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Alaska Department of Fish and Game
Division of Commercial Fisheries
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Alaska Peninsula and Aleutian Islands Management Areas

Salmon Catch, Escapement, and Run Statistics, 1988

by

James N. McCullough

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ALASKA PENINSULA AND ALEUTIAN ISLANDS MANAGEMENT AREAS SALMON CATCH, ESCAPEMENT, AND RUN STATISTICS, 1988

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AUTHOR

James N. McCullough is the Alaska Peninsula Herring and the Alaska Peninsula Southeastern District Salmon Management Biologist for Region IV, Alaska Department of Fish and Game, Division of Commercial Fisheries, 211 Mission Road, Kodiak, Ak 99615.

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ABSTRACT

In 1988, the Alaska Peninsula and Aleutian Islands Management Areas salmon catch was 13,368,662 salmon. The catch included 27,880 chinook (*Oncorhynchus tshawytscha*), 3,006,067 sockeye (*O. nerka*), 7,293,175 pink (*O. gorbuscha*), 2,302,034 chum (*O. keta*), and 739,506 coho (*O. kisutch*) salmon. The catch was 7% higher than the 1978-87 average of 12,440,426 salmon and 221% higher than the 1987 harvest. Pink, chum, and coho catches were above the 1978-87 average. A total of 382 Area M and 73 Area T permit holders operated in the Alaska Peninsula and Aleutian Islands Management Areas, and cumulatively they made 12,686 deliveries. The majority (81.9%) of the commercial salmon catch occurred in South Peninsula fisheries. North Peninsula fisheries accounted for most of the remainder of the harvest (16.7%); only 1.4% of the commercial catch occurred in the Aleutian Islands Area. The majority of the pink, chum, and coho harvest occurred in South Peninsula fisheries, and the majority of the chinook and sockeye catch was in North Peninsula fisheries.

The Alaska Peninsula and Aleutian Islands Management Areas escapement was estimated at 7,354,652 salmon composed of 17,436 chinook, 791,550 sockeye, 4,918,030 pink, 1,447,737 chum, and 179,899 coho salmon. The 1988 Alaska Peninsula Management Area escapement for all species combined was 7% above the 1978-87 average of 4,264,010 salmon. The chinook escapement was 21% lower, sockeye escapement was 32% lower, pink escapement was 28% higher, and the chum escapement was 3% higher than the 1978-87 average. The largest chinook escapements were on the North Peninsula at Meshik River, Nelson Lagoon, Steelhead Creek, and Black Hills Creek. The largest sockeye escapements were on the North Peninsula at Bear and Nelson Rivers. Pink escapements were largest (>100,000 salmon) on the South Peninsula at Suzy, Rough Beach, Swedania Point, Mino, Settlement Point, Middle, Fox Island Anchorage East, Southern, and Deadman's Cove Creeks. Chum escapements were largest (>100,000 salmon) at Canoe Bay River and Russel Creek on the South Peninsula and the Joshua Green River on the North Peninsula. Coho escapements were largest at Meshik River, Ilnik Lagoon, and Nelson River.

The North Peninsula chinook catch was mostly (58.9%) age 1.4. Most of the South Peninsula sockeye catch composition was ages 1.3 (31.8%), 2.2 (30.2%), and 2.3 (19.0%), and most of the North Peninsula sockeye catch composition was ages 2.3 (53.1%), 2.2 (20.3%), and 1.3 (17.3%). The South Peninsula chum catch age composition was mostly age 0.3 (57.1%) and age 0.4 (38.6%), and the North Peninsula chum catch age composition was mostly age 0.3 (55.4%) and age 0.4 (40.6%). The South Peninsula coho catch was age 1.1 (26.5%) and age 2.1 (69.2%); the North Peninsula coho catch was mainly age 1.1 (21.8%) and age 2.1 (70.8%).

The average chinook length in the North Peninsula catch was 768 mm, and the male-to-female ratio was 1.0:1. Sockeye lengths averaged 540 mm in the South Peninsula catch and 552 mm in the North Peninsula catch. The sockeye male-to-female ratio for the South Peninsula was 1.4:1; the sockeye male-to-female ratio for the North Peninsula was 0.8:1. Chum lengths averaged 603 mm in the South Peninsula catch and 598 mm in the North Peninsula catch. The chum male-to-female ratio for the South Peninsula was 1.0:1; the chum male-to-female ratio for the North Peninsula was 0.7:1. The average coho length in the South Peninsula catch

was 566 mm and in the North Peninsula catch was 583 mm. The coho male-to-female ratio for the South Peninsula was 1.3:1; the coho male-to-female ratio for the North Peninsula was 2.1:1.

The South Peninsula sockeye escapement age composition (Orzenoi Lake only) was mostly ages 1.3 (51.0%), 2.3 (26.0%), and 2.2 (12.0%); the North Peninsula sockeye escapement age composition was mostly ages 2.3 (29.7%), 2.2 (27.9%), and 1.3 (12.2%). Sockeye escapement lengths averaged 574 mm in the South Peninsula and 513 mm in the North Peninsula. The sockeye escapement male-to-female ratio for the South Peninsula was 0.8:1; the sockeye escapement male-to-female ratio for the North Peninsula was 1.4:1.

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

INTRODUCTION

Description of Study Area

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

The Aleutian Islands Management Area has about 444 salmon streams, and the Alaska Peninsula Management Area has about 275 (ADF&G 1985). The most productive salmon streams are in the Alaska Peninsula Management Area. Commercial salmon fishing occurs only east of Umnak Island. Subsistence and personal use fishing occurs throughout the management areas.

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 1978-87 salmon harvests have ranged from 6,036,152 to 21,073,500, and averaged 12,440,426 salmon (Table 1). Commercial fishing gear is limited to purse seines, hand purse seines, beach seines, drift gill nets, and set gill nets (Table 2, Figure 7). The catch by each gear type within a district varies depending on other fishing opportunities, weather, and gear regulation (ADF&G 1988). 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, chum, and coho 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 Area 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 Area during the last week of July, and in North Peninsula waters during the last week of May. In June, the majority of 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 fishery (Figure 8). The major set gill net effort is in the Southeastern District Mainland, Shumagin Islands Section, and Nelson Lagoon Section fisheries. After June, the majority of the purse seine effort is in South Peninsula pink and chum salmon fisheries, the drift gill net effort is in the Port Moller to Strogonof Point fisheries, and set gill net effort is in the Southeastern District Mainland, Shumagin Islands Section, and Nelson Lagoon Section fisheries. Purse seine fishing occurs in the Aleutian Islands beginning in late July when local salmon stocks are large enough to warrant a fishery.

Alaska Peninsula and Bristol Bay Management Areas Overlap Fishery

The North Peninsula and Bristol Bay Management Areas 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 overlap area is not unique within the State of Alaska, the Yakatage District of the Yakutat Area is also an overlap area with Cook Inlet permit holders, but most overlap areas have been eliminated by regulation. The Board of Fish and Game created the North Peninsula 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 salmon in the Bristol Bay Management Area. Bristol Bay fishermen other than those from Port Heiden first fished the overlap area in 1986 (Shaul and Schwarz 1989).

Major Salmon Interception Fisheries

In the Alaska Peninsula and Aleutian Islands Management Areas, most salmon fisheries are directed on local stocks, but five major interception fisheries do occur in the Alaska Peninsula Management Area.

June South Unimak and Shumagin Islands Section Fisheries

The June South Unimak and Shumagin Islands Section fisheries (ADF&G 1988; Shaul and Schwarz 1988a; Shaul and Schwarz 1989), target Bristol Bay sockeye salmon (Figure 8). 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. Fishing time for both fisheries was based on sockeye and chum salmon catches, chum salmon are harvested incidentally to the sockeye salmon. In 1986, the Board of Fisheries limited the chum salmon catch to a maximum of 400,000 salmon. The chum salmon catch limit was increased to 500,000 salmon for the 1988 season after a 1987 tagging project (Eggers et al. 1988) indicated that Western Alaska chum salmon stocks (of major concern were fall Yukon River chum salmon stocks) were not adversely impacted by the South Peninsula June fisheries.

Southeastern District Mainland Fishery

The Southeastern District Mainland fishery (East and West Stepovak Sections and Beaver and Balboa Bays) target Chignik River sockeye salmon (Figures 9, 10). The Southeastern District Mainland fishery management plan (ADF&G 1988; Shaul and Schwarz 1988b) is in effect from 1 June through 25 July. During this time fishing may be allowed on local stocks in the Northwest Stepovak and Stepovak Flats Sections. Before July 11, only set gill net gear may be used in the fishery; after July 11, set gill net, purse seine, and hand purse seines may be used. Escapement goals at Chignik must always be met before commercial fishing in the Chignik Management Area, Southeastern District Mainland area of the Alaska

Peninsula Management Area, and Cape Igvak Section of the Kodiak Management Area are allowed. The Southeastern District Mainland fishery through 25 July is allocated 6.0% of the total Chignik sockeye catch. The "total Chignik sockeye salmon catch" constitutes those sockeye salmon caught within the Chignik Management Area, plus 80% of the sockeye salmon caught in the Southeastern District Mainland from the eastern most tip of McGinty Point to Suzy Creek and from Dent Point to Kupreanof Point, plus 80% of the sockeye salmon caught in the Cape Igvak Section of the Kodiak Management Area. The Southeastern District Mainland fishery can be divided into two subareas: (1) Orzinski subarea from Suzy Creek to Dent Point where 100% of the sockeye catch has been determined as local (Orzinski) salmon, and (2) 80% mainland subarea from the eastern most tip of McGinty Point to Suzy Creek and from Dent Point to Kupreanof Point where 80% of the sockeye salmon catch has been determined as Chignik River sockeye salmon (Davenport 1961). From about 26 June to 9 July, ADF&G may disallow or restrict fishing in the 80% mainland subarea. The first fishing period in the 80% mainland subarea may not occur before the first fishing period in the Chignik Management Area. All openings are by emergency order and at least 24-h notice will be given before a salmon fishing period. After 25 July, fishing in the 80% mainland subarea may be allowed on local stocks.

Shumagin Islands Section Post-June Fishery

A more recent sockeye salmon interception fishery has developed in selected areas of the Shumagin Islands Section during July and August. Stocks contributing to this fishery are probably Chignik, Kodiak, Cook Inlet, Bristol Bay, and Alaska Peninsula salmon (McCullough 1990). There is currently no guideline harvest level established for this fishery.

South Unimak Post-June Fishery

A fourth interception fishery has developed in selected areas of Ikatan Bay Section of the Southwestern District and Unimak District from late July through mid-August. Stocks contributing to this fishery probably include: (1) Chignik, South Peninsula, and North Peninsula sockeye salmon; (2) South Peninsula, North Peninsula, and Bristol Bay chum salmon; and (3) Chignik, South Peninsula, North Peninsula, Bristol Bay, Kuskokwim, and Yukon coho salmon (Gilbert 1923; Gilbert and Rich 1925; Thorsteinson 1959; Thorsteinson and Merrell 1964).

Ilnik Section July Fishery

The fifth sockeye salmon interception fishery has developed since 1980 in the Strogonof Point area of the Ilnik Section in the North Peninsula from 6 July to about 25 July. Scale pattern analysis indicated that an estimated 296,000 sockeye salmon bound for Bristol Bay Management Area were intercepted in this area in 1988 (Geiger 1989).

Report Objectives

The objectives of this report were to: (1) present the numbers of salmon in the commercial catches, subsistence catches, and escapements by species each statistical week in the Alaska Peninsula and Aleutian Islands Management Areas during 1988; (2) estimate the age and sex composition of harvests and spawning escapements for all salmon species; and (3) 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, and evaluating escapements and management goals (McCullough 1987; McCullough 1989a; McCullough 1989b; McCullough 1989c). This report is intended as a reference document; interpretation and discussion of the 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 (catch summaries were generated from 11/17/88 to 12/29/88) 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.

In addition to stratifying all catches by statistical week, those fisheries with Board of Fisheries approved management plans (South Unimak and Shumagin Islands June salmon management plan and Southeastern District salmon management plan; ADF&G 1988) are stratified by the allocation methods associated with the individual plan. The South Unimak and Shumagin Islands Section are stratified by June and post-June fisheries. Tagging studies during June (Eggers, Rowell, and Barrett 1988; Eggers, Rowell, and Barrett 1989) in the South Unimak and Shumagin Islands Section fisheries have identified 84.7% of the combined Unimak and Shumagin sockeye salmon catch as Bristol Bay stocks. Tagging studies after June (Gilbert 1923; Gilbert and Rich 1925; Thorsteinson 1959; Thorsteinson and Merrell 1964) in South Peninsula waters have shown few Bristol Bay sockeye salmon present. The Southeastern District Mainland fishery can be divided into three strata based on gear restrictions and sockeye salmon allocations. The first strata is based on gear; prior to July 11 only set gill net gear is allowed. The second strata is also based on gear; from July 11 through July 25 purse seine, hand purse seine, and set gill net gear is allowed. Since the allocation method is in effect only through July 25, the third strata is those salmon caught after July 25. The Southeastern District Mainland fishery sockeye salmon allocation method is based on a tagging study (Davenport 1961) that identified 80.0% of the sockeye salmon caught in the East Stepovak, Stepovak Flats, Southwest Stepovak,

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 1 June to 31 August. Salmon passing through the weir were individually counted by species. The Nelson River tower, located about 56 km above the entrance to Nelson Lagoon, was operated from 17 June to 23 July. The sockeye salmon escapement into the Nelson River was estimated from timed fish counts made from a tower on the north bank of the river, 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 ten 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 during the night. The total daily escapement was the combined daylight and night estimated escapements. 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.

Escapements to all other spawning streams were monitored by aerial and foot surveys. Pink and chum salmon total escapement was 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 East Stepovak Section 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 escapement for surveyed streams was calculated by multiplying the escapement count from aerial surveys by 1.92 (Neilson and Geen 1981; Barrett et al. 1985). When weirs and counting towers were lacking, sockeye escapements for shallow, clearwater streams were calculated by multiplying the peak escapement count from aerial or foot surveys 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 was determined by multiplying the peak count from aerial surveys by 2.4 (Minard 1986). No attempt was made to estimate the escapement into systems not monitored by aerial or foot surveys. Escapement estimates of sockeye, pink, and chum salmon in the North and South Peninsula were considered reliable; chinook and coho salmon escapement estimates and all salmon estimates in the Aleutian Islands were considered minimal values.

The data in this report were stratified by statistical week and compiled using a personal computer. Age composition and associated standard errors were computed for the catch and escapement sampled for each statistical week. Total catch by age group within a statistical week was determined by multiplying the statistical week's proportion for a particular age by the catch for that statistical week. Standard error for a particular age group 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 group across

statistical weeks were obtained by simple summation. Age compositions were computed by statistical week for each area sampled.

Sockeye escapement sampling was conducted weekly using a beach seine at Nelson River and 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 statistical weeks 27, 28, and 29 (26 June to 16 July) at Nelson River, and at Bear River samples were collected as planned, except in statistical week 25 (12 June to 18 June). 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 with a $\pm$7% of the true age composition (Thompson 1987).

Sockeye escapement sampling was also conducted at Sandy Lake, Ilnik Lagoon, and Meshik River. A single escapement sample was collected at or near the peak of the escapement at Ilnik Lagoon; at Sandy Lake and Meshik River a single escapement sample was collected after the peak of escapement. Age (scales), sex, and length data were collected from all salmon sampled. For single sampling events, 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). Samples of 287-fish at Sandy Lake, 620-fish at Ilnik Lagoon, and 364-fish at Meshik River were obtained.

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 22 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. Samples were from known fisheries; tenders with catches from mixed areas were not sampled. Purse seine harvests from minor fisheries were occasionally sampled directly from the fishing vessel.

Tender operators purchased fish 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 thorough mixing of salmon by quality and species aboard the tender occurred during subsequent purchases, transport, and off-loading. Because 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 within a sample area. While this insured that samples were randomly selected from each tender, the samples may not be characteristic of the population structure because the distribution of the population was unknown in the fishery.

In the South Peninsula commercial purse seine fisheries for sockeye salmon occur near Orzinski Lake and in Pavlof Bay, and for chum salmon occur in the Southeastern District Mainland, Canoe Bay, Pavlof Bay, Volcano Bay, Belkofski

Bay, King Cove, Cold Bay, and Morzhovoi Bay. In the North Peninsula commercial purse seine fisheries for chum salon occur in Swanson Lagoon, Bechevin Bay, Izembek-Moffet Bay, and Herendeen Bay. These are terminal area fisheries from which commercial catch samples were used to describe the escapement. Seine-caught salmon in terminal area fisheries have been shown to have biological characteristics similar to the spawning population (Roos 1957).

Age was determined by examining scales (Bilton and Ricker 1965; Mosher 1968). Scales were taken from the preferred area, 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 salmon, two scales from each coho salmon, 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; (e.g., if only one coho scale was collected, there was only a 50% chance of having useable age information versus 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 acetate impressions of scales (Clutter and Whitesel 1956). Because of scale reabsorption in sockeye salmon escapement samples, an adaptation of the MIX program (McDonald and Green 1988) was used to determine the saltwater age of reabsorbed scales by examination of the length frequency modes of the sampled population (McCullough 1989c). Ages were recorded in the European notation (Mosher 1968; the first digit is the number of winters the salmon spent in freshwater, the second digit is the number of winters the salmon spent in the ocean, and the total age is the sum of these two numbers plus one to account for the incubation time).

The accuracy of age determination has been tested for sockeye salmon. In a related project using North Peninsula sockeye salmon scales a blind test was used to determine ages. A total of 545 sockeye scales from the commercial catch were read by two experienced readers, and agreement between the readers was 98% (Barry Stratton, Alaska Department of Fish and Game, personnel communication). Because the same experienced reader in the blind test determined all Alaska Peninsula sockeye salmon ages, the sockeye salmon age accuracy should be 98%. The accuracy of age determination of other salmon species was not tested.

Length measurements were taken from mid-eye to fork-of-tail using a caliper or meter stick with 1 mm gradations and reading the measuring device to the nearest millimeter. Accuracy of a length measurement was tested and found to be within $\pm$5 mm. Mean lengths were calculated from an unweighted composite of the data collected from each area sampled.

Weight measurements were taken using a spring scale with 0.1 kg gradations and reading the scale device to the nearest 0.1 kg. Accuracy of a weight measurement was tested and found to be within $\pm$0.1 kg. Mean weights 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. Salmon caught in terminal areas, which generally have some development of secondary sexual characteristics, were probably most accurately sexed. External sex determination of chinook and coho salmon was assumed to have the lowest accuracy rate because secondary sexual characteristics were generally less pronounced and not as reliable as the other species. About 30% of coho and 5% of chinook salmon were internally examined to verify the sex. All salmon not internally examined were sexed using external characteristics.

RESULTS

The basic data used in preparing the summarily results presented in this section are available in McCullough (1989c), which archives the uninterpreted 1988 data.

In 1988, 12,686 landings were make in the Alaska Peninsula and Aleutian Islands Management Areas by 382 Alaska Peninsula-Aleutian Islands permit holders and 74 Bristol Bay permit holders (61 drift gill net and 13 set gill net limited entry permit holders; Shaul 1989; McCullough 1989c). The 1988 catch of 13,368,662 salmon (Table 1) was about 7% higher than the 1978-87 average harvest and more than twice the 1987 catch. The increased catch was primarily due to above average pink, chum, and coho catches.

In 1988, 114 purse seine, 162 drift gill net, and 106 set gill net Alaska Peninsula-Aleutian Islands limited entry permits were fished in the Alaska Peninsula and Aleutian Islands Management Areas. This was a decrease of one Alaska Peninsula-Aleutian Islands limited entry permit for each gear type from the 1987 level. The decrease in limited entry permits fished by Alaska Peninsula-Aleutian Islands permit holders was off-set by an increase of 10 drift gill net and 3 set gill net Bristol Bay permit holders (Shaul and Schwarz 1989).

The total 1988 commercial salmon catch for the Alaska Peninsula and Aleutian Islands Management Areas was 27,880 chinook (0.2%), 3,006,067 sockeye (22.5%), 7,293,175 pink (54.6%), 2,302,034 chum (17.2%), and 739,506 coho salmon (5.5%) (Table 1). Drift gill net gear accounted for the greatest number of landings (5,999), followed by set gill net gear (3,814), and purse seines (2,873). Purse seine gear harvested 9,735,697 salmon (72.8%), drift gill net gear harvested 2,560,701 salmon (19.2%), and set gill net gear harvested 1,072,264 salmon (8.0%; Table 4). The South Peninsula accounted for 81.9%, the Aleutian Islands for 1.4%, and the North Peninsula for 16.7% of the total commercial harvest (Table 4). The South Peninsula catch was harvested primarily by purse seine gear (84.2%), followed by set gill net gear (8.8%), and drift gill net gear (7.1%). The North Peninsula catch was harvested primarily by drift gill net gear (71.6%), followed by purse seine gear (15.0%), and set gill net gear (13.4%). The Aleutian Islands catch was harvested exclusively by purse seine gear (100%).

In the Alaska Peninsula most subsistence and personal use salmon were taken using commercial fishing gear, while in the Aleutian Islands and Cold Bay most were taken using noncommercial fishing gear. The number of salmon retained from the commercial catch for personal use is unknown, the only fishermen required to

report personal use catches are from the Adak-Kagalaska area of the Aleutian Islands Management Area (Figure 11). The Adak-Kagalaska personal use catch was an estimated 676 salmon, which consisted of 503 sockeye, 150 pink, and 23 coho salmon (Shaul and Schwarz 1989). The subsistence salmon harvest from the Alaska Peninsula and Aleutian Islands Management Areas was 18,831 salmon, which consisted of 260 chinook, 6,467 sockeye, 4,293 pink, 1,775 chum, and 6,036 coho salmon (Table 5). Estimates of salmon subsistence use in Atka, Nikolski, and Akutan are unknown because ADF&G does not require subsistence permits in these areas.

Salmon escapement for the Alaska Peninsula and Aleutian Islands Management Areas, for those systems monitored by weirs, aerial surveys, and foot surveys, was estimated at 7,354,652 salmon, which included 17,436 chinook, 791,550 sockeye, 4,918,030 pink, 1,447,737 chum, and 179,899 coho salmon (Table 6). Salmon escapement counts for the Aleutian Islands Management Area (444 estimated salmon streams) are from 22 streams surveyed in the Unalaska District (Table 7). The escapement was 26,400 sockeye and 689,813 pink salmon. No expansion of the escapement data from the surveyed streams to the remaining 422 streams was attempted for the Aleutian Islands Management Area.

Fishing Effort

Fishing effort during the last few years has increased in the Southeastern District, the South Unimak post-June fishery, the Northern District in the Harbor Point to Strogonof Point area, and the North Peninsula and Bristol Bay Management Areas overlap fishery.

During the post-June fishery in the Shumagin Islands Section, set gill net effort began to increase in 1985 (Shaul 1989; McCullough 1990). 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 1987, effort increased to 53 set gill net fishermen, and in 1988 the effort decreased by one. The change in effort since 1985 was largely due to the increased numbers of set gill net permits being used and restricted openings in the mainland portion of the Southeastern District which shifted set gill net effort to the Shumagin Islands Section. In 1988 the Southeastern District Mainland fishery was open only two days (24-25 July) before 26 July. After 26 July management of the fishery shifted from an established management plan to management based on local run assessments (Shaul and Schwarz 1988b; Shaul and Schwarz 1989; Figure 10).

In the Shumagin Islands Section during 1988, liberal fishing time was allowed in the post-June fishery because of large pink and chum salmon runs. The increased effort and liberal fishing time resulted in above average (1978-87) catches for all species and produced record-setting catches of sockeye, pink, and coho salmon (Table 8). The post-June chinook catch of 5,955 salmon was more than twice the 1978-87 average. The sockeye catch of 416,917 salmon was nearly three times the 1978-87 average, while the pink catch of 3,396,332 salmon was about 2.5 times greater, the chum catch was about 1.5 times greater, and the coho catch was more than twice the average (Figure 12).

A second area where effort changed was in the South Unimak District and the Ikatan Bay Section of the Southwestern District (South Unimak fishery). During June no trend in the percentage of fish caught by a gear type has been apparent, but in the post-June fishery a substantial increase in the catch by drift gill net gear has been apparent since 1985, and the catch by set gill net gear has increased (Table 9). The increased gill net catch is at the expense of purse seine gear catches. The post-June coho catch since 1982 has been increasing (Eggers et al. 1989b; Table 10). The coho stock composition is of unknown origin, the harvest occurs well in advance of the time that coho enter terminal South Peninsula harvest areas. The increased harvest has created widespread concern from western and central Alaska fishermen.

A third area where effort has increased was in the Northern District from Cape Seniavin to Strogonof Point. Beginning in 1983 drift gill net fishermen shifted fishing effort in the Northern District eastward (Table 11; Figure 13). 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 1988). 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. During the 1973-82 period, sockeye catches in the Cape Seniavin to Strogonof Point area averaged 15.7% of the Harbor Point to Strogonof Point catch, compared to the 1983-88 period when the catch increased to an average of 56.6% of the total (Table 11). The recent shift in effort caused a redistribution of the Harbor Point to Strogonof Point catch.

A fourth area where effort increased was in the North Peninsula-Bristol Bay overlap fishery located west of Port Heiden. This fishery has the potential, many Bristol Bay fishermen have expressed interest in participating, of becoming very large. Prior to 1986, Bristol Bay drift gill net permit holders did not fish west of Port Heiden. In 1988, about 19 Bristol Bay drift gill net permit holders, in addition to the regular Port Heiden and Cinder River fishermen, fished the Ilnik Section post-July fishery (Shaul and Schwarz 1989). This fishery occurs from August through September when Bristol Bay salmon runs are believed to be over and late sockeye runs into Bear Lake and Nelson Lagoon and coho runs into several North Peninsula streams occurs. In 1988, the Ilnik Section catch by Bristol Bay fishermen was 13,340 sockeye and 18,283 coho salmon during August and September (Table 12).

