heiden commercial fishermen fished for chinook and coho salmon in the North Peninsula and for sockeye in the Bristol Bay Management Area. Bristol Bay fishermen other than those from Port Heiden first fished the overlap area in 1986 (Shaul 1988).

In the Alaska Peninsula and Aleutian Islands Management Areas, most salmon fisheries are directed on local stocks. Three major interception fisheries occur in the Alaska Peninsula Management Area and all are in South Peninsula waters. The first is the June South Unimak and Shumagin Islands Section fisheries (ADF&G 1987) which target Bristol Bay sockeye salmon. The allocation for South Unimak is 6.8% of the most current projected Bristol Bay inshore sockeye harvest, while the allocation for the Shumagin Islands Section is 1.5% of the projected Bristol Bay sockeye harvest (ADF&G 1987). The second interception fishery occurs in the Southeast District Mainland (East and West Stepovak Sections and Beaver and Balboa Bays) during June and July and targets Chignik River sockeye salmon. The Southeast District Mainland fishery through 25 July is allocated 6.2% of the total Chignik sockeye catch, which is determined from catches in the Cape Igvak Section of the Kodiak Management Area, the Chignik Management Area, and the Southeast District Mainland fishery (ADF&G 1987). A third more recent sockeye interception fishery has developed in selected areas of the Shumagin Islands Section during July and August. The stocks contributing to this fishery are probably Chignik, Kodiak, Cook Inlet, Bristol Bay, and Alaska Peninsula salmon (McCullough 1988a). There is currently no guideline harvest established for this fishery.

The objectives of this report were (1) to present the numbers of salmon in the commercial catch, subsistence catch, and escapements by species each statistical week in the Alaska Peninsula and Aleutian Islands Management Areas during 1987, and (2) to estimate the age and sex composition of harvests and spawning escapements for all salmon species, and (3) to estimate the mean length of each salmon species harvested in commercial fisheries. This information will provide a data base for developing brood tables, forecasting runs, evaluating escapements, and management goals. This report is intended as a reference document; interpretation and discussion of data are therefore limited.

METHODS

Commercial catch data were compiled by the Division of Commercial Fisheries of the Alaska Department of Fish and Game (ADF&G). These data were based on computer tabulations originating from individual sale receipts (fish tickets) given to fishermen at the time of delivery. Fish tickets and the computer-generated summaries were edited by ADF&G Alaska Peninsula staff for errors and omissions. Because extended fish ticket editing is usually required to finalize the data for any given year, later reports may contain minor differences in the catch information listed in this report. Most data in this report were assigned to a statistical week. A statistical week begins at 0000 hours each Sunday and ends at 2400 hours Saturday. Statistical weeks were numbered sequentially beginning with the week encompassing the first Sunday in January. A list of the 1987 statistical weeks with the corresponding calendar dates are provided in Table 4.

Salmon escapement in the Alaska Peninsula and Aleutian Islands Management Areas was monitored by aerial and foot surveys, a tower, and a weir. The Bear River weir, located about 24 km upstream of the river mouth, was operated from 2 June to 1 September. The Nelson River tower, located about 56 km above the entrance to Nelson Lagoon, was operated from 14 June to 26 July. The sockeye salmon escapement into the Nelson River was estimated from timed fish counts made from

a tower on the north river bank, which provided an unrestricted view of fish movement on both sides of the river (ADF&G 1986). The accuracy and precision of the Nelson River escapement estimates derived from the tower counts were not tested. Daily 10-minute escapement counts from the tower were made during every daylight hour. Each 10-min count was expanded into a hourly estimate to calculate the escapement during the daylight period. The escapement for the night was based on a 20-min count at dusk and dawn. The average of the two 20-min counts was expanded into a hourly estimate to calculate the escapement for the night. The total daily escapement was the combined daylight and night estimated escapements. Bear River escapement was the actual number of fish passing through the weir (ADF&G 1986). Sockeye salmon escapement entering both rivers after counting was discontinued was extrapolated from the rate of decline of the counts over the last few operating weeks.

Escapement to other spawning streams were monitored by aerial and foot surveys. Pink and chum total escapement were calculated for surveyed streams through use of aerial survey counts and an assumed average stream life of 15-d for each species, except for Swanson Lagoon chum salmon and most Southeast District Mainland pink salmon which have a 7-d assumed average stream life (Cousens et al. 1982; Johnson and Barrett 1988; A. Shaul, Alaska Department of Fish and Game, personal communication). Chinook escapements for surveyed streams were calculated by multiplying the peak escapement count by 1.92 (Neilson and Geen 1981; Barrett et al. 1985). When weirs and counting towers were lacking, sockeye escapement for shallow, clearwater streams were calculated by multiplying the peak escapement count by 1.25 (A. Shaul, Alaska Department of Fish and Game, personal communication) and by 2.0 for all other systems (Barrett 1972; Barrett et al. 1985). Total coho escapement for surveyed streams were determined by multiplying the peak count by 2.4 (Minard 1986). No attempt was made to estimate the escapement into systems not monitored by aerial surveys. Escapement estimates of sockeye, pink, and chum salmon in the North and South Peninsula were considered reliable, while chinook and coho estimates and all salmon estimates in the Aleutian Islands were considered minimal values.

Most data in this report were stratified by statistical week and compiled using a personal computer. Age composition and associated standard error were computed for the catch and escapement sampled for each statistical week. Total catch or escapement by age within a statistical week was determined by multiplying the statistical week's proportion for a particular age by the catch or escapement of that statistical week. Standard error for a particular age within a statistical week was determined by taking the square root of the variance as given by Cochran (1977) in equation 3.12 (without the finite population correction factor). The standard error provides a measure of the relative accuracy of the estimate but was not valid for confidence intervals. No standard errors or variances were calculated across statistical weeks. Catch and escapement by age across statistical weeks was obtained by simple summation. Age compositions were computed by statistical week for each area sampled. Hypothesis testing of the age composition across time was accomplished by using the chi-square statistic.

Sockeye escapement sampling was conducted weekly using a beach seine at Nelson River and with a weir trap at Bear River. Although the initial sampling plan specified a 240-fish sample to be collected 1-2 d/week, samples were collected only during weeks 28 and 29 at Nelson River and as planned at Bear River, except in weeks 24, 30, 33, and 34 (Table 4). At Nelson and Bear Rivers a 240-fish

weekly escapement sample was chosen to provide 90% simultaneous confidence levels for age composition of the population within $\pm 7\%$ of the true age composition (Thompson 1987).

Escapement sampling was also conducted at Hoodoo Lake, Sapsuk (Nelson) River, and Ilnik Lagoon. At Hoodoo Lake a sample was collected from salmon schooled at the lake outlet, while at Sapsuk River a sample was collected from post-spawning salmon in the mainstem. A single escapement sample was collected at or near the peak of the escapement at Ilnik Lagoon. Scales were collected at Hoodoo Lake and Ilnik Lagoon. Otoliths were collected at the Sapsuk River. Sex data was collected from all salmon sampled. Length data was collected at Hoodoo Lake and Ilnik Lagoon. For single sampling events, both catch and escapement, a 600-fish sample was chosen to provide 95% simultaneous confidence levels for age composition within $\pm 5\%$ of the true age composition (Thompson 1987). A 45-fish sample was collected at Hoodoo Lake, a 104-fish sample at Ilnik Lagoon, and a 28-fish sample was obtained at the Sapsuk River.

Catches were sampled weekly throughout the season from harvests in the major fishing areas, but were sampled less frequently from harvests in the minor fishing areas. Catch sampling occurred at King Cove from 8 June to 13 August, where the majority of the South Peninsula catch was delivered, and at Port Moller from 1 June to 3 September, where the majority of the North Peninsula catch was landed. Salmon were randomly sampled before sorting by cannery personnel from tenders delivering from preselected areas. The harvest area of each tender sampled was determined through vessel operator interviews and fish ticket information.

Tender operators purchased salmon from all gear types operating within their immediate area. This precluded compilation of separate age, sex, and size composition estimates by gear type except where the catch was by a single gear type. Tender operators purchased salmon from the fishermen on a first come, first serve basis. Although salmon were purchased by species a through mixing of salmon by quality and species aboard the tender occurred during subsequent purchases, transport, and off-loading. Since all catch sampling occurred before sorting within the cannery there was no preselection of salmon other than from delivery areas; although not tested each sample was assumed to be representative of the harvest with a sample area. While this insured that samples were randomly selected from each tender sampled, the samples may not be characteristic of the population structure because the distribution of the population is unknown in the fishery.

The commercial sockeye catch in Pavlof Bay, Urilia Bay, and Swanson Lagoon and the commercial chum catch in Canoe Bay, Pavlof Bay, Belkofski Bay, Swanson Lagoon, Bechevin Bay, and the Izembek-Moffet Bay Section where harvested mostly by seine gear. Commercial catch samples from these areas were used to describe the escapement. Seine caught salmon in terminal area fisheries have been shown to have similar biological characteristics as the spawning population (Roos 1957).

Age was determined by examining a single scale (Bilton and Ricker 1965; Mosher 1968) or from otoliths (MacLellan 1987). Scales were taken from the preferred area which was located on the left side of the salmon approximately two rows above the lateral line along a diagonal from the posterior insertion of the dorsal fin to the anterior insertion of the anal fin (INPFC 1963). One scale

was taken from each sockeye and chum, two scales from each coho, and three scales from each chinook salmon. Additional scales were taken from chinook and coho salmon because they have more scale regeneration than other salmon. For coho salmon if only one scale was collected there was only a 50% chance of having useable age information, while the odds of getting a readable scale improved to about 75% if two scales per fish were collected (B. Monkiewicz, Alaska Department of Fish and Game, personal communication). A microfiche reader was used to read an acetate impression of the scale (Clutter and Whitesel 1956). Because of scale reabsorption otoliths from sockeye salmon were collected from carcasses in the Sapsuk River. Otoliths were placed in a water medium and read using a binocular microscope (Lux 1971). Ages were recorded in the European notation (Mosher 1968) in which the first digit is the number of winters the salmon spent in fresh water and the second digit is the number of winters the salmon spent in the ocean. The total age is the sum of these two numbers plus one to account for the incubation time. The accuracy of age determination was not tested.

Length measurements were taken from mid-eye to fork-of-tail using a caliper or meter stick with 1-mm gradations; lengths were recorded to within 1 mm. From multiple length measurements on the same fish the accuracy of a length measurement was assumed to be within ± 5 mm. Mean lengths were calculated from an unweighted composite of the data collected from each area sampled.

Sex compositions were computed by statistical week for each area sampled. Sex was determined by external morphological examination of kipe development, belly shape, trunk depth, and jaw shape or by internal observation of the gonads. Because industry concerns of product quality and egg loss internal examination of gonads was not routinely practiced. The accuracy of dimorphic sex determinations was not tested but was probably lowest for ocean-bright migratory salmon which display limited sexual dimorphism. Terminally-captured salmon, which generally have some development of secondary sexual characteristics, were probably sexed most accurately. External sex determination of chinook and coho salmon was assumed to have the lowest accuracy rate because secondary sex characteristics were generally less pronounced and not as reliable as the other species. About 30% of the coho and 5% of the chinook salmon were internally examined to verify the sex.

RESULTS

The basic data used in preparing the summarily results presented in this section are available in McCullough (1988c), which was prepared primarily to archive the uninterpreted 1987 data.

In 1987, 10,858 landings were made in the Alaska Peninsula and Aleutian Islands Management Areas by 405 Area M and 61 Area T (51 drift gill-netters and 10 set gill-netters) limited entry permit holders (Shaul 1988). The 1987 catch of 6,036,152 salmon (Table 1) was approximately 50% lower than the 1977-86 average harvest and 41% less than the 1986 catch. This reduction was primarily caused by below-average sockeye and pink salmon catches.

In 1987, 115 purse seine, 163 drift gill net, and 108 set gill net limited entry permits were fished in the Alaska Peninsula and Aleutian Islands Management

Areas. This was a decrease of six purse seine and one drift gill net and an increase of eight set gill net permits from the 1986 level. The majority of the purse seine (82%), drift gill net (60%), and set gill net (81%) permits were fished by Alaska residents.

The total 1987 commercial salmon catch for the Alaska Peninsula and Aleutian Islands Management Areas was 23,360 chinook (0.4%), 2,659,263 sockeye (44.0%), 1,212,042 pink (20.1%), 1,744,963 chum (28.9%), and 396,524 coho salmon (6.6%) (Table 5). The South Peninsula accounted for about 71%, the Aleutian Islands for 0% (75 salmon), and the North Peninsula for 29% of the total commercial harvest. The South Peninsula catch was harvested primarily by purse seine gear (68%), followed by drift gill net gear (18%), and set gill net gear (14%) (Table 5). The North Peninsula catch was harvested primarily by drift gill net gear (69%), followed by purse seine gear (20%), and set gill net gear (11%).

In the Alaska Peninsula and Aleutian Islands Management Areas drift gill net gear accounted for the greatest number of landings (5,607), followed by set gill net gear (3,179) and purse seines (2,072). By gear type, purse seine gear harvested 3,266,948 salmon (54%), followed by drift gill net gear (1,981,184 salmon; 33%), and set gill net gear (788,020 salmon; 13%; Table 5).

In the Alaska Peninsula and Aleutian Islands Management Areas most salmon used for subsistence and personal use are taken using commercial fishing gear. The number of salmon retained from the commercial catch for personal use is unknown. The subsistence salmon harvest was about 17,125 fish amounting to 193 chinook, 6,874 sockeye, 3,327 pink, 2,094 chum, and 4,637 coho salmon (Table 6). The sport catch (Mills 1988) of about 3,764 fish included 667 chinook, 832 sockeye, 1,166 pink, 198 chum, and 901 coho salmon.

Salmon escapement for the Alaska Peninsula and Aleutian Islands Management Areas for those systems monitored by weirs, aerial surveys, and foot surveys was about 3,991,073 salmon which included 18,729 chinook, 734,584 sockeye, 1,806,981 pink, 1,231,073 chum, and 199,706 coho salmon (Table 7). Salmon escapement counts for the Aleutian Islands Management Area (444 estimated salmon streams) are from 26 streams surveyed in the Unalaska District. The escapement was 18,250 sockeye, 63,100 pink, 900 chum, and 1,320 coho salmon. In the Aleutian Islands Management Area no expansion from surveyed streams to the remaining 418 streams was attempted.

Fishing Effort

Fishing effort during the last few years has stabilized, except in the Shumagin Islands Section, the Alaska Peninsula-Bristol Bay overlap area, and the Northern District in the Cape Seniavin to Stroganof Point area.

In the Shumagin Islands Section set gill net effort began to increase in 1985 (Shaul et al. 1988; McCullough 1988a). Before 1985 an average of three to eight set gill net permit holders fished the Shumagin Islands Section. In 1985 and 1986 30 to 40 set gill net permit holders fished this area in post-June fisheries. In 1987 the effort further increased to 53 set gill net permit holders. The change in effort was due to restricted openings in the mainland portion of the Southeast District which shifted set gill net effort to the Shumagin Islands Section.

The increased effort by set gill net and purse seine fishermen in the post-June Shumagin Islands Section fishery resulted in above average (1977-86) catches for all species, except pink salmon (Table 8). The post-June chinook catch of 3,388 salmon represented a 56% increase above the 1977-86 average. The sockeye catch was 248,934 salmon which represented a 215% increase above the 1977-86 average, and a 27% decrease from the 1986 record catch of 341,811 fish (Figure 7). The pink catch was 542,383 salmon which was a 60% decrease from the average 1977-86 catch. The chum catch was 310,540 salmon which was a 32% increase from the average 1977-86 catch. The coho catch was 157,936 salmon which was only a 3% increase from the 1977-86 average, and a 22% decrease from the 1986 catch.

The second area where effort increased is in the Alaska Peninsula-Bristol Bay overlap fishery located west of Port Heiden. During 1987 about 17 Bristol Bay drift gill net permit holders, in addition to the regular Port Heiden and Cinder River fishermen, fished the Ilnik Section (Shaul 1988). Prior to 1986 Bristol Bay drift gill net permit holders did not fish west of Port Heiden. Fishing effort in the Ilnik Section targeted sockeye salmon believed to be destined for the Bear and Nelson Rivers and coho salmon destined for several North Peninsula systems.

A third area where effort increased was in the Northern District from Cape Seniavin to Strogonof Point. Beginning in 1981 drift gill net fishermen shifted the fishing effort in the Northern District eastward (Figure 8). Traditionally fishing in the Northern District has been limited to the area west of Cape Seniavin through 24 June, to the area west of the Ilnik Section from 25 June through 4 July, and to the area west of Strogonof Point after 4 July (ADF&G 1987). The local sockeye stocks in the Harbor Point to Strogonof Point fisheries are from the Meshik and Cinder Rivers, Ilnik Lagoon, Ocean River, Sandy and Bear Lakes, and Nelson Lagoon. In 1981, 5% of the Harbor Point to Strogonof Point sockeye were caught in the Cape Seniavin to Strogonof Point area. By 1987, 77% of the catch was harvested in this area (Table 9).

South Peninsula

The 1987 projected guideline sockeye harvest for the June South Unimak and Shumagin Islands Section fisheries was 775,000 salmon (S. Fried, Alaska Department of Fish and Game, Anchorage, personal communication), and there was no limit imposed on the chum catch (Shaul 1988, ADF&G 1987). The Shumagin Islands Section and the South Unimak fisheries were usually opened concurrently. The South Unimak fishery was open during June for six fishing periods for a total of 226 h (Shaul et al. 1988). During June the Shumagin Islands Section was open for five fishing periods for a total of 76 h. The June South Unimak and Shumagin Islands Section catch of 1,258,508 salmon included 5,163 chinook, 792,964 sockeye, 16,982 pink, and 443,399 chum salmon (Tables 10-13).

The 1987 catch in the Southeast District Mainland fishery (Stepovak, Beaver, and Balboa Bays) was 364 chinook, 299,463 sockeye, 378,973 pink, 244,356 chum, and 24,100 coho salmon (Table 14). About 28% of the catch was landed prior to 26 July, which amounted to 130 chinook, 244,895 sockeye, 2,363 pink, 21,332 chum, and 197 coho salmon.

