

4K95-12

AN OVERVIEW OF THE KODIAK MANAGEMENT AREA
COMMERCIAL SALMON FISHERIES WITH EMPHASIS ON
MANAGEMENT ACTIVITIES, HARVEST STRATEGIES, HISTORICAL HARVESTS,
AND EFFORT DISTRIBUTION DURING JULY

By

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INTRODUCTION

In March of 1993, the Alaska State Board of Fisheries (BOF) accepted an agenda change request to discuss proposed regulation changes designed to reduce the Kodiak seine fleet's ability to harvest sockeye salmon bound for Cook Inlet spawning systems during July. This agenda change request was submitted by the Kenai Peninsula Fishermens Association as a result of high bycatches of sockeye salmon during early to mid July 1992, in specific geographic locations.

This issue was addressed by the BOF in March of 1994 with no regulatory action being taken. The BOF rescheduled this issue to be readdressed in March of 1995. A work group was appointed by the BOF, known as the Cook Inlet/Kodiak Sockeye Salmon Working Group, which is composed of two BOF members, three representatives from Cook Inlet, and three representatives from Kodiak. This working group was to meet throughout the next year and if possible, propose some type resolution to this issue to be reviewed by the BOF in March of 1995.

The intent of this report is to provide an overview of the Kodiak Management Area (KMA) commercial salmon fisheries, stock status, and to explain the various harvest strategies which are in effect during the month of July. In addition, this report will review historical harvests by species and effort levels (measured in terms of landings) by geographic area during the July 6-25 time period. July 6 marks the first general opening for Kodiak's pink salmon fishery, while July 25 defines the start of the peak harvest period for pink salmon. This time period also spans the peak bycatch period of non-local sockeye salmon. For a majority of the KMA the first fishing time in July starts with the July 6 pink and chum fishery.

When reviewing the tables and graphics provided in this report it is important to realize that due to the 1989 EXXON VALDEZ oil spill most of the KMA remained closed to commercial salmon fishing for the entire season. Where average harvest information is used, 1989 is not included.

KODIAK MANAGEMENT AREA DESCRIPTION

Location and Boundaries

The Kodiak Management Area (KMA) is comprised of western Gulf of Alaska waters surrounding the Kodiak Archipelago, and along that portion of the Alaska Peninsula which drains into Shelikof Strait between Cape Douglas and Kilokak Rocks at Imuya Bay (Figure 1). The archipelago is approximately 150 miles long extending from Shuyak Island south to the Trinity Islands. The Alaska Peninsula portion is about 160 miles long and is separated from the archipelago by Shelikof Strait which averages 30 miles in width. Chirikof Island, located approximately 40 miles south southwest of the Trinity Islands, is also included in the Kodiak Management Area. The regulatory description of the KMA is all waters of Alaska south of a line extending east from Cape Douglas at 58°52' North latitude, west of 150° West longitude, north

of 55°30' North latitude, and east of a line extending south from the southern entrance of Imuya Bay near Kilokak Rocks at 156°20'13" West longitude¹.

Physical Description

Glaciation shaped the Kodiak Archipelago. Kodiak's topography ranges from sharp crested alpine peaks (which run down the northeast-southwest axis of the island), to broad U shaped alpine valleys, to low flat bottomed wetlands. The coastline is mostly rocky and irregular, deeply indented by numerous glacially scoured straits, inlets, and branching fjords. Though the archipelago covers approximately 5,000 square miles of land area, there is no place on Kodiak Island that is more than 15 miles from the ocean (Buck et al. 1975). The southwest end of the island is lower with more subdued topography and a relatively smooth rounded coastline. Streams are generally short and steep, draining deep mountain lakes or small glaciers. In the southwest part of Kodiak streams are somewhat longer, flowing along wide valleys (the longest rivers, the Karluk and Ayakulik, are located in this zone and each extend about 30 miles). The western portion of the Kodiak Management Area lies along the Alaska Peninsula. While similar in many ways to the Kodiak Archipelago, and also shaped by glaciation, it is an area strongly influenced by volcanism. The rugged Aleutian Range dominates the topography, running in a northeast-southwest direction down the peninsula, and forms the boundary of the watersheds which drain into Shelikof Strait. The mountains are higher than those of the Kodiak Archipelago, with many large glaciers. Generally, temperatures are lower on average with less annual precipitation. Again, streams are relatively short and steep. Because of the local occurrence of deep beds of volcanic ash some streams are unstable with shifting stream channels.

The marine waters of the area are influenced by the Alaska Current, which moves north along the Southeast Alaska panhandle, west by the north shore of the Gulf of Alaska (past Yakutat and Prince William Sound), then moves south and west past Kodiak Island. The current narrows and intensifies near the archipelago, and becomes the Alaska Stream, which passes down along the Alaska Peninsula. Actual surface currents are greatly influenced by tides and strong winds associated with frequent storms in the gulf. The climate of the Kodiak region is dominated by this strong marine influence. It is characterized by mild temperatures (the overall mean annual temperature is 40° F), predominantly cloudy skies (days are overcast more than half the year) with moderate to heavy precipitation (averaging over 68 inches per year, with up to 200 inches per year documented in specific locations).

The marine waters around Kodiak are among the most productive in the North Pacific. Offshore upwelling combines with abundant freshwater runoff to make near shore waters rich in nutrients. There are hundreds of species of marine fish native to the KMA, including 5 species of salmon: chinook *Oncorhynchus tshawytscha*, sockeye *O. nerka*, pink *O. gorbuscha*, chum *O. keta*, and coho *O. kisutch* salmon.

¹ All latitudes and longitudes currently used in ADF&G Commercial Fishing Regulations (ADF&G 1993a) are based on North American datum of 1927 (5 AAC 39.997(b)). This document also follows that system.

Population and Communities

Kodiak is one of the most rapidly expanding communities in the state of Alaska, with a population growth of 19.1% from 1990 to 1992 (Alaska Department of Labor, Unpublished Report, 1993). Approximately 15,250 people currently reside within boundaries of the Kodiak Management Area (Kodiak Island Borough Census Report, October 1993). The majority of area residents reside in the city of Kodiak (approximately 7,500) and along the connecting road system (approximately 6,500; including the U.S. Coast Guard Base adjacent to town, and outlying communities of Monashka Bay, Bell's Flats, Pasagshak, and Chiniak). The remaining 1,250 people reside in small communities scattered around the island, including the cities of Akhiok, Larsen Bay, Old Harbor, Ouzinkie, Port Lions, the village of Karluk, and a logging camp located in Danger Bay (Figure 2). Approximately 15% of the population is of Alaska Native heritage (Northern Economics 1991).