South Peninsula

The 1988 projected guideline sockeye harvest for the June South Unimak and Shumagin Islands Section fisheries was 1,518,817 salmon (S. Fried, Alaska Department of Fish and Game, Anchorage, personal communication). These fisheries were also restricted to a 500,000-chum catch limit (Shaul and Schwarz 1988a). The Shumagin Islands Section and the South Unimak fisheries were usually opened concurrently. The South Unimak fishery was open during June for five periods for a total of 110-h (McCullough 1989c). During June the Shumagin Islands Section was open for five periods for a total of 149-h. The June South Unimak and

Shumagin Islands Section catch of 1,467,941 salmon included 4,064 chinook, 756,687 sockeye, 180,224 pink, 526,711 chum, and 255 coho salmon (Tables 13-16).

The 1988 catch in the Southeastern District Mainland fishery (Stepovak, Beaver, and Balboa Bays) was 349 chinook, 158,374 sockeye, 1,180,811 pink, 258,832 chum, and 40,621 coho salmon (Table 17). About 15.6% of the catch was landed prior to 26 July, the time period in which the Southeastern District salmon management plan was in effect (ADF&G 1988). The Southeastern District management plan allocates 6% of the total Chignik sockeye salmon catch to Southeastern District mainland fishermen, while the plan was in effect Southeastern District fishermen harvested 2.7% of the total Chignik sockeye salmon catch (Thompson and Fox 1989). Prior to 26 July, the Southeastern District Mainland fishery harvested 214 chinook, 81,160 sockeye, 97,534 pink, 74,743 chum, and 2,318 coho salmon.

The 1988 Shumagin Islands Section catch of 5,025,535 salmon included 7,894 chinook, 699,147 sockeye, 3,489,878 pink, 477,254 chum, and 351,362 coho salmon (Table 13). The South Unimak and Shumagin Islands June salmon management plan allocates 1.5% of the projected Bristol Bay inshore sockeye harvest to the Shumagin Islands Section fishermen. About 8.8% of the total Shumagin Islands Section catch was landed during June. The June catch was 1,939 chinook, 282,230 sockeye, 93,546 pink, 61,946 chum, and 244 coho salmon. During June, salmon catches in the Shumagin Islands Section comprised 24.6% chinook, 40.4% sockeye, 2.7% pink, 13.0% chum, and 0.1% coho salmon of the season total. About 91.2% of the total catch was landed after June. The post-June catch was 5,955 chinook, 416,917 sockeye, 3,396,332 pink, 415,308 chum, and 351,118 coho salmon.

The post-June South Peninsula catch of 9,475,634 salmon included 7,011 chinook, 716,949 sockeye, 6,864,600 pink, 1,381,796 chum, and 505,278 coho salmon, totalling 87% of the total South Peninsula harvest. Excluding the Southeastern District Mainland catch, the South Peninsula total salmon harvest for July through September was 6,662 chinook, 558,575 sockeye, 5,683,789 pink, 1,122,964 chum, and 464,657 coho salmon. The South Peninsula commercial harvest was about 19% above the 1978-87 average catch.

The total 1988 South Peninsula salmon catch of 10,943,575 salmon included 11,075 chinook, 1,473,636 sockeye, 7,044,824 pink, 1,908,507 chum, and 505,533 coho salmon (Table 1). Peak catch occurred for chinook and sockeye salmon during week 26, for pink salmon during week 33, for chum salmon during week 32, and for coho salmon during week 31 (Table 18).

From surveyed streams, the estimated South Peninsula salmon escapement of 4,889,978 salmon included 85,547 sockeye, 4,195,660 pink, 588,779 chum, and 19,992 coho salmon (Table 6). These figures added to the commercial catch, subsistence, and personnel use harvests produced an estimated minimum 1988 South Peninsula run of 15,846,121 salmon (Table 19).

Chinook Salmon

A total of 11,075 chinook salmon were harvested in the South Peninsula in 1988 (Table 1). The catch was 28% higher than the 1978-87 average and 21% greater than the 1987 catch. The Southeastern District Mainland fishery, Ikatan Bay

Section of the Southwestern District, and the Unimak District accounted for 25% of the total chinook harvest. The Shumagin Islands Section provided 71% of the total chinook harvest. Purse seine gear accounted for 86.4% of the total chinook harvest (Table 4). Peak catches occurred during week 29 in the Southeastern District Mainland fishery, week 28 in the Shumagin Islands Section, and week 26 for both the Ikatan Bay Section and the Unimak District (Tables 13-16 and 17). The peak catch for the entire South Peninsula occurred during week 26 (Table 18).

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

Sockeye Salmon

The 1988 South Peninsula sockeye catch was 1,473,636 salmon, 25% lower than the 1978-87 average, but 1% higher than the 1987 harvest (Table 1). The lower-than-average sockeye harvest was primarily a result of the termination of the June fisheries when the chum salmon catch limit was achieved (leaving 762,130 sockeye salmon from the allocation of 1,518,817 sockeye salmon unharvested). The Southeastern District Mainland fishery, Shumagin Islands Section, and the Unimak District accounted for 95% of the harvest. The peak sockeye catch occurred in the Southeastern District Mainland fishery in week 32 (Table 17) and in the Shumagin Islands Section and the Unimak District in week 26 (Tables 13-15). The majority of sockeye salmon caught in the Southeastern District Mainland fishery were taken by set gill net gear (79.3%), in the Shumagin Islands Section by purse seine gear (75.8%), and in the Unimak District by drift gill net gear (66.5%; Table 4).

Sockeye salmon harvested in the South Peninsula were 15.6% age 1.2, 31.8% age 1.3, 30.2% age 2.2, and 19.0% age 2.3 (Table 20). Average sockeye lengths in the South Peninsula ranged from 517 mm (Cape Lutke Section) to 580 mm (Southeastern District Mainland fishery; Table 21). Overall, the average length was 540 mm. The average male-to-female ratio ranged from 1.1:1 (Shumagin Islands Section-June) to 2.0:1 (Pavlof Bay). The male-to-female ratio for the entire South Peninsula catch was 1.4:1. The average weight of sockeye salmon caught in the South Peninsula ranged from 2.26 kg in the Cape Lutke Section to 3.82 kg in the Southeastern District Mainland fishery (Table 22).

The June Shumagin Islands Section sockeye guideline harvest level was 274,485 salmon (S. Fried, Alaska Department of Fish and Game, Anchorage, personnel communication). The sockeye harvest was 282,230 salmon (Table 13). The catch was 17.4% age 1.2, 40.2% age 1.3, and 32.6% age 2.2 (Table 20). The male-to-female ratio was 1.1:1 (Table 21). The average sockeye length in the sampled catch was 548 mm for males, 543 mm for females, and 546 mm for both sexes.

The June South Unimak fishery (Ikatan Peninsula to Cape Lazaref and the Cape Lutke Section) sockeye guideline harvest level was 1,244,332 salmon (S. Fried, Alaska Department of Fish and Game, Anchorage, personnel communication). The sockeye harvest was 474,457 salmon (Table 16). The sockeye harvest was 769,875 salmon less than the allocation primarily due to the 500,000 chum salmon catch limit set by the Board of Fisheries. The sockeye catch was 26.5% age 1.2, 13.7% age 1.3, 47.4% age 2.2, and 10.5% age 2.3 (Table 20). The male-to-female ratio in June was 1.2:1 (Table 21). The average length was 525 mm for males, 519 for

females, and 522 mm for both sexes. The average length in the Cape Lutke Section catch was 517 mm, and the average length in the Ikatan Peninsula to Cape Lazaref June catch was 526 mm.

The Southeastern District Mainland fishery is allocated 6% of the total Chignik sockeye salmon catch (Davenport 1961; Figure 10). The Board of Fisheries approved Southeastern District salmon management plan effects sockeye salmon catches through 25 July in the Southeastern District Mainland fishery of the Alaska Peninsula Management Area, the entire Chignik Management Area, and the Cape Igvak Section of the Kodiak Management Area (ADF&G 1988). The 1988 total sockeye catch of Chignik salmon through 25 July in the Southeastern District Mainland, Chignik, and Cape Igvak fisheries (without adjustments for run timing) was 689,941 salmon (Thompson and Fox 1989). The Southeastern District Mainland catch of Chignik sockeye salmon through 25 July was 19,319 salmon, which was 2.8% of the total Chignik sockeye catch through 25 July (Thompson and Fox 1989). The sockeye catch in the Southeastern District Mainland was 42.6% age 1.3 and 42.0% age 2.3 (Table 20). The male-to-female ratio was 1.7:1 (Table 21). The average length was 590 mm for males, 566 mm for females, and 580 mm for both sexes. The average weight of sockeye in the Southeastern District Mainland was 3.82 kg (Table 22).

The 1988 South Peninsula sockeye catch for July through September was 558,575 salmon, excluding the Southeastern District Mainland catch (Tables 17, 18). Most (75%) of the catch was in the Shumagin Islands Section. In the Shumagin Islands Section fishing time after June was based on chum and pink salmon runs, sockeye and coho salmon are harvested incidentally to the pink and chum salmon fishery. In 1988, pink and chum runs were larger than average; more fishing time than normal was allowed and the additional fishing time resulted in above average sockeye and coho salmon catches. The Shumagin Islands Section post-June sockeye salmon catch of 416,917 salmon was almost three times the 1978-87 average of 140,621 fish (Figure 12, Table 8).

South Peninsula sockeye salmon in the post-June catch, excluding the Southeastern District Mainland, were ages 1.3 (31.4%), 2.2 (16.1%), and 2.3 (20.0%) (Table 20). The male-to-female ratio of the catch was 1.7:1, and the average length was 565 mm (Table 21).

The sockeye escapement into 17 South Peninsula streams was 85,547 fish (Tables 6, 7). Major sockeye salmon spawning systems included Orzinski Lake (20,500 salmon, 24.0%), Mortensen Lagoon (4,600 salmon, 5.4%), Thinpoint (29,600 salmon, 34.6%), and Middle Lagoon (11,400 salmon, 13.3%). Sockeye spawning areas in Acheredin Lake, Canoe Bay River, Long John Lagoon, Kinzarof Lagoon, Russel Creek, and Whalebone Bay accounted for an additional 20% of the escapement, and small systems supported 2% of the escapement.

Pavlof Bay's commercial sockeye catch of 44,567 salmon (79% seine caught; Table 4) was sampled to estimate biological characteristics of the harvest, and these characteristics are assumed to be the same for the spawning escapement (Roos 1957). The sockeye escapement was 44.5% age 1.3, 14.0% age 2.2, and 33.3% age 2.3 (Table 20). The male-to-female ratio was 2.0:1 (Table 21). The average length was 582 mm for males, 566 mm for females, and 577 mm for both sexes. The average weight of the fish was 3.57 kg (Table 22).

Orzinski Lake's sockeye escapement was sampled using a commercial set gill net located near the mouth of the lake outlet. The sockeye were 11.0% age 1.2, 51.0% age 1.3, 12.0% age 2.2, and 26.0% age 2.3 (Table 23). The male-to-female ratio was 0.8:1 (Table 24). The average length was 582 mm for males, 566 mm for females, and 574 mm for both sexes.

Pink Salmon

The 1988 South Peninsula pink harvest of 7,044,824 fish occurred mainly (97%) in post-June fisheries, by purse seine gear (Tables 1, 4). The catch was 69% higher than the 1968-86 even-year average (4,148,119 salmon), and nearly six times the 1987 catch. Most of the catch was in the Shumagin Islands Section (50%), the Southeastern District Mainland fishery (17%), and the Deer Island Section (15%). Peak catches occurred during weeks 32 and 33 (Table 18).

The pink salmon estimated spawning escapement was 4,195,659 fish (Table 7, Table 19). The largest escapements were in Suzy, Rough Beach, Swedania Point, Mino, Settlement Point, Middle, Fox Island Anchorage East, Southern, and Deadman's Cove Creeks. These systems accounted for 53% of the pink salmon escapement. The medium-sized systems of Grub Gulch, Orzinski Lake, Dry Lagoon, Bay Point, Squaw Harbor, Beaver River, Coal Bay, Kitchen Anchorage, Fox Island Anchorage West, Eastern Creek, and Verskin's Bight accounted for 20% of the escapement. Small systems (112 streams) accounted for 27% of the escapement.

Chum Salmon

The 1988 South Peninsula chum catch of 1,908,507 salmon was 33% higher than the 1978-87 average, and 39% higher than the 1987 catch (Table 1). The majority (87.5%) of chum salmon were caught in the Southeastern District Mainland fishery, Shumagin Islands Section, Volcano Bay, Cold Bay, and the South Unimak June and post-June fisheries. Peak catches in the Southeastern District Mainland fishery occurred during week 32, in the Shumagin Islands Section during week 30, in Volcano and Cold Bays during week 33, and in South Unimak fishery during week 26. Seine gear caught the majority (75.2%) of chum salmon in all fisheries except in the Unimak District where drift gill net gear caught 62.5% of the chum salmon in the district (Table 4). The South Peninsula chum catch was 57.1% age 0.3 and 38.6% age 0.4 (Table 25). Average chum length varied from 577 mm (Ikatan Peninsula to Cape Lazaref June) to 632 mm (Morzhovoi Bay), and averaged 603 mm (Table 26). The male-to-female ratio varied from 0.7:1 (Ikatan Peninsula to Cape Lazaref post-June) to 1.4:1 (Morzhovoi Bay). The male-to-female ratio for the entire South Peninsula was 1.0:1. Average chum weights varied from 3.36 kg (Ikatan Peninsula-Cape Lazaref) to 4.76 kg (Southeastern District Mainland) and averaged 3.76 kg (Table 22).

A total of 477,254 chum salmon were caught in the Shumagin Islands Section during 1988 (Table 13). The June chum harvest of 61,946 salmon in the Shumagin Islands Section was 45.2% age 0.3 and 50.2% age 0.4 (Table 25). The number of chum salmon in the June catch would have been greater, but purse seine fishermen released an unknown number of live chum salmon from their catch because of the June fishery 500,000-chum salmon catch limit. The male-to-female ratio was 1.0:1

(Table 26). The average length was 606 mm for males, 580 mm for females, and 592 mm for both sexes. After June, 415,308 chum were harvested in the Shumagin Islands Section (Table 13). The post-June catch was 46.3% age 0.3 and 47.7% age 0.4 (Table 25). The male-to-female ratio was 0.9:1 (Table 26). The average length of post-June males was 619 mm, 608 mm for females, and 613 mm for both sexes. The 1988 Shumagin Islands Section average chum weight in the catch was 3.74 kg (Table 22).

The June South Unimak fishery (Unimak District, Bechevin Bay Section of the Northwestern District, and Ikatan Bay Section of the Southwestern District) catch included 464,765 chum salmon (Table 16). The chum harvest was 64.3% age 0.3 and 32.9% age 0.4 (Table 25). The male-to-female ratio was 1.0:1 (Table 26). The average chum length in the catch was 580 mm. In June, the average weight of chum salmon in the Cape Lutke Section was 3.37 kg (Table 22).

The South Unimak post-June fishery (Otter Cove and Sanak Island Section of the Unimak District and Ikatan Bay Section of the Southwestern District) catch was 133,659 chum salmon (Table 14). The harvest was 55.7% age 0.3 and 40.0% age 0.4 (Table 25). The male-to-female ratio was 0.7:1 (Table 26). The average length of the post-June catch was 586 mm. The average weight of chum salmon in the Ikatan Peninsula to Cape Lazaref fishery for the season was 3.36 kg (Table 22).

The chum harvest in the Southeastern District Mainland fishery was 258,832 salmon with the peak catch occurring during week 32 (Table 17). The chum harvest was 58.9% age 0.3 and 35.7% age 0.4 (Table 25). The male-to-female ratio was 0.9:1 (Table 26). The average length for both sexes was 595 mm and the average weight was 4.76 kg (Table 22).

Purse seine fisheries in terminal areas accounted for most of the remaining 573,997 chum harvest in the South Peninsula. The majority of these salmon were harvested in Canoe, Pavlof, Volcano, and Cold Bays (Table 4). The chum harvested in terminal fisheries were 60.6% age 0.3 and 35.9% age 0.4 (Table 25). The male-to-female ratio was 1.2:1 (Table 26). The average chum length was 606 mm and the average weight was 3.4 kg (Table 22).

The South Peninsula chum escapement was 588,779 salmon (Table 6). Most chum salmon spawned in Canoe Bay River, Volcano Bay, Belkofski Bay, Russell Creek, and Sandy Cove which accounted for 64% of the escapement (Table 7). Moderate-sized escapements occurred in Stepovak River, Coleman Creek, San Diego system, Beaver River, Chinaman Lagoons, Long John Lagoons, Lenard Harbor, and Little John Lagoons which accounted for 16% of the escapement. Smaller systems accounted for the remaining 20% of the escapement.

The commercial chum catch in terminal fisheries at Canoe, Pavlof, Volcano, Belkofski, King Cove, Cold, and Morzhovoi Bays were sampled to determine biological characteristics of the run (Roos 1957). Most (96.3%) of the chum salmon catch in Canoe Bay was taken with seine gear (Table 4). The peak catch occurred during week 30. The escapement was 38.8% age 0.3 and 57.0% age 0.4 (Table 25). The male-to-female ratio was 1.1:1 (Table 26). The average length was 616 mm for males, 607 mm for females, and 611 mm for both sexes. The average weight was 4.35 kg (Table 22).

Most (98.7%) of the chum salmon catch in Pavlof Bay was taken with seine gear (Table 4). The peak catch occurred during week 32. The escapement was 56.9% age 0.3 and 36.7% age 0.4 (Table 25). The male-to-female ratio was 1.2:1 (Table 26). The average length was 610 mm for males, 592 mm for females, and 601 mm for both sexes. The average weight was 3.68 kg (Table 22).

Most (98.8%) of the chum salmon catch in Volcano Bay was taken by seine gear (Table 4). The peak catch occurred during week 33. The escapement was 52.0% age 0.3 and 45.1% age 0.4 (Table 25). The male-to-female ratio was 1.1:1 (Table 26). The average length was 617 mm for males, 603 mm for females and 611 mm for both sexes.

All (except 12) of the chum salmon catch in Belkofski Bay was taken by seine gear (99.9%; Table 4). The peak catch occurred during week 32. The escapement was 49.4% age 0.3 and 45.4% age 0.4 (Table 25). The male-to-female ratio was 1.1:1 (Table 26). The average length was 617 mm for males, 601 mm for females, and 609 mm for both sexes. The average weight was 3.80 kg (Table 22).

Most (91.8%) of the chum salmon catch in King Cove was taken by seine gear (Table 4). The peak catch occurred during week 33. The escapement was 63.4% age 0.3 and 33.9% age 0.4 (Table 25). The male-to-female ratio was 1.0:1 (Table 26). The average length was 604 mm for males, 596 mm for females, and 600 mm for both sexes. The average weight was 3.76 kg (Table 22).

All (except 9) of the chum salmon catch in Cold Bay was taken by seine gear (99.9%; Table 4). The peak catch occurred during week 33. The escapement was 80.7% age 0.3 and 16.8% age 0.4 (Table 25). The male-to-female ratio was 1.2:1 (Table 26). The average length was 619 mm for males, 597 mm for females, and 609 mm for both sexes. The average weight was 3.94 kg (Table 22).

Most (82%) of the Morzhovoi Bay chum salmon catch was taken by seine gear (Table 4). The peak catch occurred during week 32. The escapement was 35.4% age 0.3 and 60.9% age 0.4 (Table 25). The male-to-female ratio was 1.4:1 (Table 26). The average length was 632 mm for males, 631 mm for females, and 632 mm for both sexes. The average weight was 3.88 kg (Table 22).

Coho Salmon

A total of 505,533 coho salmon were harvested in South Peninsula fisheries (Table 1). The catch was more than twice the 1978-87 average harvest and historically was the largest coho catch reported. The Shumagin Islands Section harvest was 69.5% of the total coho catch (Table 13). The peak Shumagin Islands Section catch occurred during weeks 30 and 31. The catch was 26.5% age 1.1 and 69.2% age 2.1 (Table 27). The male-to-female ratio was 1.3:1 (Table 28). The average length was 569 mm for males, 562 mm for females, and 566 mm for both sexes. The average weight was 3.23 kg (Table 22). Coho escapement monitoring in the South Peninsula was limited to 10 index streams (Table 7). The total estimated coho escapement to South Peninsula streams was 50,000 to 100,000 salmon (Shaul and Schwarz 1989).

Aleutian Islands Area

In 1988, the Aleutian Islands Management Area was open for 2,118-h and the only catch was from the Unalaska District. The total catch was 187,881 salmon composed of 4,315 sockeye, 183,109 pink, 450 chum, and 7 coho salmon (Table 1). The catch was the largest since 1984 but only 25% of the 1978-87 average harvest. Peak catch for sockeye and chum salmon occurred during week 31 and for pink salmon during week 34 (Table 29). Escapement monitoring in the Aleutian Islands was limited to surveys of 22 salmon streams on Unalaska Island. The total estimated spawning escapement to these streams was 26,400 sockeye and 689,813 pink salmon (Tables 6, 7). Stream surveys were not conducted late enough in the season to accurately estimate the coho escapement. The 1988 Aleutian Islands Management Area run was at least 908,839 salmon (Table 19).

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

North Peninsula

The total 1988 North Peninsula catch was 2,237,206 salmon composed of 16,805 chinook, 1,528,116 sockeye, 65,242 pink, 393,077 chum, and 233,966 coho salmon (Table 1). About 71.6% of the catch was taken with drift gill nets, 13.4% by set gill nets, and 15.0% by purse seine gear (Table 4). Seine gear accounted for most of the effort in terminal chum salmon fisheries, as well as terminal sockeye fisheries in Urilia Bay, Swanson Lagoon, and Izembek-Moffet Bay. Terminal set gill net fisheries for sockeye and coho salmon occurred in Cinder River, Port Heiden Bay, Ilnik Lagoon, Swanson Lagoon, and Urilia Bay. A terminal set and drift gill net fishery occurs in Nelson Lagoon.

For those streams that were surveyed, the estimated North Peninsula salmon escapement of 1,748,461 salmon included 17,436 chinook, 679,603 sockeye, 32,557 pink, 858,958 chum and 159,907 coho salmon (Tables 6, 7). These figures added to the catch, subsistence, and personnel use fisheries produced an estimated minimum run of 3,987,861 salmon (Table 19).

Chinook Salmon

The 1988 North Peninsula chinook catch was 16,805 salmon (Table 1). The harvest was 15% below the 1978-87 average of 19,848 but 18% more than the 1987 catch. The peak catch for the North Peninsula occurred during week 26 (Table 30). Nelson Lagoon Section accounted for 38.5% of the catch, 21.6% was from the Harbor Point to Cape Seniavin fishery, and 34.6% was from the Inner Port Heiden Section (Table 4). Catches peaked during weeks 26 and 27 in the Nelson Lagoon Section, during week 25 in the Harbor Point to Cape Seniavin fishery, and during week 26 in the Inner Port Heiden Section. The majority (64.7%) of the Nelson Lagoon Section catch was harvested with set gill nets; 94.1% of the harvest in the Harbor Point to Cape Seniavin fishery and 84.9% of the harvest in the Inner Port Heiden Section was with drift gill nets. The Northern District chinook catch was

16.2% age 1.2, 11.5% age 1.3, 58.9% age 1.4, and 13.1% age 1.5 (Table 31). The male-to-female ratio was 1.0:1 (Table 32). The average North Peninsula chinook length was 768 mm. The largest chinook salmon were harvested in the Harbor Point to Cape Seniavin fishery where the average length was 789 mm and the average weight was 8.48 kg (Tables 31, 22). The average weight of chinook salmon harvested in the North Peninsula was 7.58 kg (Table 22).

Chinook escapement to the North Peninsula was about 17,436 salmon (Tables 6,7). The majority of the escapement (66%) was in Nelson River, Steelhead Creek, and Black Hills Creek at 36%, 18%, and 12%, respectively.

Sockeye Salmon

The North Peninsula catch of 1,528,116 sockeye salmon was 13% less than the 1978-87 average but 26% greater than the 1987 catch (Table 1). The majority (81.5%) of the harvest occurred in the Port Moller to Strogonof Point area (Table 4). The Harbor Point to Cape Seniavin area produced 32.6% and the Cape Seniavin to Strogonof Point area produced 48.8% of the North Peninsula sockeye catch. The peak catch for the North Peninsula occurred during week 28, but substantial catches also occurred in weeks 27 and 29 (Table 30). The majority of the North Peninsula sockeye catch was taken with drift gill net gear (84.5%), except in the Inner Port Heiden Section, Ilnik Lagoon, Nelson Lagoon, Izembek-Moffet Bay, Swanson Lagoon, and Urilia Bay Sections where most of the catch was taken by set gill net gear (Table 4). The catch was 17.3% age 1.3, 20.3% age 2.2, and 53.1% age 2.3 (Table 20). The male-to-female ratio for the North Peninsula catch was 0.8:1 (Table 21). Sockeye salmon were largest in the Swanson Lagoon catch (571 mm length and 3.30 kg weight) and smallest in the Urilia Bay catch (535 mm length and 2.57 kg weight; Tables 21, 22). The average length of sockeye salmon sampled from North Peninsula catches was 552 mm and the average weight was 2.83 kg.