The 1987 Shumagin Islands Section catch of 1,447,598 salmon included 4,534 chinook, 389,501 sockeye, 548,023 pink, 347,604 chum, and 157,936 coho salmon (Table 10). About 87% of the catch was landed after June, which amounted to 3,388 chinook, 248,934 sockeye, 542,383 pink, 310,540 chum, and 157,936 coho salmon.

The post-June South Peninsula catch of 2,813,059 salmon included 3,935 chinook, 463,090 sockeye, 1,191,512 pink, 929,782 chum, and 224,740 coho salmon, totaling 2,813,059 salmon or 66% of the total South Peninsula harvest. Excluding the Southeast District Mainland catch, the South Peninsula total salmon harvest for July through September was 3,571 chinook, 163,627 sockeye, 812,539 pink, 285,426 chum, and 200,640 coho salmon. The South Peninsula commercial harvest was 65% below the 1977-86 average catch.

The total 1987 South Peninsula salmon catch of 4,268,490 salmon included 9,174 chinook, 1,449,753 sockeye, and 1,208,556 pink, 1,376,267 chum, and 224,740 coho salmon (Table 1). Peak catch occurred for chinook salmon during week 25, for sockeye salmon during week 26, for both pink and chum salmon during week 32, and for coho salmon during week 31 (Table 15).

The total South Peninsula salmon escapement of 2,478,019 salmon included 80,598 sockeye, 1,742,855 pink, 651,875 chum, and 2,690 coho salmon (Table 7). These figures added to the catch produced an estimated 1987 South Peninsula total run of 6,746,509 salmon (Table 16).

Chinook Salmon

A total of 9,174 chinook salmon were harvested in the South Peninsula in 1987 (Table 1). The catch was 18% higher than the 1977-86 average and 64% greater than the 1986 catch. The Southeast District Mainland fishery, Shumagin Islands Section, Ikatan Bay Section, and the Unimak District accounted for 99% of the harvest. The Shumagin Islands Section caught 49% of the total chinook harvest. Peak catch occurred during week 31 in the Southeast District Mainland fishery, week 28 in the Shumagin Islands Section, and week 25 for both the Ikatan Bay Section and the Unimak District. The peak catch for the entire South Peninsula occurred during week 25.

There are no documented chinook spawning streams on the South Peninsula.

Sockeye Salmon

The 1987 South Peninsula sockeye catch was 1,449,753 salmon, an amount 22% lower than the 1977-86 average but 19% higher than the 1986 harvest (Table 1). The majority of the salmon were caught in the Southeast District Mainland fishery, Shumagin Islands Section, and the Unimak District. Peak sockeye catch occurred in the Southeast District Mainland fishery in week 27 (Table 14), the Shumagin Islands Section in week 29 (Table 10), and the Unimak District in week 26 (Table 11, 12). The majority of sockeye caught in the Southeast District Mainland fishery was taken by set gill net gear (97%), in the Shumagin Islands Section by purse seine gear (75%), and in the Unimak District by drift gill net gear (62%) (Table 5).

The sockeye harvested in the South Peninsula was 21% age 1.2, 47% age 1.3, and 19% age 2.3 (Table 17). Average sockeye lengths in the South Peninsula ranged from 539 mm (Cape Lutke Section) to 593 mm (Southeast District Mainland fishery; Table 18). Overall, the average length was 558 mm. The average male to female ratio ranged from 0.9:1 (Cape Lutke Section) to 2.7:1 (Shumagin Islands Section post-June). Overall, the male to female ratio was 1.3:1.

The June Shumagin Islands Section sockeye guideline harvest level was set at 140,000 salmon (Shaul 1988). The sockeye harvest was 140,567 salmon (Table 10). The catch was 12% age 1.2, 62% age 1.3, and 16% age 2.3 (Table 17). The male to female ratio was 1.0:1 (Table 18), and the average salmon length was 578 mm. Males were larger than females within all age classes except for age 2.2 salmon. Overall, the average length was 586 mm for the males and 569 mm for the females. Generally salmon in every age class averaged 25 mm larger in length as compared to the 1986 catch (McCullough 1988b).

The South Unimak June fishery (Ikatan Peninsula to Cape Lazaref and the Cape Lutke Section) sockeye guideline harvest level was set at 635,000 salmon (Shaul 1988). The sockeye harvest was 652,397 salmon (Table 13). The sockeye catch was 39% age 1.2, 27% age 1.3, 14% age 2.2, and 14% age 2.3 (Table 17). Males were more abundant than females only during week 24. The June male to female ratio was 0.9:1 (Table 18). The mean length was 543 mm. Females were larger than males in age classes 0.3, 0.4, and 2.2. The average male length in the Cape Lutke Section catch was 536 mm, while the average female length was 542 mm. In the Ikatan Peninsula to Cape Lazaref catch males averaged 546 mm and females 547 mm.

The 1987 total sockeye catch of Chignik River salmon through 25 July in the Southeast District Mainland, Chignik, and Cape Igvak fisheries was 2,128,000 salmon (Probasco and Fox 1988). The Southeast District Mainland catch of Chignik sockeye salmon through 25 July was 146,792 fish, which was 6.9% of the total Chignik sockeye catch through 25 July (Probasco and Fox 1988). The sockeye catch in the Southeast District Mainland was 72% age 1.3 and 21% age 2.3 (Table 17). In the catch the male to female ratio was 1.5:1 (Table 18). Mean salmon length was 593 mm. Males were larger than females within all age classes. Overall, the average length was 602 mm for males and 581 mm for females.

The 1987 South Peninsula sockeye catch for July through September, was 356,187 salmon, excluding the Southeast District Mainland catch. Most (70%) of the catch was in the Shumagin Islands Section. The Shumagin Island Section post-June catch of 248,887 salmon was 215% above the 1977-86 average of 115,737 fish (Figure 7, Table 8).

The majority of the South Peninsula sockeye in the post-June catch, excluding the Southeast District Mainland were ages 1.2 (8.0%), 1.3 (55.6%), and 2.3 (27.6%) (Table 17). The male to female ratio of the catch was 2.2:1 (Table 18), and the average length was 580 mm. The averaged length of males was greater than that of females within all major age classes. Overall, the average length was 591 mm for males and 562 mm for females.

The sockeye escapement into 23 South Peninsula streams was 80,598 salmon (Table 7). Most sockeye salmon spawned in Orzinski (22,800), Mortensen (6,400), Thinpoint (10,400), and Middle Lagoon (14,000). Sockeye systems in Acheredin Lake, Canoe Bay River, Long John Lagoon, Kinzarof Lagoon, Russel Creek, and

Whalebone Bay accounted for 19% of the escapement and small systems accounted for 4% of the escapement.

Pavlof Bay's commercial sockeye catch of 36,372 salmon (95% seine caught) was sampled to estimate biological characteristics of the harvest, these characteristics are assumed to be the same for the spawning escapement (Roos 1957). The sockeye escapement was 76% age 1.3 and 17% age 2.3 (Table 17). The male to female ratio was 2.3:1 (Table 18). The average length was 597 mm for males, 568 mm for females, and 588 mm for both sexes.

Pink Salmon

The 1987 South Peninsula pink harvest of 1,208,556 salmon mainly (99%) occurred in post-June fisheries (Table 1). The catch was 48% lower than the 1967-85 odd-year average (2,318,820 salmon) and 73% lower than the 1985 catch. Most of the catch was in the Shumagin Islands Section (32%) and the Southeast District Mainland fishery (31%). Peak catches occurred during weeks 32 and 34 (Table 15). The total pink escapement was 1,742,855 salmon (Table 7). The largest escapements were in Suzy, Mino, Settlement Point, Middle, and Southern Creeks. Together these systems accounted for 47% of the escapement. The medium-sized systems of Bay Point, Squaw Harbor, Coal Bay, Canoe Bay River, and the Volcano Bay system accounted for 18% of the escapement. Small systems accounted for 35% of the escapement.

Chum Salmon

The 1987 South Peninsula chum catch of 1,376,267 salmon was 4% higher than the 1977-86 average and 21% lower than the 1986 catch (Table 1). The majority of chum salmon were caught in the Southeast District Mainland fishery, Shumagin Islands Section, Canoe Bay, Pavlof Bay, Volcano Bay, and the South Unimak June fishery. Peak catches in the Southeast District Mainland fishery occurred during week 32, in the Shumagin Islands Section and Canoe Bay during week 30, in Pavlof Bay during week 33, in Volcano Bay during week 35, and in South Unimak June fishery during week 25. Seine gear caught the majority of chum salmon in all fisheries except in Morzhovoi Bay, and the Ikatana Peninsula to Cape Lazaref fishery (Table 5). The South Peninsula chum catch was 49% age 0.3 and 48% age 0.4 (Table 19). Average chum length varied from 568 mm (Cape Lutke Section) to 626 mm (Belkofski Bay) and averaged 589 mm (Table 20). The male to female ratio varied from 0.8:1 (Shumagin Islands Section post-June, Pavlof Bay, and Ikatana Peninsula to Cape Lutke post-June fisheries) to 1.2:1 (Southeast District Mainland). Overall, the male to female ratio for the entire South Peninsula was 0.9:1.

A total of 347,604 chum salmon were caught in the Shumagin Islands Section during 1987 (Table 10). The June chum harvest of 37,064 salmon in the Shumagin Islands Section was 38% age 0.3 and 59% age 0.4 (Table 19). The male to female ratio was 1.0:1 (Table 20). Males were larger than females within all ages; the average length of both sexes was 589 mm. After June 310,540 chum were harvested in the Shumagin Islands Section (Table 10). The post-June catch was 46% age 0.3 and 51% age 0.4 (Table 19). The male to female ratio was 0.8:1 (Table 20). Males were larger within all ages except for age 0.2. The average length of all post-June chum salmon was 596 mm.

The South Unimak June fishery (Unimak District, Bechevin Bay Section of the Northwestern District, and Ikatan Bay Section of the Southwestern District) catch was 406,335 chum salmon (Table 13). The chum harvest was 50% age 0.3 and 46% age 0.4 (Table 19). Females were more abundant in the harvest during all weeks. Overall, the male to female ratio was 0.9:1 (Table 20). Males for all areas and ages were larger than females. The average chum length in the catch was 573 mm.

The chum harvest in the Southeast District Mainland fishery was 244,356 salmon (Table 14). The peak catch occurred during week 32. The chum harvest was 51% age 0.3 and 47% age 0.4 (Table 19). Males were more abundant and larger within all age classes. The male to female ratio was 1.2:1 (Table 20). The average length for both sexes was 600 mm.

Purse seine fisheries in terminal areas accounted for most of the remaining 377,972 chum harvest in the South Peninsula. The majority of these salmon were harvested in Canoe, Pavlof, and Volcano Bays, and the Ikatan Peninsula to Cape Lazaref post-June fishery (Table 5). The chum harvested in terminal fisheries were 50% age 0.3 and 45% age 0.4 (Table 19). The male to female ratio was 0.9:1 (Table 20). Males were larger within all ages except age 0.2 fish in Canoe and Pavlof Bays. The average chum length was 591 mm.

The South Peninsula chum escapement was 651,875 salmon (Table 7). Most chum salmon spawned in Canoe Bay River, Volcano Bay, Belkofski Bay, Russell Creek, and Sandy Cove which accounted for 57% of the escapement. Moderate-sized escapements occurred in Stepovak River, Louie's Corner, Coleman Creek, San Diego system, Beaver River, Chinaman Lagoons, Long John Lagoons, Old Man's Lagoon, and Little John Lagoon which accounted for 27% of the escapement. Smaller systems accounted for the remaining 16% of the escapement.

The commercial chum catch in the terminal fisheries at Canoe Bay, Pavlof Bay and Belkofski Bay were sampled to determine biological characteristics of the commercial catch and the spawning escapement (Roos 1957). Most (97%) of the chum catch in Canoe Bay was by seine gear (Table 5). The peak catch occurred during week 30. The escapement was 58% age 0.4 and 39% age 0.3 (Table 19). Overall, the male to female ratio was 1.0:1 (Table 20). Males were larger than females within all age classes except for age-0.2 fish. The average length was 603 mm for males, 593 mm for females, and 598 mm for both sexes. Most (99%) of the chum catch in Pavlof Bay was by seine gear. The peak catch occurred during week 33. The escapement was 62% age 0.3 and 31% age 0.4 (Table 19). Overall, the male to female ratio was 0.8:1 (Table 20). Males were larger than females within all age classes except for age-0.2 fish. The average length was 595 mm for males, 584 mm for females, and 589 mm for both sexes. All (100%) of the chum catch in Belkofski Bay was by seine gear. The peak catch occurred during week 30. The escapement was 72% age 0.4 and 25% age 0.3 (Table 19). Overall, the male to female ratio was 1.3:1 (Table 20). Males were larger than females within all age classes. The average length was 632 mm for males, 619 mm for females, and 626 mm for both sexes.

Coho Salmon

A total of 224,740 coho salmon were harvested in South Peninsula fisheries (Table 1). The catch was 15% greater than the 1977-86 average harvest and 5% lower than the 1986 harvest. The Shumagin Islands Section harvest was 70% of the total coho

catch (Table 10). The peak Shumagin Islands Section catch occurred during weeks 30 and 31. Coho escapement monitoring in the South Peninsula was limited three salmon streams: Humbolt Creek, Long John Lagoon, and Thin Point Lake. The total estimated escapements to these streams were 2,690 salmon, which is assumed to represent only a small portion of the total South Peninsula escapement.

Aleutian Islands Area

In 1987 the Aleutian Islands Management Area was open for 324 h and the only catch was 75 sockeye salmon recorded from a single delivery in the Unalaska District (Table 21). The catch was the lowest since 1974 through 1977 when fishing was closed in the Aleutian Islands (Table 1). The sockeye catch occurred during week 27 (Table 21). Escapement monitoring in the Aleutian Islands was limited to surveys of 26 salmon streams on Unalaska Island. The total estimated escapements to these streams were 18,250 sockeye, 63,100 pink, and 900 chum salmon (Table 7). The stream surveys were not conducted late enough in the season to accurately gauge the coho escapement, but based on the surveys the coho escapement was at least 1,320 salmon. Of 26 monitored streams pink salmon escapement goals were met only at Iliuk and Kashega (Shaul et al. 1988). The 1987 Aleutian Islands Management Area run was at least 83,645 salmon (Table 16).

Catch and escapement samples were not collected in the Aleutian Islands Management Area.

North Peninsula

The total 1987 North Peninsula catch was 1,767,587 salmon composed of 14,186 chinook, 1,209,435 sockeye, 3,486 pink, 368,696 chum, and 171,784 coho salmon (Table 1). About 69% of the catch was taken with drift gill nets and 11% by set gill nets. The remaining 20% was taken with purse seine gear. Seine gear accounted for most of the effort in terminal chum salmon fisheries as well as terminal sockeye fisheries in Urilia Bay and Swanson Lagoon. Terminal set gill net fisheries for sockeye and coho salmon occurred in Cinder River, Port Heiden Bay, Ilnik Lagoon, Nelson Lagoon, Swanson Lagoon, and Urilia Bay.

The total North Peninsula salmon escapement of 1,429,484 fish included 18,729 chinook, 635,736 sockeye, 1,025 pink, 578,298 chum and 195,696 coho salmon (Table 7). The total run was estimated to be 3,197,071 salmon (Table 16).

Chinook Salmon

The 1987 North Peninsula chinook catch was 14,186 salmon (Table 1). The harvest was 25% below the 1977-86 average of 18,979 but 21% more than the 1986 catch. The peak catch for the North Peninsula occurred during week 25 (Table 22). The Nelson Lagoon Section accounted for 41% of the catch, 29% was from the Harbor Point to Cape Seniavin fishery, and 23% was from the Port Heiden Section (Table 5). Catches peaked during weeks 25 and 26 in the Nelson Lagoon Section and the Harbor Point to Cape Seniavin fishery and during week 24 in the Port Heiden Section. The majority (60%) of the Nelson Lagoon Section catch was harvested

with set gill nets, while 97% of the harvest in the Harbor Point to Cape Seniavin fishery and 84% of the harvest in the Port Heiden Section was with drift gill nets. The Northern District chinook catch was mostly (65%) age 1.4 (Table 23). Overall, the male to female ratio was 0.7:1 (Table 24). Males were larger than females within all ages except age 1.2 in the Nelson Lagoon Section and ages 1.2 and 1.3 in the Harbor Point to Cape Seniavin fishery. The average North Peninsula chinook length was 777 mm. The largest chinook were harvested in the Harbor Point to Cape Seniavin fishery where the average length was 802 mm.

In 1987 the average size of chinook salmon from all North Peninsula fisheries was noticeably larger than during 1986; the Harbor Point to Cape Seniavin chinook averaged 89 mm longer than salmon in 1986 (McCullough 1988b). In 1987 the older-aged salmon, ages 1.4 and 1.5, accounted for 76% of the catch as compared to 1986 where the same ages accounted for 58% of the catch.

Chinook escapement to the North Peninsula was about 18,750 salmon (Table 7). The majority of the escapement (56%) was in the Meshik, Cinder, and Nelson Rivers at 14%, 9%, and 33%, respectively.

Sockeye Salmon

The North Peninsula catch of 1,209,435 sockeye salmon was 29% less than the 1977-86 average, 51% less than the 1986 catch, and the lowest since 1978 (Table 1). The majority (77%) of the harvest occurred in the Port Moller to Strogonof Point area (Table 5). The Harbor Point to Cape Seniavin area produced 18%, and the Cape Seniavin to Strogonof Point area produced 59% of the North Peninsula sockeye catch. The peak catch for the North Peninsula occurred during week 28, but substantial catches also occurred in weeks 26 through 30 (Table 22). The majority of the North Peninsula sockeye catch was taken with drift gill net gear except in the Nelson Lagoon, the Swanson Lagoon, and the Urilia Bay Sections (Table 5). The catch was 28% age 1.3, 16% age 2.2, and 38% age 2.3 (Table 17). The male to female ratio for the North Peninsula catch was 0.9:1 (Table 18). The average sockeye length in the harvest was 544 mm. Sockeye salmon average length was greatest in the Cape Seniavin to Strogonof Point catch (565 mm) and least in the Nelson Lagoon Section catch (529 mm).