Commercial fishing and processing account for 55% of the private sector work force (Northern Economics 1991). During the commercial salmon fishing season (approximately June through September) 4,200 to 5,000 people may be involved in the KMA commercial salmon fishery. This includes approximately 1,800 to 2,000 fishers and crew, 200 to 300 tender operators and crew, and 2,200 to 2,700 processing personnel (based on ADF&G estimate and Alaska Department of Labor statistics). The economic value of the commercial salmon fishery, based solely on the average price paid to fishers (exvessel value), has averaged over \$30,000,000 annually since 1975 (Figure 3).

SALMON RESOURCES

Salmon Producing Streams

There are approximately 800 streams within the KMA in which salmon migration or spawning has been documented (State of Alaska 1993a). Of these, 440 streams are shown on the current Kodiak Area Salmon Statistical Area Map (Figure 4; Appendices A.1-A.8). Four streams support viable chinook salmon stocks, 39 streams support sockeye salmon stocks of extremely varying size, 174 have coho salmon runs, approximately 150 have chum salmon runs, and all 440 streams support pink salmon stocks. Of these streams, 92 are located in the Mainland District on the Alaska Peninsula, 18 are on Shuyak Island, 84 are on Afognak Island, 234 are on Kodiak Island, and 12 are on the Trinity Island group (Table 1).

Biological Escapement Goals

The Alaska Department of Fish and Game (ADF&G) Commercial Fisheries Management and Development Division (CFMDD) Kodiak salmon management and research staff have established biological escapement goals, or the annual number of spawning salmon required inriver to sustain production, for each salmon species. Escapement goals are expressed as a range; the low end of the range is considered a minimum escapement, and the high end of the range is the maximum escapement goal (Table 2). These escapement goals have been formulated for sockeye, pink, and chum salmon by river system (Appendices B.1-B.3). Escapement goals have also been prepared

for most coho and major chinook salmon producing streams (Appendices B.4 and B.5). The KMA commercial salmon fisheries are managed to achieve escapement levels which are within the biological range. The "targeted" escapement goals for KMA salmon are: 15,000 chinook, 2,100,000 sockeye, 3,000,000 to 4,500,000 pink², 1,020,000 chum and 150,000 coho salmon.

Salmon Production Potential (Wild Stocks)

An "average salmon production potential" for the KMA can be calculated by multiplying the escapement goal by an assumed average return per spawner, for each species (Table 3). The annual "potential harvest" is calculated by subtracting the targeted escapement goal. Assuming that escapement requirements are achieved, and that the actual return per spawner values for each species are near the assumed values, the potential annual harvests should average 22,500 chinook, 3,150,000 sockeye, 7,500,000 to 11,250,000 pink, 1,836,000 chum, and 225,000 coho salmon. However, due to the variable environmental conditions encountered throughout the life cycle of these species, fluctuations in salmon production occur. In recent years, the actual return per spawner estimates for Kodiak's major sockeye salmon systems has approached 3.8:1 (Patricia Nelson, personal communication), which should result in approximately 5.9 million sockeye being available for harvest (Figure 5).

Supplemental Production

There are two hatcheries located in the KMA which produce salmon to supplement natural salmon production (Figure 2). Both hatcheries, Kitoi Bay and Pillar Creek, are operated by the Kodiak Regional Aquaculture Association (KRAA). Kitoi Bay Hatchery has a rearing capacity of 230,000,000 eggs, and is located on the east side of Afognak Island. The Kitoi Bay facility produces primarily pink salmon, plus some sockeye, chum, and coho salmon. Some outstocking of coho and sockeye fry or smolt occurs, but the majority of the salmon are intended to return to the hatchery for common property harvest. Pillar Creek Hatchery, with a rearing capacity of 20,000,000 eggs, is located north of the city of Kodiak at Monashka Bay. It is utilized primarily as an incubation facility for sockeye salmon stocking projects.

The Kodiak Regional Planning Team (KRPT) identified sockeye salmon as the # 1 priority species for supplemental production. KRAA and ADF&G are involved in limnological studies of KMA lakes and ongoing lake fertilization to increase sockeye salmon fry growth and survival. Lake fertilization has been conducted on Malina, Laura, Portage, Frazer, and Karluk Lakes. Through the use of remote egg takes and hatchery incubation, sockeye salmon fry are being stocked to enhance future sockeye salmon harvest potential. Stocking of sockeye salmon is occurring at Spiridon, Hidden, Crescent, and Waterfall Lakes.

² Pink salmon production in individual systems tend to be large one year, then small the next. On Kodiak there has been an "even year dominance"; that is, during even numbered years the major pink salmon systems produce larger returns. Hence the escapement goal is different between odd and even years, with odd numbered years having lower goals, and even years having higher goals.

ADF&G Sport Fish Division annually stocks chinook and coho salmon fingerlings and smolt to enhance sport fishing opportunities (Schwarz *in press*). Chinook salmon smolt have been stocked into Island and Mission Lakes near the city of Kodiak. Coho salmon presmolt have been stocked into Island, Kalsin, Mayflower, Dark, Mission, Orbin, and Potato Patch Lakes near the city of Kodiak, into Crescent Lake near the city of Port Lions, into Ouzinkie Lake on Spruce Island near the city of Ouzinkie, and into Little Kitoi, Hidden, and Jenifer Lakes on Afognak Island. Most of the coho salmon stocking is intended to produce put-and-take fisheries, where all returning adults are expected to be harvested, and no escapement and subsequent spawning is possible.

Supplementing KMA salmon fisheries is an ongoing long term project, with the first harvestable adult sockeye returns occurring in 1994. The *Kodiak Regional Comprehensive Salmon Plan* (KRPT 1992) states an objective of increasing the harvest of salmon (over and above the KMA wild salmon harvest) by an additional 3,000 chinook, 1,700,000 sockeye, 383,000 coho, 11,500,000 pink, and 1,100,000 chum salmon by the year 2002.

"Non Local" Salmon in the KMA

Salmon tagging studies have been conducted in the KMA to aid in management of commercial fisheries by estimating the stock composition present at a particular time and place, and to determine average travel time of major stocks through fishery management units. The earliest tagging study was done in 1927 (Rich and Morton 1929) and there were intermittent tagging studies through 1981 (Bowe 1941; Bevan 1959; Simon et al. 1969; Nicholson 1978; Tyler et al. 1986). Most occurred along the south and west sides of the Kodiak Archipelago to learn more about the migration pathways of sockeye salmon travelling to the major systems of Kodiak (Karluk, Ayakulik, Upper Station, and Frazer). Some sockeye salmon tagging was done along the north and east sides of the archipelago (Tyler et al. 1986) and at the south west end of the KMA, along the Alaska Peninsula near Wide Bay (Simon et al. 1969). Salmon migrating through KMA waters to the Chignik and Cook Inlet Management Areas as well as salmon migrating through portions of Cook Inlet to Kodiak were documented in some of those studies.