The North Peninsula sockeye escapement was 679,603 salmon (Tables 6, 7). Nelson and Bear Rivers (150,650 and 310,023 salmon, respectively; Table 7) accounted for 67.8% of the escapement. The Meshik River (60,160 salmon, 8.9%), Ilnik Lagoon (38,850 salmon, 5.7%), Sandy Lake (43,125 salmon 6.4%), and Whaleback Mountain Creek in Urilia Bay (35,750 salmon, 5.3%) accounted for 26.2% of the escapement. Minor systems accounted for the remaining 6% of the escapement. These escapement were within or above the desired escapement goals (Shaul and Schwarz 1989). Sockeye escapement age composition to the North Peninsula was 12.2% age 1.3, 27.9% age 2.2, and 29.7% age 2.3 (Table 23). The North Peninsula male-to-female ratio was 1.4:1 (Table 24). The average sockeye escapement length was 513 mm. In the escapement sockeye salon were largest in the Meshik River (584 mm) and smallest in Sandy Lake (494 mm).

The Nelson Lagoon system (Coastal and Hoodoo Lakes, and David, Caribou, and Sapsuk Rivers) sockeye escapement was 150,650 salmon (Table 7; Figure 14). About 90% of this escapement, amounting to 135,000 salmon, occurred in the Sapsuk River-Hoodoo Lake drainage, of which about 75% spawned in Hoodoo Lake and about 25% spawned in Sapsuk River (McCullough 1989b). Peak escapement occurred in week 27. The sockeye escapement in Sapsuk River-Hoodoo Lake was 18.7% age 1.2, 13.1% age 2.1, 14.6% age 1.3, 27.1% age 2.2, and 24.2% age 2.3 (Table 23). The male-to-female ratio was 2.1:1 (Table 24). The high male-to-female ratio in the

escapement was a result of the large number of males (40,538) from age classes 1.1, 0.3, 1.2, and 2.1 (Table 23). The average length for males was 477 mm, 536 mm for females, and 495 mm for both sexes (Table 24). The male average length was lowered by the younger age classes 1.1, 1.2, and 2.1 which were mostly males.

The 1988 Bear River sockeye escapement was 310,023 salmon (Table 7; Figure 15). Peak escapement occurred in week 27. The sockeye escapement was 40.6% age 2.2, and 44.8% age 2.3 (Table 23). In Bear River an increase in the proportion of age 2.2 sockeye salmon was accompanied by a decrease in age 2.3 salmon as the season progressed. The male-to-female ratio was 1.4:1 (Table 24). The average length for the males was 477 mm, 521 mm for females, and 495 mm for both sexes.

The sockeye escapement into Sandy Lake was 43,125 salmon (Table 7). The escapement was 62.1% age 1.2 and 34.3% age 1.3 (Table 23). The male-to-female ratio was 1.3:1 (Table 24). The average length for males was 475 mm, 521 mm for females, and 494 mm for both sexes.

The sockeye escapement into the Ilnik Lagoon system, (Ocean and Ilnik Rivers and Willie Creek) was 38,850 salmon (Table 7). The escapement was 40.6% age 0.3 and 43.0% age 1.3 (Table 23). The male-to-female ratio was 1.9:1 (Table 24). The average length for males was 586 mm, 557 mm for females, and 576 mm for both sexes.

The sockeye escapement into the Meshik River was 60,160 salmon (Table 7). The escapement was 28.4% age 0.3, 41.0% age 0.4, and 12.0% age 1.4 (Table 23). The male-to-female ratio was 1.4:1 (Table 24). The average length for males was 594 mm, 571 mm for females, and 584 mm for both sexes.

Pink Salmon

North Peninsula pink runs have historically been of minor importance. The 1988 North Peninsula catch of 65,242 pink salmon was 23% less than the 1968-86 even-year average of 84,973 salmon but almost 3 times greater than the 1986 catch (Table 1). The majority (47.6%) of the catch was in the Harbor Point to Cape Seniavin area, followed by the Bechevin Bay fishery (44.2%; Table 4). The peak catch in North Peninsula fisheries occurred during week 33 (Table 30). The North Peninsula escapement of 32,557 pink salmon spawned in several Northwestern District streams and in Trader Mountain Creek and Bear River in the Northern District (Table 7). The total North Peninsula run was about 97,822 fish (67% catch and 33% escapement; Tables 7, 19).

Chum Salmon

A total of 393,077 chum salmon were caught in North Peninsula fisheries in 1988 (Table 1). The catch was 11% lower than the 1978-87 average but 6% above the 1987 catch. Most of the catch occurred in the Izembek-Moffet Bay Section (28.5%), the Harbor Point to Cape Seniavin fishery (22.3%), and in Herendeen Bay (15.7%; Table 4). Distribution of the catch by gear type was 57.7% purse seine, 35.2% drift gill net, and 7.1% set gill net. The peak catch for the North Peninsula occurred during week 28 (Table 30). The North Peninsula catch was 55.4% age 0.3 and 40.6% age 0.4 (Table 25). The North Peninsula male-to-female ratio was 0.7:1 (Table 26). The average chum length in the harvest was 598 mm. The average weight of chum salmon sampled from North Peninsula catches ranged from 3.05 kg (Harbor Point to Cape Seniavin) to 4.17 kg (Izembek-Moffet Bay), and was 3.47 kg for the entire North Peninsula (Table 22).

The 1988 North Peninsula chum escapement of 858,958 salmon was about 6% greater than the 1978-86 average and 48% greater than the 1987 escapement (Tables 6, 7). The majority of the escapement was in the Joshua Green River (465,409 salmon, 54%) and Frosty Creek (66,209 salmon, 8%) of the Izembek-Moffet Bay Section, the Herendeen-Moller Bay Section (75,664 salmon, 9%), and the Meshik River (45,767 salmon, 5%; Table 7). The large escapement in the Izembek-Moffet Bay Section was a result of the fishing effort moving to the South Peninsula pink salmon fisheries. The total chum salmon run for the North Peninsula was estimated at 1,252,317 salmon (Table 19).

Herendeen Bay's commercial catch of 61,743 chum salmon (90.3% seine caught), Izembek-Moffet Bay's Section 112,172 chum salmon (96.8% seine caught), and the Bechevin Bay-Swanson Lagoon catch of 59,355 chum salmon (90.6% seine caught) were sampled to determine biological characteristics of the fisheries (Roos 1957; Table 4). The characteristics of the catch were assumed to be the same as the spawning escapement. In Herendeen Bay the peak catch occurred during week 30. The escapement was 38.8% age 0.3 and 59.5% age 0.4 (Table 25). The male-to-female ratio was 1.0:1 (Table 26). The average length was 603 mm for males, 588 mm for females, and 596 mm for both sexes. The average weight was 3.61 kg (Table 22). In Izembek-Moffet Bay Section the peak catch occurred during week 30. The escapement was 32.7% age 0.3 and 65.2% age 0.4 (Table 25). The male-to-female ratio was 1.3:1 (Table 26). The average length was 623 mm for males, 605 mm for females, and 615 mm for both sexes. The average weight was 4.17 kg (Table 22).

In the Bechevin Bay-Swanson Lagoon fishery the peak catch occurred during week 28. The escapement was 41.4% age 0.3 and 55.6% age 0.4 (Table 25). The male-to-female ratio was 1.3:1 (Table 26). The average length was 605 mm for males, 593 mm for females, and 600 mm for both sexes.

Coho Salmon

A total of 233,966 coho salmon were harvested in the North Peninsula (Table 1). The catch was 59% greater than the 1978-87 average and 36% greater than the 1987 catch. The increased coho catch observed since 1979 was 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 (40.8%), followed by the Cinder River Section (12.2%), the Inner Port Heiden Section (11.7%), and the Cape Seniavin to Strogonof Point fishery (9.3%; Table 4). Distribution of the catch by gear type was 6.3% purse seine, 53.1% drift gill net, and 40.5% set gill net. Peak catches occurred in the Northern District fisheries during weeks 35 and 36. Peak catches occurred in the Northwestern District during weeks 36 and 37. The catch was 21.8% age 1.1 and 70.8% age 2.1 (Table 27). The male-to-female ratio for the North Peninsula catch was 2.1:1 (Table 28). The high male-to-female ratio was probably the result of not sampling the latter portion of the runs when females are probably more numerous than males. For example, in the Nelson Lagoon Section males comprised 87% of the catch in week 33; this decreased to 50% in week 36. This pattern was consistent in other North Peninsula fisheries sampled which indicates that males enter the fisheries earlier than females. Coho salmon were largest in the Harbor Point to Cape Seniavin fishery (606 mm) and smallest in both the Nelson Lagoon Section and the Cape Seniavin to Strogonof Point fishery (579 mm). The average coho length in the North Peninsula catch was 583 mm. Average weights of coho salmon ranged from 3.19 kg in the Nelson Lagoon Section to 3.53 kg in the Harbor Point to Cape Seniavin fishery, and averaged 3.35 kg for the North Peninsula harvest (Table 22).

Coho escapements in the North Peninsula have been poorly monitored due to budget restrictions and survey conditions. The escapement in 10 monitored streams was estimated at 159,907 salmon (Tables 6, 7). Of those streams monitored, Ilnik Lagoon (Ocean, Ilnik, and Unangashak Rivers) had the largest escapement (32%) followed by the Meshik River (26%), the Nelson Lagoon system (27%), and Cinder River (6%).

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Table 1. The commercial salmon catch in the Alaska Peninsula and Aleutian Islands Management Areas by species, 1968-88.

Year	Area	Number of Salmon						Percent
		Chinook	Sockeye	Pink	Chum	Coho	Total	
1968	South Peninsula	1,400	699,800	1,287,100	325,300	31,100	2,344,700	64.6
	Aleutians	0	2,000	902,800	800	100	905,700	25.0
	North Peninsula	4,500	237,100	200	73,500	64,900	380,200	10.5
	Total	5,900	938,900	2,190,100	399,600	96,100	3,630,600	100.0
1969	South Peninsula	1,900	912,800	1,219,400	389,200	10,900	2,534,200	79.6
	Aleutians	0	1,900	242,200	1,500	0	245,600	7.7
	North Peninsula	4,800	321,300	100	28,100	49,100	403,400	12.7
	Total	6,700	1,236,000	1,461,700	418,800	60,000	3,183,200	100.0
1970	South Peninsula	1,800	1,794,600	1,723,400	981,700	32,200	4,533,700	82.3
	Aleutians	0	200	672,500	3,300	100	676,100	12.3
	North Peninsula	3,200	213,000	7,800	50,200	26,400	300,600	5.5
	Total	5,000	2,007,800	2,403,700	1,035,200	58,700	5,510,400	100.0
1971	South Peninsula	2,200	715,500	1,450,100	1,366,600	16,800	3,551,200	88.2
	Aleutians	0	300	45,400	100	0	45,800	1.1
	North Peninsula	2,200	354,200	300	64,200	8,200	429,100	10.7
	Total	4,400	1,070,000	1,495,800	1,430,900	25,000	4,026,100	100.0
1972	South Peninsula	1,300	557,800	78,000	727,500	8,000	1,372,600	83.1
	Aleutians	0	100	2,800	0	0	2,900	0.2
	North Peninsula	1,800	179,500	0	84,700	9,600	275,600	16.7
	Total	3,100	737,400	80,800	812,200	17,600	1,651,100	100.0
1973	South Peninsula	400	330,200	58,000	293,000	6,600	688,200	65.3
	Aleutians	0	100	7,000	0	0	7,100	0.7
	North Peninsula	4,400	171,800	300	155,700	26,900	359,100	34.1
	Total	4,800	502,100	65,300	448,700	33,500	1,054,400	100.0
1974	South Peninsula	500	204,700	99,700	71,500	9,400	385,800	54.5
	Aleutians	0	0	0	0	0	0	0.0
	North Peninsula	5,100	247,900	10,500	35,300	24,000	322,800	45.6
	Total	5,600	452,600	110,200	106,800	33,400	708,600	100.0
1975	South Peninsula	100	268,400	61,700	132,900	0	463,100	62.9
	Aleutians	0	0	0	0	0	0	0.0
	North Peninsula	2,100	233,500	300	8,700	28,200	272,800	37.1
	Total	2,200	501,900	62,000	141,600	28,200	735,900	100.0
1976	South Peninsula	2,100	375,000	2,367,000	532,500	200	3,276,800	81.5
	Aleutians	0	0	0	0	0	0	0.0
	North Peninsula	4,900	641,100	600	73,600	26,000	746,200	18.6
	Total	7,000	1,016,100	2,367,600	606,100	26,200	4,023,000	100.0
1977	South Peninsula	500	311,700	1,448,600	243,200	2,100	2,006,100	75.8
	Aleutians	0	0	0	0	0	0	0.0
	North Peninsula	5,500	471,100	900	129,100	34,100	640,700	24.2
	Total	6,000	782,800	1,449,500	372,300	36,200	2,646,800	100.0
1978	South Peninsula	800	579,500	5,608,800	547,000	60,700	6,796,800	80.5
	Aleutians	0	1,800	38,100	0	0	39,900	0.5
	North Peninsula	14,200	896,200	466,600	163,200	63,300	1,603,500	19.0
	Total	15,000	1,477,500	6,113,500	710,200	124,000	8,440,200	100.0

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Table 1. (page 2 of 3)

Year	Area	Number of Salmon						Percent
		Chinook	Sockeye	Pink	Chum	Coho	Total	
1979	South Peninsula	2,100	1,149,700	6,570,500	483,000	356,500	8,561,800	75.8
	Aleutians	0	12,200	539,400	200	0	551,800	4.9
	North Peninsula	17,100	1,979,500	5,000	65,700	112,800	2,180,100	19.3
	Total	19,200	3,141,400	7,114,900	548,900	469,300	11,293,700	100.01980
1980	South Peninsula	4,800	3,613,000	7,961,500	1,351,200	274,200	13,204,700	71.9
	Aleutians	0	9,200	2,597,500	4,900	0	2,611,600	14.2
	North Peninsula	16,800	1,397,100	301,700	700,200	127,900	2,543,700	13.9
	Total	21,600	5,019,300	10,860,700	2,056,300	402,100	18,360,000	100.0
1981	South Peninsula	10,200	2,255,200	5,035,900	1,770,300	162,200	9,233,800	75.2
	Aleutians	0	5,400	302,800	6,600	200	315,000	2.6
	North Peninsula	18,300	1,844,900	11,200	706,800	155,400	2,736,600	22.3
	Total	28,500	4,105,500	5,349,900	2,483,700	317,800	12,285,400	100.0
1982	South Peninsula	9,800	2,346,000	6,734,900	2,272,500	256,000	11,619,200	76.8
	Aleutians	0	2,700	1,447,800	6,100	0	1,456,600	9.6
	North Peninsula	30,100	1,435,300	12,300	331,100	238,000	2,046,800	13.5
	Total	39,900	3,784,000	8,195,000	2,609,700	494,000	15,122,600	100.0
1983	South Peninsula	26,900	2,556,600	2,827,600	1,707,100	127,700	7,245,900	73.8
	Aleutians	0	4,400	2,000	11,400	0	17,800	0.2
	North Peninsula	29,500	2,093,400	3,400	348,700	75,100	2,550,100	26.0
	Total	56,400	4,654,400	2,833,000	2,067,200	202,800	9,813,800	100.0
1984	South Peninsula	9,200	2,318,000	11,589,300	1,656,500	309,100	15,882,100	75.4
	Aleutians	0	67,200	2,309,700	33,900	0	2,410,800	11.4
	North Peninsula	23,000	1,734,900	27,400	796,700	198,600	2,780,600	13.2
	Total	32,200	4,120,100	13,926,400	2,487,100	507,700	21,073,500	100.0
1985	South Peninsula	7,884	2,214,583	4,438,598	1,393,285	172,514	8,226,864	70.3
	Aleutians	40	2,750	90	14,175	0	17,055	0.2
	North Peninsula	23,553	2,600,589	3,055	670,644	167,740	3,465,581	29.6
	Total	31,477	4,817,922	4,441,743	2,078,104	340,254	11,709,500	100.0
1986	South Peninsula	5,589	1,223,089	4,031,487	1,749,651	235,854	7,245,670	70.6
	Aleutians	11	7,702	42,621	38,819	60	89,213	0.9
	North Peninsula	11,740	2,463,735	22,630	271,216	165,201	2,934,522	28.6
	Total	17,340	3,694,526	4,096,738	2,059,686	401,115	10,269,405	100.0
1987	South Peninsula	9,174	1,449,753	1,208,556	1,376,267	224,740	4,268,490	70.7
	Aleutians	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	1,744,963	396,524	6,036,152	100.0
1988	South Peninsula	11,075	1,473,636	7,044,824	1,908,507	505,533	10,943,575	81.9
	Aleutians	0	4,315	183,109	450	7	187,881	1.4
	North Peninsula	16,805	1,528,116	65,242	393,077	233,966	2,237,206	16.7
	Total	27,880	3,006,067	7,293,175	2,302,034	739,506	13,368,662	100.0
Average 1968-1977								
	South Peninsula	1,220	617,050	979,300	506,340	11,730	2,115,640	77.9
	Aleutians	0	460	187,270	570	20	188,320	6.9
	North Peninsula	3,850	307,050	2,100	70,310	29,740	413,050	15.2
	Total	5,070	924,560	1,168,670	577,220	41,490	2,717,010	100.0

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Table 1. (page 3 of 3)

Year	Area	Number of Salmon						Percent
		Chinook	Sockeye	Pink	Chum	Coho	Total	
Average 1978-1987								
	South Peninsula	8,645	1,970,543	5,600,714	1,430,680	217,951	9,228,532	74.2
	Aleutians	5	11,343	728,001	11,609	26	750,984	6.0
	North Peninsula	19,848	1,765,506	85,677	442,296	147,583	2,460,909	19.8
	Total	28,498	3,747,391	6,414,392	1,884,585	365,559	12,440,426	100.0

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, 1988.

District	Set Gill Net	Drift Gill Net	Purse Seine	Hand Purse Seine	Beach Seine
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, 1988.

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; 282-14; 282-21; 282-22; 282-23; 282-24; 282-25; 282-26
South Central District	
Canoe Bay	283-63; 283-64
Pavlof Bay	283-61; 283-62; 283-65
Southwestern District	
Volcano Bay Section	283-51; 283-52
Belkofski Bay Section	283-42
King Cove	283-33
Cold Bay	283-32; 283-34; 283-35
Deer Island Section	283-31
Thin Point Section	283-20
Morzhovoi Bay Section	283-12
Unimak District	
Ikatan Peninsula to Cape Lazaref	311-60 (June catch) 284-40; 284-50; 284-60
Cape Lutke Section	284-20
ALEUTIAN ISLANDS AREA	
Unalaska District	302-22
NORTH PENINSULA	
Northwestern District	
Dublin Bay Section	311-20
Urilia Bay Section	311-32
Swanson Lagoon Section	311-52
Bechevin Bay Section	311-60 (Post-June catch)
Izembek-Moffet Bay Section	312-10; 312-20; 312-40
Northern District	
Black Hills Section	313-10
Caribou Flats Section	313-20
Nelson Lagoon Section	313-30

-Continued-

Table 3. (page 2 of 2)

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

Table 4. 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, 1988.

Area	Gear	Number of Salmon						Percent
		Chinook	Sockeye	Pink	Chum	Coho	Total	
SOUTH PENINSULA								
Southeastern District								
Southeast Dist. Mainland	Seine	234	32,865	1,091,389	220,925	29,911	1,375,324	12.6
	Set Net	115	125,509	89,422	37,907	10,710	263,663	2.4
	Total	349	158,374	1,180,811	258,832	40,621	1,638,987	15.0
Shumagin Island Section	Seine	1,671	203,391	93,394	51,154	243	349,853	3.2
June	Set Net	268	78,839	152	10,792	1	90,052	0.8
	June Total	1,939	282,230	93,546	61,946	244	439,905	4.0
Shumagin Island Section	Seine	5,862	326,863	3,221,597	385,772	340,745	4,280,839	39.1
Post-June	Set Net	93	90,054	174,735	29,536	10,373	304,791	2.8
	Post Total	5,955	416,917	3,396,332	415,308	351,118	4,585,630	41.9
Shumagin Island Section	Seine	7,533	530,254	3,314,991	436,926	340,988	4,630,692	42.3
Total	Set Net	361	168,893	174,887	40,328	10,374	394,843	3.6
	Total	7,894	699,147	3,489,878	477,254	351,362	5,025,535	45.9
South Central District								
Canoe Bay	Seine	22	2,475	74,049	71,687	63	148,296	1.4
	Set Net	1	1,926	367	2,752	15	5,061	0.1
	Total	23	4,401	74,416	74,439[a]	78	153,357	1.4
Pavlof Bay	Seine	253	35,359	48,835	79,895	3,386	167,728	1.5
	Set Net	6	9,208	92	1,044	232	10,582	0.1
	Total	259	44,567[a]	48,927	80,939[a]	3,618	178,310	1.6
Southwestern District								
Volcano Bay	Seine	112	8,506	195,622	166,637	11,761	382,638	3.5
	Set Net	1	5,829	838	1,973	1,858	10,499	0.1
	Total	113	14,335	196,460	168,610[a]	13,619	393,137	3.6
Belkofski Bay	Seine	5	137	298,734	32,404	50	331,330	3.0
	Set Net	0	10	300	12	0	322	0.0
	Total	5	147	299,034	32,416[a]	50	331,652	3.0
King Cove	Seine	1	137	289,193	26,472	37	315,840	2.9
	Set Net	0	19	2,055	2,360	3	4,437	0.0
	Total	1	156	291,248	28,832[a]	40	320,277	2.9
Cold Bay	Seine	1	842	32,434	166,874	13	200,164	1.8
	Set Net	0	15	0	9	11	35	0.0
	Total	1	857	32,434	166,883[a]	24	200,199	1.8
Deer Island	Seine	0	164	1,041,574	2,394	128	1,044,260	9.5
	Set Net	0	270	350	200	70	890	0.0
	Total	0	434	1,041,924	2,594	198	1,045,150	9.6
Thin Point	Seine	0	81	42,471	9,331	2,750	54,633	0.5
	Set Net	4	3,493	4,063	1,115	7,686	16,361	0.2
	Total	4	3,574	46,534	10,446	10,436	70,994	0.7

-Continued-

Table 4. (page 2 of 4)

Area	Gear	Number of Salmon						Percent
		Chinook	Sockeye	Pink	Chum	Coho	Total	
SOUTH PENINSULA (continued)								
Morzhovoi Bay	Seine	2	33	7,435	7,235	314	15,019	0.1
	Set Net	6	2,112	3,354	1,603	519	7,594	0.1
	Total	8	2,145	10,789	8,838[a]	833	22,613	0.2
Unimak District								
Sanak Islands	Set Net	0	345	110	0	0	455	0.0
	Total	0	345	110	0	0	455	0.0
Ikatan Peninsula	Seine	130	31,226	23,347	30,238	2	84,943	0.8
To Cape Lazaref	Set Net	53	15,229	70	2,903	0	18,255	0.2
June	Drift Net	460	210,180	688	205,056	8	416,392	3.8
	Total	643	256,635	24,105	238,197	10	519,590	4.8
Ikatan Peninsula	Seine	94	16,375	84,490	59,361	565	160,885	1.5
To Cape Lazaref	Set Net	57	9,665	15,985	6,232	8,633	40,572	0.4
Post-June	Drift Net	142	44,657	145,106	68,066	75,445	333,416	3.1
	Total	293	70,697	245,581	133,659	84,643	534,873	4.9
Ikatan Peninsula	Seine	224	47,601	107,837	89,599	567	245,828	2.3
To Cape Lazaref	Set Net	110	24,894	16,055	9,135	8,633	58,827	0.5
Total	Drift Net	602	254,837	145,794	273,122	75,453	749,808	6.9
	Total	936	327,332	269,686	371,856	84,653	1,054,463	9.6
Cape Lutke	Seine	1,182	110,184	62,479	125,657	1	299,503	2.7
	Drift Net	300	107,638	94	100,911	0	208,943	1.9
	Total	1,482	217,822	62,573	226,568	1	508,446	4.7
ALEUTIAN ISLANDS AREA								
Unalaska District	Seine	0	4,315	183,109	450	7	187,881	100.0
	Total	0	4,315	183,109	450	7	187,881	100.0
NORTH PENINSULA								
Northwestern District								
Urilia Bay	Seine	5	27,573	0	4,518	3,886	35,982	1.6
	Set Net	4	8,000	0	36	891	8,931	0.4
	Drift Net	14	5,171	3	2,204	0	7,392	0.3
	Total	23	40,744	3	6,758	4,777	52,305	2.3
Swanson Lagoon	Seine	2	17,027	40	13,412	7,842	38,323	1.7
	Set Net	0	6,966	10	1,324	2,399	10,699	0.5
	Drift Net	1	733	131	979	2,062	3,946	0.2
	Total	3	24,766	181	15,715[a]	12,303	52,968	2.4
Bechevin Bay	Seine	1	335	26,364	40,341	32	67,073	3.0
	Set Net	0	345	495	1,175	2	2,017	0.1
	Drift Net	3	793	1,960	2,124	37	4,917	0.2
	Total	4	1,473	28,819	43,640[a]	71	74,007	3.3
Izembek-Moffet	Seine	4	10,943	1,141	108,538	3,036	123,662	5.5
Lagoon Section	Drift Net	0	525	11	3,634	2	4,172	0.2
	Total	4	11,468	1,152	112,172[a]	3,038	127,834	5.7
Nelson Lagoon Section	Set Net	4,190	136,161	541	8,876	59,743	209,511	9.4
	Drift Net	2,284	50,463	262	3,758	35,681	92,448	4.1
	Total	6,474	186,624	803	12,634	95,424	301,959	13.5