The North Peninsula sockeye escapement was 635,736 salmon (Table 7). Nelson and Bear Rivers accounted for 65% of the escapement. The Meshik and Cinder Rivers, Ilnik Lagoon, and Whaleback Mountain Creek in Urilia Bay accounted for 24% of the escapement. Minor systems accounted for the remaining 11% of the escapement. The total sockeye escapements were 156,350 at Nelson River, 258,000 at Bear River, 11,125 at Sandy Lake, and 33,563 at Ilnik Lagoon (Ilnik and Ocean Rivers and Willie Creek). These escapement were within or above the desired escapement goals, except the Sandy River escapement which was 45% below the desired level (Shaul et al. 1988). Sockeye escapement to the North Peninsula was 15% age 1.3, 54% age 2.2, and 20% age 2.3 (Table 25). Overall, the male to female ratio was 1.5:1 (Table 26). The average length of sockeye salmon spawning in North Peninsula systems were 521 mm. The sockeye salmon average length was greatest in Ilnik Lagoon (583 mm) and least in Nelson Lagoon (508 mm).

The 1987 Bear River sockeye escapement was 250,551 salmon. Peak escapement occurred in week 28. The sockeye escapement was 14% age 1.3, 51% age 2.2, and 31% age 2.3 (Table 25). In Bear River an increase in the proportion of age-2.2

sockeye salmon accompanied by a decrease in age-1.3 fish occurred as the season progressed. Male sockeye salmon were more abundant than female sockeye salmon in all age classes, except within age-2.3 fish. Overall, the male to female ratio was 1.5:1 (Table 26). Female sockeye salmon were noticeably larger than males only within age-2.2 fish. The average length for the females was 537 mm, for the males was 508 mm, and for both sexes was 519 mm.

The Nelson Lagoon system (Coastal and Hoodoo Lakes, and David, Caribou, and Sapsuk Rivers) sockeye escapement was 156,525 (Figure 9). About 91% of this escapement amounting to 142,175 salmon occurred in the Sapsuk River-Hoodoo Lake drainage (Shaul et al. 1988), of which about 75% spawned in Hoodoo Lake and the remainder (25%) spawned in Sapsuk River. Peak escapement occurred in week 28. The sockeye escapement in Sapsuk River-Hoodoo Lake was 19% age 1.2, 10% age 1.3, and 68% age 2.2 (Table 25). Overall, the male to female ratio was 1.5:1 (Table 26). Male sockeye were more abundant than female sockeye salmon, except within ages 1.2 and 2.2. Female sockeye lengths differed from male lengths. The mean length of females of age-1.2 were 26 mm larger than males, age-1.3 were 32 mm shorter, and age-2.2 were 26 mm shorter. The average lengths were 514 mm for females, 491 mm for males, and 508 mm for both sexes.

Otoliths collected from the escapement spawning in the Sapsuk River indicated that the salmon were 14% age 1.2 and 79% age 1.3. Scale samples from the Hoodoo Lake indicated that the lake portion of the escapement was 13% age 1.2 and 77% age 2.2. The age composition of the different components of the Sapsuk River-Hoodoo Lake escapement indicate that most (93%) of the age-2. fish are Hoodoo Lake spawners, while the majority (82%) of age-1. fish are Sapsuk River spawners.

The sockeye escapement into the Ilnik Lagoon System, (Ocean and Ilnik Rivers and Willie Creek) was 33,563. The escapement was 44% age 1.3 and 41% age 0.3 (Table 25). Overall, the male to female ratio was 1.9:1 (Table 26). Males were larger than females within the major age classes. The average length was 595 mm for males, 563 mm for females, and 583 mm for both sexes.

Urilia Bay's commercial sockeye catch of 104,419 (87% seine caught) and Swanson Lagoon sockeye catch of 31,957 (84% seine caught) was sampled to determine biological characteristics of the fishery (Roos 1957). The characteristics of the fishery were assumed to be the same as the spawning population (Table 5). The Urilia Bay escapement was 51% age 0.3 and 40% age 1.3 (Table 17). Overall, the male to female ratio was 1.1:1 (Table 18). Females were larger than males within the two major age classes. The average length was 517 mm for males, 549 mm for females, and 532 mm for both sexes. The Swanson Lagoon escapement was 24% age 0.3, 43% age 1.3, and 22% age 2.3 (Table 17). Overall, the male to female ratio was 0.8:1 (Table 18). Males were larger than females within the three major age classes. The average length was 571 mm for males, 554 mm for females, and 562 mm for both sexes.

Pink Salmon

North Peninsula pink runs have historically been of minor importance. The 1987 North Peninsula catch of 3,486 pink salmon was 2% of the 1967-85 odd-year average of 193,104 fish but 14% greater than the 1985 catch (Table 1). The majority (39%) of the catch was in the Harbor Point to Cape Seniavin fishery, followed

by the Cape Seniavin to Strogonof Point fishery (33%). The peak catch in North Peninsula fisheries occurred during week 33 (Table 22). The North Peninsula escapement of 1,025 pink salmon spawned in several of the Northwestern District streams. The total North Peninsula run was 4,511 salmon (77% catch and 23% escapement; Table 16).

Chum Salmon

A total of 368,696 chum salmon were caught in North Peninsula fisheries in 1987 (Table 1). The catch was 12% lower than the 1977-86 average but 36% above the 1986 catch. Most of the catch occurred in the Harbor Point to Cape Seniavin fishery (26%) and the Izembek-Moffet Bay Section (40%). Peak catch occurred during week 27 in the Harbor Point to Cape Seniavin fishery and in week 31 in the Izembek-Moffet Bay Section. The peak catch for the North Peninsula occurred during week 31 (Table 22). The North Peninsula catch was 53% age 0.3 and 42% age 0.4 (Table 19). Overall, the male to female ratio was 0.8:1 (Table 20). The average chum length in the harvest was 580 mm.

The 1987 North Peninsula chum escapement of 578,298 salmon, was 4% higher than the 1977-86 average and over twice as great as the 1986 escapement (Table 7). The majority of the escapement was in the Joshua Green River of the Izembek-Moffet Bay Section (41%), the Herendeen-Moller Bay Section (15%), and the Meshik River (9%). The chum escapement was generally evenly distributed with desired escapements realized in all systems (Shaul et al. 1988). The total chum run for the North Peninsula was about 946,994 salmon (Table 16).

Swanson's Lagoon commercial catch of 27,518 salmon (93% seine caught), Bechevin Bay's 37,050 salmon (89% seine caught), and the Izembek-Moffet Bay Section catch of 148,638 salmon (94% seine caught) was sampled to determine biological characteristics of the fishery (Table 5). The characteristics of the catch were assumed to be the same as the spawning escapement. In Swanson Lagoon the peak catch occurred during week 28. The Swanson Lagoon escapement was 58% age 0.4 and 38% age-0.3 (Table 19). Overall, the male to female ratio was 1.0:1 (Table 20). Males were larger than females in all age classes. The average length was 598 mm for males, 577 mm for females and 588 mm for both sexes. Bechevin Bay peak catch occurred during week 35. The Bechevin Bay escapement was 71% age 0.3 and 24% age 0.4 (Table 19). Overall, the male to female ratio was 1.7:1 (Table 20). Males were larger than females in all age classes, except age-0.2 where females were larger. The average length was 579 mm for males, 569 mm for females, and 576 mm for both sexes. In the Izembek-Moffet Bay Section the peak catch occurred during week 31. The Izembek-Moffet Bay Section escapement was 76% age 0.3 and 22% age 0.4 (Table 19). Overall, the male to female ratio was 1.4:1 (Table 20). Males were larger than females in all age classes, except age-0.2 where females were larger. The average length was 594 mm for males, 580 mm for females, and 588 mm for both sexes.

Coho Salmon

A total of 171,784 coho salmon were harvested in the North Peninsula (Table 1). The catch was 28% greater than the 1977-86 average and 4% greater than the 1986 catch. The increased coho catch observed since 1979 is probably the result of larger coho runs and an increase in fishing effort. The majority of the 1987

catch was in the Nelson Lagoon Section (49%), followed by the Port Heiden Section (16%), and the Cape Seniavin to Strogonof Point fishery (14%) (Table 5). Peak catches occurred in the Northern District fisheries during week 36, except in the Cinder River Section where the peak catch occurred during week 35. Peak catches occurred in the Northwestern District during week 37. The catch was 69% age 2.1 and 26% age 1.1 (Table 27). Male coho salmon were more abundant than female coho salmon within all ages, except age-3.1 in the Nelson Lagoon Section where the sex ratio was even. Overall, the male to female ratio for the North Peninsula catch was 1.9:1 (Table 28). The largest coho salmon were harvested in the Cape Seniavin to Strogonof Point fishery (average length 597 mm) and the smallest were harvested in the Nelson Lagoon Section (average length 578 mm). The average coho length in the North Peninsula catch was 585 mm. The weekly sex composition of coho salmon in the Nelson Lagoon Section indicates that the majority of males enter the fishery earlier than the females.

Coho escapements in the North Peninsula have been poorly monitored due to budget restrictions and survey conditions. The escapement in 13 monitored streams was about 195,696 salmon (Table 7).

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TABLES AND FIGURES

Table 1. The commercial salmon catch in the Alaska Peninsula and Aleutian Islands Management Areas by species, 1967-87.

Year	Area	Number of Salmon					Total
		Chinook	Sockeye	Pink	Chum	Coho	
1967	South Peninsula	1,600	294,100	77,800	245,200	2,900	621,600
	Aleutians	0	200	7,900	0	0	8,100
	North Peninsula	<u>5,500</u>	<u>224,700</u>	<u>700</u>	<u>41,300</u>	<u>46,800</u>	<u>319,000</u>
	Total	7,100	519,000	86,400	286,500	49,700	948,700
1968	South Peninsula	1,400	699,800	1,287,100	325,300	31,100	2,344,700
	Aleutians	0	2,000	902,800	800	100	905,700
	North Peninsula	<u>4,500</u>	<u>237,100</u>	<u>200</u>	<u>73,500</u>	<u>64,900</u>	<u>380,200</u>
	Total	5,900	938,900	2,190,100	399,600	96,100	3,630,600
1969	South Peninsula	1,900	912,800	1,219,400	389,200	10,900	2,534,200
	Aleutians	0	1,900	242,200	1,500	0	245,600
	North Peninsula	<u>4,800</u>	<u>321,300</u>	<u>100</u>	<u>28,100</u>	<u>49,100</u>	<u>403,400</u>
	Total	6,700	1,236,000	1,461,700	418,800	60,000	3,183,200
1970	South Peninsula	1,800	1,794,600	1,723,400	981,700	32,200	4,533,700
	Aleutians	0	200	672,500	3,300	100	676,100
	North Peninsula	<u>3,200</u>	<u>213,000</u>	<u>7,800</u>	<u>50,200</u>	<u>26,400</u>	<u>300,600</u>
	Total	5,000	2,007,800	2,403,700	1,035,200	58,700	5,510,400
1971	South Peninsula	2,200	715,500	1,450,100	1,366,600	16,800	3,551,200
	Aleutians	0	300	45,400	100	0	45,800
	North Peninsula	<u>2,200</u>	<u>354,200</u>	<u>300</u>	<u>64,200</u>	<u>8,200</u>	<u>429,100</u>
	Total	4,400	1,070,000	1,495,800	1,430,900	25,000	4,026,100
1972	South Peninsula	1,300	557,800	78,000	727,500	8,000	1,372,600
	Aleutians	0	100	2,800	0	0	2,900
	North Peninsula	<u>1,800</u>	<u>179,500</u>	<u>0</u>	<u>84,700</u>	<u>9,600</u>	<u>275,600</u>
	Total	3,100	737,400	80,800	812,200	17,600	1,651,100
1973	South Peninsula	400	330,200	58,000	293,000	6,600	688,200
	Aleutians	0	100	7,000	0	0	7,100
	North Peninsula	<u>4,400</u>	<u>171,800</u>	<u>300</u>	<u>155,700</u>	<u>26,900</u>	<u>359,100</u>
	Total	4,800	502,100	65,300	448,700	33,500	1,054,400
1974	South Peninsula	500	204,700	99,700	71,500	9,400	385,800
	Aleutians	0	0	0	0	0	0
	North Peninsula	<u>5,100</u>	<u>247,900</u>	<u>10,500</u>	<u>35,300</u>	<u>24,000</u>	<u>322,800</u>
	Total	5,600	452,600	110,200	106,800	33,400	708,600

-Continued-

Table 1. (page 2 of 3)

Year	Area	Number of Salmon					Total
		Chinook	Sockeye	Pink	Chum	Coho	
1975	South Peninsula	100	268,400	61,700	132,900	0	463,100
	Aleutians	0	0	0	0	0	0
	North Peninsula	<u>2,100</u>	<u>233,500</u>	<u>300</u>	<u>8,700</u>	<u>28,200</u>	<u>272,800</u>
	Total	2,200	501,900	62,000	141,600	28,200	735,900
1976	South Peninsula	2,100	375,000	2,367,000	532,500	200	3,276,800
	Aleutians	0	0	0	0	0	0
	North Peninsula	<u>4,900</u>	<u>641,100</u>	<u>600</u>	<u>73,600</u>	<u>26,000</u>	<u>746,200</u>
	Total	7,000	1,016,100	2,367,600	606,100	26,200	4,023,000
1977	South Peninsula	500	311,700	1,448,600	243,200	2,100	2,006,100
	Aleutians	0	0	0	0	0	0
	North Peninsula	<u>5,500</u>	<u>471,100</u>	<u>900</u>	<u>129,100</u>	<u>34,100</u>	<u>640,700</u>
	Total	6,000	782,800	1,449,500	372,300	36,200	2,646,800
1978	South Peninsula	800	579,500	5,608,800	547,000	60,700	6,796,800
	Aleutians	0	1,800	38,100	0	0	39,900
	North Peninsula	<u>14,200</u>	<u>896,200</u>	<u>466,600</u>	<u>163,200</u>	<u>63,300</u>	<u>1,603,500</u>
	Total	15,000	1,477,500	6,113,500	710,200	124,000	8,440,200
1979	South Peninsula	2,100	1,149,700	6,570,500	483,000	356,500	8,561,800
	Aleutians	0	12,200	539,400	200	0	551,800
	North Peninsula	<u>17,100</u>	<u>1,979,500</u>	<u>5,000</u>	<u>65,700</u>	<u>112,800</u>	<u>2,180,100</u>
	Total	19,200	3,141,400	7,114,900	548,900	469,300	11,293,700
1980	South Peninsula	4,800	3,613,000	7,961,500	1,351,200	274,200	13,204,700
	Aleutians	0	9,200	2,597,500	4,900	0	2,611,600
	North Peninsula	<u>16,800</u>	<u>1,397,100</u>	<u>301,700</u>	<u>700,200</u>	<u>127,900</u>	<u>2,543,700</u>
	Total	21,600	5,019,300	10,860,700	2,056,300	402,100	18,360,000
1981	South Peninsula	10,200	2,255,200	5,035,900	1,770,300	162,200	9,233,800
	Aleutians	0	5,400	302,800	6,600	200	315,000
	North Peninsula	<u>18,300</u>	<u>1,844,900</u>	<u>11,200</u>	<u>706,800</u>	<u>155,400</u>	<u>2,736,600</u>
	Total	28,500	4,105,500	5,349,900	2,483,700	317,800	12,285,400
1982	South Peninsula	9,800	2,346,000	6,734,900	2,272,500	256,000	11,619,200
	Aleutians	0	2,700	1,447,800	6,100	0	1,456,600
	North Peninsula	<u>30,100</u>	<u>1,435,300</u>	<u>12,300</u>	<u>331,100</u>	<u>238,000</u>	<u>2,046,800</u>
	Total	39,900	3,784,000	8,195,000	2,609,700	494,000	15,122,600

-Continued-

Table 1. (page 3 of 3)

Year	Area	Number of Salmon					Total
		Chinook	Sockeye	Pink	Chum	Coho	
1983	South Peninsula	26,900	2,556,600	2,827,600	1,707,100	127,700	7,245,900
	Aleutians	0	4,400	2,000	11,400	0	17,800
	North Peninsula	<u>29,500</u>	<u>2,093,400</u>	<u>3,400</u>	<u>348,700</u>	<u>75,100</u>	<u>2,550,100</u>
	Total	56,400	4,654,400	2,833,000	2,067,200	202,800	9,813,800
1984	South Peninsula	9,200	2,318,000	11,589,300	1,656,500	309,100	15,882,100
	Aleutians	0	67,200	2,309,700	33,900	0	2,410,800
	North Peninsula	<u>23,000</u>	<u>1,734,900</u>	<u>27,400</u>	<u>796,700</u>	<u>198,600</u>	<u>2,780,600</u>
	Total	32,200	4,120,100	13,926,400	2,487,100	507,700	21,073,500
1985	South Peninsula	7,884	2,214,583	4,438,598	1,393,285	172,514	8,226,864
	Aleutians	40	2,750	90	14,175	0	17,055
	North Peninsula	<u>23,553</u>	<u>2,600,589</u>	<u>3,055</u>	<u>670,644</u>	<u>167,740</u>	<u>3,465,581</u>
	Total	31,477	4,817,922	4,441,743	2,078,104	340,254	11,709,500
1986	South Peninsula	5,589	1,223,089	4,031,487	1,749,651	235,854	7,245,670
	Aleutians	11	7,702	42,621	38,819	60	89,213
	North Peninsula	<u>11,740</u>	<u>2,463,735</u>	<u>22,630</u>	<u>271,216</u>	<u>165,201</u>	<u>2,934,522</u>
	Total	17,340	3,694,526	4,096,738	2,059,686	401,115	10,269,405
1987	South Peninsula	9,174	1,449,753	1,208,556	1,376,267	224,740	4,268,490
	Aleutians	0	75	0	0	0	75
	North Peninsula	<u>14,186</u>	<u>1,209,435</u>	<u>3,486</u>	<u>368,696</u>	<u>171,784</u>	<u>1,767,587</u>
	Total	23,360	2,659,263	1,212,042	1,744,963	396,524	6,036,152
Average 1967-76							
	South Peninsula	1,330	615,290	842,220	506,540	11,810	1,977,190
	Aleutians	0	480	188,060	570	20	189,130
	North Peninsula	<u>3,850</u>	<u>282,410</u>	<u>2,080</u>	<u>61,530</u>	<u>31,010</u>	<u>380,880</u>
	Total	5,180	898,180	1,032,360	568,640	42,840	2,547,200
Average 1977-86							
	South Peninsula	7,777	1,856,737	5,624,719	1,317,374	195,687	9,002,293
	Aleutians	5	11,335	728,001	11,609	26	750,977
	North Peninsula	<u>18,979</u>	<u>1,691,672</u>	<u>85,419</u>	<u>418,336</u>	<u>133,814</u>	<u>2,348,220</u>
	Total	26,762	3,559,745	6,438,138	1,747,319	329,527	12,101,491

Note: Values prior to 1985 are rounded to the nearest hundred fish.