Based on coded wire tag recoveries, chinook salmon originating from Canadian hatcheries in British Columbia were documented in 1994 as contributing to the commercial harvest.

Recent stock composition studies in the KMA used scale pattern analysis, run timing, and analysis of shifts in average weights of commercial catches (Barrett and Swanton 1991 and 1992; Barrett and Nelson 1994; Swanton and Nelson 1994; Vining and Barrett 1994). Samples of KMA spawning chinook, sockeye, and chum salmon have been collected to establish baseline data for genetic stock identification.

SALMON FISHING ACTIVITY

The salmon resources of the KMA have been exploited commercially for over 150 years (Roppel 1986). The first commercial fisheries were small salted salmon ventures by the occupying Russians in the early 1800's. Salmon streams were blocked and salmon captured as they became

schooled behind these barriers. Sockeye salmon returning to the Karluk River brought fishermen and processors to Kodiak soon after the territory was transferred from the Russians in 1867. A record of commercial sockeye salmon harvest dating back to 1882 exists (Table 4). Intense competition led to expansion of the fishery to other areas and species. By the early 1900's fisheries for coho, pink, and chum salmon had developed.

Commercial Gear Use

Beach seines were the first gear type effectively used commercially. In the late 1800's, beach seines 40 fathoms in length were used to harvest sockeye salmon in Karluk Lagoon. As competition for fish grew the primary harvest location for Karluk sockeye salmon moved outside the lagoon, using heavily manned beach seines averaging 450 fathoms in length. The first fish trap was built in Kodiak in 1896, and until the late 1950's the Kodiak commercial salmon fishery was dominated by cannery owned fish traps, with some independent fishers owning purse seine, beach seine and set gillnet operations. When Alaska was granted statehood in 1959, fish traps were prohibited, and the KMA commercial salmon fishery was conducted by purse seine, set gillnet, and beach seine gear (in decreasing order of abundance). In 1974 a "limited entry system" was adopted by the State of Alaska which restricted the number of individuals allowed to participate in commercial salmon fisheries. This system formally established post statehood levels of purse seine, beach seine, and set gillnet gear participation.

There are 613 commercial salmon permits for the KMA: 387 purse seine (making this the second largest purse seine fleet in the state), 34 beach seine, and 190 set gillnet. Actual numbers of permits fished annually varies slightly (Table 5). Seventy-seven percent of KMA permits are owned by Alaska state residents, with ownership varying little since 1987 (Table 6). Sixty-one percent of all permits are owned by Kodiak area residents, representing all communities (Table 7).

Management Units

The KMA is one of 13 designated salmon net registration areas in the State of Alaska. Inseason management of the commercial salmon fishery is structured around 7 districts subdivided into 52 sections. These sections are occasionally subdivided inseason to adjust fishing effort on unexpected salmon surpluses or deficits. Each management unit (section) defines a traditional geographic harvest area, managed for specific stocks or traditional fishing patterns (Appendices A.1-A.8).

Legal Commercial Gear Areas

In the KMA there are restrictions on which gear types can operate in specific management units, based on historical gear use patterns. Both purse and beach seine gear are allowed to operate in the entire management area, except for the Moser-Olga Bay Section of the Alitak Bay District,

where set gillnets are the only legal gear³. In the Central Section of the Northwest Kodiak District both set gillnet and seine gear are allowed. Since 1974, the geographical areas currently open to specific gear types have, with few exceptions, remained unchanged.

In the mid 1970's, that portion of the Karluk District between Rocky Point and Cape Uyak was closed to set gillnet gear in an attempt to accelerate the rebuilding of the Karluk sockeye and pink salmon stocks. No gillnet gear had fished there since the early 1960's. Several purse seine locations within this area, which could impact Karluk stocks, were brought under direct management control. This area was used to provide an expanded closed water sanctuary for severely depleted Karluk sockeye and pink salmon stocks.

In the late 1970's, a gear and area adjustment occurred in the Alitak District. The common boundary between the Cape Alitak, Moser-Olga Bay, and Humpy-Deadman Sections was adjusted in an effort to reduce gear conflicts caused by an unclear boundary description. The area open to set gillnet gear was reduced from Cape Alitak to Tanner Head and was increased in Deadman Bay to a point northwest of Fox Island.

A gear and area adjustment was made in Zachar Bay to alleviate fixed and mobile gear conflicts. In the late 1970's closed water sanctuary markers were reduced (moved further into the bay) and the new area was designated "seine gear only". The creation of this small area adjacent to the closed waters within Zachar Bay was consistent with that of other major westside Kodiak bays.

In the mid to late 1980's, there were two adjustments made to boundaries in the Moser-Olga Bay Section to allow for continued use of set gillnet sites; one adjustment was in the closed water portion of Chip Cove and the other at the north end of the "Fox Island line".

Also, as a result of purse seine fishing activity in Shelikof Strait in 1988, the Alaska State Board of Fisheries stated that commercial salmon fishing activities should be restricted to those waters located within the State of Alaska territorial sea boundary (three mile limit). Due to conflicts between state and federal regulations, Kodiak ADF&G staff issued an emergency order closing all waters of the KMA seaward of the state territorial sea boundary for the 1991 and 1992 seasons. Beginning in 1993, a new regulation was in effect which states that all KMA district and section boundaries do not extend beyond the three mile limit.

Commercial Salmon Processing

Commercial salmon processing within the KMA began in the late 1860's with small salting and pickling operations located around Kodiak Island near major harvest areas. In 1882 processing evolved to canning; when the first cannery was built at Karluk. Kodiak's processing plants have further evolved from those scattered, seasonally operated, canning operations to today's efficient

³ Prior to Alaska being granted statehood, this management unit was designated set gillnet only. In 1970 this rule was amended such that the Moser-Olga Bay Section remains gillnet only prior to September 5. Seine gear is then legal in the entire Alitak Bay District. The Dog Salmon Flats, Inner and Outer Akalura, and the Inner and Outer Upper Station Sections are normally closed to commercial fishing. In the event of over escapement "mop up" fisheries can occur in these sections. Prior to September 5 only set gillnet gear would be allowed in these sections.

multi-tasked plants, mainly congregated within the city of Kodiak. The majority of these plants are now year-round operations, processing crab and groundfish in addition to salmon. Kodiak's processors now produce fresh and frozen salmon products, supplemental to canned salmon. Recent technology used in processing other fish species has been adapted to salmon processing, yielding new, diverse salmon products (such as fillets, surimi, hams, nuggets, and burgers).

Up to 15 salmon buyers or processors participate annually in KMA salmon fisheries. Processing plants are located in the city of Kodiak, Port Bailey, Uganik Bay, Larsen Bay, and Alitak Bay (Figure 2). The latest estimate of the sustained processing capacity of Kodiak's shorebased salmon processors is approximately one million salmon per day. With this high processing capacity, it is common for Kodiak processors to "import" salmon harvested elsewhere in the state. At times, salmon from Bristol Bay, Cook Inlet, Prince William Sound, Alaska Peninsula, and Chignik Management areas are processed in Kodiak plants.