-Continued-

Table 4. (page 3 of 4)

Area	Gear	Number of Salmon						Percent
		Chinook	Sockeye	Pink	Chum	Coho	Total	
NORTH PENINSULA (continued)								
Herendeen Bay	Seine	3	30	4	55,747	0	55,784	2.5
	Set Net	0	2	0	378	0	380	0.0
	Drift Net	0	52	0	5,618	0	5,670	0.3
	Total	3	84	4	61,743[a]	0	61,834	2.8
Moller Bay	Set Net	48	0	0	0	0	48	0.0
	Total	48	0	0	0	0	48	0.0
Harbor Point To Cape Seniavin	Seine	56	11,584	0	4,097	0	15,737	0.7
	Set Net	159	2,774	0	14,071	0	17,004	0.8
	Drift Net	3,409	484,360	31,024	69,608	15,689	604,090	27.0
	Total	3,624	498,718	31,024	87,776	15,689	636,831	28.5
Cape Seniavin To Strogonof Point	Set Net	4	1,764	0	192	0	1,960	0.1
	Drift Net	775	744,232	2,925	47,556	21,775	817,263	36.5
	Total	779	745,996	2,925	47,748	21,775	819,223	36.6
Ilnik Lagoon	Set Net	26	6,507	141	54	16,493	23,221	1.0
	Drift Net	0	1,095	0	26	0	1,121	0.1
	Total	26	7,602	141	80	16,493	24,342	1.1
Outter Port Heiden	Drift Net	0	647	181	11	8,627	9,466	0.4
	Total	0	647	181	11	8,627	9,466	0.4
Inner Port Heiden	Set Net	880	6,834	1	1,943	5,091	14,749	0.7
	Drift Net	4,936	3,117	0	2,857	22,206	33,116	1.5
	Total	5,816	9,951	1	4,800	27,297	47,865	2.1
Cinder River Section	Set Net	1	5	2	0	9,722	9,730	0.4
	Drift Net	0	38	6	0	18,750	18,794	0.8
	Total	1	43	8	0	28,472	28,524	1.3
SOUTH PENINSULA TOTAL	Seine	9,569	768,638	6,607,043	1,436,036	389,969	9,211,255	84.2
	Set Net	902	362,475	145,888	374,033	75,453	958,751	8.8
	Drift Net	604	342,523	291,893	98,438	40,111	773,569	7.1
	Total	11,075	1,473,636	7,044,824	1,908,507	505,533	10,943,575	100.0
ALEUTIAN ISLANDS AREA TOTAL								
	Seine	0	4,315	183,109	450	7	187,881	100.0
	Total	0	4,315	183,109	450	7	187,881	100.0
NORTH PENINSULA TOTAL	Seine	71	67,492	27,549	226,653	14,796	336,561	15.0
	Set Net	5,312	169,394	1,192	28,052	94,745	298,695	13.4
	Drift Net	11,422	1,291,230	36,501	138,372	124,425	1,601,950	71.6
	Total	16,805	1,528,116	65,242	393,077	233,966	2,237,206	100.0
ALASKA PENINSULA AND ALEUTIAN ISLANDS AREAS CATCH BY GEAR TYPE								
	Seine	9,640	840,445	6,817,701	1,663,139	404,772	9,735,697	72.8
	Set Net	5,916	511,917	293,085	126,490	134,856	1,072,264	8.0
	Drift Net	12,324	1,653,705	182,389	512,405	199,878	2,560,701	19.2
	Total	27,880	3,006,067	7,293,175	2,302,034	739,506	13,368,662	100.0

-Continued-

Table 4. (page 4 of 4)

Area	Gear	Number of Salmon						Percent
		Chinook	Sockeye	Pink	Chum	Coho	Total	
ALASKA PENINSULA AND ALEUTIAN ISLANDS AREAS CATCH BY REGION								
SOUTH PENINSULA		11,075	1,473,636	7,044,824	1,908,507	505,533	10,943,575	81.9
ALEUTIAN		0	4,315	183,109	450	7	187,881	1.4
NORTH PENINSULA		16,805	1,528,116	65,242	393,077	233,966	2,237,206	16.7
Total		27,880	3,006,067	7,293,175	2,302,034	739,506	13,368,662	100.0
Percent		0.2	22.5	54.6	17.2	5.5	100.0	

[a] Denotes terminal areas where the commercial catch was used to describe the escapement.

Table 5. Alaska Peninsula and Aleutian Islands Management Areas subsistence salmon catch by species estimated from returned permits, 1988.

Area	Permits Issued	Returned	Percent Return	Number of Salmon Chinook	Sockeye	Pink	Chum	Coho	Total
South Peninsula									
Sand Point	74	52	70.3	146	2,694	1,326	1,175	853	6,194
King Cove	28	10	35.7	3	555	265	43	2,855	3,721
Cold Bay	24	9	37.5	0	737	2	0	66	805
False Pass	10	7	70.0	11	401	29	192	834	1,467
Total	136	78	57.4	160	4,387	1,622	1,410	4,608	12,187
Aleutian Islands									
Aleutians	74	43	58.1	1	962	2,626	83	390	4,062
Other	3	2	66.7	2	4	1	0	0	7
Total	77	45	58.4	3	966	2,627	83	390	4,069
North Peninsula									
Nelson Lagoon-Port Moller	13	9	69.2	26	284	0	25	184	519
Port Heiden	10	9	90.0	69	268	23	105	134	599
Total	23	18	78.3	95	552	23	130	318	1,118
Other									
Alaska Peninsula	24	18	75.0	2	562	21	152	720	1,457
Total	24	18	75.0	2	562	21	152	720	1,457
Total	260	159	61.2	260	6,467	4,293	1,775	6,036	18,831

Table 6. Alaska Peninsula and Aleutian Islands Management Areas estimated salmon escapements by district, 1988.[a]

Area District	Number of Salmon					
	Chinook	Sockeye	Pink	Chum	Coho	Total
South Peninsula						
Southeastern	0	24,377	1,301,149	90,397	7,032	1,422,955
Southcentral	0	5,550	1,275,564	225,623	2,640	1,509,377
Southwestern	0	55,620	1,591,960	271,446	10,320	1,929,346
Unimak	0	0	26,987	1,313	0	28,300
Total	0	85,547	4,195,660	588,779	19,992	4,889,978
Aleutian Islands Area						
Unalaska	0	26,400	689,813	0	0	716,213
Total	0	26,400	689,813	0	0	716,213
North Peninsula						
Northwestern	192	64,990	32,139	711,858	0	809,179
Northern	17,244	614,613	418	147,100	159,907	939,282
Total	17,436	679,603	32,557	858,958	159,907	1,748,461
Total	17,436	791,550	4,918,030	1,447,737	179,899	7,354,652

[a]Estimated escapement does not include streams which were not surveyed.

Table 7. Estimated escapement by species for major streams and areas in the Alaska Peninsula and Aleutian Islands Management Areas, 1988.

Stream Name	Number of Salmon				
	Chinook	Sockeye	Pink	Chum	Coho
South Peninsula					
Stepovak River	0	0	1,200	10,000	0
Grub Gulch Creek	0	0	56,603	4,900	0
Orzinski Lake	0	20,500	73,873	0	0
Suzy Creek	0	0	174,322	0	0
San Diego Lagoon	0	0	0	8,436	0
Rough Beach Creek	0	0	132,520	0	0
Swedania Point Creek	0	0	109,388	0	0
Dry Lagoon	0	0	71,030	5,000	0
Bay Point	0	0	72,990	2,900	0
Acheredin Lake	0	3,875	0	0	0
Squaw Harbor Major	0	0	92,000	0	0
Coleman Creek	0	0	3,357	15,500	0
Beaver River	0	0	58,532	9,000	1,680
Mino Creek	0	750	212,932	2,000	0
Coal Bay Major	0	0	93,860	0	0
Settlement Point	0	0	607,973	4,000	0
Middle Creek	0	0	203,973	0	0
Canoe Bay River	0	2,400	36,200	152,596	1,200
Dry Lagoon	0	0	0	8,500	0
Chinaman Lagoons	0	0	0	22,900	0
Long John Lagoons	0	2,400	6,620	12,187	720
Southwest Stream	0	0	2,600	11,987	0
Volcano Bay	0	0	11,000	25,663	0
Kitchen Anchorage	0	0	66,000	0	0
Belkofski Bay Creek	0	0	19,000	36,835	8,880
Fox Island Anchorage East	0	0	121,200	0	0
Fox Island Anchorage West	0	0	89,404	0	0
Southern Creek	0	0	371,083	0	0
Eastern Creek	0	0	85,780	0	0
Lenard Harbor	0	0	6,300	15,140	480
Kinzarof Lagoon	0	5,200	500	200	720
Russell Creek	0	1,200	20,997	115,001	0
Mortensen Lagoon	0	4,600	0	0	0
Thinpoint	0	29,600	0	0	0
Verskin's Bight	0	0	59,406	0	0
Sandy Cove Stream	0	0	6,127	27,813	0
Middle Lagoon	0	11,400	0	0	0
Little John Lagoon	0	0	3,067	14,120	0
Deadman's Cove	0	600	276,573	0	0
Whalebone Bay	0	2,400	2,100	0	0
Other Streams	0	622	1,047,149	84,101	6,312
South Peninsula Total	0	85,547	4,195,659	588,779	19,992

-Continued-

Table 7. (page 2 of 3).

Stream Name	Number of Salmon				
	Chinook	Sockeye	Pink	Chum	Coho
Aleutian Islands					
Summer Bay	0	1,600	1,000	0	0
Unalaska Village Creek	0	0	99,047	0	0
Nateekin River	0	0	185,900	0	0
Volcano Bay	0	1,400	0	0	0
Glacier Valley	0	0	117,487	0	0
Humpback Bay #1	0	0	138,198	0	0
Kashega West A Lake	0	20,000	0	0	0
Kashega Bay B	0	3,200	38,660	0	0
Other Streams	0	200	109,521	0	0
Aleutian Islands Total	0	26,400	689,813	0	0
North Peninsula					
Whaleback Mt. Creek	0	35,750	0	2,000	0
Frosty Creek	0	40	0	66,209	0
Joshua Green River	192	17,200	0	465,409	0
Moffet Springs Creek	0	200	0	43,387	0
Moffet Creek	0	2,500	0	46,992	0
North Creek	1,152	7,875	0	6,500	0
Cathedral River	1,152	0	0	0	0
Black Hills	2,112	0	0	0	0
Steelhead	3,072	0	0	0	0
Nelson River[a]	6,336	150,650	0	11,000	42,480
Herendeen-Moller Bay[b]	0	200	0	75,664	0
Bear Lake[c]	1,154	310,023	238	103	7
Sandy Lake	576	43,125	0	0	0
Ilnik Lagoon[d]	384	38,850	0	0	51,600
Meshik River[e]	375	60,160	0	45,767	42,000
Cinder River[f]	288	1,200	0	100	23,760
Other Streams	643	11,830	32,319	95,827	67
North Peninsula Total	17,436	679,603	32,557	858,958	159,907
Alaska Peninsula and Aleutian Islands Total	17,436	791,550	4,918,029	1,447,737	179,899

Escapements were counted through weirs only on the major stem of Bear and Nelson River systems, all other Alaska Peninsula escapements were counted by aerial surveys; Aleutian surveys were by aerial and foot surveys. Escapements were not estimated for streams that were not surveyed. Complete escapement data can be found in McCullough (1989).

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Table 7. (page 3 of 3)

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[a] Nelson River escapement includes David's, Caribou, Nelson, and Sapsuk Rivers, and Hoodoo and Coastal Lakes.

[b] Herendeen-Moller Bay includes 13 streams which are managed as a single unit.

[c] Bear Lake includes the lake system and two streams which flow into Bear River.

[d] Ilnik Lagoon includes Ilnik, Unangashak, and Ocean Rivers and Willie Creek.

[e] Meshik River includes 18 streams which flow into the Meshik River.

[f] Cinder River includes Mud Creek.

Table 8. Southeastern District, Shumagin Islands Section commercial salmon catch, June and post-June, 1978-1988.

Year	Number of Salmon					
	Chinook	Sockeye	Pink	Chum	Coho	Total
			June			
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	560	156,027	141,315	99,048	1	396,951
1987	1,146	140,567	5,640	37,064	0	184,417
Average	1,491	298,418	209,079	91,249	308	600,545
1988	1,939	282,230	93,546	61,946	244	439,905
			Post-June			
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	3,121	341,811	1,497,892	557,332	201,518	2,601,674
1987	3,388	248,934	542,383	310,540	157,936	1,263,181
Average	2,506	140,621	1,418,800	266,447	169,833	1,998,207
1988	5,955	416,917	3,396,332	415,308	351,118	4,585,630

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Table 8. (page 2 of 2).

Year	Number of Salmon					
	Chinook	Sockeye	Pink	Chum	Coho	Total
			Combined June and Post-June			
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	3,681	497,838	1,639,207	656,380	201,519	2,998,625
1987	4,534	389,501	548,023	347,604	157,936	1,447,598
Average	3,997	439,039	1,627,878	357,696	170,141	2,598,752
1988	7,894	699,147	3,489,878	477,254	351,362	5,025,535

[a]1980 June catch includes catch through 5 July.

Table 9. South Unimak fishery commercial salmon catch by gear type, June and post-June, 1978-1988.

Year	Percent Of Total Catch			Total Catch
	Purse Seine	Drift Gill Net	Set Gill Net	
		June		
1978	22.4	77.2	0.4	570,149
1979	67.9	31.9	0.2	782,479
1980	82.8	16.9	0.3	4,333,013
1981	60.4	38.1	1.5	2,319,433
1982	64.8	34.6	0.6	3,639,743
1983	62.7	36.8	0.5	2,210,050
1984	72.3	27.1	0.6	1,831,990
1985	58.8	40.7	0.6	1,853,708
1986	56.5	42.7	0.8	720,130
1987	38.0	60.6	1.5	1,074,091
Average	58.6	40.6	0.7	1,933,479
1988	37.4	60.8	1.8	1,028,036
		Post-June		
1978	99.7	0.0	0.3	536,252
1979	84.1	4.3	11.6	31,987
1980	98.8	0.4	0.8	430,439
1981	96.7	1.8	1.5	94,296
1982	49.1	47.4	3.5	158,027
1983	81.1	15.2	3.8	318,190
1984	67.0	25.4	7.6	668,295
1985	44.4	37.0	18.6	206,148
1986	27.7	51.0	21.3	194,779
1987	10.5	78.5	11.0	147,856
Average	65.9	26.1	8.0	278,627
1988	30.1	62.3	7.7	535,328

Table 10. South Unimak fishery commercial catch by number of salmon, June and post-June, 1978-1988.

Year	Number of Salmon					
	Chinook	Sockeye	Pink	Chum	Coho	Total
			June			
1978	267	419,065	47,382	103,432	3	570,149
1979	569	670,241	48,906	62,725	38	782,479
1980	2,927	2,730,004	1,140,611	458,618	853	4,333,013
1981	4,458	1,468,284	324,517	522,091	83	2,319,433
1982	5,569	1,667,303	1,032,154	933,476	1,241	3,639,743
1983	8,179	1,545,075	40,441	616,354	1	2,210,050
1984	2,024	1,131,365	470,688	227,913	0	1,831,990
1985	4,101	1,454,969	69,811	324,825	2	1,853,708
1986	1,364	315,370	150,674	252,721	1	720,130
1987	4,017	652,397	11,342	406,335	0	1,074,091
Average	3,348	1,205,407	333,653	390,849	222	1,933,479
1988	2,125	474,457	86,678	464,765	11	1,028,036
			Post-June			
1978	0	188	511,437	16,369	8,258	536,252
1979	15	12,863	11,509	7,558	42	31,987
1980	0	3,513	346,372	80,381	173	430,439
1981	86	18,272	17,510	57,773	655	94,296
1982	150	21,194	54,704	56,383	25,596	158,027
1983	4,675	65,436	18,011	217,359	12,709	318,190
1984	558	68,123	337,017	198,231	64,366	668,295
1985	65	36,683	39,130	100,731	29,539	206,148
1986	115	65,796	61,448	40,599	26,821	194,779
1987	134	54,370	6,414	53,621	33,317	147,856
Average	580	34,644	140,355	82,901	20,148	278,627
1988	293	70,697	245,581	133,659	84,643	534,873

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Table 10. (page 2 of 2).

Year	Number of Salmon					
	Chinook	Sockeye	Pink	Chum	Coho	Total
			Combined June and Post-June			
1978	267	419,253	558,819	119,801	8,261	1,106,401
1979	584	683,104	60,415	70,283	80	814,466
1980	2,927	2,733,517	1,486,983	538,999	1,026	4,763,452
1981	4,544	1,486,556	342,027	579,864	738	2,413,729
1982	5,719	1,688,497	1,086,858	989,859	26,837	3,797,770
1983	12,854	1,610,511	58,452	833,713	12,710	2,528,240
1984	2,582	1,199,488	807,705	426,144	64,366	2,500,285
1985	4,166	1,491,652	108,941	425,556	29,541	2,059,856
1986	1,479	381,166	212,122	293,320	26,822	914,909
1987	4,151	706,767	17,756	459,956	33,317	1,221,947
Average	3,927	1,240,051	474,008	473,750	20,370	2,212,106
1988	2,418	545,154	332,259	598,424	84,654	1,562,909

Table 11. The North Peninsula Harbor Point to Strogonof Point commercial sockeye salmon harvest, 1973-88.

Year	Catch Area: Harbor Point to Cape Seniavin Number	Percent	Catch Area: Cape Seniavin to Strogonof Point Number	Percent	Total Number	Percent
1973[a]	117,700	83.6	23,100	16.4	140,800	100.0
1974[a]	267,400	93.3	19,300	6.7	286,700	100.0
1975[a]	166,000	94.7	9,300	5.3	175,300	100.0
1976[a]	310,900	58.0	224,700	42.0	535,600	100.0
1977[a]	268,700	73.5	97,000	26.5	365,700	100.0
1978[a]	556,400	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
Average	612,925	84.3	106,359	15.7	719,284	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
1988	498,718	40.1	745,996	59.9	1,244,714	100.0
Average	707,194	43.4	844,274	56.6	1,551,467	100.0

[a] Does not include statistical area 314-12 in Harbor Point to Cape Seniavin data.

Table 12. Northern District, Ilnik Section (Alaska Peninsula-Bristol Bay overlap area) commercial salmon catch by Bristol Bay fishermen, August and September, 1986-88.

Year	Number of Salmon					
	Chinook	Sockeye	Pink	Chum	Coho	Total
1986	0	926	0	0	1,200	2,126
1987	1	7,469	476	1,334	10,097	19,377
1988	10	13,340	2,431	836	18,283	34,900
Average	4	7,245	969	723	9,860	18,801

Table 13. Southeastern District, Shumagin Islands Section commercial salmon catch by statistical week and species, June and post-June, 1988.

Statistical Week	Calendar Dates	Number of Salmon					
		Chinook	Sockeye	Pink	Chum	Coho	Total
				June			
24	6/05 - 6/11	46	7,871	0	746	0	8,663
25	6/12 - 6/18	462	98,889	26,788	20,047	0	146,186
26	6/19 - 6/25	901	140,947	57,243	32,211	2	231,304
27	6/26 - 7/02	530	34,523	9,515	8,942	242	53,752
Total		1,939	282,230	93,546	61,946	244	439,905
				Post-June			
28	7/03 - 7/09	1,664	50,002	15,345	41,808	623	109,442
29	7/10 - 7/16	1,125	88,330	15,788	48,580	5,450	159,273
30	7/17 - 7/23	1,380	120,154	240,372	114,570	95,969	572,445
31	7/24 - 7/30	681	61,705	391,903	74,223	93,435	621,947
32	7/31 - 8/06	353	39,197	1,037,630	78,560	68,122	1,223,862
33	8/07 - 8/13	442	23,377	921,567	39,439	46,310	1,031,135
34	8/14 - 8/20	309	28,117	712,064	17,610	37,093	795,193
35	8/21 - 8/27	0	0	0	0	0	0
36	8/28 - 9/03	0	730	58,746	306	475	60,257
37	9/04 - 9/10	1	3,111	2,820	101	2,521	8,554
38	9/11 - 9/17	0	1,784	95	106	1,064	3,049
39	9/18 - 9/24	0	208	1	4	33	246
40	9/25 - 10/01	0	177	1	1	21	200
41	10/02 - 10/08	0	0	0	0	0	0
42	10/09 - 10/15	0	25	0	0	2	27
Total		5,955	416,917	3,396,332	415,308	351,118	4,585,630
Total		7,894	699,147	3,489,878	477,254	351,362	5,025,535

Table 14. Southwestern and Unimak Districts, Ikatan Peninsula to Cape Lazaref area, commercial salmon catch by statistical week and species, June and post-June, 1988.

Statistical Week	Calendar Dates	Number of Salmon					
		Chinook	Sockeye	Pink	Chum	Coho	Total
				June			
24	6/05 - 6/11	65	9,255	16	13,441	0	22,777
25	6/12 - 6/18	255	116,723	2,796	99,530	8	219,312
26[a]	6/19 - 6/25	263	105,452	19,307	95,405	0	220,427
27	6/26 - 7/02	60	25,205	1,986	29,821	2	57,074
Total		643	256,635	24,105	238,197	10	519,590
				Post-June			
28	7/03 - 7/09	124	20,959	5,064	57,590	824	84,561
29	7/10 - 7/16	22	5,796	376	2,600	956	9,750
30	7/17 - 7/23	31	13,722	6,781	10,917	21,286	52,737
31	7/24 - 7/30	81	18,328	45,358	33,251	41,712	138,730
32	7/31 - 8/06	19	8,199	82,203	18,026	13,019	121,466
33	8/07 - 8/13	8	2,110	75,726	7,590	4,459	89,893
34	8/14 - 8/20	8	1,580	30,072	3,644	2,127	37,431
35	8/21 - 8/27	0	0	0	0	0	0
36	8/28 - 9/03	0	0	0	0	0	0
37	9/04 - 9/10	0	0	0	29	178	207
38	9/11 - 9/17	0	3	1	12	82	98
Total		293	70,697	245,581	133,659	84,643	534,873
Total		936	327,332	269,686	371,856	84,653	1,054,463

[a]Includes one June delivery from the Sanak Islands.

Table 15. Unimak District, Cape Lutke Section, commercial salmon catch by statistical week and species, 1988.

Statistical Week	Calendar Dates	Number of Salmon					
		Chinook	Sockeye	Pink	Chum	Coho	Total
24	6/05 - 6/11	17	2,289	10	5,041	0	7,357
25	6/12 - 6/18	206	64,294	11,592	56,241	0	132,333
26	6/19 - 6/25	1,035	127,440	41,202	104,933	0	274,610
27	6/26 - 7/02	224	23,799	9,769	60,353	1	94,146
Total		1,482	217,822	62,573	226,568	1	508,446

Table 16. South Unimak and Shumagin Islands Section June sockeye and chum commercial salmon catch by day, 1988.

Date		Shumagin Islands		South Unimak		Total	
		Sockeye	Chum	Sockeye	Chum	Sockeye	Chum
June	11	7,871	746	11,544	18,482	19,415	19,228
	12						
	13						
	14						
	15	6,122	736	43,056	35,537	49,178	36,273
	16	12,078	1,552	79,071	70,319	91,149	71,871
	17	12,959	1,745			12,959	1,745
	18	67,730	16,014	58,890	49,915	126,620	65,929
	19						
	20						
	21	38,568	8,487	82,204	64,723	120,772	73,210
	22			35,159	26,252	35,159	26,252
	23	51,898	10,621	115,529	109,363	167,427	119,984
	24	50,481	13,103			50,481	13,103
	25						
	26						
	27	34,523	8,942	49,004	90,174	83,527	99,116
	Total	282,230	61,946	474,457	464,765	756,687	526,711

Table 17. Southeastern District Mainland fishery commercial salmon catch statistical week and species, 1988.

Statistical Week	Calendar Dates	Number of Salmon					
		Chinook	Sockeye	Pink	Chum	Coho	Total
				Before 26 July[a]			
28	7/03 - 7/09	21	17,924	67	972	3	18,987
29	7/10 - 7/16	97	20,256	336	6,141	21	26,851
30	7/17 - 7/23	60	22,710	49,571	28,327	147	100,815
31	7/24 - 7/25	36	20,270	47,560	39,303	2,147	109,316
Total		214	81,160	97,534	74,743	2,318	255,969
				After 25 July			
31	7/26 - 7/30	52	25,816	84,652	48,442	4,220	163,182
32	7/31 - 8/06	63	27,638	651,747	117,627	8,039	805,114
33	8/07 - 8/13	17	5,166	345,052	16,319	14,671	381,225
34-35	8/14 - 8/27	0	0	0	0	0	0
36	8/28 - 9/03	0	1,771	1,120	364	534	3,789
37	8/04 - 9/10	1	10,767	689	830	6,801	19,088
38	9/11 - 9/17	2	5,286	16	498	3,880	9,682
39	9/18 - 9/24	0	318	1	9	67	395
40	9/25 - 10/01	0	452	0	0	91	543
Total		135	77,214	1,083,277	184,089	38,303	1,383,018
Total		349	158,374	1,180,811	258,832	40,621	1,638,987

[a] The Southeastern District salmon management plan allocates sockeye salmon caught in the Southeastern District Mainland fishery. The management plan is in effect from June 1 through July 25, after July 25 fishing time is based on local stocks.

Table 18. South Peninsula commercial salmon catch by statistical week, gear type, and species, 1988.