Table 2. Alaska Peninsula and Aleutian Islands Management Areas listing of allowable gear by district and section, 1987.

District	Gill Net		Seine		
	Set	Drift	Purse	Hand Purse	Beach
SOUTH PENINSULA					
Southeastern District	X		X	X	
Southcentral District	X		X	X	
Southwestern District	X		X	X	
Unimak District	X	X	X	X	
ALEUTIAN ISLANDS AREA			X	X	X
NORTH PENINSULA					
Northwestern District	X	X	X	X	
Northern District					
Black Hills Section	X	X			
Caribou Flats Section	X	X			
Nelson Lagoon Section	X	X			
Herendeen-Moller Bay Section	X	X	X	X	
Bear River Section		X	X	X	
Three Hills Section		X			
Port Heiden Section	X	X			
Cinder River Section	X	X			

Table 3. Districts, sections, and statistical areas for the Alaska Peninsula and Aleutian Islands Management Areas, 1987.

Fishing Area Location	Statistical Areas
SOUTH PENINSULA	
Southeastern District	
Southeast District Mainland	281-10; 281-20; 281-31; 281-32; 281-33; 281-35; 283-75; 283-80; 283-90
Shumagin Island Section	282-11; 282-12; 282-13; 282-21; 282-22; 282-23; 282-24; 282-25; 282-26
Southcentral District	
Canoe Bay	283-63; 283-64
Pavlof Bay	283-61; 283-62; 283-65
Southwestern District	
Volcano Bay	283-51; 283-52
Belkofski Bay	283-42
King Cove	283-33
Cold Bay	283-32; 283-34; 283-35
Deer Island	283-31
Thin Point	283-20
Morzhovoi Bay	283-12
Ikatan Peninsula to Cape Lazaref	311-60 (June catch) 284-40; 284-50; 284-60
Unimak District	
Cape Lutke	284-20
ALEUTIAN ISLANDS AREA	
Unalaska District	302-22
NORTH PENINSULA	
Northwestern District	
Urilia Bay	311-32
Swanson Lagoon	311-52
Bechevin Bay	311-60 (Post-June catch)
Izembek-Moffet Bay Section	312-10; 312-20; 312-40
Northern District	
Black Hills Section	313-10
Nelson Lagoon Section	313-30
Herendeen Bay	314-20

-Continued-

Table 3. (page 2 of 2)

Fishing Area Location	Statistical Areas
Northern District (continued)	
Harbor Point to Cape Seniavin	314-12; 315-11; 315-20
Cape Seniavin to Strogonof Point	316-10; 316-20; 316-22; 316-25
Outer Port Heiden Section	317-10
Inner Port Heiden Section	317-20
Cinder River Section	318-20

Table 4. Statistical weeks and corresponding calendar dates for 1987.

Statistical Week	Calendar Dates	Statistical Week	Calendar Dates
1	01-Jan to 03-Jan	28	05-July to 11-July
2	04-Jan to 10-Jan	29	12-July to 18-July
3	11-Jan to 17-Jan	30	19-July to 25-July
4	18-Jan to 24-Jan	31	26-July to 01-Aug
5	25-Jan to 31-Jan	32	02-Aug to 08-Aug
6	01-Feb to 07-Feb	33	09-Aug to 15-Aug
7	08-Feb to 14-Feb	34	16-Aug to 22-Aug
8	15-Feb to 21-Feb	35	23-Aug to 29-Aug
9	22-Feb to 28-Feb	36	30-Aug to 05-Sep
10	01-Mar to 07-Mar	37	06-Sep to 12-Sep
11	08-Mar to 14-Mar	38	13-Sep to 19-Sep
12	15-Mar to 21-Mar	39	20-Sep to 26-Sep
13	22-Mar to 28-Mar	40	27-Sep to 03-Oct
14	29-Mar to 04-Apr	41	04-Oct to 10-Oct
15	05-Apr to 11-Apr	42	11-Oct to 17-Oct
16	12-Apr to 18-Apr	43	18-Oct to 24-Oct
17	19-Apr to 25-Apr	44	25-Oct to 31-Oct
18	26-Apr to 02-May	45	01-Nov to 07-Nov
19	03-May to 09-May	46	08-Nov to 14-Nov
20	10-May to 16-May	47	15-Nov to 21-Nov
21	17-May to 23-May	48	22-Nov to 28-Nov
22	24-May to 30-May	49	29-Nov to 05-Dec
23	31-May to 06-June	50	06-Dec to 12-Dec
24	07-June to 13-June	51	13-Dec to 19-Dec
25	14-June to 20-June	52	20-Dec to 26-Dec
26	21-June to 27-June	53	27-Dec to 31-Dec
27	28-June to 04-July		

Table 5. Commercial set gill net, drift gill net, and purse seine salmon harvest by area and species in the Alaska Peninsula and Aleutian Islands Management Areas, 1987.

Area	Gear	Number of Salmon					Total	Percent
		Chinook	Sockeye	Pink	Chum	Coho		
SOUTH PENINSULA								
Southeastern District								
Southeast Dist. Mainland	Seine	203	9,421	352,451	204,662	12,461	579,198	13.6
	Set Net	161	290,042	26,522	39,694	11,639	368,058	8.6
	Total	364	299,463	378,973	244,356	24,100	947,256	22.2
Shumagin Island Section	Seine	4,442	290,375	527,342	320,294	152,025	1,294,478	30.3
	Set Net	92	99,126	20,681	27,310	5,911	153,120	3.6
	Total	4,534	389,501	548,023	347,604	157,936	1,447,598	33.9
Southcentral District								
Canoë Bay	Seine	6	1,319	116,395	87,787	43	205,550	4.8
	Set Net	4	1,518	56	2,589	0	4,167	0.1
	Total	10	2,837	116,451	90,376	43	209,717	4.9
Pavlof Bay	Seine	89	34,689	101,815	107,035	1,184	244,812	5.7
	Set Net	5	1,683	3,814	939	10	6,451	0.2
	Total	94	36,372	105,629	107,974	1,194	251,263	5.9
Southwestern District								
Volcano Bay	Seine	15	2,844	13,870	89,128	1,014	106,871	2.5
	Set Net	0	5,813	1,664	2,872	327	10,676	0.3
	Total	15	8,657	15,534	92,000	1,341	117,547	2.8
Belkofski Bay	Seine	0	5	8,195	17,921	3	26,124	0.6
	Total	0	5	8,195	17,921	3	26,124	0.6
King Cove	Seine	0	36	145	10,643	116	10,940	0.3
	Set Net	0	1,160	174	2,461	0	3,795	0.1
	Total	0	1,196	319	13,104	116	14,735	0.4
Cold Bay	Seine	0	135	0	894	400	1,429	0.1
	Set Net	0	200	0	0	650	850	0.0
	Total	0	335	0	894	1,050	2,279	0.1
Deer Island	Seine	0	4	17,554	122	0	17,680	0.4
	Total	0	4	17,554	122	0	17,680	0.4
Thin Point	Seine	0	1,165	0	190	974	2,329	0.1
	Set Net	0	17	0	23	2,429	2,469	0.1
	Total	0	1,182	0	213	3,403	4,798	0.2

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Table 5. (page 2 of 4)

Area	Gear	Number of Salmon					Total	Percent
		Chinook	Sockeye	Pink	Chum	Coho		
SOUTH PENINSULA								
Morzhovoi Bay	Seine	0	200	0	331	1,406	1,937	0.1
	Set Net	6	<u>3,234</u>	<u>122</u>	<u>1,416</u>	<u>831</u>	<u>5,609</u>	<u>0.1</u>
	Total	6	3,434	122	1,747	2,237	7,546	0.2
Unimak District								
Ikatan Peninsula To Cape Lazaref June	Seine	441	48,083	2,845	27,095	0	78,464	1.8
	Set Net	54	12,989	10	2,574	0	15,627	0.4
	Drift Net	<u>651</u>	<u>296,417</u>	<u>533</u>	<u>178,431</u>	<u>0</u>	<u>476,032</u>	<u>11.2</u>
Total	1,146	357,489	3,388	208,100	0	570,123	13.4	
Ikatan Peninsula To Cape Lazaref Post-June	Seine	50	5,320	2,955	7,074	137	15,536	0.4
	Set Net	64	39,360	3,025	43,115	30,445	116,009	2.7
	Drift Net	<u>20</u>	<u>9,690</u>	<u>434</u>	<u>3,432</u>	<u>2,735</u>	<u>16,311</u>	<u>0.4</u>
Total	134	54,370	6,414	53,621	33,317	147,856	3.5	
Cape Lutke	Seine	2,479	190,110	7,905	128,732	0	329,226	7.7
	Drift Net	<u>392</u>	<u>104,798</u>	<u>49</u>	<u>69,503</u>	<u>0</u>	<u>174,742</u>	<u>4.1</u>
	Total	2,871	294,908	7,954	198,235	0	503,968	11.8
ALEUTIAN ISLANDS AREA								
Kashega Bay	Seine	0	75	0	0	0	75	100.0
	Total	0	75	0	0	0	75	100.0
NORTH PENINSULA								
Northwestern District								
Urilia Bay	Seine	2	91,013	0	34	7,612	98,661	5.6
	Set Net	1	5,641	0	0	0	5,642	0.3
	Drift Net	<u>2</u>	<u>7,765</u>	<u>0</u>	<u>10</u>	<u>0</u>	<u>7,777</u>	<u>0.4</u>
	Total	5	104,419	0	44	7,612	112,080	6.3
Swanson Lagoon	Seine	1	26,967	56	25,619	4,853	57,496	3.2
	Set Net	0	3,829	0	1,099	2,377	7,305	0.4
	Drift Net	<u>1</u>	<u>1,161</u>	<u>0</u>	<u>800</u>	<u>1,057</u>	<u>3,019</u>	<u>0.2</u>
	Total	2	31,957	56	27,518	8,287	67,820	3.8
Bechevin Bay	Seine	1	528	762	32,898	452	34,641	2.0
	Set Net	0	878	11	1,080	1	1,970	0.1
	Drift Net	<u>0</u>	<u>84</u>	<u>10</u>	<u>3,072</u>	<u>309</u>	<u>3,475</u>	<u>0.2</u>
	Total	1	1,490	783	37,050	762	40,086	2.3

-Continued-

Table 5. (page 3 of 4)

Area	Gear	Number of Salmon					Total	Percent
		Chinook	Sockeye	Pink	Chum	Coho		
NORTH PENINSULA								
Izenbek-Moffet	Seine	52	6,159	1	140,265	2,860	149,337	8.4
Lagoon Section	Set Net	0	18	0	140	0	158	0.0
	Drift Net	0	298	6	8,233	37	8,574	0.5
	Total	52	6,475	7	148,638	2,897	158,069	8.9
Northern District								
Black Hills Section	Drift Net	100	62	0	9	0	171	0.0
	Total	100	62	0	9	0	171	0.0
Nelson Lagoon Section	Set Net	3,467	87,259	29	4,459	44,537	139,751	7.9
	Drift Net	2,356	41,212	16	2,200	39,161	84,945	4.8
	Total	5,823	128,471	45	6,659	83,698	224,696	12.7
Herendeen Bay	Seine	0	0	0	4,486	0	4,486	0.3
	Drift Net	0	0	0	115	0	115	0.0
	Total	0	0	0	4,601	0	4,601	0.3
Harbor Point To Cape Seniavin	Seine	46	563	0	7,069	0	7,678	0.4
	Set Net	96	918	4	9,254	1	10,273	0.6
	Drift Net	3,968	213,156	1,360	78,822	4,992	301,877	17.1
	Total	4,110	214,637	1,364	95,145	4,993	320,249	18.1
Cape Seniavin To Stroganof Point	Set Net	17	15,233	26	64	10,532	25,872	1.5
	Drift Net	856	704,118	1,138	47,927	12,865	766,904	43.4
	Total	873	719,351	1,164	47,991	23,397	792,776	44.9
Port Heiden Section	Set Net	504	1,676	0	580	4,466	7,226	0.4
	Drift Net	2,713	683	1	426	23,055	26,878	1.5
	Total	3,217	2,359	1	1,006	27,521	34,104	1.9
Cinder River Section	Set Net	2	34	0	1	2,653	2,690	0.1
	Drift Net	1	180	66	34	9,964	10,245	0.6
	Total	3	214	66	35	12,617	12,935	0.7
SOUTH PENINSULA TOTAL								
	Seine	7,725	583,706	1,151,472	1,001,908	169,763	2,914,574	68.2
	Set Net	342	425,472	53,477	83,310	24,532	587,133	13.8
	Drift Net	1,107	440,575	3,607	291,049	30,445	766,783	18.0
	Total	9,174	1,449,753	1,208,556	1,375,887	225,120	4,268,490	100.0

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Table 5. (page 4 of 4)

Area	Gear	Number of Salmon					Total	Percent
		Chinook	Sockeye	Pink	Chum	Coho		
ALEUTIAN ISLANDS AREA TOTAL								
	Seine	0	75	0	0	0	75	100.0
	Total	0	75	0	0	0	75	100.0
NORTH PENINSULA TOTAL								
	Seine	102	125,230	819	210,371	15,777	352,299	19.9
	Set Net	4,087	115,486	70	16,677	64,567	200,887	11.4
	Drift Net	9,997	968,719	2,597	141,648	91,440	1,214,401	68.7
	Total	14,186	1,209,435	3,486	368,696	171,784	1,767,587	100.0
ALASKA PENINSULA AND ALEUTIAN ISLANDS MANAGEMENT AREAS CATCH BY GEAR TYPE								
	Seine	7,827	709,011	1,152,291	1,212,279	185,540	3,266,948	54.1
	Set Net	4,429	540,958	53,547	99,987	89,099	788,020	13.1
	Drift Net	11,104	1,409,294	6,204	432,697	121,885	1,981,184	32.8
	Total	23,360	2,659,263	1,212,042	1,744,583	396,904	6,036,152	100.0
ALASKA PENINSULA AND ALEUTIAN ISLANDS MANAGEMENT AREAS CATCH BY REGION								
	SOUTH PENINSULA	9,174	1,449,753	1,208,556	1,376,267	224,740	4,268,490	70.7
	ALEUTIAN	0	75	0	0	0	75	0.0
	NORTH PENINSULA	14,186	1,209,435	3,486	368,696	171,784	1,767,587	29.3
	Total	23,360	2,659,263	1,212,042	1,744,583	396,904	6,036,152	100.0
	Percent	0.4	44.0	20.1	28.9	6.6	100.0	

Table 6. Alaska Peninsula and Aleutian Islands Management Areas subsistence salmon catch by species estimated from returned permits, 1987.

Area	Permits			Number of Salmon					
	Issued	Returned	Percent Returned	Chinook	Sockeye	Pink	Chum	Coho	Total
SOUTH PENINSULA									
Sand Point	84	62	73.8	87	2,018	1,160	1,114	1,508	5,887
King Cove	39	28	71.8	3	2,320	206	334	1,662	4,525
Cold Bay	30	24	80.0	0	620	13	54	155	842
False Pass	12	9	75.0	14	103	163	389	443	1,112
Total	165	123	74.6	104	5,061	1,542	1,891	3,768	12,366
NORTH PENINSULA									
Nelson Lagoon	10	9	90.0	22	245	5	14	254	540
Port Heiden	10	7	70.0	66	193	0	36	193	524
Other	6	5	83.3	1	278	0	2	278	289
Total	26	21	80.8	89	716	5	52	725	1,353
ALEUTIAN ISLANDS AREA									
Unalaska	81	49	60.5	0	1,097	1,780	151	378	3,406
Other	0	0	0.0	0	0	0	0	0	0
Total	81	49	60.5	0	1,097	1,780	151	378	3,406
Total	272	193	71.0	193	6,874	3,327	2,094	4,637	17,125

Table 7. Alaska Peninsula and Aleutian Islands Management Areas salmon spawning escapements by district, 1987.^a

Area	Number of Salmon					Total
	Chinook	Sockeye	Pink	Chum	Coho	
SOUTH PENINSULA						
Southeastern District	0	25,577	692,036	154,205	50	871,868
Southcentral District	0	4,363	790,421	169,267	1,680	965,731
Southwestern District	0	50,658	260,099	327,910	960	639,627
Unimak District	0	0	300	493	0	793
Total Estimated Escapement	0	80,598	1,742,855	651,875	2,690	2,478,019
ALEUTIAN ISLANDS AREA						
Unalaska District	0	18,250	63,100	900	1,320	83,570
Total Estimated Escapement	0	18,250	63,100	900	1,320	83,570
NORTH PENINSULA						
Northwestern District	0	59,565	1,025	413,777	25,200	499,567
Northern District	18,729	576,171	0	164,521	170,496	929,917
Total Estimated Escapement	18,729	635,736	1,025	578,298	195,696	1,429,484
Total	18,729	734,584	1,806,981	1,231,073	199,706	3,991,073

^aEstimated escapements do not include streams which were not surveyed.

Table 8. Shumagin Islands Section commercial salmon catch, June and post-June, 1977-87.