Subsistence Salmon Fishery

The KMA staff issues subsistence salmon permits annually to obtain harvest data. Only residents of the state of Alaska are eligible to take salmon for subsistence purposes. Since 1989 KMA ADF&G staff have mailed out permits, regulations, and a map showing closed water areas to eligible residents. Additional permits are issued to Alaska residents at the Kodiak ADF&G office. Subsistence fishermen are requested to return their permits to ADF&G after the salmon season, listing areas fished by date and salmon harvest by species.

With few restrictions, the entire KMA is open to subsistence salmon fishing. Reported harvests have averaged 25,500 fish annually for the past 10 years (Table 8). Sockeye salmon accounts for 62% of the harvest, followed by coho salmon at 27%. The most utilized subsistence fishing areas include the north end of Kodiak Island and the southeast side of Afognak Island.

Salmon Sport Fishery

Since the early 1980's, commercial sport fishing activities have been increasing, particularly in remote areas of the KMA (*Schwarz in press*). Salmon sport fishing opportunities continue to be discovered in the KMA. Commercial sport activity includes lodge operations, charter vessels, guiding, and directed air charter flights. Although sport caught salmon may not be sold, the lodge, guiding, and charter activities are considered commercial uses since the owner is compensated monetarily for directing and providing fishing opportunities. Most charter boat operations are based out of the city of Kodiak. Remote lodges are currently being operated at Karluk Lagoon, Ayakulik River mouth, Olga Bay, Larsen Bay, Old Harbor, Saltery Lake, Port Lions, Port Bailey, Raspberry Straits, Seal Bay, Port Williams, Zachar Bay, Uyak Bay, Ugak Bay, Uganik Bay, and Kukak Bay. Floating cabins are located in Paramanoff and Perenos Bay. Fly in sport fishing areas include virtually all KMA chinook and sockeye salmon systems, and most major coho salmon systems.

Sport fishing activities are regulated by ADF&G's Sport Fish Division. The KMA sport fishery salmon harvest is estimated by an annual Sport Fish Division statewide mailout survey. Sport

fish salmon harvest varies each year, but by looking at averages over the last 16 years (1978-82, 1983-87, and 1988-93) an increasing trend is evident (Table 9). The harvest has averaged 12,400 pink, 17,500 coho, 5,400 sockeye, and 2,200 chinook salmon, over the 1988-93 period.

ADF&G STAFF INVOLVEMENT

The ADF&G, Commercial Fisheries Management and Development Division (CFMDD) is responsible for the management of commercial harvest activities on Alaska's salmon stocks. KMA staff responsible for regulation of the commercial salmon fishery consists of an Area Management Biologist, two Assistant Area Management Biologists, and approximately 15 seasonal employees. The Kodiak salmon research staff includes an Area Research Biologist and approximately 10 seasonal employees. A Regional Salmon Management Coordinator and a Regional Salmon Research Biologist oversee these operations. The Kodiak salmon development staff (formerly the Fisheries Rehabilitation and Enhancement Division) includes an Area Biologist, and Assistant Area Biologist, and approximately 10 seasonal employees. Biologists and technicians from the Division of Sport Fish, Alaska State Parks, U.S. Fish and Wildlife Service (Kodiak National Wildlife Refuge), and KRAA, aid in the collection of data at various times during the salmon fishing season.

Preseason Activities

Forecasts

Preseason salmon forecasts are developed jointly by management and research biologists. Pink salmon returns to the KMA are predicted by broad geographic area, while individual forecasts are made for major sockeye salmon stocks. Projected harvests are estimated by fishery and area (Table 10).

The KMA pink salmon forecast is based on a preemergent pink salmon sac fry survival study. This study has been conducted each spring by the KMA management staff since 1966. This annual program examines pink salmon overwinter egg to fry survival in specific streams during March and April (Table 11). Each year, data are compared to previous year's results to develop a preseason forecast of return and potential harvest. The KMA pink salmon forecasts are reliable in projecting extremes for major systems and total production. This forecast assists fishery managers in making preseason decisions concerning fishing time and areas open to fishing, especially during the early portion of the pink salmon run.

System specific sockeye salmon forecasts are developed for major stocks. Information which is used to develop these forecasts are: previous run strength information (escapement and catch); sockeye salmon smolt outmigration data; and samples of sockeye salmon escapement and commercial catch age data.

Formal forecasts are not prepared for chinook, coho, or chum salmon. Potential harvest is estimated by the Area Management Biologist based on previous escapements and observed

escapement/return relationships. Similarities exist between pink and chum salmon freshwater and early marine survival. Pink salmon forecasting information (egg to fry overwinter survival estimates) are used along with escapement data to predict chum salmon production.

Inseason Activity

By regulation, the commercial salmon fishing season in the Kodiak Management Area may extend from June 5 through October 31 (State of Alaska 1993b). Inseason management activities focus around daily evaluations of actual run strength in comparison to preseason expectations (forecasts) by species. Commercial salmon fisheries may be allowed if there appears to be salmon surplus to escapement needs.

Escapement Estimation

The majority of KMA sockeye and all chinook salmon escapement counts are obtained with the use of fish weirs (Brodie 1994). Weirs are used on up to 12 different spawning systems (Table 12; Figure 2). Escapement counts through fish weirs are hand tallied total counts, by species. Sonar, video, or timed periodic counts are not used. Escapement gates are closed when personnel are not present to count. All four major sockeye salmon systems and several of the minor sockeye salmon systems are monitored by seasonal ADF&G staff at fish weirs. The remainder are monitored by aerial observation using small fixed wing aircraft. Escapement counts are collected daily from fish counting weir stations by single side band radio contact. The timely and accurate data from weir camps allows for more precise stock specific management.

While some KMA pink, chum, and coho salmon escapement counts are obtained from weirs, most counts for these species are estimated by aerial survey, and a few streams are surveyed by foot. Aerial survey and foot survey counts are considered an index of the actual escapement, for use inseason to aid fishery management⁵. Salmon buildup estimates and escapement index counts are collected from frequent fixed wing aircraft surveys of KMA bays and streams (Table 13).

Commercial Salmon Harvest Strategy

There is a general chronology related to salmon run timing by species within the KMA (Figure 6). There are "early run" sockeye salmon present in the KMA throughout June to about mid July, and "late run" sockeye salmon are available from mid July through late September. Pink and chum salmon are available and targeted during July through August. Coho salmon are present in the KMA from about August through October. Commercial salmon fisheries are structured around the seasonal abundances of salmon. Inseason management actions follow a plan described in an annually issued harvest strategy (Prokopowich et al. 1994). This strategy recognizes a specific chronology of management actions related to salmon run timing by species. Included

⁵ Expansion of index counts to estimate total return strength can be accomplished by various methods, and is done postseason by research staff. All escapement values in past Annual Management Reports are total counts from weir plus index counts, and this document follows that pattern.

in this annually issued harvest strategy are descriptions of the many BOF approved regulatory management plans which also guide inseason management actions.