Statistical Week	Calendar Dates	Permits	Landings	Number of Salmon						Percent	
				Chinook	Sockeye	Pink	Chum	Coho	Total	Gear Type	Total
Purse Seine											
25	6/12 - 6/18	88	91	468	81,340	40,845	31,604	0	154,257	1.7	1.4
26	6/19 - 6/25	88	223	1,839	211,213	117,241	101,545	1	431,839	4.7	3.9
27	6/26 - 7/02	80	80	676	52,248	21,134	73,900	245	148,203	1.6	1.4
28	7/03 - 7/09	67	115	1,735	51,195	20,290	104,656	951	178,827	1.9	1.6
29	7/10 - 7/16	74	175	1,233	84,935	15,742	67,873	5,386	175,169	1.9	1.6
30	7/17 - 7/23	88	275	1,526	111,058	287,953	198,882	96,679	696,098	7.6	6.4
31	7/24 - 7/30	91	293	899	76,360	516,416	195,846	101,615	891,136	9.7	8.1
32	7/31 - 8/06	108	451	413	52,243	2,013,076	320,326	73,585	2,459,643	26.7	22.5
33	8/07 - 8/13	111	473	460	21,191	2,109,371	265,711	64,027	2,460,760	26.7	22.5
34	8/14 - 8/20	104	331	320	25,082	1,263,247	55,092	36,614	1,380,355	15.0	12.6
35	8/21 - 8/27	22	26	0	1	141,172	2,902	10	144,085	1.6	1.3
36	8/28 - 9/03	16	18	0	207	58,428	5,372	1,718	65,725	0.7	0.6
37	9/04 - 9/10	10	17	0	1,565	2,128	12,327	8,519	24,539	0.3	0.2
38	9/11 - 9/17	2	2	0	0	0	0	619	619	0.0	0.0
39-42	9/18 - 10/15	0	0	0	0	0	0	0	0	0.0	0.0
Total		112	2,569	9,569	768,638	6,607,043	1,436,036	389,969	9,211,255	100.0	84.2
Drift Gill Net											
24	6/05 - 6/11	84	85	74	10,882	18	18,343	0	29,317	3.1	0.3
25	6/12 - 6/18	148	348	336	148,570	218	137,304	8	286,436	29.9	2.6
26	6/19 - 6/25	140	361	306	137,048	450	126,650	0	264,454	27.6	2.4
27	6/26 - 7/02	84	85	44	21,318	96	23,670	0	45,128	4.7	0.4
28	7/03 - 7/09	12	18	14	4,217	52	3,220	388	7,891	0.8	0.1
29	7/10 - 7/16	7	12	1	2,089	60	757	479	3,386	0.4	0.0
30	7/17 - 7/23	48	97	23	11,407	5,918	9,486	18,303	45,137	4.7	0.4
31	7/24 - 7/30	54	192	74	16,459	43,077	31,052	37,694	128,356	13.4	1.2
32	7/31 - 8/06	51	172	18	7,850	64,925	17,312	12,608	102,713	10.7	0.9
33	8/07 - 8/13	19	49	4	1,453	22,238	3,921	3,628	31,244	3.3	0.3
34	8/14 - 8/20	17	39	8	1,179	8,835	2,277	2,085	14,384	1.5	0.1
35-36	8/21 - 9/03	0	0	0	0	0	0	0	0	0.0	0.0
37	9/04 - 9/10	2	2	0	0	0	29	178	207	0.0	0.0
38	9/11 - 9/17	1	1	0	3	1	12	82	98	0.0	0.0
39-42	9/18 - 10/15	0	0	0	0	0	0	0	0	0.0	0.0
Total		148	1,461	902	362,475	145,888	374,033	75,453	958,751	100.0	8.8

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Table 18. (page 2 of 3).

Statistical Week	Calendar Dates	Permits	Landings	Number of Salmon						Percent	
				Chinook	Sockeye	Pink	Chum	Coho	Total	Gear Type	Total
Set Gill Net											
24	6/05 - 6/11	40	41	54	8,533	8	885	0	9,480	1.2	0.1
25	6/12 - 6/18	57	218	119	49,996	113	6,910	0	57,138	7.4	0.5
26	6/19 - 6/25	60	175	54	25,578	61	4,354	1	30,048	3.9	0.3
27	6/26 - 7/02	60	70	94	9,961	40	1,546	0	11,641	1.5	0.1
28	7/03 - 7/09	59	157	75	40,693	216	6,658	170	47,812	6.2	0.4
29	7/10 - 7/16	60	185	63	50,070	861	4,753	667	56,414	7.3	0.5
30	7/17 - 7/23	60	255	50	54,600	12,261	11,639	6,061	84,611	10.9	0.8
31	7/24 - 7/30	63	325	54	47,956	35,431	19,415	7,287	110,143	14.2	1.0
32	7/31 - 8/06	53	298	16	15,951	85,016	24,379	3,367	128,729	16.6	1.2
33	8/07 - 8/13	49	280	6	9,226	101,237	12,144	4,161	126,774	16.4	1.2
34	8/14 - 8/20	34	151	15	6,721	52,743	3,893	2,368	65,740	8.5	0.6
35	8/21 - 8/27	2	4	0	228	773	72	623	1,696	0.2	0.0
36	8/28 - 9/03	28	29	0	2,294	1,638	247	2,101	6,280	0.8	0.1
37	9/04 - 9/10	37	117	2	12,465	1,381	925	5,410	20,183	2.6	0.2
38	9/11 - 9/17	32	123	2	7,070	111	604	7,006	14,793	1.9	0.1
39	9/18 - 9/24	6	10	0	526	2	13	100	641	0.1	0.0
40	9/25 - 10/01	7	8	0	630	1	1	787	1,419	0.2	0.0
41	10/02 - 10/08	0	0	0	0	0	0	0	0	0.0	0.0
42	10/09 - 10/15	1	2	0	25	0	0	2	27	0.0	0.0
Total		70	2,448	604	342,523	291,893	98,438	40,111	773,569	100.0	7.1
All Gears											
24	6/05 - 6/11	124	126	128	19,415	26	19,228	0	38,797	0.4	0.4
25	6/12 - 6/18	293	657	923	279,906	41,176	175,818	8	497,831	4.5	4.5
26	6/19 - 6/25	288	759	2,199	373,839	117,752	232,549	2	726,341	6.6	6.6
27	6/26 - 7/02	224	235	814	83,527	21,270	99,116	245	204,972	1.9	1.9
28	7/03 - 7/09	138	290	1,824	96,105	20,558	114,534	1,509	234,530	2.1	2.1
29	7/10 - 7/16	141	372	1,297	137,094	16,663	73,383	6,532	234,969	2.1	2.1
30	7/17 - 7/23	196	627	1,599	177,065	306,132	220,007	121,043	825,846	7.5	7.5
31	7/24 - 7/30	208	810	1,027	140,775	594,924	246,313	146,596	1,129,635	10.3	10.3
32	7/31 - 8/06	212	921	447	76,044	2,163,017	362,017	89,560	2,691,085	24.6	24.6
33	8/07 - 8/13	179	802	470	31,870	2,232,846	281,776	71,816	2,618,778	23.9	23.9
34	8/14 - 8/20	155	521	343	32,982	1,324,825	61,262	41,067	1,460,479	13.3	13.3
35	8/21 - 8/27	24	30	0	229	141,945	2,974	633	145,781	1.3	1.3

-Continued-

Table 18. (page 3 of 3).

Statistical Week	Calendar Dates	Permits	Landings	Number of Salmon						Percent	
				Chinook	Sockeye	Pink	Chum	Coho	Total	Gear Type	Total
All Gears (continued)											
36	8/28 - 9/03	44	47	0	2,501	60,066	5,619	3,819	72,005	0.7	0.7
37	9/04 - 9/10	49	136	2	14,030	3,509	13,281	14,107	44,929	0.4	0.4
38	9/11 - 9/17	9	13	2	7,073	112	616	7,707	15,510	0.1	0.1
39	9/18 - 9/24	6	10	0	526	2	13	100	641	0.0	0.0
40	9/25 - 10/01	7	8	0	630	1	1	787	1,419	0.0	0.0
41	10/02 - 10/08	0	0	0	0	0	0	0	0	0.0	0.0
42	10/09 - 10/15	1	2	0	25	0	0	2	27	0.0	0.0
Total		330	6,478	11,075	1,473,636	7,044,824	1,908,507	505,533	10,943,575	100.0	100.0
Percent				0.1	13.5	64.4	17.4	4.6	100.0		

Table 19. The commercial salmon catch, escapement, and total run by species and Aleutian Islands Management Areas, 1988.

Area	Species	Number of Salmon			
		Catch	Escapement	Other[a]	Total Run
South Peninsula	Chinook	11,075	0	160	11,235
Aleutians		0	0	3	3
North Peninsula		16,805	17,436	97	34,338
	Total	27,880	17,436	260	45,576
South Peninsula	Sockeye	1,473,636	85,547	4,387	1,563,570
Aleutians		4,315	26,400	1,469	32,184
North Peninsula		1,528,116	679,603	1,114	2,208,833
	Total	3,006,067	791,550	6,970	3,804,587
South Peninsula	Pink	7,044,824	4,195,660	1,643	11,242,127
Aleutians		183,109	689,813	2,777	875,699
North Peninsula		65,242	32,557	23	97,822
	Total	7,293,175	4,918,030	4,443	12,215,648
South Peninsula	Chum	1,908,507	588,779	1,410	2,498,696
Aleutians		450	0	83	533
North Peninsula		393,077	858,958	282	1,252,317
	Total	2,302,034	1,447,737	1,775	3,751,546
South Peninsula	Coho	505,533	19,992	4,968	530,493
Aleutians		7	0	413	420
North Peninsula		233,966	159,907	678	394,551
	Total	739,506	179,899	6,059	925,464
South Peninsula	All Fish	10,943,575	4,889,978	12,568	15,846,121
Aleutians		187,881	716,213	4,745	908,839
North Peninsula		2,237,206	1,748,461	2,194	3,987,861
	Total	13,368,662	7,354,652	19,507	20,742,821

[a]Other includes subsistence and personnel use catches.

Table 20. Estimated age composition of sockeye salmon catches from Alaska Peninsula Management Area, 1988.

Area	Ages 0.2	0.3	1.2	1.3	2.2	1.4	2.3	2.4	Other[a]	Total
South Peninsula										
Southeast District Mainland										
Number	620	3,102	5,372	67,452	13,619	981	66,570	454	204	158,374
Percent	0.4	2.0	3.4	42.6	8.6	0.6	42.0	0.3	0.1	100.0
Shumagin Islands Section (June)										
Number	1,556	1,903	49,153	113,596	92,112	1,219	20,058	0	2,633	282,230
Percent	0.6	0.7	17.4	40.2	32.6	0.4	7.1	0.0	0.9	100.0
Shumagin Islands Section (Post-June)										
Number	5,002	11,973	28,842	178,619	79,120	1,614	106,965	168	4,615	416,917
Percent	1.2	2.9	6.9	42.8	19.0	0.4	25.7	0.0	1.1	100.0
Pavlof Bay[b]										
Number	117	495	2,658	19,818	6,227	109	14,847	50	243	44,567
Percent	0.3	1.1	6.0	44.5	14.0	0.2	33.3	0.1	0.6	100.0
Thin Point										
Number	0	111	1,952	1,216	111	0	147	0	37	3,574
Percent	0.0	3.1	54.6	34.0	3.1	0.0	4.1	0.0	1.0	100.0
Morzhovoi Bay										
Number	0	124	289	454	578	0	701	0	0	2,145
Percent	0.0	5.8	13.5	21.2	26.9	0.0	32.7	0.0	0.0	100.0
Ikatan Peninsula-Cape Lazaref (June)										
Number	1,066	2,864	64,763	35,323	117,825	286	34,209	0	300	256,635
Percent	0.4	1.1	25.2	13.8	45.9	0.1	13.3	0.0	0.1	100.0
Ikatan Peninsula-Cape Lazaref (Post-June)										
Number	340	1,857	9,525	17,167	25,422	100	15,413	58	815	70,679
Percent	0.5	2.6	13.5	24.3	36.0	0.1	21.8	0.1	1.2	100.0
Cape Lutke										
Number	1,830	435	63,514	28,579	104,343	608	16,947	44	1,522	217,822
Percent	0.8	0.2	29.2	13.1	47.9	0.3	7.8	0.0	0.8	100.0
South Unimak (June Ikatan-Lazaref & Cape Lutke)										
Number	2,911	2,814	125,846	64,801	224,976	1,140	49,649	47	2,272	474,457
Percent	0.6	0.6	26.5	13.7	47.4	0.2	10.5	0.0	0.5	100.0
South Peninsula Total										
Number	10,531	22,864	226,068	462,224	439,357	4,917	275,857	774	10,369	1,452,943
Percent	0.7	1.6	15.6	31.8	30.2	0.3	19.0	0.1	0.7	100.0
North Peninsula										
Urilia Bay										
Number	3,353	8,915	3,926	22,599	266	0	776	0	909	40,744
Percent	8.2	21.9	9.6	55.5	0.7	0.0	1.9	0.0	2.2	100.0
Swanson Lagoon										
Number	42	144	2,520	17,373	905	0	3,722	0	59	24,766
Percent	0.2	0.6	10.2	70.2	3.7	0.0	15.0	0.0	0.2	100.0

-Continued-

Table 20. (page 2 of 2)

Area	Ages 0.2	0.3	1.2	1.3	2.2	1.4	2.3	2.4	Other[a]	Total
North Peninsula (continued)										
Nelson Lagoon										
Number	194	1,693	32,017	37,692	33,465	70	80,895	21	579	186,624
Percent	0.1	0.9	17.2	20.2	17.9	0.0	43.3	0.0	0.3	100.0
Harbor Point-Cape Seniavin										
Number	0	3,016	6,332	60,224	91,518	1,730	334,052	527	1,321	498,718
Percent	0.0	0.6	1.3	12.1	18.4	0.3	67.0	0.1	0.3	100.0
Ilnik Lagoon										
Number	12	2,411	107	3,400	252	275	865	51	227	7,602
Percent	0.2	31.7	1.4	44.7	3.3	3.6	11.4	0.7	3.0	100.0
Cape Seniavin-Strogonof Point										
Number	0	11,181	51,917	117,853	178,876	850	382,275	579	2,464	745,996
Percent	0.0	1.5	7.0	15.8	24.0	0.1	51.2	0.1	0.3	100.0
Port Heiden										
Number	133	2,340	951	2,245	1,750	133	2,455	57	533	10,598
Percent	1.3	22.1	9.0	21.2	16.5	1.3	23.2	0.5	5.0	100.0
North Peninsula Total										
Number	3,734	29,700	97,770	261,386	307,032	3,058	805,040	1,235	6,092	1,515,048
Percent	0.2	2.0	6.5	17.3	20.3	0.2	53.1	0.1	0.4	100.0
Alaska Peninsula Total										
Number	14,265	52,564	323,838	723,610	746,389	7,975	1,080,897	2,009	16,461	2,967,991
Percent	0.5	1.8	10.9	24.4	25.1	0.3	36.4	0.1	0.6	100.0

[a] Other ages include: 0.1, 1.1, 2.1, 0.4, 3.2, 3.3

[b] Denotes terminal area where the commercial catch was used to describe the escapement.

Table 21. Estimated mean length (mm; mid-eye to tail fork) and sex ratio of sockeye salmon catches from the Alaska Peninsula Management Area, 1988.

Area	Male		Female		Male And Female			Sex			
	Number	Length	Number	Length	Number	Mean	SE	Number	Male	Female	M:F Ratio
South Peninslula											
Southeastern District											
Southeast District Mainland	222	590	159	566	382	580	2	1,610	1,014	596	1.7 : 1
Shumagin Islands Section (June)	666	548	556	543	1,224	546	1	1,743	942	801	1.1 : 1
Shumagin Islands Section (Post-June)	351	574	191	561	542	570	2	3,514	2,165	1,349	1.6 : 1
South Central District											
Pavlof Bay[a]	403	582	201	566	604	577	2	1,920	1,290	630	2.0 : 1
Southwestern District											
Thin Point	59	553	34	543	97	549	4	95	60	35	1.7 : 1
Morzhovoi Bay	32	563	20	556	52	561	4	56	32	24	1.3 : 1
Unimak District											
Ikatan Peninsula-Cape Lazaref (June)	571	530	408	521	979	526	1	1,964	1,118	846	1.3 : 1
Ikatan Peninsula-Cape Lazaref (Post-June)	226	545	134	533	360	540	3	2,100	1,287	813	1.5 : 1
Cape Lutke	386	519	333	515	719	517	1	1,823	997	826	1.2 : 1
South Unimak (Ikatan-Lutke in June)	957	525	741	519	1,698	522	1	3,787	2,115	1,672	1.2 : 1
Total	3,873	545[b]	2,777	534[b]	6,657	540[b]		18,612	11,020	7,592	1.4 : 1
North Peninsula											
Northwestern District											
Urilia Bay	111	528	84	545	195	535	4	358	206	152	1.3 : 1
Swanson Lagoon	464	585	363	554	828	571	1	901	503	398	1.2 : 1
Northern District											
Nelson Lagoon	2,590	547	3,094	541	5,689	544	1	6,412	2,903	3,509	0.8 : 1
Harbor Point-Cape Seniavin	518	560	722	556	1,242	558	1	7,354	3,277	4,077	0.8 : 1
Ilnik Lagoon	306	581	522	561	828	568	1	933	342	591	0.5 : 1
Cape Seniavin-Strogonof Point	416	558	370	560	786	559	1	4,995	2,532	2,463	1.0 : 1
Port Heiden	136	570	93	551	229	562	3	615	346	269	1.2 : 1
Total	4,541	556[b]	5,248	548[b]	9,797	552[b]		21,568	10,109	11,459	0.8 : 1
Total	8,414	551[b]	8,025	543[b]	16,454	547[b]		40,180	21,129	19,051	1.1 : 1

[a] Denotes terminal area where the commercial catch was used to describe the escapement.
[b] Mean is weighted by sample size.

Table 22. Average weights of commercially harvested salmon in the Alaska Peninsula Management Area by species and area, 1988.

Species Location	Sample Size	Mean Weight (kg)	90% Confidence Interval[a]	Standard Deviation
Chinook				
North Peninsula				
Harbor Point-Cape Seniavin	149	8.48	0.38	2.84
Nelson Lagoon	240	6.96	0.35	3.25
Average	195	7.58[b]		
Sockeye				
South Peninsula				
Southeast Mainland	199	3.82	0.10	0.84
Shumagin Islands	248	2.90	0.09	0.83
Pavlof Bay[c]	200	3.57	0.12	1.00
Morzhovoi Bay	56	2.79	0.13	0.61
Ikatan Peninsula-Cape Lazaref	386	2.45	0.06	0.77
Cape Lutke	150	2.26	0.08	0.57
Average	207	2.93[b]		
Sockeye				
North Peninsula				
Port Heiden	99	3.19	0.14	0.83
Ilnik Lagoon	189	3.07	0.07	0.58
Cape Seniavin-Strogonof Point	298	2.81	0.06	0.62
Harbor Point-Cape Seniavin	410	2.78	0.05	0.60
Nelson Lagoon	351	2.62	0.06	0.73
Swanson Lagoon	100	3.30	0.11	0.66
Urilia Bay	148	2.57	0.10	0.73
Average	228	2.83[b]		
Chum				
South Peninsula				
Southeast Mainland	100	4.76	0.22	1.37
Shumagin Islands	244	3.74	0.11	1.04
Canoe Bay[c]	100	4.35	0.13	0.81
Pavlof Bay[c]	100	3.68	0.14	0.86
King Cove[c]	100	3.76	0.16	0.94
Belkofski Bay[c]	100	3.80	0.15	0.88
Cold Bay[c]	100	3.94	0.12	0.71
Morzhovoi Bay[c]	50	3.88	0.19	0.80
Ikatan Peninsula-Cape Lazaref	303	3.36	0.09	1.00
Cape Lutke	146	3.37	0.12	0.85
Average	134	3.76[b]		

-Continued-

Table 22. (page 2 of 2)

Species Location	Sample Size	Mean Weight (kg)	90% Confidence Interval	Standard Deviation
Chum (continued)				
North Peninsula				
Cape Seniavin-Strogonof Point	195	3.49	0.09	0.79
Harbor Point-Cape Senaivin	249	3.05	0.05	0.50
Herendeen Bay[c]	149	3.61	0.10	0.74
Nelson Lagoon	150	3.52	0.11	0.81
Izembek-Moffet Bay[c]	100	4.17	0.13	0.77
Average	169	3.47[b]		
Coho				
South Peninsula				
Shumagin Islands	99	3.23	0.11	0.64
Average	99	3.23[b]		
Coho				
North Peninsula				
Cape Seniavin-Strogonof Point	146	3.33	0.11	0.78
Harbor Point-Cape Seniavin	150	3.53	0.12	0.86
Nelson Lagoon	150	3.19	0.14	1.05
Average	149	3.35[b]		

[a] Confidence interval is around the mean
[b] Average mean weight is weighted by sample size.
[c] Denotes terminal areas where the commercial catch was used to describe the escapement.

Table 23. Estimated age composition of sockeye salmon escapements from the Alaska Peninsula Management Area, 1988.

Area	Ages 1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	Other[a]	Total
South Peninsula											
Total South Peninsula (Orzenoi Lake Only)											
Number	0	0	2,255	0	0	10,455	2,460	0	5,330	0	20,500
Percent	0.0	0.0	11.0	0.0	0.0	51.0	12.0	0.0	26.0	0.0	100.0
North Peninsula											
Nelson Lagoon (Hoodoo Lake-Sapsuk River)											
Number	1,719	785	25,297	17,689	0	19,668	36,562	0	32,661	619	135,000
Percent	1.3	0.6	18.7	13.1	0.0	14.6	27.1	0.0	24.2	0.5	100.0
Bear River											
Number	57	0	1,125	28,724	0	14,853	125,965	127	138,904	268	310,023
Percent	0.0	0.0	0.4	9.3	0.0	4.8	40.6	0.0	44.8	0.1	100.0
Sandy Lake											
Number	311	311	26,778	0	0	14,790	778	0	156	0	43,125
Percent	0.7	0.7	62.1	0.0	0.0	34.3	1.8	0.0	0.4	0.0	100.0
Ilnik Lagoon											
Number	72	15,772	2,243	0	579	16,712	362	796	1,519	796	38,850
Percent	0.2	40.6	5.8	0.0	1.5	43.0	0.9	2.0	3.9	2.0	100.0
Meshik River											
Number	0	17,082	557	0	24,695	5,570	371	7,241	928	3,714	60,160
Percent	0.0	28.4	0.9	0.0	41.0	9.3	0.6	12.0	1.5	6.2	100.0
Total North Peninsula											
Number	2,159	33,950	56,000	46,413	25,274	71,593	164,038	8,164	174,168	5,397	587,156
Percent	0.4	5.8	9.5	7.9	4.3	12.2	27.9	1.4	29.7	0.9	100.0
Total Alaska Peninsula											
Number	2,159	33,950	58,255	46,413	25,274	82,048	166,498	8,164	179,498	5,397	607,656
Percent	0.4	5.6	9.6	7.6	4.2	13.5	27.4	1.3	29.5	0.9	100.0

[a] Other ages include: 0.2, 3.2, and 2.4

Table 24. Estimated mean length (mm; mid-eye to tail fork) and sex ratio of sockeye salmon escapements from the Alaska Peninsula Management Area, 1988.

Area	Male		Female		Male And Female			Sex			
	Number	Length	Number	Length	Number	Mean	SE	Number	Male	Female	M:F Ratio
South Peninsula											
Orzenoi Lake[a]	47	582	52	566	100	574	4	118	54	64	0.8 : 1
Total	47	582	52	566	100	574	4	118	54	64	0.8 : 1
North Penisaula											
Nelson Lagoon	190	477	83	536	273	495	6	270	182	88	2.1 : 1
Bear River	1,553	477	1,087	521	2,641	495	1	2,913	1,712	1,201	1.4 : 1
Sandy Lake	158	475	118	521	277	494	4	285	161	124	1.3 : 1
Ilnik Lagoon	346	586	189	557	535	576	2	618	403	215	1.9 : 1
Meshik River	188	594	136	571	324	584	3	364	210	154	1.4 : 1
Total	2,435	501	1,613	530	4,050	513[a]		4,450	2,668	1,782	1.4 : 1
Total	2,482	503	1,665	532	4,150	514[b]		4,568	2,722	1,846	1.5 : 1

[a] Orzenoi Lake samples were from gill net catch samples near the mouth of the lake outlet, it is possible that other stocks (Chignik) may have been present.
[b] Mean is weighted by sample size.

Table 25. Estimated age composition of chum salmon catches from the Alaska Peninsula Management Area, 1988.