Year	Number of Salmon					Total
	Chinook	Sockeye	Pink	Chum	Coho	
June						
1977	122	45,912	2,001	21,899	0	69,934
1978	319	83,352	54,325	33,425	57	171,478
1979	475	179,139	105,813	40,953	252	326,632
1980 ^a	342	572,090	465,652	71,330	34	1,109,448
1981	1,263	362,520	129,283	57,338	251	550,655
1982	1,554	450,548	686,671	161,308	0	1,300,081
1983	5,277	416,494	15,434	169,277	3	606,485
1984	1,830	256,838	449,188	109,207	14	817,077
1985	2,142	366,607	37,465	133,542	2,466	542,222
1986	<u>560</u>	<u>156,027</u>	<u>141,315</u>	<u>99,048</u>	<u>1</u>	<u>396,951</u>
Average	1,388	288,953	208,715	89,733	308	589,096
1987	1,146	140,567	5,640	37,064	0	184,417
Post-June						
1977 ^b	6	97	0	38	74	215
1978	137	35,785	1,202,198	149,984	40,376	1,428,480
1979	910	145,369	2,076,670	93,527	313,573	2,630,049
1980	1,380	138,438	1,545,827	262,462	233,456	2,181,563
1981	4,009	116,297	1,364,026	307,980	126,955	1,919,267
1982	1,889	67,269	1,638,712	296,426	207,273	2,211,569
1983	6,547	108,365	900,726	220,824	92,403	1,328,865
1984	3,222	96,149	1,786,737	259,497	211,648	2,357,253
1985	461	107,792	1,632,827	205,899	113,193	2,060,172
1986	<u>3,121</u>	<u>341,811</u>	<u>1,497,892</u>	<u>557,332</u>	<u>201,518</u>	<u>2,601,674</u>
Average	2,168	115,737	1,364,562	235,397	154,047	1,871,911
1987	3,388	248,934	542,383	310,540	157,936	1,263,181

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Table 8. (page 2 of 2)

Year	Number of Salmon					Total
	Chinook	Sockeye	Pink	Chum	Coho	
Combined June and Post-June						
1977	128	46,009	2,001	21,937	74	70,149
1978	456	119,137	1,256,523	183,409	40,433	1,599,958
1979	1,385	324,508	2,182,483	134,480	313,825	2,956,681
1980	1,722	710,528	2,011,479	333,792	233,490	3,291,011
1981	5,272	478,817	1,493,309	365,318	127,206	2,469,922
1982	3,443	517,817	2,325,383	457,734	207,273	3,511,650
1983	11,824	524,859	916,160	390,101	92,406	1,935,350
1984	5,052	352,987	2,235,925	368,704	211,662	3,174,330
1985	2,603	474,399	1,670,292	339,441	115,659	2,602,394
1986	<u>3,681</u>	<u>497,838</u>	<u>1,639,207</u>	<u>656,380</u>	<u>201,519</u>	<u>2,998,625</u>
Average	3,557	404,690	1,573,276	325,130	154,335	2,461,007
1987	4,534	389,501	548,023	347,604	157,936	1,447,598

^aThe 1980 June catch includes catches through July 5.

^bFishing time was severely curtailed during June of 1977 to rebuild pink salmon runs on the Alaska Peninsula.

Table 9. The North Peninsula Harbor Point to Strogonof Point commercial sockeye harvest, 1977-87.

Year	Catch Area				Total	
	Harbor Point to Cape Seniavin		Cape Seniavin to Strogonof Point			
	Number	Percent	Number	Percent	Number	Percent
1977	268,700 ^a	73.5	97,000	26.5	365,700	100.0
1978	556,400 ^a	94.5	32,200	5.5	588,600	100.0
1979	1,352,903	87.4	194,362	12.6	1,547,265	100.0
1980	752,144	74.9	252,227	25.1	1,004,371	100.0
1981	1,327,800	95.1	68,900	4.9	1,396,700	100.0
1982	1,009,300	87.6	142,500	12.4	1,151,800	100.0
1983	1,126,200	60.7	729,600	39.3	1,855,800	100.0
1984	637,400	46.2	743,700	53.8	1,381,100	100.0
1985	827,075	45.8	978,154	54.2	1,805,229	100.0
1986	939,131	45.0	1,148,840	55.0	2,087,971	100.0
1987	214,637	23.0	719,351	77.0	933,988	100.0
1977-83 Average	913,350	80.8	216,684	19.2	1,130,034	100.0
1984-87 Average	654,561	42.2	897,511	57.8	1,552,072	100.0
1977-86 Average	879,705	66.7	438,748	33.3	1,318,454	100.0

^aDoes not include statistical area 314-12 in Harbor Point to Cape Seniavin data.

Table 10. Shumagin Islands Section commercial salmon catch by statistical week and species, June and post-June 1987.

Statistical Week	Number of Salmon					Total
	Chinook	Sockeye	Pink	Chum	Coho	
24	399	31,734	158	8,942	0	41,233
25	695	78,667	2,289	19,951	0	101,602
26	<u>52</u>	<u>30,166</u>	<u>3,193</u>	<u>8,171</u>	<u>0</u>	<u>41,582</u>
Total June	1,146	140,567	5,640	37,064	0	184,417
28	1,534	65,303	16,620	40,434	609	124,500
29	1,085	95,845	30,920	61,021	21,416	210,287
30	326	61,806	84,585	134,508	58,485	339,710
31	358	13,854	92,402	39,034	53,047	198,695
32	69	8,377	153,139	27,916	17,014	206,515
33	0	0	0	0	0	0
34	15	784	163,707	5,887	2,289	172,682
35	0	0	0	0	0	0
36	0	549	147	550	1,953	3,199
37	0	1,466	150	997	3,011	5,624
38	1	8	3	5	10	27
39	0	883	710	181	71	1,845
40	<u>0</u>	<u>59</u>	<u>0</u>	<u>7</u>	<u>31</u>	<u>97</u>
Total Post-June	3,388	248,934	542,383	310,540	157,936	1,263,181
Total All Weeks	4,534	389,501	548,023	347,604	157,936	1,447,598

Table 11. Ikatán Peninsula to Cape Lazaref commercial salmon catch by statistical week and species, 1987.

Statistical Week	Number of Salmon					Total
	Chinook	Sockeye	Pink	Chum	Coho	
24	237	24,122	4	25,931	0	50,294
25	534	164,740	219	93,751	0	259,244
26	375	168,627	3,165	88,418	0	260,585
Total June	1,146	357,489	3,388	208,100	0	570,123
28	87	28,509	3,824	22,481	605	55,506
29	8	15,119	1,093	10,403	3,565	30,188
30	8	5,511	485	9,210	8,958	24,172
31	26	3,942	581	7,053	16,961	28,563
32	5	1,269	431	4,124	2,890	8,719
33	0	0	0	0	0	0
34	0	0	0	0	0	0
35	0	0	0	0	0	0
36	0	8	0	130	150	288
37	0	12	0	220	188	420
Total Post-June	134	54,370	6,414	53,621	33,317	147,856
Total All Weeks	1,280	411,859	9,802	261,721	33,317	717,979

Table 12. Cape Lutke commercial salmon catch by statistical week and species, 1987.

Statistical Week	Number of Salmon					Total
	Chinook	Sockeye	Pink	Chum	Coho	
24	287	8,064	1	12,318	0	20,670
25	1,559	135,839	608	102,376	0	240,382
26	1,025	151,005	7,345	83,541	0	242,916
Total	2,871	294,908	7,954	198,235	0	503,968

Table 13. South Unimak and Shumagin Islands Section June commercial sockeye and chum salmon catches, by day, 1987.

Date	Shumagin Islands		South Unimak		Total	
	Sockeye	Chum	Sockeye	Chum	Sockeye	Chum
June 8	114	4	4,383	4,889	4,497	4,893
9						
10	31,620	8,938	10,017	10,880	41,637	19,818
11			17,786	22,480	17,786	22,480
12						
13						
14	23,567	6,803	44,185	24,095	67,752	30,898
15			47,812	30,213	47,812	30,213
16						
17			85,411	63,805	85,411	63,805
18			66,708	54,898	66,708	54,898
19						
20	55,100	13,148	56,463	23,116	111,563	36,264
21			97,780	48,047	97,780	48,047
22			76,509	42,731	76,509	42,731
23						
24						
25			45,022	24,173	45,022	24,173
26	30,166	8,171	100,321	57,008	130,487	65,179
Total	140,567	37,064	652,397	406,335	792,964	443,339

Table 14. Southeast District Mainland fishery commercial salmon catch by statistical week and species, 1987.

Statistical Week	Number of Salmon					Total
	Chinook	Sockeye	Pink	Chum	Coho	
25	19	38,485	0	339	0	38,843
26	26	37,853	2	405	0	38,286
27	31	116,222	60	2,220	0	118,533
28	13	24,049	43	2,418	4	26,527
29	36	22,666	541	7,819	52	31,114
30	5	5,620	1,717	8,131	141	15,614
Total Before 27 July	130	244,895	2,363	21,332	197	268,917
31	151	15,841	31,047	59,455	3,361	109,855
32	70	17,110	156,160	123,615	8,772	305,727
33	0	0	14,417	2,705	0	17,122
34	2	1,994	174,497	25,139	1,850	203,482
36	1	1,472	61	990	616	3,410
37	9	10,475	427	10,076	6,537	27,524
38	0	5,658	0	902	2,132	8,692
39	1	1,959	1	142	633	2,736
41	0	59	0	0	2	61
Total After 26 July	234	54,568	376,610	223,024	23,903	678,339
Total	364	299,463	378,973	244,356	24,100	947,256

Table 15. South Peninsula commercial salmon catch by statistical week, gear type, and species, 1987.

Statistical Week	Number of Salmon					Total	Percent
	Chinook	Sockeye	Pink	Chum	Coho		
Purse Seine							
24	607	25,379	162	14,026	0	40,174	1.4
25	2,266	163,996	2,940	96,126	0	265,328	9.1
26	1,152	155,653	13,118	80,292	0	250,215	8.6
27	0	0	0	0	0	0	0.0
28	1,576	56,652	19,208	52,262	612	130,310	4.5
29	1,130	96,969	33,393	79,163	21,071	231,726	7.9
30	335	54,433	86,965	192,587	57,993	392,313	13.5
31	496	16,702	141,847	110,864	55,047	324,956	11.1
32	139	11,279	399,543	196,436	24,599	631,996	21.7
33	10	483	120,153	84,280	156	205,082	7.0
34	14	755	332,031	27,264	2,993	363,057	12.5
35	0	0	1,265	25,653	24	26,942	0.9
36	0	223	79	21,116	2,259	23,677	0.8
37	0	430	58	21,664	5,009	27,161	0.9
38	0	0	0	0	0	0	0.0
39	0	752	710	175	0	1,637	0.1
40	0	0	0	0	0	0	0.0
41	0	0	0	0	0	0	0.0
Total	7,725	583,706	1,151,472	1,001,908	169,763	2,914,574	100.0
Set Gill Net							
24	35	48,334	1	961	0	49,331	8.4
25	75	60,065	116	3,204	0	63,460	10.8
26	61	132,021	125	3,942	0	136,149	23.2
27	0	0	0	0	0	0	0.0
28	61	58,408	621	8,659	254	68,003	11.6
29	45	51,491	1,482	12,438	1,172	66,628	11.3
30	6	18,625	3,987	10,858	2,410	35,886	6.1
31	37	17,116	17,323	13,199	3,316	50,991	8.7
32	6	15,333	21,252	16,713	1,692	54,996	9.4
33	1	141	1,745	394	8	2,289	0.4
34	3	2,023	6,173	3,762	1,146	13,107	2.2
35	0	0	0	276	0	276	0.1
36	1	1,963	129	1,724	1,296	5,113	0.9
37	9	12,078	519	6,118	10,359	29,083	4.9
38	1	5,666	3	907	2,142	8,719	1.5
39	1	2,090	1	148	704	2,944	0.5
40	0	59	0	7	31	97	0.0
41	0	59	0	0	2	61	0.0
Total	342	425,472	53,477	83,310	24,532	587,133	100.0

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Table 15. (page 2 of 2)

Statistical Week	Number of Salmon					Total	Percent
	Chinook	Sockeye	Pink	Chum	Coho		
Drift Gill Net							
24	300	28,692	0	32,541	0	61,535	8.0
25	473	193,141	62	117,169	0	310,845	40.6
26	270	179,382	520	98,222	0	278,394	36.3
27	0	0	0	0	0	0	0.0
28	28	18,317	764	15,225	362	34,696	4.5
29	2	12,624	935	9,167	2,858	25,586	3.4
30	6	4,158	453	8,319	7,697	20,633	2.7
31	23	3,156	538	6,730	16,515	26,962	3.5
32	5	1,093	335	3,454	2,775	7,662	1.0
33	0	0	0	0	0	0	0.0
34	0	0	0	0	0	0	0.0
35	0	0	0	0	0	0	0.0
36	0	8	0	130	150	288	0.0
37	0	4	0	90	88	182	0.0
38	0	0	0	0	0	0	0.0
39	0	0	0	0	0	0	0.0
40	0	0	0	0	0	0	0.0
41	0	0	0	0	0	0	0.0
Total	1,107	440,575	3,607	291,049	30,445	766,783	100.0
All Gear							
24	942	102,405	163	47,530	0	151,040	3.5
25	2,814	417,202	3,118	216,499	0	639,633	15.0
26	1,483	467,056	13,763	182,456	0	664,758	15.6
27	0	0	0	0	0	0	0.0
28	1,665	133,377	20,593	76,146	1,228	233,009	5.5
29	1,177	161,084	35,810	100,768	25,101	323,940	7.6
30	347	77,216	91,405	211,764	68,100	448,832	10.5
31	556	36,974	159,708	130,793	74,878	402,909	9.4
32	150	27,705	421,130	216,603	29,066	694,654	16.3
33	11	624	121,898	84,674	164	207,371	4.9
34	17	2,778	338,204	31,026	4,139	376,164	8.8
35	0	0	1,265	25,929	24	27,218	0.6
36	1	2,914	208	22,970	2,194	29,078	0.7
37	9	12,512	577	27,872	15,456	56,426	1.3
38	1	5,666	3	907	2,142	8,719	0.2
39	1	2,842	711	323	2,842	4,581	0.1
40	0	59	0	7	59	97	0.0
41	0	59	0	0	2	61	0.0
Total	9,174	1,449,753	1,208,556	1,376,267	224,740	4,268,490	100.0
Percent	0.2	34.0	28.3	32.2	5.3	100.0	

Table 16. The commercial salmon catch, spawning escapement, and total run by species for the Alaska Peninsula and Aleutian Islands Management Areas, 1987.

Area	Species	Number of Salmon		
		Catch	Escapement	Total Run
South Peninsula	Chinook	9,174	0	9,174
Aleutians		0	0	0
North Peninsula		<u>14,186</u>	<u>18,729</u>	<u>32,915</u>
	Total	23,360	18,729	42,089
South Peninsula	Sockeye	1,449,753	80,598	1,530,351
Aleutians		75	18,250	18,325
North Peninsula		<u>1,209,435</u>	<u>635,736</u>	<u>1,845,171</u>
	Total	2,659,263	734,584	3,393,847
South Peninsula	Pink	1,208,556	1,742,855	2,951,411
Aleutians		0	63,100	63,100
North Peninsula		<u>3,486</u>	<u>1,025</u>	<u>4,511</u>
	Total	1,212,042	1,806,980	3,019,022
South Peninsula	Chum	1,376,267	651,876	2,028,143
Aleutians		0	900	900
North Peninsula		<u>368,696</u>	<u>578,298</u>	<u>946,994</u>
	Total	1,744,963	1,231,074	2,976,037
South Peninsula	Coho	224,740	2,690	227,430
Aleutians		0	1,320	1,320
North Peninsula		<u>171,784</u>	<u>195,696</u>	<u>367,480</u>
	Total	396,524	199,706	596,230
South Peninsula	All Fish	4,268,490	2,478,019	6,746,509
Aleutians		75	83,570	83,645
North Peninsula		<u>1,767,587</u>	<u>1,429,484</u>	<u>3,197,071</u>
	Total	6,036,152	3,991,073	10,027,225

Table 17. Estimated age composition of sockeye salmon catches from the Alaska Peninsula Management Area, 1987.