SALMON STOCK STATUS

Chinook Salmon

The Kodiak area has two naturally occurring chinook salmon populations, in the Ayakulik and Karluk Rivers. A small introduced chinook salmon run occurs in the Dog Salmon River. There are no directed commercial fisheries targeting these stocks and any commercial harvest occurs as bycatch in fisheries targeting sockeye and pink salmon. Sport fishing pressure on chinook salmon runs in the Ayakulik and Karluk Rivers is increasing, as commercial sport fish operators and recreational anglers continue to discover fishing opportunities in the Kodiak area. In the Dog Salmon River, to aid establishment of a viable spawning stock, sport fishing for chinook salmon is prohibited.

There are two other chinook runs in the KMA, both introduced. One is at Pasagshak River, where in the late 1970's eggs taken from Chignik River chinook salmon were used to establish a chinook run accessible by road to Kodiak sport fishers. The productivity of this run has been less than expected, and chinook sport fishing has remained closed in Pasagshak River. The second introduced chinook salmon run is located at Mill Bay near the city of Kodiak. This introduction was designed to support put-and-take recreational fisheries. Since 1989 ADF&G Sport Fish Division annually stocks up to 100,000 chinook salmon presmolt from the Elmendorf Hatchery in Anchorage into Island Lake.

Currently, chinook salmon stocks are considered healthy. Minimum escapement requirements have been met annually since 1982, while the upper end of the escapement range has been met or exceeded each year since 1987 (Table 13, Figure 7). Harvests have increased as well, for the subsistence, sport, and commercial fisheries (Tables 4, 8, and 9). Over the last 10 years, the commercial harvest has averaged approximately 17,000 chinook salmon (Figure 8).

Sockeye Salmon

There are 39 known sockeye salmon runs in the KMA. Large returns (greater than 500,000 fish) occur in four lake systems: Karluk, Ayakulik, Upper Station, and Frazer (Dog Salmon River). The first three support naturally occurring runs, while the Frazer Lake sockeye stock is a very successful introduced run. There is a large set of falls below Frazer Lake which blocks natural migration; this run is maintained through the use of a large "fish ladder".

These systems provide approximately 80% of the current KMA sockeye salmon production. Directed fisheries on these stocks are intense and require extensive management activities from June 5 through September 20. The Karluk and Upper Station systems have distinct early (May 25 through July 15) and late runs (July 16 through September 20). Frazer is primarily an early returning stock with most sockeye entering fresh water by July 20. Ayakulik also has an early

returning stock which continues into mid August. The overall escapement goals for these four major systems have been achieved annually since 1988.

Twelve sockeye systems in the KMA have minor but significant runs. These include the Afognak, Uganik, Akalura, Saltery, Kafliia, Pauls, Buskin, Swikshak, Little, Malina, Thorsheim, and Perenosa systems. These systems annually account for approximately five percent of KMA's current sockeye salmon production. Escapement into each system is generally less than 60,000 sockeye salmon. These minor stocks offer a relatively high yield per unit effort to directed commercial seine effort, and so, are vulnerable to overexploitation. The exception is the sockeye salmon run into Buskin Lake, which is not targeted by a commercial fishery. All fish surplus to escapement requirements are currently harvested in a subsistence fishery and, to a lesser degree, in a recreational sport fishery. All these minor sockeye salmon stocks are considered to be moderately healthy with the exception of Malina, Pauls, and Perenosa. A more conservative management approach for these systems is currently in effect.

The remaining 23 systems are comparatively minor systems and are not usually exploited by directed commercial effort.

Commercial salmon harvest strategies have not limited sockeye salmon subsistence or sport fishing opportunities in the KMA. Both the Buskin and Barabara sockeye stocks receive substantial subsistence effort due to their proximity to communities. These two systems may be approaching maximum exploitation from subsistence effort alone. Sport fish interest in Barabara is low, while the Buskin is receiving increased effort. These systems will require close monitoring in the future to ensure biological protection and that future subsistence use will not be jeopardized.

As mentioned previously, the Kodiak Regional Planning Team (KRPT)⁶ established sockeye as the priority species for supplemental production (Kodiak Regional Planning Team 1992). Currently, the Kodiak Regional Aquaculture Association (KRAA) in conjunction with ADF&G is active in providing additional sockeye salmon production, both by introducing sockeye runs into previously unutilized lakes and by enhancing weak natural runs.

Overall, KMA sockeye stocks are healthy. The lower escapement goal for KMA sockeye salmon has been met or exceeded annually since 1984 (Table 13, Figure 9). Commercial harvest has averaged 3,385,000 sockeye salmon over the 1984-1994 period (Table 4, Figure 10).

Pink Salmon

All salmon streams within the KMA support pink salmon runs. Pink salmon represent the foundation of Kodiak salmon production, and may comprise over 80% of the total annual harvest (Table 4). Primarily due to the cyclic production from Ayakulik and Karluk Rivers, KMA pink

⁶ The RPT is a group consisting of representatives of ADF&G, regional aquaculture associations, and the public, mandated by Alaska Statutes (16.10.375-470) to develop and amend comprehensive salmon production plans for salmon production regions.

salmon runs are usually larger during the even numbered years. However since 1989 odd year production has surpassed even year production⁷.

Except for occasional local variations, KMA pink salmon stocks are considered very healthy. Escapement goals have been met or exceeded in each year since 1975 (Table 13, Figure 11). Over the last 10 year (1984-1994) period, the annual harvest has averaged 11,759,000 pink salmon; even year pink salmon harvest has averaged 9,086,000, odd year pink salmon harvest averaged 13,535,000 (Table 4; Figure 12). Pink salmon survival and subsequent returns are strongly influenced by environmental factors (Groot and Margolis 1991). Wild stock pink salmon production should remain above average as long as existing management strategies are retained (to ensure adequate escapement) and adverse environmental conditions do not persist. The long term outlook for Kodiak's wild pink salmon stocks is very good.

The Kitoi Bay Hatchery on Afognak Island primarily produces pink salmon. In recent years pink salmon returns to this hatchery have ranged from approximately 1,000,000 to 13,000,000 fish.

Chum Salmon

Chum salmon are present in at least 150 streams of the KMA. KMA chum salmon production has been variable, and has been at low levels for the past 3 years. Escapement estimates have been near or above the targeted goal (1 million fish) in only 2 of the past 10 years, while the minimum escapement goal has been achieved in 8 of the past 10 years⁸ (Table 13; Figure 13). The annual commercial harvest for the last 10 years has averaged 794,000 chum salmon since 1984 (Table 4; Figure 14).