Area	Ages 0.2	0.3	0.4	0.5	Total
South Peninsula					
Southeast District Mainland					
Number	9,562	152,461	92,306	4,504	258,832
Percent	3.7	58.9	35.7	1.7	100.0
Shumagin Islands Section (June)					
Number	485	27,991	31,070	2,401	61,946
Percent	0.8	45.2	50.2	3.9	100.0
Shumagin Islands Section (Post-June)					
Number	14,062	192,271	198,237	10,739	415,308
Percent	3.4	46.3	47.7	2.6	100.0
Canoe Bay[a]					
Number	1,104	28,878	42,431	2,025	74,439
Percent	1.5	38.8	57.0	2.7	100.0
Pavlof Bay[a]					
Number	4,097	46,042	29,724	1,073	80,939
Percent	5.1	56.9	36.7	1.3	100.0
Volcano Bay[a]					
Number	2,902	87,642	76,034	2,031	168,610
Percent	1.7	52.0	45.1	1.2	100.0
Belkofski Bay[a]					
Number	739	16,028	14,707	943	32,416
Percent	2.3	49.4	45.4	2.9	100.0
King Cove[a]					
Number	488	18,268	9,777	299	28,832
Percent	1.7	63.4	33.9	1.0	100.0
Cold Bay[a]					
Number	2,319	134,641	28,064	1,859	166,883
Percent	1.4	80.7	16.8	1.1	100.0
Morzhovoi Bay[a]					
Number	94	3,133	5,378	234	8,838
Percent	1.1	35.4	60.9	2.6	100.0

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Area	Ages 0.2	0.3	0.4	0.5	Total
South Peninsula (continued)					
Ikatan Peninsula-Cape Lazaref (June)					
Number	1,207	166,587	66,055	4,349	238,197
Percent	0.5	69.9	27.7	1.8	100.0
Ikatan Peninsula-Cape Lazaref (Post-June)					
Number	3,520	74,386	53,456	2,296	133,659
Percent	2.6	55.7	40.0	1.7	100.0
Cape Lutke					
Number	2,107	134,514	84,641	5,307	226,568
Percent	0.9	59.4	37.4	2.3	100.0
South Unimak (Ikatan-Lutke June)					
Number	3,458	298,858	152,992	9,458	464,765
Percent	0.7	64.3	32.9	2.0	100.0
South Peninsula Total					
Number	42,686	1,082,842	731,880	38,060	1,895,467
Percent	2.3	57.1	38.6	2.0	100.0
North Peninsula					
Bechevin Bay-Swanson Lagoon[a]					
Number	196	24,554	33,006	1,598	59,355
Percent	0.3	41.4	55.6	2.7	100.0
Izembek-Moffet Bay[a]					
Number	254	36,643	73,107	2,166	112,172
Percent	0.2	32.7	65.2	1.9	100.0
Nelson Lagoon					
Number	35	11,294	1,272	33	12,634
Percent	0.3	89.4	10.1	0.3	100.0
Herendeen Bay[a]					
Number	281	23,939	36,714	810	61,743
Percent	0.5	38.8	59.5	1.3	100.0
Harbor Point-Cape Seniavin					
Number	876	59,498	24,984	2,419	87,776
Percent	1.0	67.8	28.5	2.8	100.0

-Continued-

Table 25. (page 3 of 3)

Area	Ages 0.2	0.3	0.4	0.5	Total
North Peninsula (continued)					
Cape Seniavin-Strogonof Point					
Number	403	23,193	23,528	625	47,748
Percent	0.8	48.6	49.3	1.3	100.0
North Peninsula Total					
Number	44,731	1,261,963	924,491	45,711	2,276,895
Percent	2.0	55.4	40.6	2.0	100.0
Total Number	87,417	2,344,805	1,656,371	83,771	4,172,362
Percent	2.1	56.2	39.7	2.0	100.0

[a] Denotes terminal areas where the commercial catch was used to describe the escapement.

Table 26. Estimated mean length (mm; mid-eye to tail fork) and sex ratio of chum salmon catches from the Alaska Peninsula Management Area, 1988.

Area	Male		Female		Male And Female			Sex			
	Number	Length	Number	Length	Number	Mean	SE	Number	Male	Female	M:F Ratio
South Peninsula											
Southeast District Mainland	359	600	394	591	754	595	1	814	390	424	0.9 : 1
Shumagin Islands Section (June)	145	606	172	580	317	592	3	1,328	677	651	1.0 : 1
Shumagin Islands Section (Post-June)	247	619	302	608	549	613	2	3,330	1,589	1,741	0.9 : 1
Canoe Bay[a]	677	616	563	607	1,240	611	1	1,326	722	604	1.1 : 1
Pavlof Bay[a]	1,348	610	1,106	592	2,454	601	1	2,699	1,484	1,215	1.2 : 1
Volcano Bay[a]	306	617	275	603	581	611	2	600	315	285	1.1 : 1
Belkofski Bay[a]	526	617	457	601	985	609	1	1,038	555	483	1.1 : 1
King Cove[a]	456	604	440	596	896	600	1	928	473	455	1.0 : 1
Cold Bay[a]	911	619	762	597	1,674	609	1	1,798	985	813	1.2 : 1
Morzhovoi Bay[a]	112	632	77	631	189	632	3	196	115	81	1.4 : 1
Ikatan Peninsula-Cape Lazaref (June)	177	589	161	563	338	577	2	1,326	664	662	1.0 : 1
Ikatan Peninsula-Cape Lazaref (Post-June)	178	595	197	577	375	586	2	2,388	1,003	1,305	0.7 : 1
Cape Lutke	171	592	110	570	281	583	2	1,610	862	748	1.1 : 1
South Unimak (Ikatan-Lutke June)	348	591	271	566	619	580	1	2,936	1,526	1,410	1.0 : 1
Total	5,961	610	5,287	594	10,633	603[b]		22,317	11,360	10,877	1.0 : 1
North Peninsula											
Bechevin Bay-Swanson Lagoon[a]	216	605	155	593	371	600	2	409	238	171	1.3 : 1
Izembek-Moffet Bay[a]	1,200	623	872	605	2,078	615	1	2,184	1,263	921	1.3 : 1
Nelson Lagoon	936	605	1,303	582	2,241	591	1	2,379	1,000	1,379	0.7 : 1
Herendeen Bay[a]	572	603	548	588	1,125	596	1	1,193	605	588	1.0 : 1
Harbor Point-Cape Seniavin	354	580	408	579	762	579	1	4,613	1,960	2,653	0.7 : 1
Cape Seniavin-Strogonof Point	170	600	238	586	413	592	2	4,135	1,449	2,686	0.5 : 1
Total	3,448	608	3,524	589	6,990	598[b]		14,913	6,515	8,398	0.7 : 1
Total	9,409	609[b]	8,811	592[b]	17,623	601[b]		37,230	17,875	19,275	0.9 : 1

[a] Denotes terminal areas where the commercial catch was used to describe the escapement.
[b] Mean is weighted by sample size.

Table 27. Estimated age composition of coho salmon catches from the Alaska Peninsula Management Area, 1988.

Area	Ages 1.1	2.1	3.1	Total
South Peninsula				
Shumagin Islands Section				
Number	93,063	243,105	15,194	351,362
Percent	26.5	69.2	4.3	100.0
South Peninsula Total (Shumagin Islands Section only)				
Number	93,063	243,105	15,194	351,362
Percent	26.5	69.2	4.3	100.0
North Peninsula				
Nelson Lagoon Section				
Number	18,367	70,862	6,195	95,424
Percent	19.2	74.3	6.5	100.0
Harbor Point to Cape Seniavin				
Number	4,378	9,479	1,832	15,689
Percent	27.9	60.4	11.7	100.0
Cape Seniavin to Strogonof Point				
Number	6,255	13,702	1,819	21,775
Percent	28.7	62.9	8.4	100.0
North Peninsula Total				
Number	29,000	94,043	9,846	132,889
Percent	21.8	70.8	7.4	100.0
Total Number	122,063	337,148	25,040	484,251
Percent	25.2	69.6	5.2	100.0

Table 28. Estimated mean length (mm; mid-eye to tail fork) and sex ratio of coho salmon catches from the Alaska Peninsula Management Area, 1988.

Area	Male		Female		Male And Female			Sex			
	Number	Length	Number	Length	Number	Mean	SE	Number	Male	Female	M:F Ratio
South Peninsula											
Shumagin Islands Section	97	569	79	562	176	566	2	210	120	90	1.3 : 1
North Peninsula											
Nelson Lagoon Section	1,409	573	662	590	2,076	579	1	2,285	1,566	719	2.2 : 1
Harbor Point to Cape Seniavin	213	602	175	611	388	606	2	1,171	695	476	1.5 : 1
Cape Seniavin to Strogonof Point	216	579	90	581	306	579	2	1,732	1,251	481	2.6 : 1
Total	1,838	577[a]	927	593[a]	2,770	583[a]		5,188	3,512	1,676	2.1 : 1
Total	1,935	577	1,006	591	2,946	582[a]		5,398	3,632	1,766	2.1 : 1

[a] Mean is weighted by sample size.

Table 29. Aleutian Islands Management Area, Unalaska District, commercial salmon catch by statistical week, gear type, and species, 1988.

Statistical Week	Calendar Dates	Permit Landings		Number of Salmon						Percent
				Chinook	Sockeye	Pink	Chum	Coho	Total	
Purse Seine										
29	7/10 - 7/16	1	1	0	1,600	0	0	0	1,600	0.9
30	7/17 - 7/23	1	1	0	115	0	0	0	115	0.1
31	7/24 - 7/30	3	3	0	2,600	5,008	450	0	8,058	4.3
32	7/31 - 8/06	0	0	0	0	0	0	0	0	0.0
33	8/07 - 8/13	1	5	0	0	11,904	0	0	11,904	6.3
34	8/14 - 8/20	2	14	0	0	126,354	0	0	126,354	67.3
35	8/21 - 8/27	2	6	0	0	39,843	0	0	39,843	21.2
36	8/28 - 9/03	0	0	0	0	0	0	0	0	0.0
37	9/04 - 9/10	0	0	0	0	0	0	0	0	0.0
38	9/11 - 9/17	1	1	0	0	0	0	7	7	0.0
Total		3	31	0	4,315	183,109	450	7	187,881	100.0

Table 30. North Peninsula commercial salmon catch by statistical week, gear type, and species, 1988.

Statistical Week	Calendar Dates	Permits	Landings	Number of Salmon						Percent	
				Chinook	Sockeye	Pink	Chum	Coho	Total	Gear Type	Total
Purse Seine											
24	6/05 - 6/11	4	7	0	1,727	0	0	0	1,727	0.5	0.1
25	6/12 - 6/18	6	8	0	3,531	0	1,422	0	4,953	1.5	0.2
26	6/19 - 6/25	7	10	2	6,308	0	5,373	0	11,683	3.5	0.5
27	6/26 - 7/02	19	31	26	19,508	0	15,567	0	35,101	10.4	1.6
28	7/03 - 7/09	20	74	36	10,946	12	59,219	0	70,213	20.9	3.1
29	7/10 - 7/16	12	28	3	2,399	2	26,980	0	29,384	8.7	1.3
30	7/17 - 7/23	10	36	2	1,969	260	48,828	0	51,059	15.2	2.3
31	7/24 - 7/30	6	21	1	3,519	815	27,107	0	31,442	9.3	1.4
32	7/31 - 8/06	7	27	1	12,183	10,003	24,262	0	46,449	13.8	2.1
33	8/07 - 8/13	5	8	0	2,406	8,512	5,816	1	16,735	5.0	0.7
34	8/14 - 8/20	3	4	0	3	7,945	4,846	1	12,795	3.8	0.6
35	8/21 - 8/27	0	0	0	0	0	0	0	0	0.0	0.0
36	8/28 - 9/03	6	8	0	2,893	0	0	7,542	10,435	3.1	0.5
37	9/04 - 9/10	8	10	0	100	0	6,470	7,252	13,822	4.1	0.6
38	9/11 - 9/17	1	1	0	0	0	763	0	763	0.2	0.0
Total		27	273	71	67,492	27,549	226,653	14,796	336,561	100.0	15.0
Drift Gill Net											
23	5/29 - 6/04	4	9	92	42	0	41	0	175	0.0	0.0
24	6/05 - 6/11	29	67	2,121	988	0	149	2	3,260	0.2	0.1
25	6/12 - 6/18	27	66	3,185	10,698	3	649	0	14,535	0.9	0.6
26	6/19 - 6/25	50	131	3,687	64,576	0	4,606	40	72,909	4.6	3.3
27	6/26 - 7/02	153	517	1,315	193,052	0	27,009	2	221,378	13.8	9.9
28	7/03 - 7/09	149	806	588	459,672	3	30,041	1	490,305	30.6	21.9
29	7/10 - 7/16	151	491	218	209,471	16	13,105	3	222,813	13.9	10.0
30	7/17 - 7/23	132	451	97	73,574	82	25,937	11	99,701	6.2	4.5
31	7/24 - 7/30	67	239	47	41,100	1,578	13,624	55	56,404	3.5	2.5
32	7/31 - 8/06	92	280	28	47,096	8,367	11,722	1,851	69,064	4.3	3.1
33	8/07 - 8/13	105	318	21	58,090	17,851	6,755	4,563	87,280	5.4	3.9
34	8/14 - 8/20	104	308	12	37,433	5,262	2,853	16,829	62,389	3.9	2.8
35	8/21 - 8/27	118	408	7	63,615	2,640	1,116	44,963	112,341	7.0	5.0
36	8/28 - 9/03	90	269	4	28,057	645	481	32,813	62,000	3.9	2.8
37	9/04 - 9/10	57	161	0	3,766	54	284	21,249	25,353	1.6	1.1
38	9/11 - 9/17	11	17	0	0	0	0	2,043	2,043	0.1	0.1
Total		216	4,538	11,422	1,291,230	36,501	138,372	124,425	1,601,950	100.0	71.6

-Continued-

Table 30. (page 2 of 2).

Statistical Week	Calendar Dates	Permits	Landings	Number of Salmon						Percent	
				Chinook	Sockeye	Pink	Chum	Coho	Total	Gear Type	Total
Set Gill Net											
22	5/22 - 5/28	2	3	26	0	0	0	0	26	0.0	0.0
23	5/29 - 6/04	4	8	72	59	0	1	0	132	0.0	0.0
24	6/05 - 6/11	25	67	478	2,467	0	357	0	3,302	1.1	0.1
25	6/12 - 6/18	19	46	469	6,166	0	23	0	6,658	2.2	0.3
26	6/19 - 6/25	35	120	1,808	23,027	0	5,875	0	30,710	10.3	1.4
27	6/26 - 7/02	38	150	2,082	47,897	1	6,261	250	56,491	18.9	2.5
28	7/03 - 7/09	36	129	275	35,677	0	2,835	0	38,787	13.0	1.7
29	7/10 - 7/16	32	107	67	16,572	0	1,404	0	18,043	6.0	0.8
30	7/17 - 7/23	27	102	20	13,255	1	1,721	0	14,997	5.0	0.7
31	7/24 - 7/30	22	76	2	6,613	36	2,719	1	9,371	3.1	0.4
32	7/31 - 8/06	26	76	2	9,269	76	3,192	2,460	14,999	5.0	0.7
33	8/07 - 8/13	33	85	5	5,449	690	2,374	3,839	12,357	4.1	0.6
34	8/14 - 8/20	35	91	2	1,828	235	1,066	10,595	13,726	4.6	0.6
35	8/21 - 8/27	34	98	1	516	73	160	25,249	25,999	8.7	1.2
36	8/28 - 9/03	33	89	1	253	78	37	26,383	26,752	9.0	1.2
37	9/04 - 9/10	30	96	2	346	2	27	21,245	21,622	7.2	1.0
38	9/11 - 9/17	13	23	0	0	0	0	4,723	4,723	1.6	0.2
Total		60	1,366	5,312	169,394	1,192	28,052	94,745	298,695	100.0	13.4
All Gears											
22	5/22 - 5/28	2	3	26	0	0	0	0	26	0.0	0.0
23	5/29 - 6/04	8	17	164	101	0	42	0	307	0.0	0.0
24	6/05 - 6/11	58	141	2,599	5,182	0	506	2	8,289	0.4	0.4
25	6/12 - 6/18	52	120	3,654	20,395	3	2,094	0	26,146	1.2	1.2
26	6/19 - 6/25	92	261	5,497	93,911	0	15,854	40	115,302	5.2	5.2
27	6/26 - 7/02	210	698	3,423	260,457	1	48,837	252	312,970	14.0	14.0
28	7/03 - 7/09	205	1,009	899	506,295	15	92,095	1	599,305	26.8	26.8
29	7/10 - 7/16	195	626	288	228,442	18	41,489	3	270,240	12.1	12.1
30	7/17 - 7/23	169	589	119	88,798	343	76,486	11	165,757	7.4	7.4
31	7/24 - 7/30	95	336	50	51,232	2,429	43,450	56	97,217	4.3	4.3
32	7/31 - 8/06	125	383	31	68,548	18,446	39,176	4,311	130,512	5.8	5.8
33	8/07 - 8/13	143	411	26	65,945	27,053	14,945	8,403	116,372	5.2	5.2
34	8/14 - 8/20	142	403	14	39,264	13,442	8,765	27,425	88,910	4.0	4.0
35	8/21 - 8/27	152	506	8	64,131	2,713	1,276	70,212	138,340	6.2	6.2
36	8/28 - 9/03	129	366	5	31,203	723	518	66,738	99,187	4.4	4.4
37	9/04 - 9/10	95	267	2	4,212	56	6,781	49,746	60,797	2.7	2.7
38	9/11 - 9/17	25	41	0	0	0	763	6,766	7,529	0.3	0.3
Total		303	6,177	16,805	1,528,116	65,242	393,077	233,966	2,237,206	100.0	100.0
Percent				0.8	68.3	2.9	17.6	10.5	100.0		

Table 31. Estimated age composition of chinook salmon catches from the North Peninsula, 1988.

Area	Ages 1.1	1.2	1.3	1.4	1.5	1.6	Total
Nelson Lagoon Section							
Number	9	1,216	749	3,707	789	4	6,474
Percent	0.1	18.8	11.6	57.3	12.2	0.1	100.0
Harbor Point to Cape Seniavin							
Number	0	416	413	2,242	536	17	3,624
Percent	0.0	11.5	11.4	61.9	14.8	0.5	100.0
Total							
Number	9	1,632	1,162	5,949	1,325	21	10,098
Percent	0.1	16.2	11.5	58.9	13.1	0.2	100.0

Table 32. Estimated mean length (mm; mid-eye to tail fork) and sex ratio of chinook salmon catches from the North Peninsula, 1988.

Area	Male		Female		Male And Female			Sex			
	Number	Length	Number	Length	Number	Mean	SE	Number	Male	Female	M:F Ratio
Nelson Lagoon Section	855	755	811	769	1,679	762	3	1,856	951	905	1.1 : 1
Harbor Point to Cape Seniavin	254	778	232	801	486	789	5	976	455	521	0.9 : 1
Total	1,109	760[a]	1,043	776[a]	2,165	768[a]		2,832	1,406	1,426	1.0 : 1

[a] Mean is weighted by sample size.

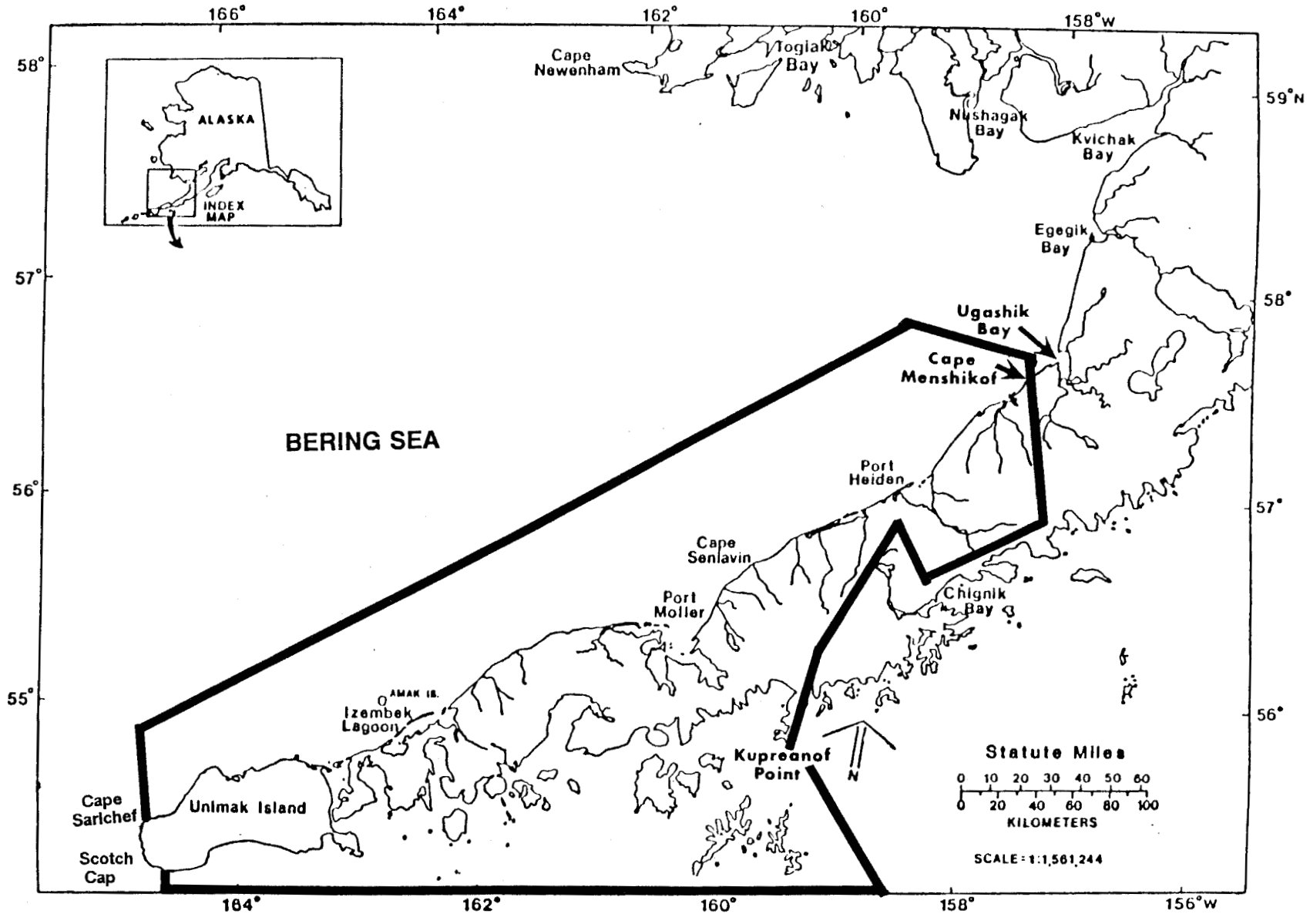


Figure 1. Map of the Alaska Peninsula Management Area from Kvichak Bay to Unimak Island with the Alaska Peninsula Management Area shown inside the blocking

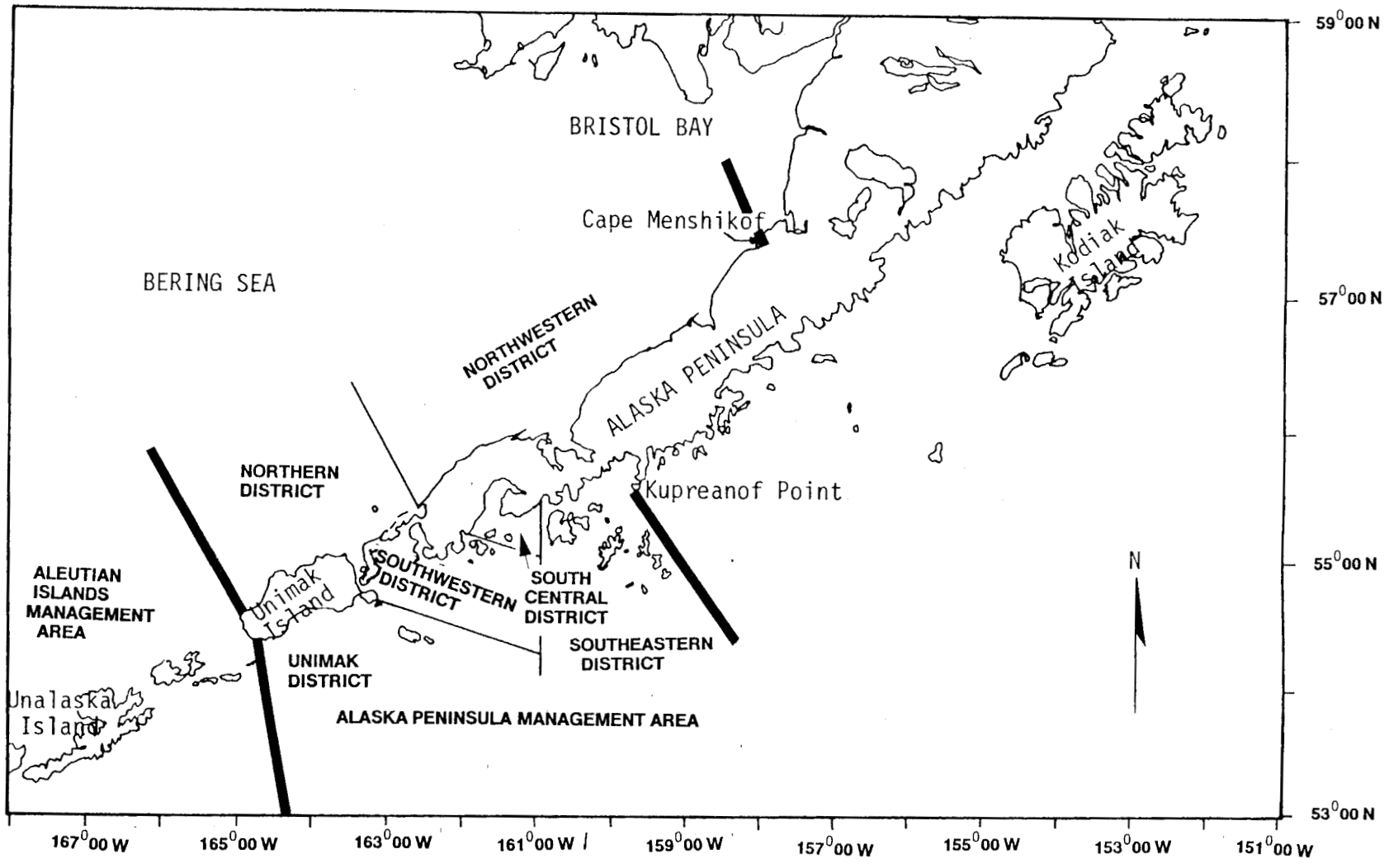


Figure 2. Map of the Alaska Peninsula and Eastern Aleutian Islands Management Areas. The study area on the Pacific Ocean portion of the map is from Kupreanof Point to Unalaska Island, and on the Bering Sea from Unalaska Island to Cape Menshikof. Districts of the Alaska Peninsula Management Area are shown.