Area	Ages									Total
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	2.4	Other ^a	
SOUTH PENINSULA										
Southeast District Mainland										
Number	0	7,232	4,032	216,713	6,312	542	63,259	104	1,272	299,463
Percent	0.0	2.4	1.3	72.4	2.1	0.2	21.1	0.0	0.4	100.0
Shumagin Island Section (June)										
Number	0	4,278	17,014	86,972	8,985	235	21,951	234	898	140,567
Percent	0.0	3.0	12.1	61.9	6.4	0.2	15.6	0.2	0.7	100.0
Shumagin Island Section (Post-June)										
Number	24	4,606	10,548	146,569	9,286	1,244	75,033	233	1,390	248,934
Percent	0.0	1.9	4.2	58.9	3.7	0.5	30.1	0.1	0.6	100.0
Pavlof Bay										
Number	0	952	544	27,666	650	155	6,319	42	42	36,372
Percent	0.0	2.6	1.5	76.1	1.8	0.4	17.4	0.1	0.1	100.0
Morzhovoi Bay										
Number	0	670	1,508	838	84	0	335	0	0	3,434
Percent	0.0	19.5	43.9	24.4	2.4	0.0	9.8	0.0	0.0	100.0
Ikatan Peninsula-Cape Lazaref (June)										
Number	280	12,319	129,902	115,080	48,734	2,596	47,245	551	552	357,489
Percent	0.1	3.4	36.3	32.2	13.6	0.7	13.2	0.2	0.2	100.0
Ikatan Peninsula-Cape Lazaref (Post-June)										
Number	0	1,786	14,845	15,561	8,899	183	12,900	38	159	54,370
Percent	0.0	3.3	27.3	28.6	16.4	0.3	23.7	0.1	0.3	100.0
Cape Lutke										
Number	413	13,398	125,163	64,546	43,962	1,764	43,172	1,144	1,346	294,908
Percent	0.1	4.5	42.4	21.9	14.9	0.6	14.6	0.4	0.5	100.0

SOUTH PENINSULA TOTAL										
Number	717	45,241	303,556	673,945	126,912	6,719	270,214	2,346	4,462	1,435,537
Percent	0.1	3.2	21.2	46.9	8.8	0.5	18.8	0.2	0.3	100.0

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Table 17. (page 2 of 2)

Area	Ages									Total
	0.2	0.3	1.2	1.3	2.2	1.4	2.3	2.4	Other	
NORTH PENINSULA										
Urilia Bay										
Number	226	52,937	6,757	41,202	36	1,494	498	0	1,268	104,419
Percent	0.2	50.7	6.5	39.5	0.0	1.4	0.5	0.0	1.2	100.0
Swanson Lagoon										
Number	0	7,763	1,755	13,644	1,834	0	6,882	0	78	31,957
Percent	0.0	24.3	5.5	42.7	5.7	0.0	21.5	0.0	0.2	100.0
Nelson Lagoon Section										
Number	609	5,338	24,040	24,763	61,818	623	10,654	214	411	128,471
Percent	0.5	4.2	18.7	19.3	48.1	0.5	8.3	0.2	0.3	100.0
Harbor Point-Cape Seniavin										
Number	88	7,616	13,137	61,943	49,943	573	79,872	322	1,138	214,637
Percent	0.0	3.5	6.1	28.9	23.3	0.3	37.2	0.2	0.5	100.0
Cape Seniavin-Stroganof Point										
Number	199	30,203	60,995	187,668	75,629	1,537	354,781	4,420	3,921	719,351
Percent	0.0	4.2	8.5	26.1	10.5	0.2	49.3	0.6	0.6	100.0

NORTH PENINSULA TOTAL										
Number	1,122	103,857	106,684	329,220	189,260	4,227	452,687	4,956	6,816	1,198,835
Percent	0.1	8.7	8.9	27.5	15.8	0.3	37.7	0.4	0.6	100.0

ALASKA PENINSULA TOTAL										
Number	1,839	149,098	410,240	1,003,165	316,172	10,946	722,901	7,302	11,278	2,634,372
Percent	0.1	5.7	15.6	38.1	12.0	0.4	27.4	0.3	0.4	100.0

^a Other age groups include: 1.1, 2.1, 0.4, 3.1, 3.2, and 3.2.

Table 18. Estimated mean length (mm; mid-eye to tail fork) and sex ratio of sockeye salmon catches from the Alaska Peninsula Management Area, 1987.

Area	Length mm			Sex			
	N	Mean	SE	N	Male	Female	M:F Ratio
SOUTH PENINSULA							
Southeast District Mainland	2,235	593	1	2,548	1,525	1,023	1.5 : 1
Shumagin Island Section June	1,532	578	1	1,670	848	822	1.0 : 1
Shumagin Island Section Post-June	2,601	587	1	2,952	2,952	1,086	2.7 : 1
Pavlof Bay	1,187	588	1	1,313	917	396	2.3 : 1
Morzhovoi Bay	41	550	5	58	35	23	1.5 : 1
Ikatan Peninsula to Cape Lazaref (June)	1,986	547	1	2,231	1,145	1,086	1.1 : 1
Ikatan Peninsula to Cape Lazaref (Post-June)	1,447	560	1	1,733	1,024	709	1.4 : 1
Cape Lutke Section	<u>1,783</u>	<u>539</u>	1	<u>1,994</u>	<u>954</u>	<u>1,040</u>	<u>0.9 : 1</u>
Total	12,812	558 ^a		14,499	8,314	6,185	1.3 : 1
NORTH PENINSULA							
Urilia Bay	1,131	532	1	1,248	656	592	1.1 : 1
Swanson Lagoon	885	562	1	950	419	531	0.8 : 1
Nelson Lagoon Section	4,756	529	1	5,488	2,570	2,918	0.9 : 1
Harbor Point to Cape Seniavin	5,654	541	1	6,028	2,832	3,196	0.9 : 1
Cape Seniavin to Strogonof Point	<u>4,402</u>	<u>565</u>	1	<u>4,695</u>	<u>2,232</u>	<u>2,463</u>	<u>0.9 : 1</u>
Total	16,828	544 ^a		18,409	8,709	9,700	0.9 : 1
Alaska Peninsula Total							
	29,640	550 ^a		32,908	17,023	15,885	1.1 : 1

^aMean weighted by sample size.

Table 19. Estimated age composition of chum salmon catches from the Alaska Peninsula Management Area, 1987.

Area	Ages					Total
	0.2	0.3	0.4	0.5	0.6	
SOUTH PENINSULA						
Southeast District Mainland						
Number	3,294	125,405	114,694	963	0	244,356
Percent	1.3	51.3	46.9	0.4	0.0	100.0
Shumagin Island Section (June)						
Number	303	14,003	21,880	876	0	37,064
Percent	0.8	37.8	59.0	2.4	0.0	100.0
Shumagin Island Section (Post-June)						
Number	6,201	142,812	159,512	2,017	0	310,540
Percent	2.0	46.0	51.4	0.6	0.0	100.0
Canoe Bay						
Number	1,956	34,903	52,695	824	0	90,376
Percent	2.2	38.6	58.3	0.9	0.0	100.0
Pavlof Bay-Long Beach						
Number	7,570	66,801	33,359	243	0	107,974
Percent	7.0	61.9	30.9	0.2	0.0	100.0
Belkofski Bay						
Number	464	4,428	12,861	169	0	17,921
Percent	2.6	24.7	71.8	0.9	0.0	100.0
Ikatan Peninsula-Cape Lazaref (June)						
Number	793	96,808	103,335	6,977	187	208,100
Percent	0.4	46.5	49.7	3.4	0.1	100.0
Ikatan Peninsula-Cape Lazaref (Post-June)						
Number	983	29,655	22,526	455	0	53,621
Percent	1.8	55.3	42.0	0.8	0.0	100.0
Cape Lutke						
Number	1,045	105,705	84,841	6,643	0	198,235
Percent	0.5	53.3	42.8	3.4	0.0	100.0

SOUTH PENINSULA TOTAL						
Number	22,609	620,520	605,703	19,167	187	1,268,187
Percent	1.8	48.9	47.8	1.5	0.0	100.0

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Table 19. (page 2 of 2)

Area	Ages					Total
	0.2	0.3	0.4	0.5	0.6	
NORTH PENINSULA						
Swanson Lagoon						
Number	99	10,462	15,866	1,091	0	27,518
Percent	0.4	38.0	57.7	4.0	0.0	100.0
Bechevin Bay						
Number	1,196	26,407	9,043	404	0	37,050
Percent	3.2	71.3	24.4	1.1	0.0	100.0
Izembek-Moffet Bay Section						
Number	840	112,923	33,169	1,707	0	148,638
Percent	0.6	76.0	22.3	1.1	0.0	100.0
Nelson Lagoon Section						
Number	301	4,645	1,695	18	0	6,659
Percent	4.5	69.8	25.5	0.3	0.0	100.0
Herendeen Bay						
Number	19	3,415	1,148	19	0	4,601
Percent	0.4	74.2	25.0	0.4	0.0	100.0
Harbor Point-Cape Seniavin						
Number	1,720	19,185	74,090	127	24	95,145
Percent	1.8	20.2	77.9	0.1	0.0	100.0
Cape Seniavin-Strogonof Point						
Number	1,327	23,276	22,864	514	9	47,991
Percent	2.8	48.5	47.6	1.1	0.0	100.0
<hr/>						
NORTH PENINSULA TOTAL						
Number	5,502	200,313	157,875	3,880	33	367,602
Percent	1.5	52.7	41.6	1.0	0.0	100.0
<hr/>						
Alaska Peninsula Total						
Number	28,111	820,833	763,578	23,047	220	1,635,789
Percent	1.7	50.2	46.7	1.4	0.0	100.0

Table 20. Estimated mean length (mm; mid-eye to tail fork) and sex ratio of chum salmon catches from the Alaska Peninsula Management Area, 1987.

Area	Length mm			Sex			
	N	Mean	SE	N	Male	Female	M:F Ratio
SOUTH PENINSULA							
Southeast District Mainland	2,427	600	1	2,586	1,385	1,201	1.2 : 1
Shumagin Island Section June	1,310	589	1	1,389	686	703	1.0 : 1
Shumagin Island Section Post-June	2,757	596	1	2,948	1,304	1,644	0.8 : 1
Canoe Bay	1,685	598	1	1,787	893	894	1.0 : 1
Pavlof Bay-Long Beach	1,113	589	1	1,181	533	648	0.8 : 1
Belkofski Bay	425	626	2	452	255	197	1.3 : 1
Ikatan Peninsula to Cape Lazaref June	1,972	577	1	2,102	958	1,144	0.8 : 1
Ikatan Peninsula to Cape Lutke Post June	2,081	580	1	2,232	1,002	1,230	0.8 : 1
Cape Lutke Section	<u>1,595</u>	<u>568</u>	1	<u>1,681</u>	<u>780</u>	<u>901</u>	<u>0.9 : 1</u>
Total	15,365	589 ^a		16,357	7,796	8,562	0.9 : 1
NORTH PENINSULA							
Swanson Lagoon	554	588	1	588	292	296	1.0 : 1
Bechevin Bay	499	576	2	529	332	197	1.7 : 1
Izembek-Moffet Bay Section	2,671	588	1	2,845	1,652	1,193	1.4 : 1
Nelson Lagoon Section	2,018	586	1	2,111	872	1,239	0.7 : 1
Herendeen Bay	480	577	1	490	306	184	1.7 : 1
Harbor Point to Cape Seniavin	4,287	573	0	4,502	1,827	2,675	0.7 : 1
Cape Seniavin to Strogonof Point	<u>3,819</u>	<u>579</u>	1	<u>3,996</u>	<u>1,632</u>	<u>2,364</u>	<u>0.7 : 1</u>
Total	14,328	580 ^a		15,061	6,913	8,148	0.8 : 1
Alaska Peninsula Total							
	29,693	585 ^a		31,418	14,709	16,710	0.9 : 1

^aMean weighted by sample size.

Table 21. Aleutian Islands Management Area commercial salmon catch by statistical week, 1987.

Statistical Week	Number of Salmon					Total	Percent
	Chinook	Sockeye	Pink	Chum	Coho		
27	0	75	0	0	0	75	100.0
Total	0	75	0	0	0	75	100.0
Percent	0.0	100.0	0.0	0.0	0.0	100.0	

Table 22. North Peninsula commercial salmon catch by statistical week, gear type, and species, 1987.

Statistical Week	Number of Salmon					Total	Percent
	Chinook	Sockeye	Pink	Chum	Coho		
Purse Seine							
23	0	384	0	0	0	384	0.1
24	0	700	0	0	0	700	0.2
25	0	17,440	0	0	0	17,440	4.9
26	38	34,902	0	5,152	0	40,092	11.4
27	52	31,112	0	15,031	0	46,195	13.1
28	10	14,114	0	37,228	0	51,352	14.6
29	0	1,584	4	18,052	0	19,640	5.6
30	0	4,416	10	9,271	0	13,697	3.9
31	2	8,305	40	50,833	0	59,180	16.8
32	0	8,896	357	18,707	0	27,960	7.9
33	0	175	348	37,025	4	37,552	10.7
34	0	0	0	0	0	0	0.0
35	0	0	60	10,750	0	10,810	3.1
36	0	2,200	0	1,496	2,400	6,096	1.7
37	0	1,002	0	6,826	13,373	21,201	6.0
38	0	0	0	0	0	0	0.0
Total	102	125,230	819	210,371	15,777	352,299	100.0
Set Gill Net							
23	397	730	0	0	0	1,127	0.6
24	1,014	3,269	0	0	0	4,283	2.1
25	798	8,624	0	656	0	10,078	5.0
26	1,148	23,529	0	1,435	0	26,112	13.0
27	506	21,732	0	2,899	0	25,137	12.5
28	145	19,645	3	3,979	0	23,772	11.8
29	57	19,859	1	1,795	1	21,713	10.8
30	8	8,608	2	969	0	9,587	4.8
31	3	3,852	0	1,690	2	5,547	2.8
32	2	3,622	1	1,838	161	5,624	2.8
33	1	643	11	1,191	1,751	3,597	1.8
34	4	575	22	115	10,946	11,662	5.8
35	4	278	21	66	16,525	16,894	8.4
36	0	131	6	22	22,081	22,240	11.1
37	0	387	3	20	11,939	12,349	6.1
38	0	2	0	2	1,161	1,165	0.6
Total	4,087	115,486	70	16,677	64,567	200,887	100.0

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Table 22. (page 2 of 2)

Statistical Week	Number of Salmon					Total	Percent
	Chinook	Sockeye	Pink	Chum	Coho		
Drift Gill Net							
23	1,142	28	0	25	0	1,195	0.1
24	2,122	711	0	178	0	3,011	0.3
25	3,081	11,262	0	3,052	0	17,396	1.4
26	1,781	67,499	0	23,991	0	93,271	7.7
27	1,061	156,709	20	21,266	0	179,056	14.7
28	432	299,181	27	11,050	0	310,690	25.6
29	191	252,161	44	32,378	9	284,783	23.5
30	112	101,993	69	15,482	6	117,662	9.7
31	36	29,718	68	11,550	53	41,425	3.4
32	2	811	6	2,852	99	3,770	0.3
33	21	18,671	767	12,781	4,483	36,723	3.0
34	9	11,396	629	2,250	15,267	29,551	2.4
35	5	8,954	526	1,401	31,567	42,453	3.5
36	2	4,975	334	555	28,391	34,257	2.8
37	0	2,746	101	2,766	11,339	16,952	1.4
38	0	1,904	6	70	226	2,206	0.2
Total	9,997	968,719	2,597	141,648	91,440	1,214,401	100.0
All Gear							
23	1,539	1,142	0	25	0	2,706	0.2
24	3,136	4,680	0	178	0	7,994	0.5
25	3,879	37,326	0	3,709	0	44,914	2.5
26	2,967	125,930	0	30,578	0	159,475	9.0
27	1,619	209,553	20	39,196	0	250,388	14.2
28	587	332,940	30	52,257	0	385,814	21.8
29	248	273,604	49	52,225	10	326,136	18.4
30	120	115,017	81	25,722	6	140,946	8.0
31	41	41,875	108	64,073	55	106,152	6.0
32	4	13,329	364	23,397	260	37,354	2.1
33	22	19,489	1,126	50,997	6,238	77,872	4.4
34	13	11,971	651	2,365	26,213	41,213	2.3
35	9	9,232	607	12,217	48,092	70,157	4.0
36	2	7,306	340	2,073	52,872	62,593	3.5
37	0	4,135	104	9,612	36,651	50,502	2.9
38	0	1,906	6	72	1,387	3,371	0.2
Total	14,186	1,209,435	3,486	368,696	171,784	1,767,587	100.0
Percent	0.8	68.4	0.2	20.9	9.7	100.0	

Table 23. Estimated age composition of chinook salmon catches from the North Peninsula, 1987.

Area	Ages						Total
	1.1	1.2	1.3	1.4	1.5	1.6	
Nelson Lagoon Section							
Number	17	841	750	3,422	774	18	5,823
Percent	0.3	14.4	12.9	58.8	13.3	0.3	100.0
Harbor Point-Cape Seniavin							
Number	0	274	449	3,078	306	3	4,110
Percent	0.0	6.7	10.9	74.5	7.4	0.1	100.0
Total							
Number	17	1,115	1,199	6,500	1,080	21	9,933
Percent	0.2	11.2	12.1	65.4	10.9	0.2	100.0

Table 24. Estimated mean length (mm; mid-eye to tail fork) and sex ratio of chinook salmon catches from the North Peninsula, 1987.

Area	Length mm			Sex			
	N	Mean	SE	N	Male	Female	M:F Ratio
Nelson Lagoon Section	1,826	759	3	2,035	801	1,234	0.6 : 1
Harbor Point to Cape Seniavin	1,346	802	2	1,466	649	817	0.8 : 1
Total	3,172	777 ^a		3,501	1,450	2,051	0.7 : 1

^aMean weighted by sample size.

Table 25. Estimated age composition of sockeye salmon escapements from the North Peninsula, 1987.

Area	Ages										Total
	0.2	0.3	1.2	0.4	2.1	1.3	2.2	1.4	2.3	2.4	
<hr/>											
Nelson River											
Number	0	0	26,855	0	790	14,218	96,363	0	3,949	0	142,175
Percent	0.0	0.0	18.9	0.0	0.6	10.0	68.7	0.0	2.8	0.0	100.0
<hr/>											
Bear River											
Number	0	0	6,806	0	313	35,905	129,420	152	78,819	905	252,320
Percent	0.0	0.0	2.7	0.0	0.1	14.2	51.3	0.1	31.2	0.4	100.0
<hr/>											
Ilnik Lagoon											
Number	606	10,607	303	1,818	0	11,516	303	303	606	0	26,063
Percent	2.3	40.7	1.2	1.2	0.0	44.2	1.2	1.2	2.3	0.0	100.0
<hr/>											
TOTAL											
Number	606	10,607	33,964	1,818	1,103	61,639	226,086	455	83,374	905	420,558
Percent	0.1	2.5	8.1	0.4	0.3	14.7	53.8	0.1	19.8	0.2	

Table 26. Estimated mean length (mm; mid-eye to tail fork) and sex ratio of sockeye salmon escapements from the North Peninsula, 1987.

Area	Length mm			Sex			
	N	Mean	SE	N	Male	Female	M:F Ratio
Nelson River	179	508	4	210	127	83	1.5 : 1
Bear Lake	1,943	519	1	2,241	1,344	897	1.5 : 1
Ilnik Lagoon	86	583	4	104	68	36	1.9 : 1
Total	2,208	521 ^a		2,555	1,539	1,016	1.5 : 1

^aMean weighted by sample size.

Table 27. Estimated age composition of coho salmon catches from the North Peninsula, 1987.