Chum salmon management has received increasing emphasis. Increases in directed fishing on specific chum salmon stocks combined with efforts to harvest better quality fish (bright vs. dark fish) requires that more intensive chum salmon stock management strategies continue to be developed to prevent overexploitation. Currently, KMA management staff evaluate chum salmon escapement goals, historical harvest and escapement data, age class information, and inseason harvest and escapement data to improve management of this species. It may be possible to improve chum salmon management by developing improved escapement estimation methods and implementing a catch sampling program to collect more age class data. The future status of this species is expected to be good.

The Kitoi Bay Hatchery is developing an early run chum salmon return to the hatchery. In recent years the majority of chum salmon returning to the hatchery have been needed for brood stock. However, significant supplemental production is expected to occur in 1995.

⁷ Kodiak odd year pink salmon production was generally greater than even year production prior to 1948. The mechanism which has led to switches in odd vs. even year dominance is not known.

⁸ Low escapement counts for chum salmon may be related to factors other than absolute abundance. Complete estimations may be hampered by difficulties associated with surveying chum salmon populations.

Coho Salmon

About 174 systems have been identified which support coho runs in the KMA. Twenty percent of KMA coho salmon systems (35 streams) produce 80% of the total KMA production. Concern exists for the other 80 percent (139 streams) where coho runs are relatively small and maybe more susceptible to overexploitation. To provide adequate protection for these smaller stocks all user groups must be monitored inseason for potential changes in harvest rates which may not correspond with fluctuation in run strength.

The Kitoi Bay Hatchery, located on Afognak Island, produces coho salmon for returns to the hatchery. Coho salmon smolt are also produced for stocking, to provide additional sport and subsistence fishing opportunities. These are mostly put-and-take operations, with all returning adults expected to be harvested, and no escapement and subsequent spawning possible. Coho salmon have been stocked into streams and lakes along the Kodiak road system, and into small lakes near the communities of Port Lions and Ouzinkie.

In recent years, coho salmon have experienced a large increase in exploitation by commercial, sport, and subsistence users within the KMA (Tables 4, 8, and 9). The escapement goal for this species has been achieved annually since 1983 (Table 13; Figure 15). Over the past 10 years (1984-1994) commercial harvests have averaged 269,000 coho salmon (Table 4; Figure 16). Most stocks appear healthy. The future status of this species is expected to be very good.

KODIAK'S JULY COMMERCIAL SALMON FISHERIES

Historical Background

During July, fisheries occurring in most of the KMA are dependent on a pink salmon harvest strategy which sets the initial fishing periods based on the strength of the preseason pink salmon forecast (Table 10; Figure 17). Kodiak's fjord like bays provide for large closed water sanctuaries to protect pink salmon needed to meet escapement requirements (Appendices A.1-A.8). These large closed water sanctuaries allow for an orderly harvest of ocean bright pink salmon on the outer capes.

Pink salmon represent the most abundant species of salmon commercially harvested in the KMA (Table 4). With the overall collapse of the sockeye salmon fisheries in the early 1950's, pink salmon began to support the commercial fishery. Pink salmon continued to provide for most of Kodiak's "exvessel value" until the 1980's when the overall sockeye salmon production began to increase as a direct result of the intensive sockeye rebuilding programs initiated in 1971 (Table 14; Figure 18).

Year-to-year fluctuations in the numbers of pink salmon returning can be quite variable (Figure 12). In order to assist industry planning, a forecasting program was initiated in the mid 1960's using a preemergent fry index. Sampling major pink salmon systems for "overwinter" egg to fry survival proved to be a reliable method for predicting Kodiak pink salmon returns. This project

evolved into the current day pink salmon forecasting program in which preemergent fry sampling is conducted annually on selected "index streams" (Table 11).

During the first decade of statehood (1960's), weekly fishing periods in July were set preseason and usually ran from Monday through Friday. As part of a major effort to start rebuilding Kodiak's depleted sockeye salmon stocks (Figure 10) in the early 1970's, the method of adjusting fishing time was changed from emergency order (E.O.) closures to emergency order openings. This new use of the emergency order process changed the actual regulatory announcement for fishing time from preseason to inseason.

Switching to emergency order openings was a monumental step in allowing for orderly inseason adjustments of fishing time based on observed run strength.

Coincidentally, there was a major drop in pink salmon production beginning in 1972 (Figure 12), due to severe cold winters combined with poor early marine survival conditions. For the next three years (1973-1975), fishing time in July was drastically reduced as part of a pink salmon rebuilding program.

Although the inseason announcement of fishing periods started in 1971; the length of the initial fishing periods were based on the preseason forecast. However, the date of the first general pink salmon opening was not fixed, and varied between July 5 and July 10 from 1971 to 1977 (generally the first Monday after July 4). Due to the July 5 opening date in 1971 and the disastrous years of 1972-1975, problems with early pink salmon buildups near the stream mouths were not encountered until 1977.

In 1977, the initial fishing period for the general pink salmon season did not occur until July 10. With Kodiak's pink salmon production on the rebound, large quantities of pink salmon had built up inside closed water sanctuaries prior to the initial opening. In order to provide for harvest opportunities on surplus pink salmon, closed water sanctuaries were reduced. Overall, the quality of the fish harvested were poor. This type of unorderly startup of the pink salmon season, which had the large seine fleet jockeying for position on buildup sets of poor quality fish, lead to an earlier fixed opening date.

Current Pink Salmon Harvest Strategy

In order to provide for an orderly start and improve the overall quality of the fish harvested, July 6 was selected as the initial date for the first general pink salmon opening in 1978. Although the length of time of the initial fishing periods continues to vary based on the preseason forecast, July 6 has remained the first day of the general pink salmon opening (Figure 19). The duration of each of the first three weekly fishing periods remained consistent through 1987. Beginning in 1988, the initial fishing period for "even year" returns was limited to no more than 57 hours. This change reflected the differences in early production between "odd" and "even" years.

This type of harvest strategy has received excellent support from Kodiak's fishing industry. The fixed opening date (with preset fishing periods) provides for an orderly start of the pink salmon fishery with inseason adjustments of fishing time (either increase or decrease) occurring during

peak abundance periods in late July and early August based on actual run strength. Due to a decline in fish prices in the mid 1980's, the overall quality of salmon harvested became more of a statewide concern. Kodiak's harvest strategy for pink salmon was used as an example of the department's ability to prosecute a fishery on high quality fish while still ensuring escapement.

In order to evaluate inseason harvest rates, which in turn reflects a particular area's actual run strength, the Kodiak Area is divided into 25 "tender reporting areas" (Table 15). These report areas are specific geographic locations structured around specific fisheries and harvest locations. Harvest data are collected daily from all fish buyers. These "initial harvest data" are a compilation of the previous days deliveries to each company's tenders or dock by each tender reporting area. Additional inseason data are collected and evaluated via aerial surveys of initial buildups and escapement levels of pink salmon combined with observations of traveling schools of fish.