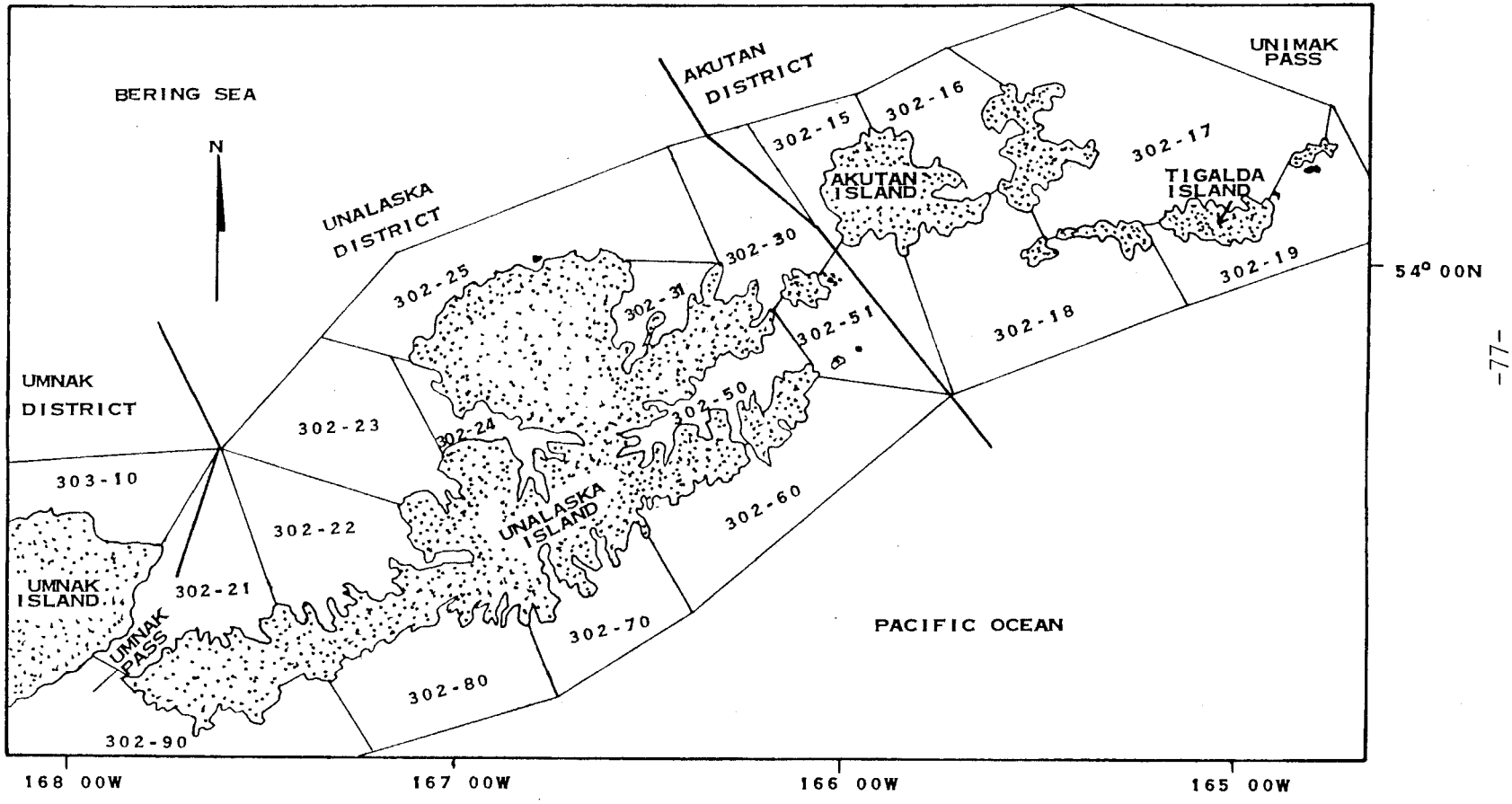


Figure 3. Map of the Aleutian Islands Management Area from Umnak Pass to Unimak Pass with the districts and statistical salmon fishing areas shown.

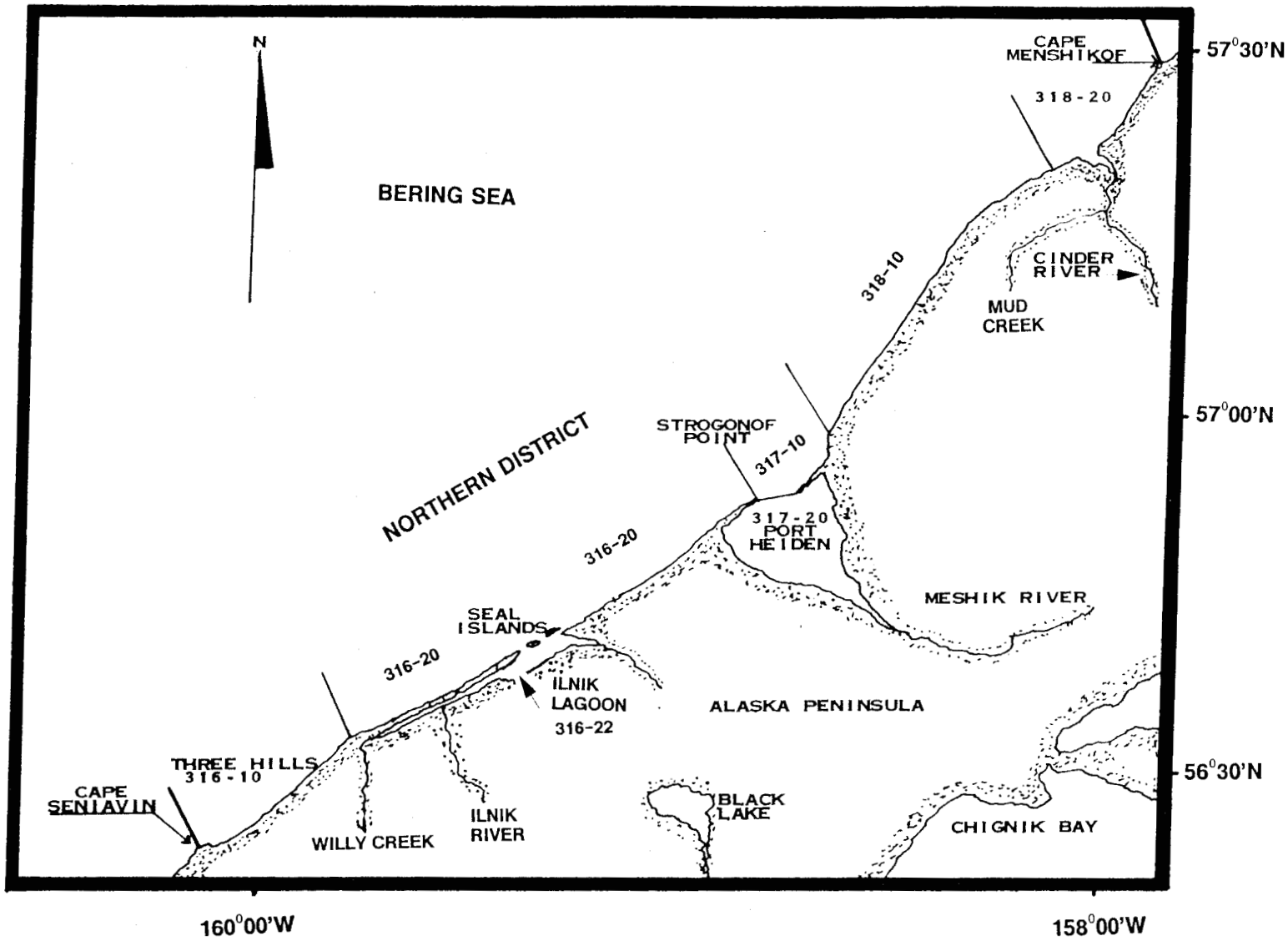


Figure 4. Map of the North Alaska Peninsula from Cape Seniavin to Cape Menshikof with the district and statistical salmon fishing areas shown.

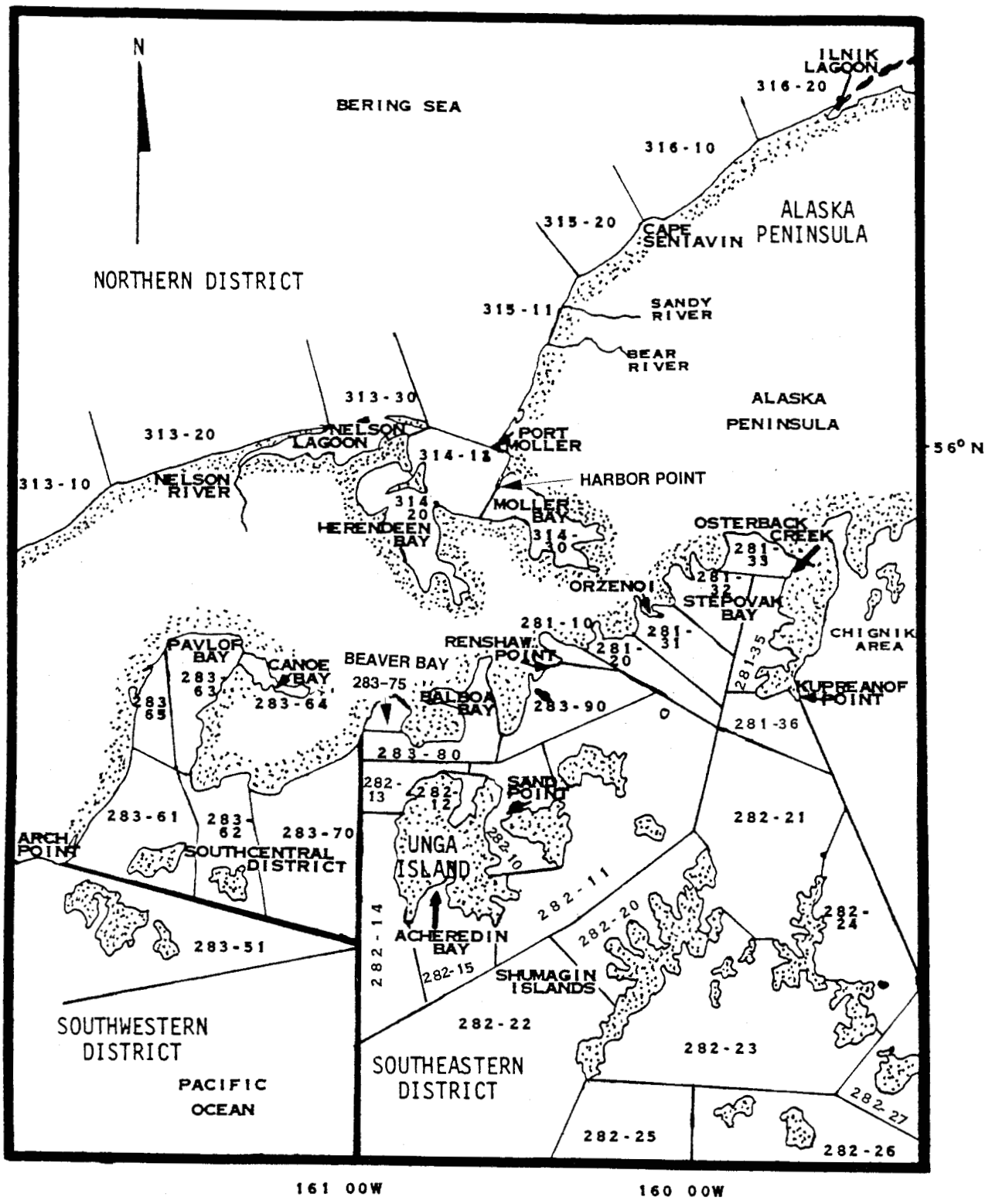


Figure 5. Map of the Alaska Peninsula Management Area from Arch Point to Kupreanof Point with the districts and statistical salmon fishing areas shown.

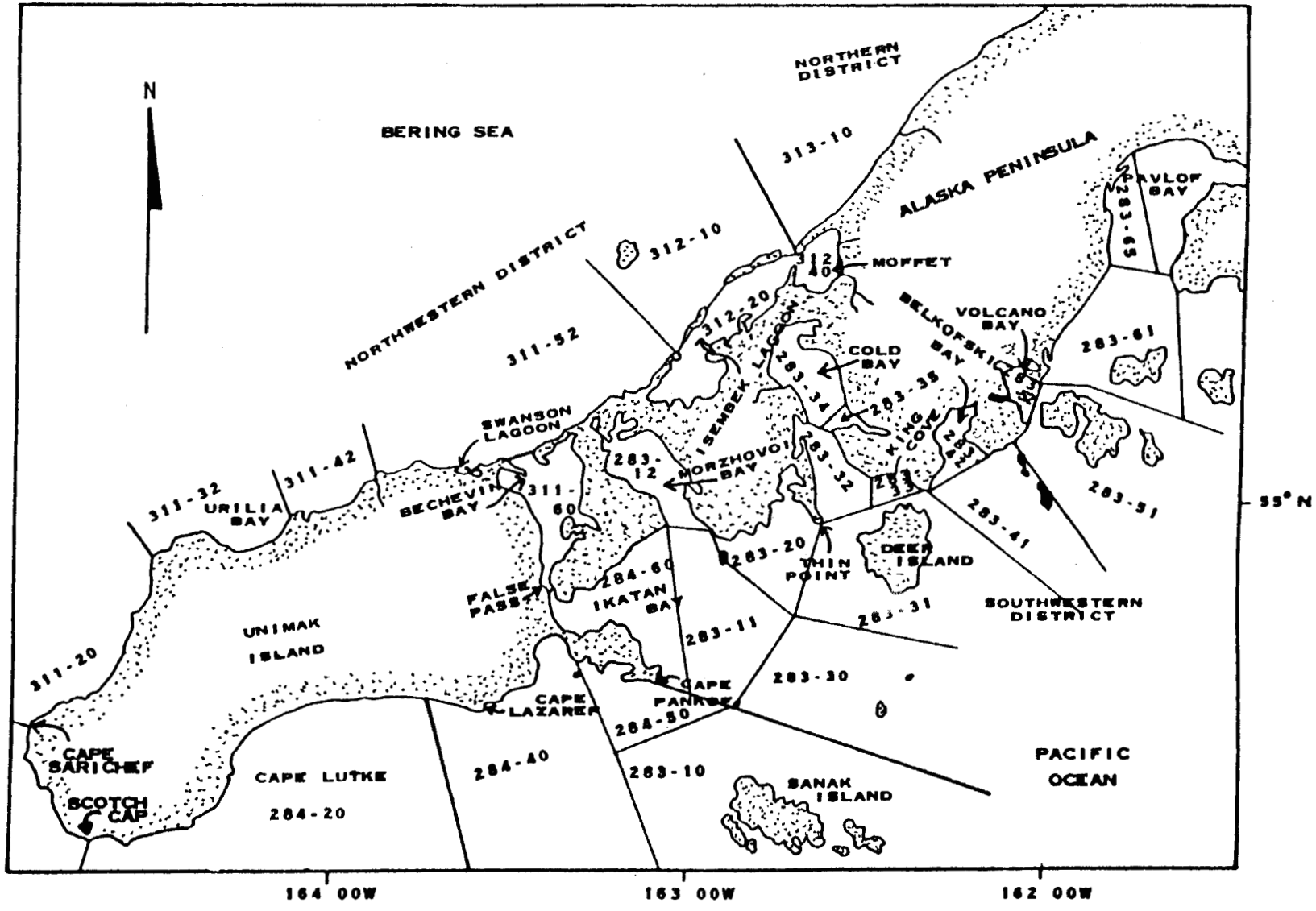


Figure 6. Map of the Alaska Peninsula Management Area from Cape Sarichef to Pavlof Bay with the districts and statistical salmon fishing areas shown.

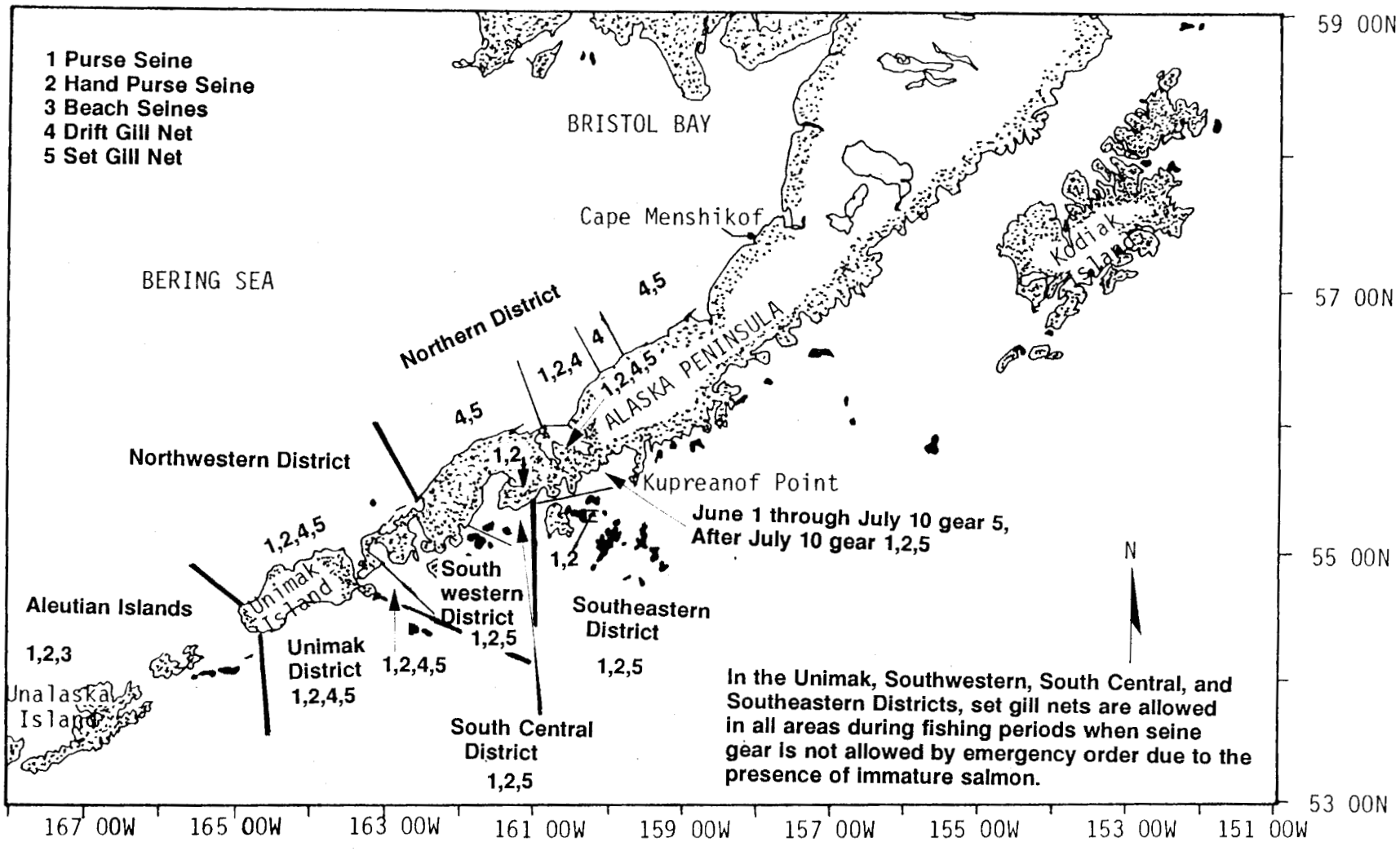


Figure 7. Map of the Alaska Peninsula and Eastern Aleutian Islands Management Areas with the allowable gear type for each area shown.

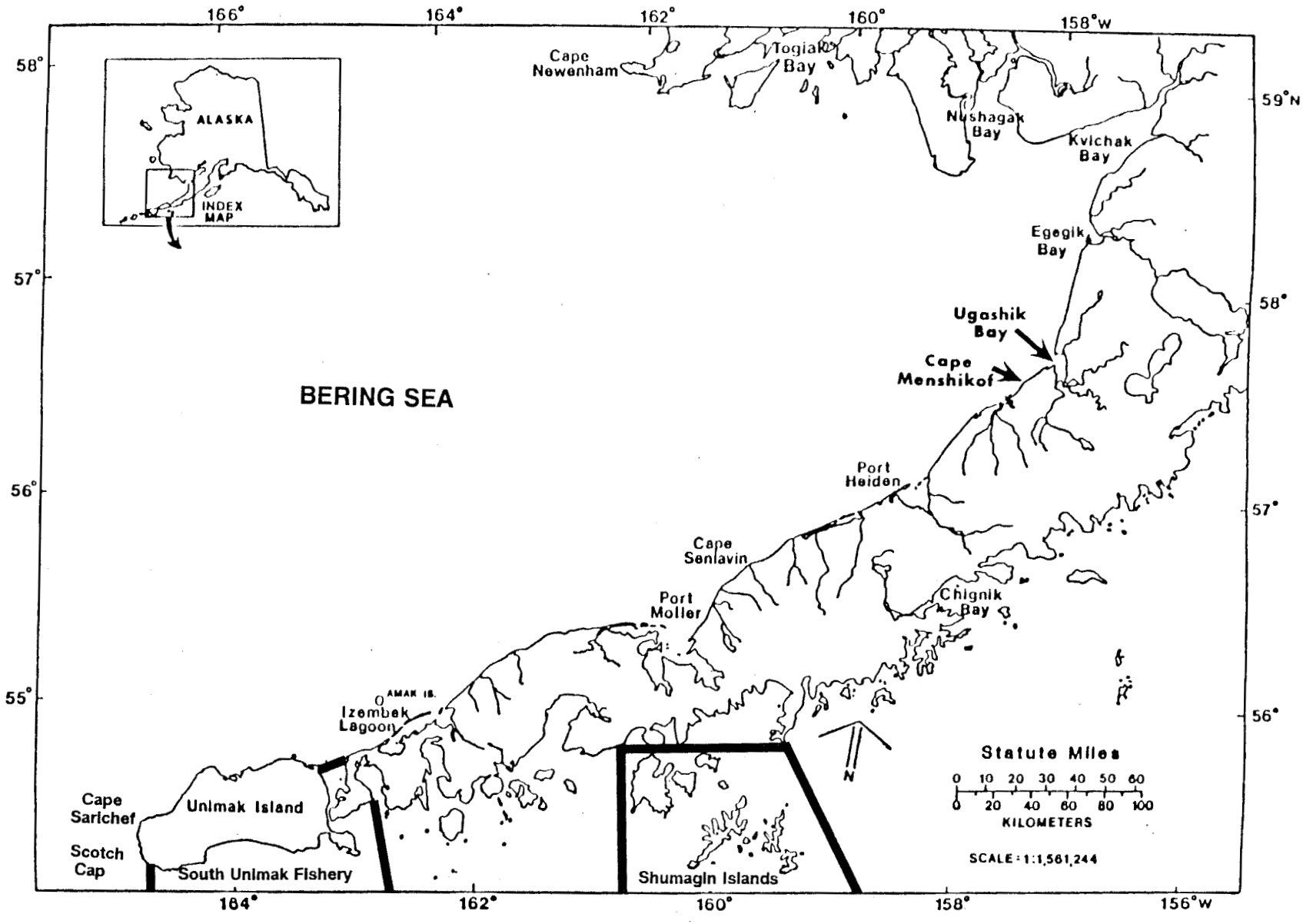


Figure 8. Map of the Alaska Peninsula Management Area showing the location of the South Unimak and Shumagin Islands June fisheries.