Area	Ages			Total
	1.1	2.1	3.1	
Nelson Lagoon Section				
Number	22,803	56,820	4,072	83,698
Percent	27.2	67.9	4.9	100.0
Harbor Point-Cape Seniavin				
Number	2,031	2,801	161	4,993
Percent	40.7	56.1	3.2	100.0
Cape Seniavin-Strogonof Point				
Number	4,035	17,156	2,204	23,397
Percent	17.2	73.3	9.4	100.0
Total				
Number	28,869	76,777	6,437	112,083
Percent	25.8	68.5	5.7	100.0

Table 28. Estimated mean length (mm; mid-eye to tail fork) and sex ratio of coho salmon catches from the North Peninsula, 1987.

Area	Length mm			Sex			
	N	Mean	SE	N	Male	Female	M:F Ratio
Nelson Lagoon Section	1,977	578	1	2,181	1,474	707	2.1 : 1
Harbor Point to Cape Seniavin	355	587	2	393	271	122	2.2 : 1
Cape Seniavin to Strogonof Point	1,191	597	1	1,327	813	514	1.6 : 1
Total	3,523	585 ^a		3,901	2,558	1,343	1.9 : 1

^aMean weighted by sample size.

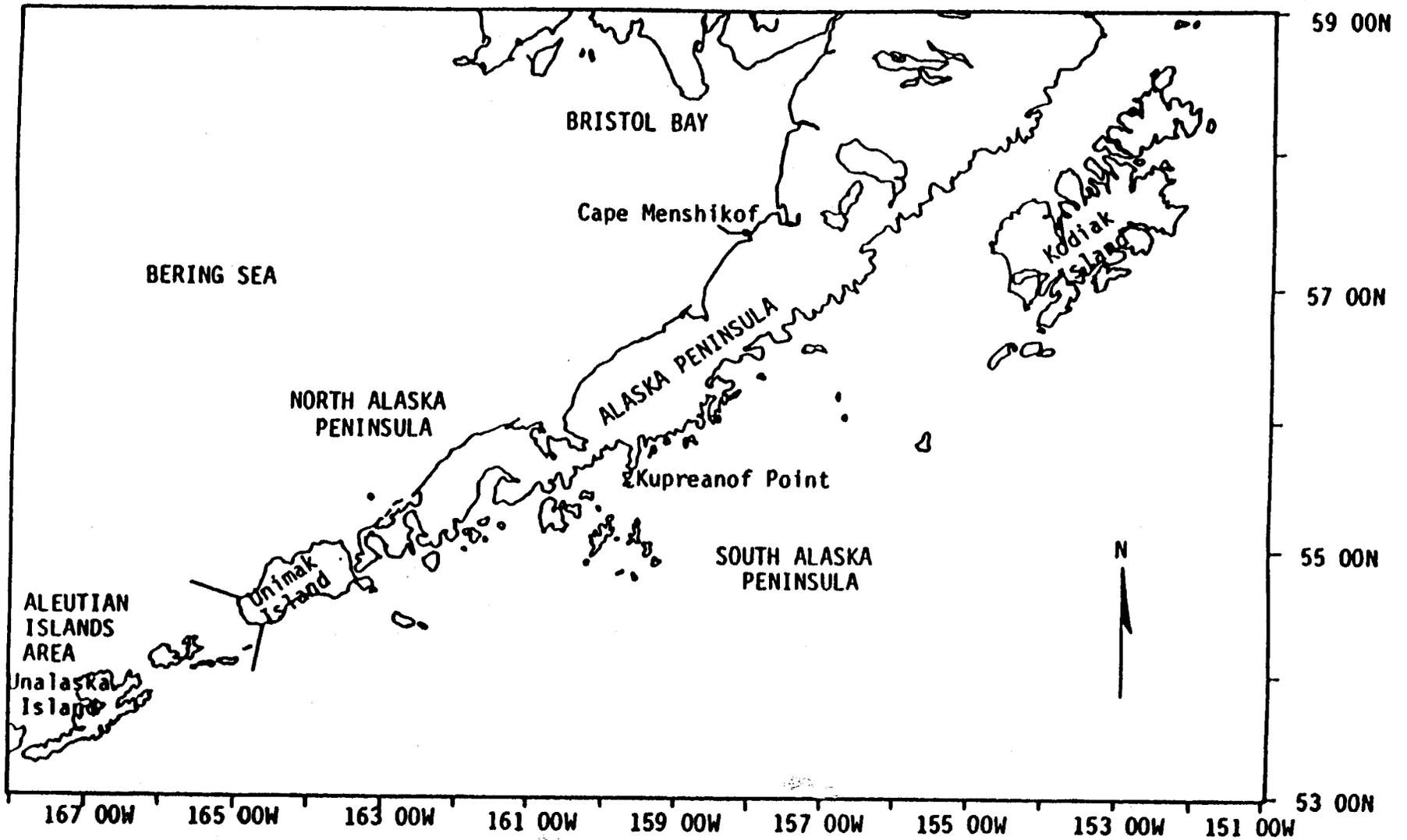


Figure 1. Map of the Alaska Peninsula and Aleutian Islands Management Areas, the study area on the Pacific Ocean portion of the map is from Kupreanof Point to Unalaska Island and on the Bering Sea from Unalaska Island to Cape Menchikof.

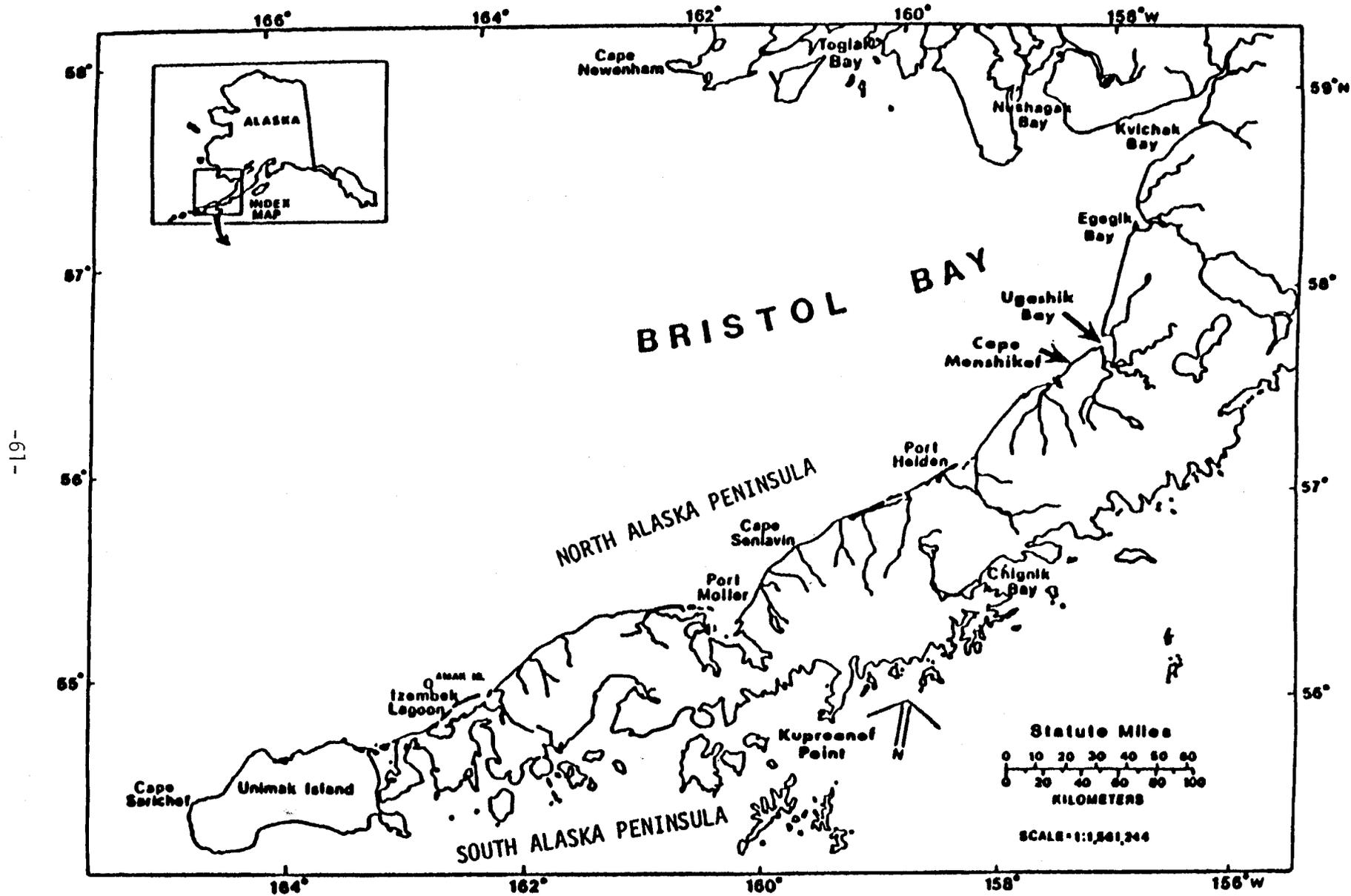


Figure 2. Map of the Alaska Peninsula from Kvichak Bay to Unimak Island.

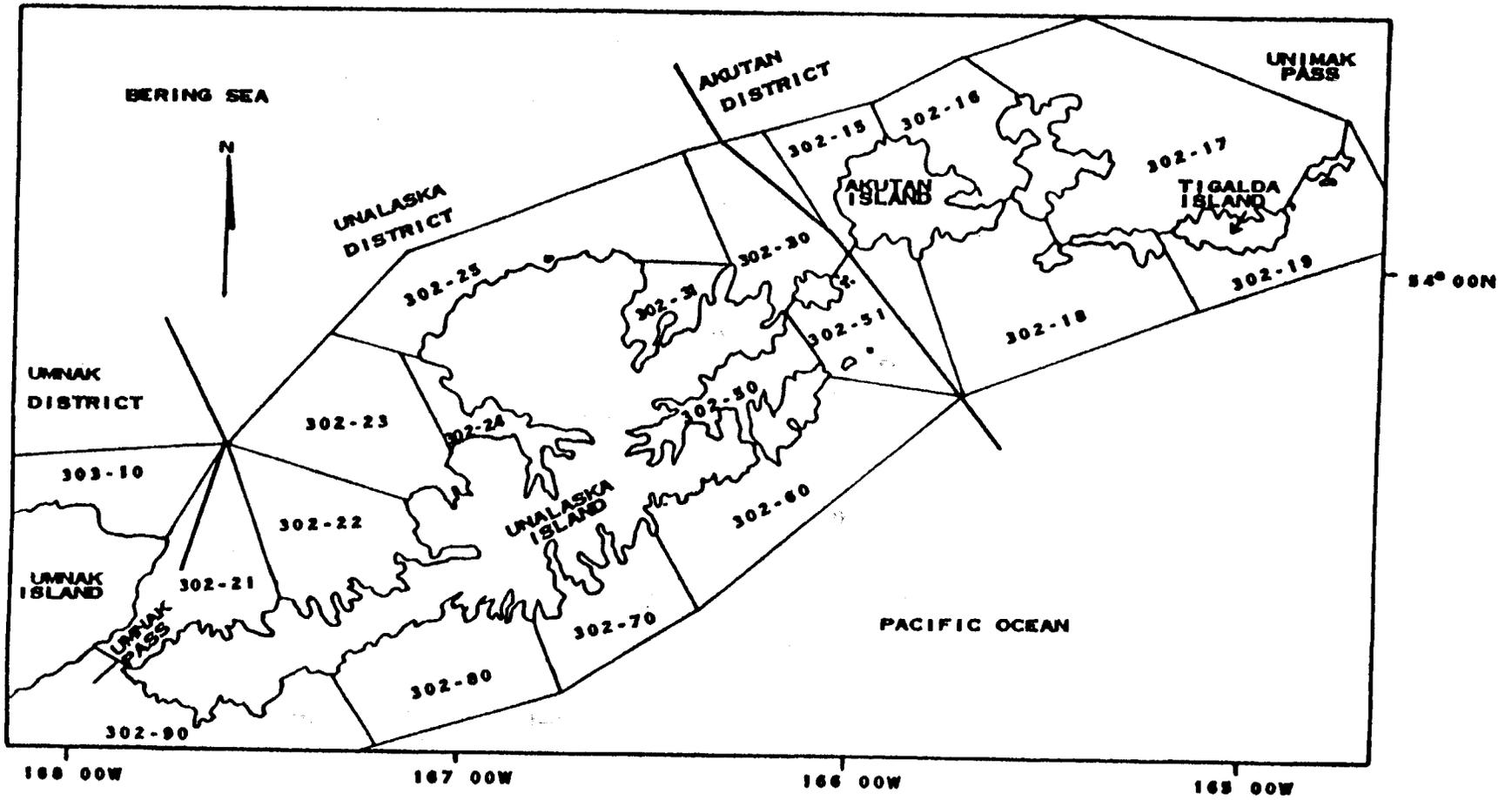


Figure 3. Map of the Aleutian Islands Management Area from Umnak Pass to Unimak Pass with the statistical salmon fishing areas shown.

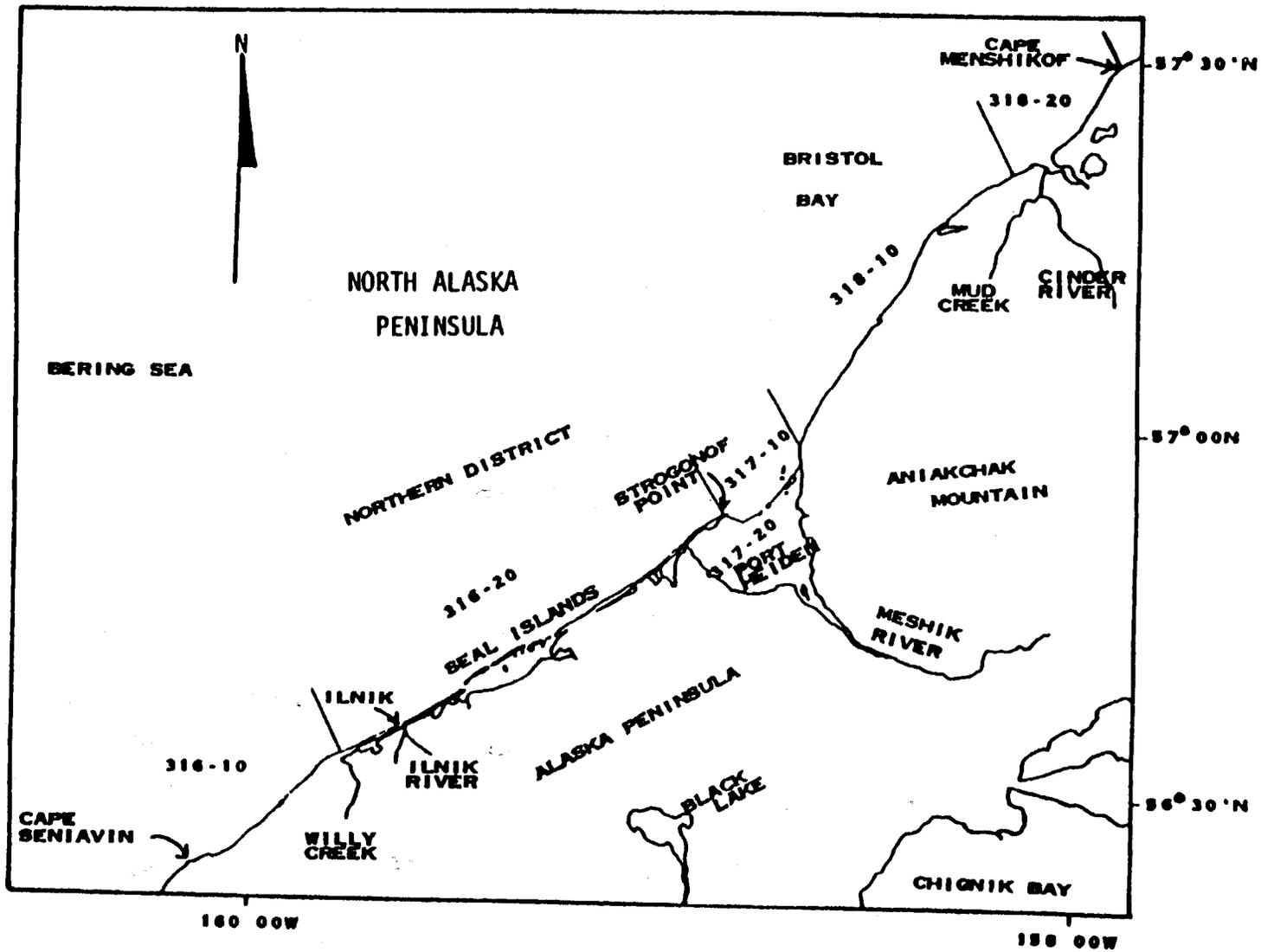


Figure 4. Map of the Alaska Peninsula Management Area from Cape Seniavin to Cape Menshikof with the statistical salmon fishing areas shown.