Expected fishing periods are detailed pre-season in an annually issued harvest strategy (Table 16). In general, adjustments in fishing periods are not made until after the third fishing period which occurs during the week ending July 25. On average (1970-93), 20% of the pink salmon harvest has been taken by the end of the third fishing period. By the end of July, approximately 40% of the pink salmon harvest has occurred (Figure 20; Table 17).

Management Plans in Effect in July

Although initial fishing time in July for a major portion of the Kodiak Area is affected by the harvest strategy based on the forecasted pink salmon run strength, other salmon species, predominantly chum and sockeye salmon, are also harvested during this time period. There are several regulatory management plans which address fisheries directed toward chum and sockeye salmon (Figure 21).

The *Cape Igvak Salmon Management Plan*, (5AAC 18.360) which begins in June and remains in effect until July 25, provides both allocative and biological guidelines for a directed fishery on sockeye salmon bound for Chignik. The *Westside Kodiak Management Plan* (5AAC 18.362) provides guidelines for early run sockeye and chum salmon fisheries through July 5 for all westside management units. In addition, this plan provides guidelines for directed sockeye salmon fisheries throughout July in the Southwest Kodiak District. In the Alitak Bay District, directed sockeye fisheries occur through July 15, under the *Alitak Bay District Management Plan* (5AAC 18.361). The *Eastside Afognak Management Plan* (5AAC 18.365) addresses a directed sockeye salmon fishery in the Southeast Afognak Section through July 5. During the time period July 6 through July 25 the *North Shelikof Strait Sockeye Salmon Management Plan* (5AAC 18.363) is in effect. This plan reduces directed fishing opportunities on migrating sockeye salmon through the use of sockeye salmon harvest caps which trigger "seaward zone" closures while still providing for harvest opportunities on local stocks in more nearshore waters. The sockeye salmon harvest pattern which occurred in 1988 resulted in the adoption of the *North Shelikof Strait Sockeye Salmon Management Plan* in 1990 (Figure 22). In addition, the Board also stated its intent that all fishing activities be restricted to only those waters within the "three mile limit" even though previously adopted state regulations defined Shelikof Strait as state

waters. A portion of the *North Shelikof Strait Sockeye Salmon Management Plan* pertaining to the "seaward zone" of the Southwest Afognak Section was changed in 1993 to provide for a ½ mile "corridor" along the coast. This corridor, when in effect, eliminates vessels from being completely displaced from traditional fishing locations while providing increased protection for migrating sockeye salmon and retaining harvest opportunities on pink salmon. The *Spiridon Lake Sockeye Salmon Management Plan* (5AAC 18.366) is also in effect during July. This plan directs terminal fishing activities for an enhanced sockeye salmon run in Spiridon Bay.

While not in a specific regulatory plan, major restrictions resulted from board action in 1990 and again in 1993 which clarified that all waters seaward of the state territorial sea boundary (three mile limit) are closed to salmon fishing. This action confined the Kodiak purse seine fleet's fishing activities to more traditional inshore waters and provided for a large closed water corridor in Shelikof Strait for migratory fish to pass through.

The *Eastside Kodiak Management Plan* (currently not in regulation) provides for directed sockeye fisheries in the Inner Ugak Bay Section through July 10 (Table 18). This plan details which species affect fishing time in specific management units over time and will be submitted as a regulatory plan during the next scheduled regulatory year for Kodiak.

Whenever possible, specific fisheries are coordinated to occur simultaneously, in order to provide for less concentrated fishing conditions which in turn lessen the potential for gear and allocative conflicts (Figure 23).

July Chum Salmon Harvest

Chum salmon are harvested in directed fisheries and in pink salmon fisheries. The geography of many of the Alaska Peninsula bays do not allow for large closed water sanctuaries. In order to provide additional protection for specific chum salmon stocks in the Mainland District, initial fishing periods are limited to no more than 57 hours per week. To a limited degree chum salmon are also harvested during directed sockeye salmon fisheries in the Alitak District, Southwest Kodiak District, and in the Cape Igvak Section.

On average (1970-94), approximately 26% of the annual chum salmon harvest is taken from July 6 through July 25 (Table 17; Figure 20).

July Chinook and Coho Salmon Harvests

There are no directed coho or chinook salmon fisheries in the KMA in July. Although directed coho salmon fisheries occur later in the season, directed chinook salmon fisheries do not occur in the KMA at any time during the year.

Any coho or chinook salmon which are harvested during July, are caught during fisheries directed toward pink, chum, or sockeye salmon. On average (1970-1994), 12% of the annual coho salmon harvest is taken during the time period July 6 through July 25 (Table 19). On average (1970-94), 38% of the annual chinook salmon harvest has been taken during the time period July 6 through July 25 (Table 19).

July Sockeye Harvest

It is quite normal for sockeye salmon to be harvested in July as shown by the regulatory management plans in effect.

On average (1970-87), 27% of Kodiak's annual sockeye salmon harvest is taken during the time period July 6 through July 25 (Table 20; Figure 24). In recent years, major departures from this "July average sockeye salmon harvest" have occurred. In 1988 and again in 1992 approximately 50% of the sockeye salmon harvest was taken during the July 6 to July 25 period. It should be noted that the increase in the July harvest percentage in 1988 and 1992 coincided with very strong sockeye salmon returns to Cook Inlet (Table 21; Figure 25). In previous years, there have also been seasons where a high percentage of the annual sockeye salmon harvest has occurred in July, but this was mainly due to the Cape Igvak fishery (Figure 26).

Historical Harvest and Effort Information

Sockeye harvest patterns which occurred in 1992 resulted in the agenda change request, to address Kodiak's July fisheries. As mentioned in the introduction to this report, the proposed regulation changes which accompanied this agenda change request desire to implement new regulations which are intended to reduce the harvest of sockeye salmon bound to Cook Inlet spawning systems by Kodiak commercial salmon fishers.

An extensive volume of graphs and tables have been prepared which depict historical effort and harvest dates for the Kodiak commercial salmon fishery. Most of the very detailed summaries are located in the appendix portion of this report with the contents of each appendix described below.

Graphs and tables depicting the basic management chronology by major harvest area (Figure 27) along with the 1970-94 average harvest by species by week for the entire season, are located in Appendix C.

In Appendix D are graphs and tables depicting historical harvests by species for the time period July 6 through July 25 for the years 1970-94 for the 10 major geographical areas. Historical effort levels measured in landings, are also shown by year for the same time period.