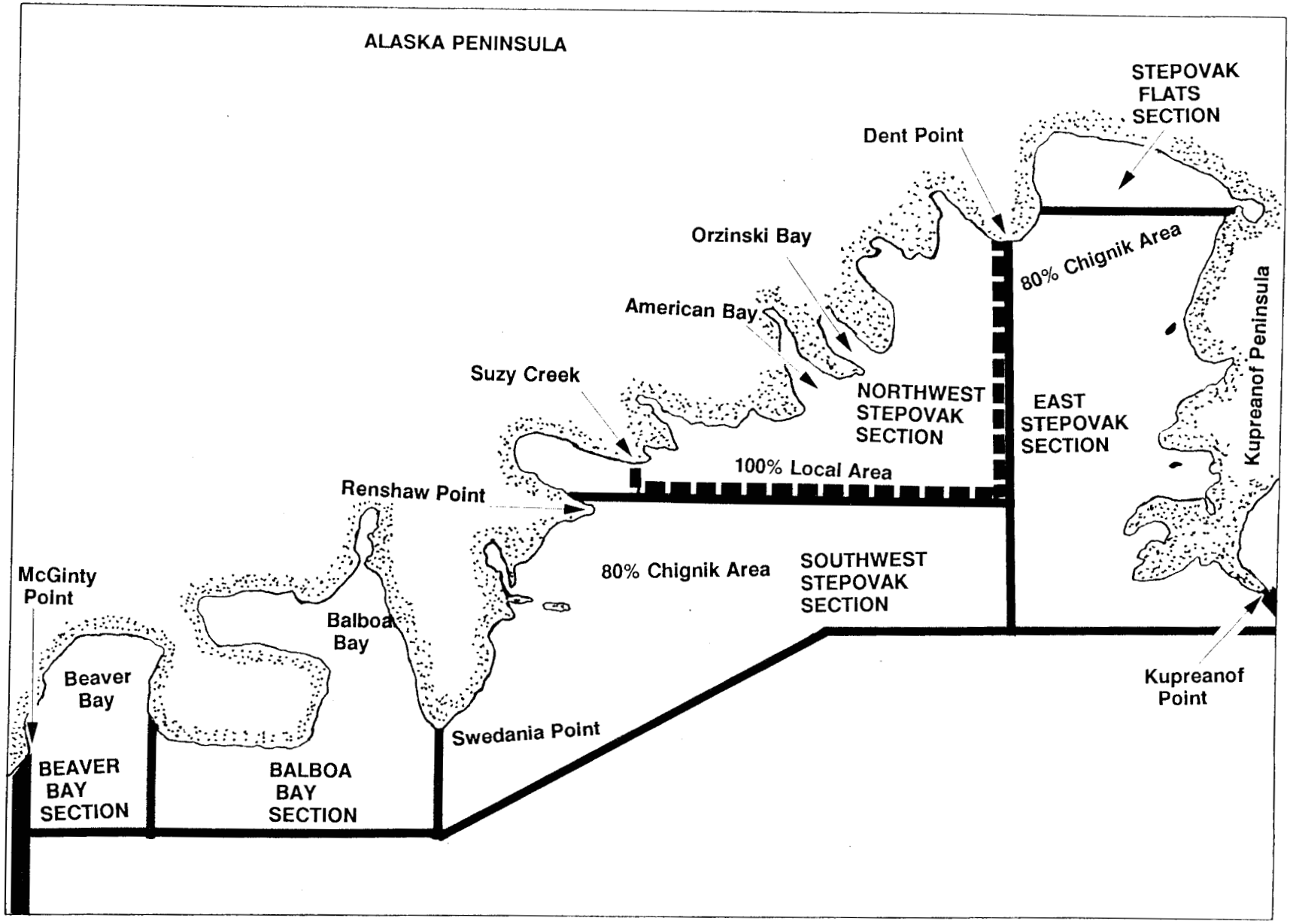
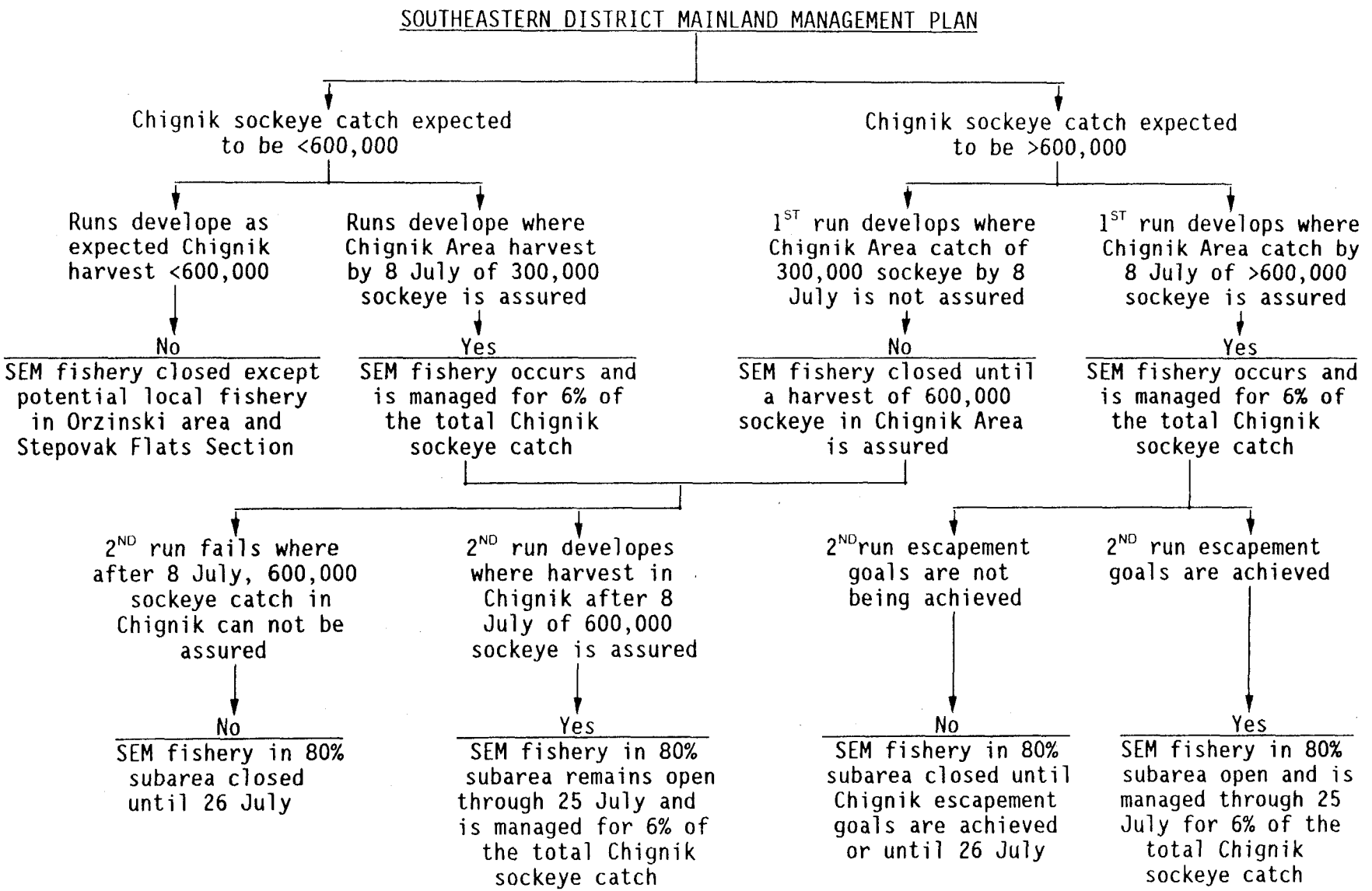


Figure 9. Map of the Southeastern District Mainland fishery showing the areas designated as 100% local sockeye salmon and 80% Chignik River bound sockeye salmon.

Figure 10. Flow chart of the Southeastern District Mainland (SEM) salmon management plan.



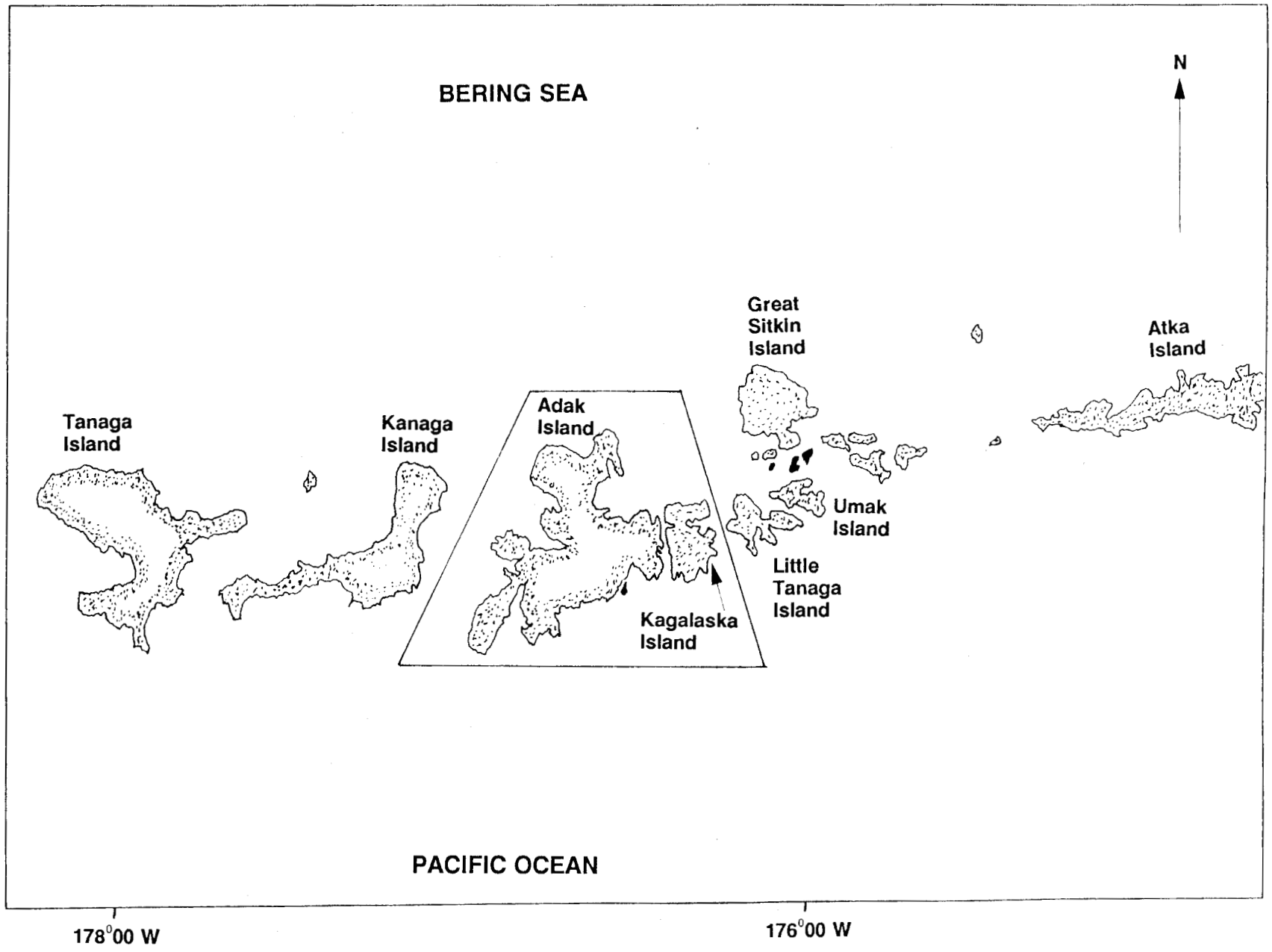


Figure 11. Map of the Aleutian Islands Management Area from Atka Island to Tanaga Island with the Adak-Kagalaska personal salmon use area shown.

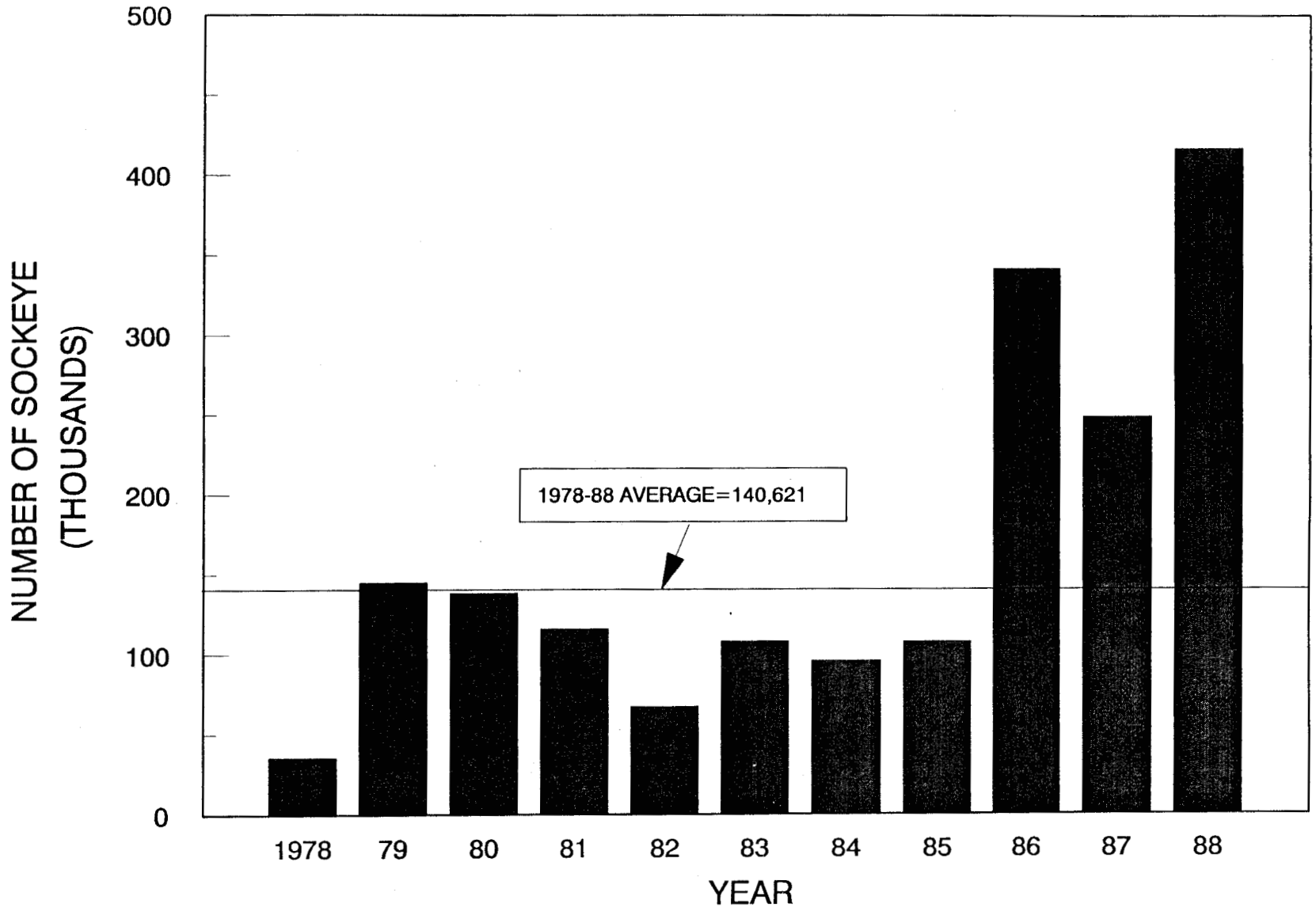


Figure 12. Shumagin Islands Section sockeye salmon catch after June, 1978-88.

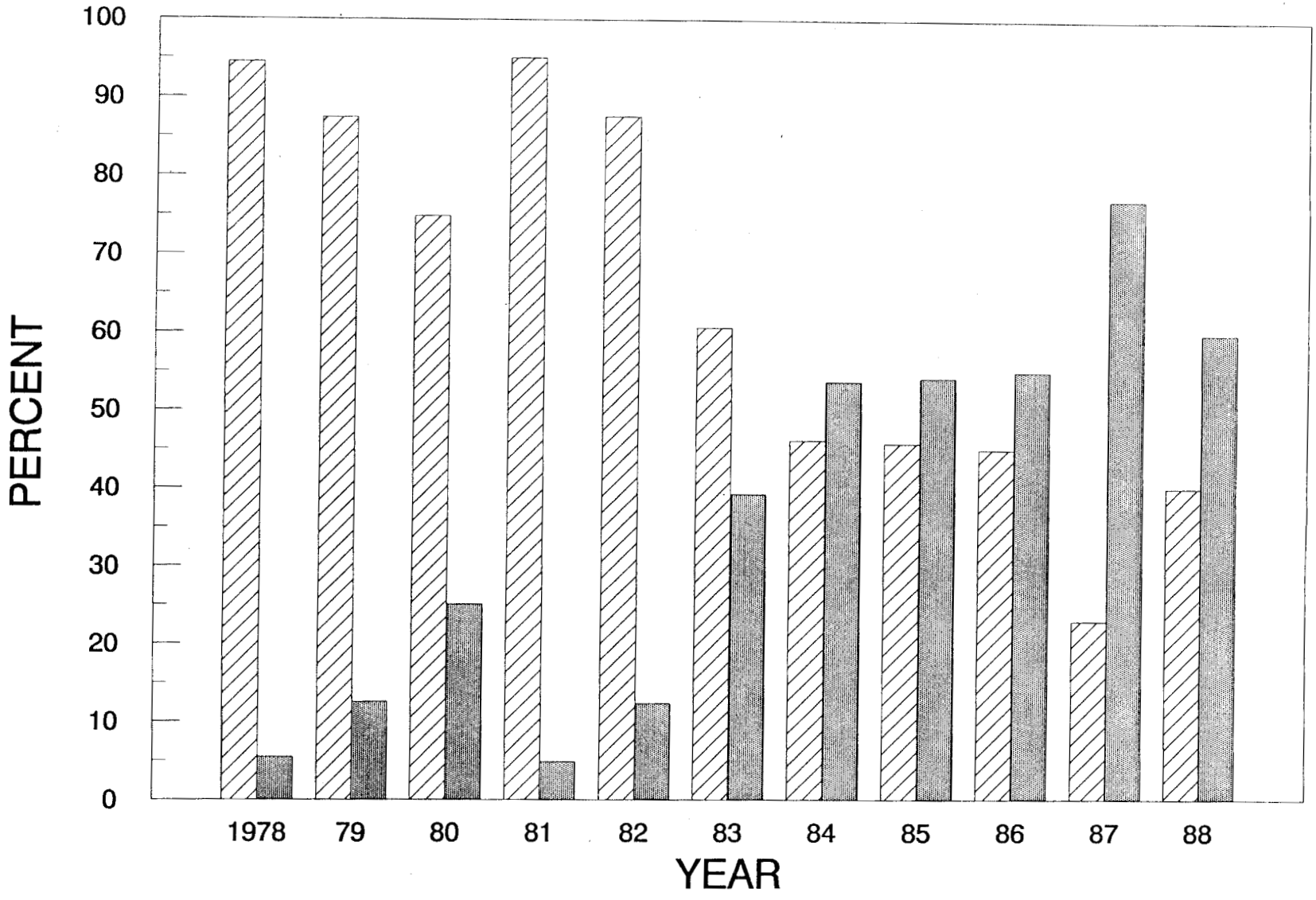


Figure 13. Distribution of annual sockeye salmon catches between the areas of Harbor Point, Port Moller, to Cape Seniavin (hatched bars) and Cape Seniavin to Strogonof Point (black bars), Northern District, Alaska Peninsula Management Area, 1978-88.

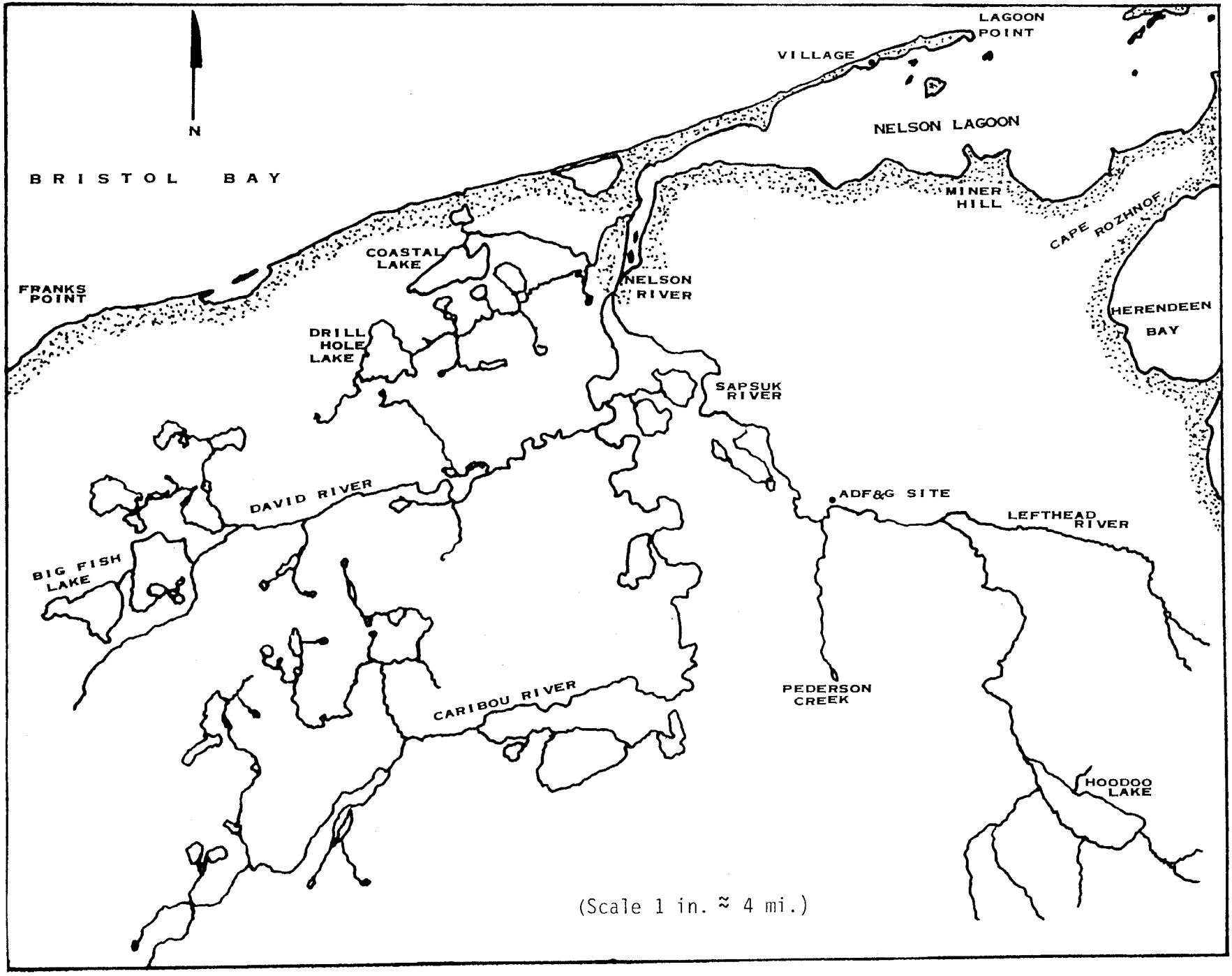


Figure 14. Map of the Nelson River drainage.

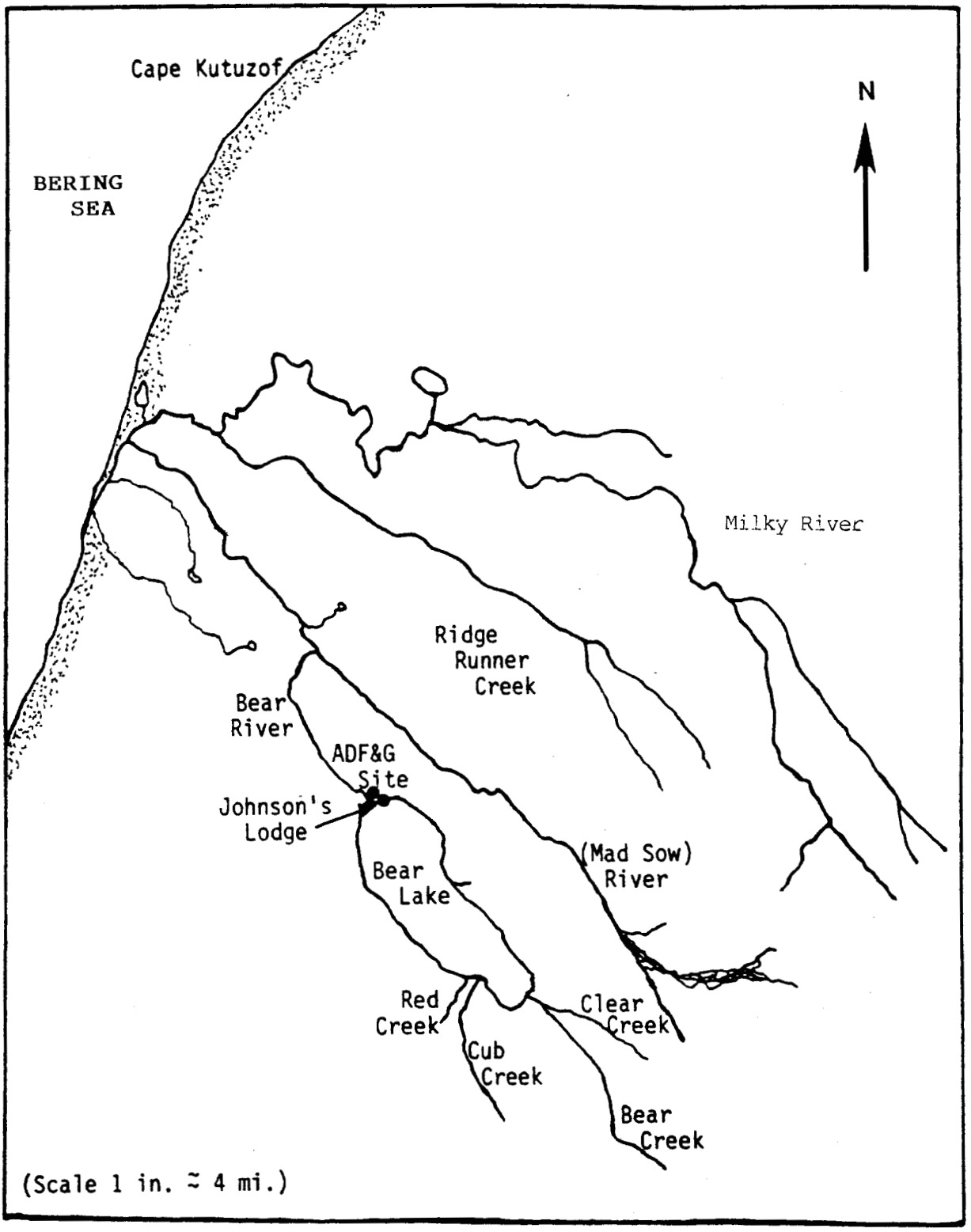


Figure 15. Map of the Bear River drainage.