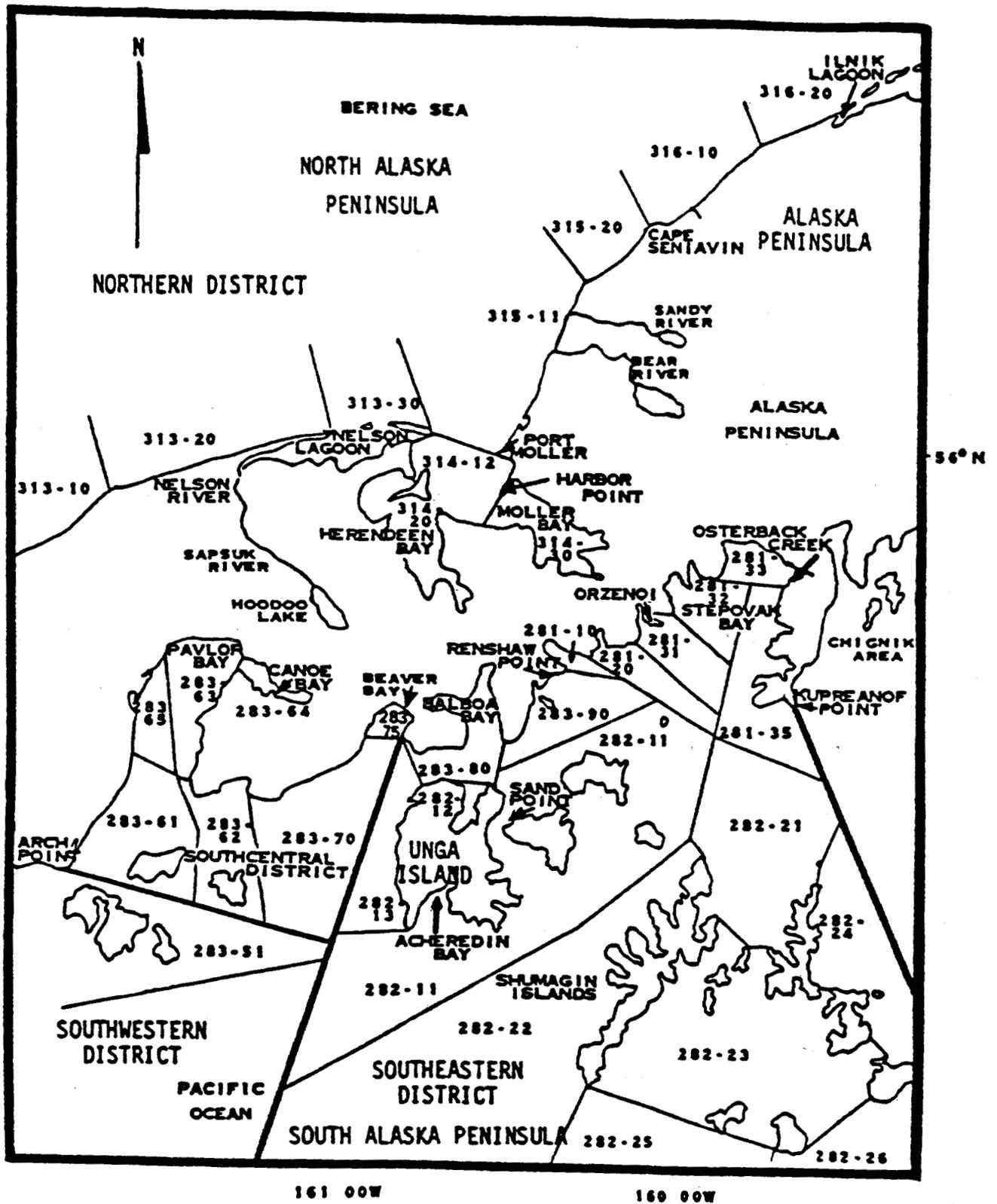


Figure 5. Map of the Alaska Peninsula Management Area from Arch Point to Kupreanof Point with the statistical salmon fishing areas shown.

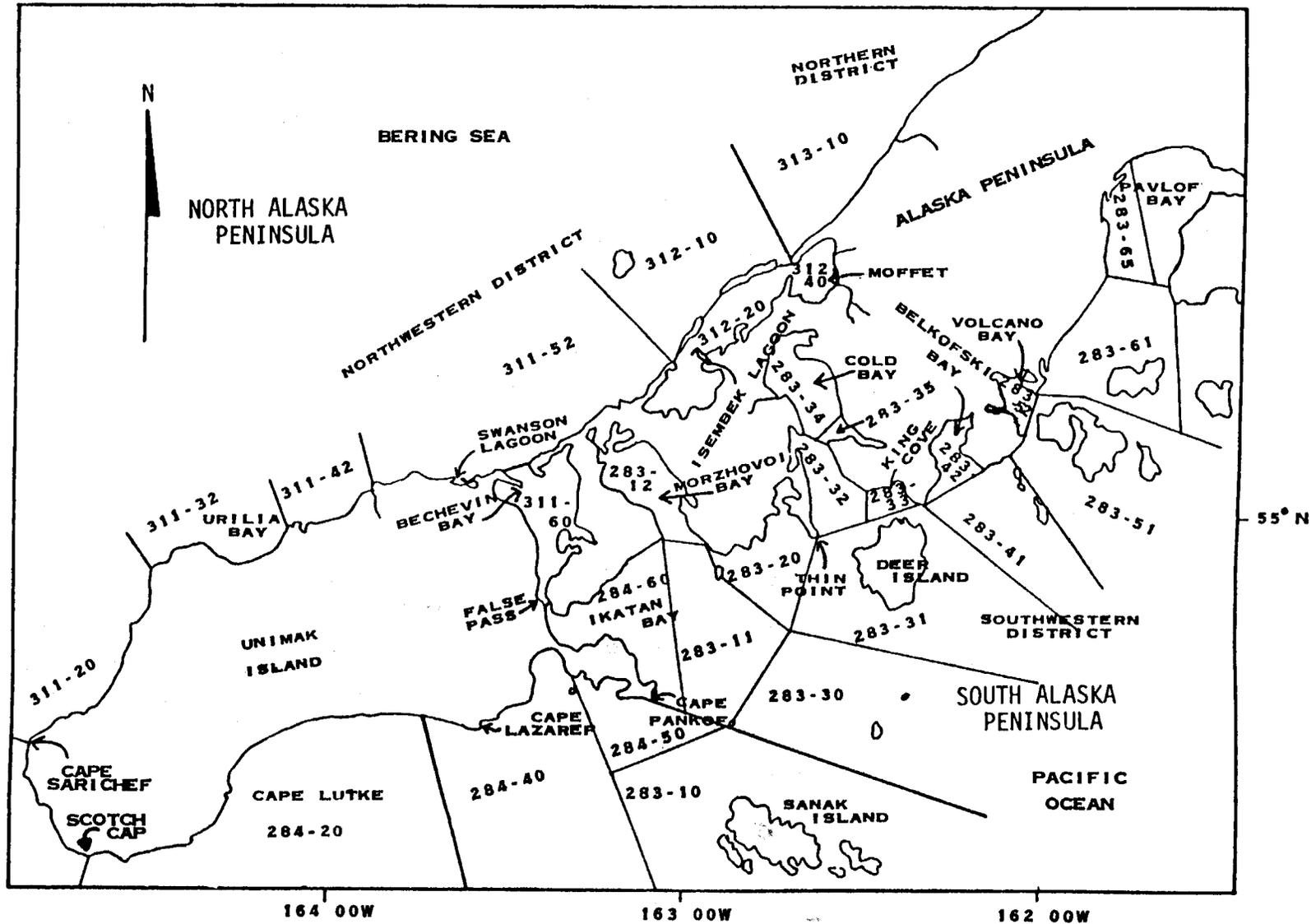


Figure 6. Map of the Alaska Peninsula Management Area from Cape Sarichef to Pavlof Bay with the statistical salmon fishing areas shown.

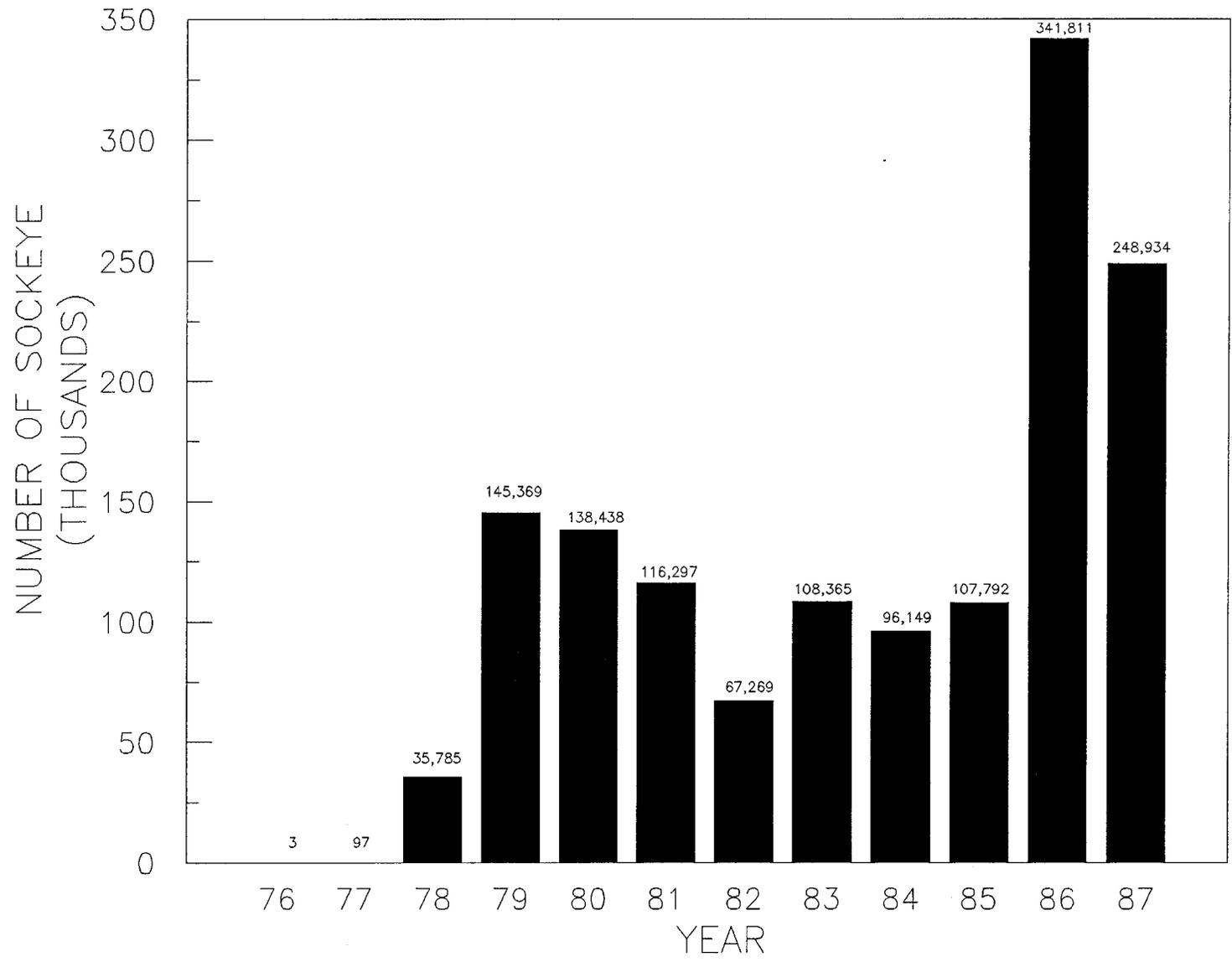


Figure 7. Shumagin Islands Section sockeye catch after June, 1976–87.

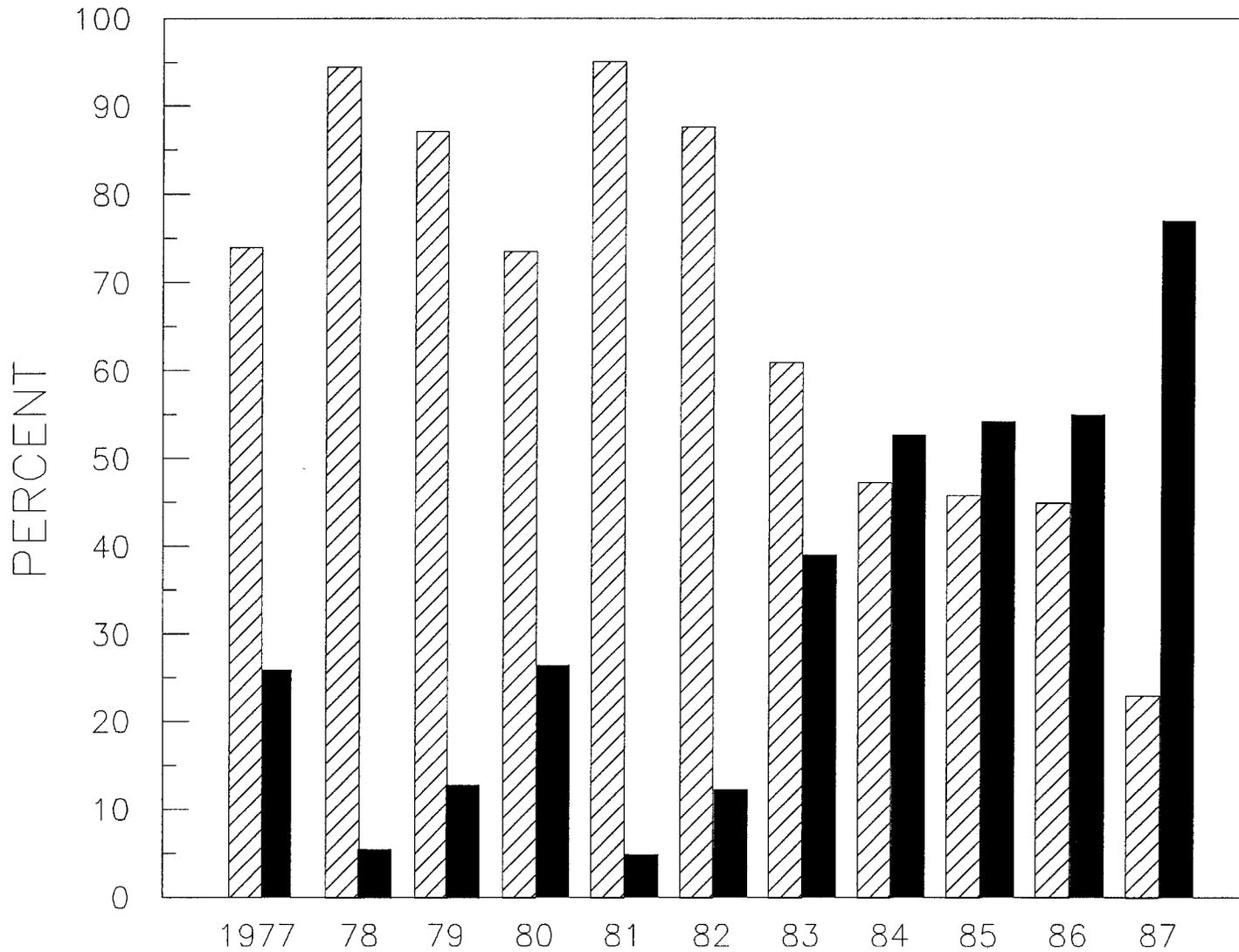


Figure 8. Distribution of annual sockeye salmon catches between the areas of Harbor Point, Port Moller, to Cape Seniavin (hatched bars) and Cape Seniavin to Strogonof Point (black bars), Northern District, Alaska Peninsula Management Area, 1977-87.

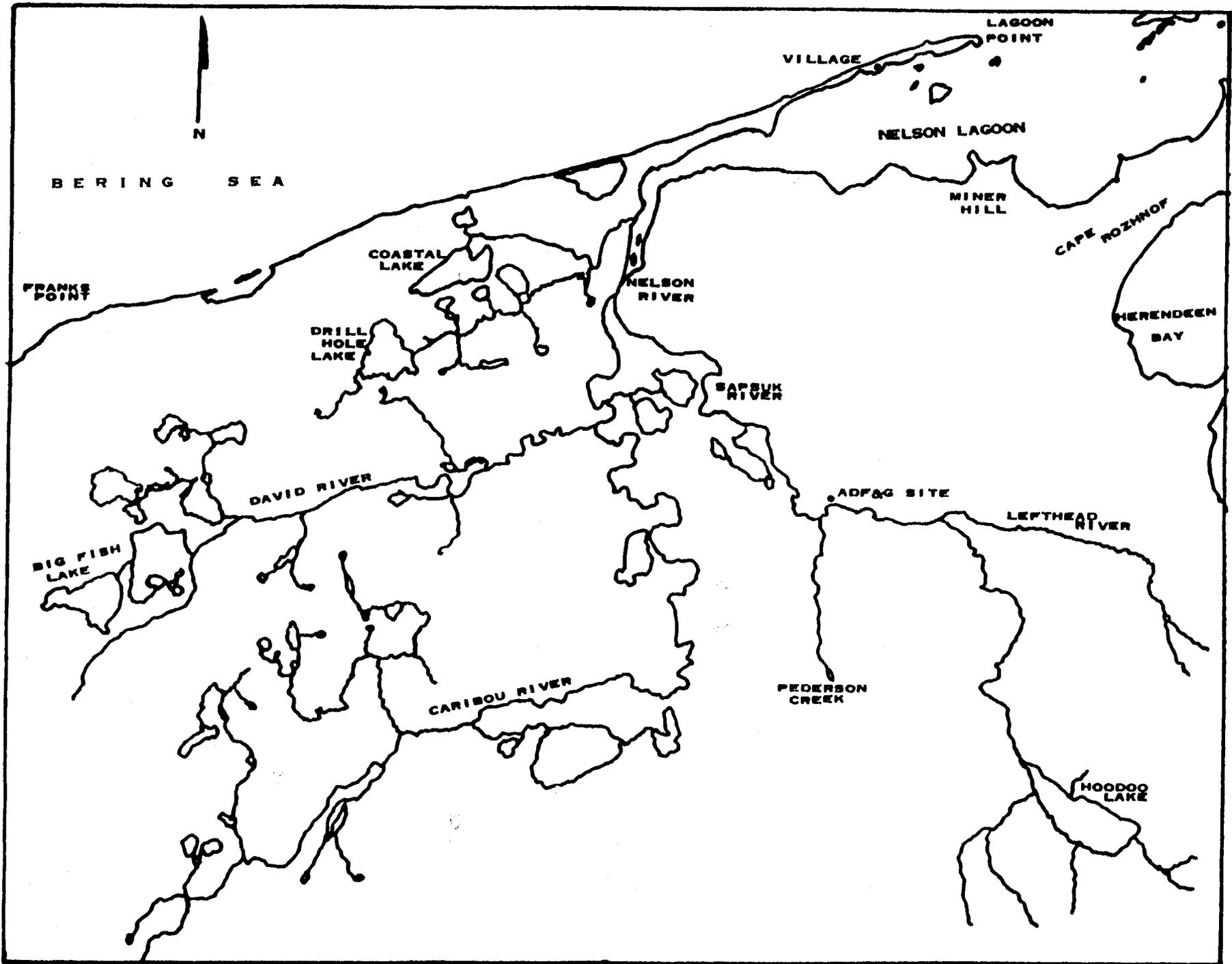


Figure 9. Map of the Nelson River drainage.

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