Appendix E contains graphs and tables depicting historical harvest (1970-1994) and effort information during the July 6 to July 25 time period for the specific harvest areas presented in the agenda change request by the Kenai Peninsula Fishermens Association. These specific areas are: statistical areas 258-10 and 258-40, which are in the Sitkalidak Section (Figure 28) of the Eastside Kodiak District; the Halibut Bay Section (Figure 29) which is located in the Southwest Kodiak District; and the Katmai and Alinchak Sections (Figure 30) located in the Mainland District.

Appendix F contains graphs and tables depicting the chinook salmon catch and escapement (1968-1994) and the coho and chinook salmon harvest (1990-1994) by major harvest area by three time periods: 6/1-7/5, 7/6-25, and 7/26-10/31. Also contained in Appendix F is a summary table of the *North Shelikof Strait Sockeye Salmon Management Plan*; graphs and tables showing the

harvest by species, by year (1970-1994) for selected management units, and graphs depicting the annual 1987-1994 harvest by species and major harvest area for the 6/1-7/5, 7/6-25, and 7/26-10/31 time periods.

Appendix G contains graphs which depict the comparison between the number of permits versus the number of landings for the 10 major harvest areas during the time period July 6 through July 25.

Appendix H contains a list of regulatory management plans for Kodiak and tables which depict plans for fisheries occurring on the westside of Kodiak in Alitak, Cape Igvak, along the eastside of Afognak, north Shelikof units, and a basic management chronology by species by major harvest area for the month of July. This appendix also contains two tables on exvessel value of the salmon fishery by year and gear type.

While reviewing information presented in graphic formats, it is important to note the "scaling" used to show the number of fish harvested or effort levels when comparing one harvest location to another.

In summary, the information contained in this report provides actual harvest and effort summaries for Kodiak's commercial salmon fisheries. These fisheries have occurred within the framework of the various regulatory and non-regulatory management plans in effect for the KMA.

LITERATURE CITED

- ADF&G (Alaska Department of Fish and Game). 1993a. Regulations of the Alaska Board of Fisheries for commercial fisheries in Alaska; Cook Inlet, Kodiak, Chignik. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Juneau.
- ADF&G (Alaska Department of Fish and Game). 1993b. An atlas to the catalog of waters important for spawning, rearing, or migration of anadromous fishes; Southwestern Region, Resource Management Region III. Alaska Department of Fish and Game, Division of Habitat, Anchorage. Revised Feb. 11, 1993.
- Barrett, B.M., and C.O. Swanton. 1992. Estimation of the major sockeye salmon stocks contributing to the North Shelikof Strait Fishery of July 6-25, 1988-1992. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 4K92-43, Kodiak.
- Barrett, B.M., and P.A. Nelson. 1994. Estimated run timing of selected sockeye salmon stocks on the west and east sides of Kodiak Island. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 4K94-6, Kodiak.
- Bevan, D.E. 1959. Tagging experiments in the Kodiak Island area with reference to the estimation of salmon (*Oncorhynchus*) populations. Ph.D. Thesis, University of Washington, Seattle.
- Bowe, W.T. 1941. Alaska fishery and fur-seal industries in 1938. U.S. Bureau of Fisheries, Report for 1939, Admin. Report 36, Washington, D.C.
- Brodie, J.R. 1994. Kodiak Management Area salmon escapement cumulative counts for fish-weirs, 1985-1994. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 4K94-41, Kodiak.
- Buck, E.H., W.J. Wilson, L.S. Lau, C. Liburd, and H.W. Searby. 1975. Kadyak; a background for living. Arctic Environmental Information and Data Center Publication B-75; University of Alaska, Anchorage.
- Groot, C. and L. Margolis, Editors. 1991. Pacific Salmon Life Histories. University of British Columbia Press; Vancouver, British Columbia.
- Joyce, T.L. 1992. FY92 Annual Report Kitoi Bay Hatchery. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement, and Development, & Kodiak Regional Aquaculture Association, Kodiak.
- Kodiak Regional Planning Team. 1992. Kodiak regional comprehensive salmon plan, 1982-2002; Phase II Revision. Alaska Department of Fish and Game, Office of the Commissioner, Juneau.

LITERATURE CITED (Cont.)

- Nicholson, L.D. 1978. A summary of all known red salmon (*Oncorhynchus nerka*) tagging conducted on Kodiak Island, Alaska. Alaska Department of Fish and Game, Division of Commercial Fisheries, Unpublished Report, Kodiak.
- Northern Economics with John Isaacs and Associates, ResourceEcon Resource Valuations. 1991. Commercial Fishing Industry Employment Data for the Gulf of Alaska. Technical Memorandum GOA-1, Minerals Management Service.
- Prokopowich, D.L., K. Brennan, and D.R. Gretsche. 1994. Kodiak area commercial salmon fishery harvest strategy, 1994. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 4K94-21, Kodiak.
- Rich, W.H. and F.G. Morton. 1929. Salmon tagging experiments in Alaska, 1927 and 1928. U.S. Bureau of Fisheries, Bulletin 45:1-23, Washington D.C.
- Roppel P. 1986. Salmon from Kodiak: a history of the salmon fishery of Kodiak Island, Alaska. Alaska Historic Commission, Studies in History No. 216. Anchorage.
- Schwarz, L.J. *In press*. Area Management Report for the recreational fisheries of the Kodiak and Alaska Peninsula/Aleutian Islands Regulatory Area, 1994. Alaska Department of Fish and Game, Division of Sport Fish, Kodiak.
- Simon, R.J., J. Lechner, M.F. Eaton, and P.B. Jackson. 1969. Kodiak Management Area Annual Report, 1969. State of Alaska, Division of Commercial Fisheries, Region IV Report (unpublished), Kodiak.
- Swanton, C.O., and P.A. Nelson. 1994. Contribution of Karluk and Upper Station late run sockeye salmon to the Sitkalidak, Alinchak, and Katmai Section July fisheries, 1992-1993. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 4K94-3, Kodiak.
- Tyler, R.W., L. Malloy, D. Prokopowich, and K. Manthey. 1986. Migration of Sockeye Salmon in the Kodiak Archipelago, 1981. State of Alaska, Division of Commercial Fisheries, Finfish Data Report No. 1-85, Kodiak.
- Vining, I. and B. Barrett. 1994. The use of average weight to estimate the amount of interception of non local sockeye within the Kodiak Management Area. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 4K94-5, Kodiak.

Table 1. Estimated number of salmon production systems per district, with species distribution, in the Kodiak Management Area, 1994.

Management District	Number of Streams ^a	Number of Streams with Each Species ^b				
		Chinook	Sockeye	Coho	Pink	Chum
Afognak	102	0	13	48	102	5
Northwest Kodiak	63	0	4	22	63	23
Southwest Kodiak	11	2	2	10	11	6
Alitak	30	1	5	15	30	14
Eastside Kodiak	116	1	8	32	116	47
Northeast Kodiak	26	0	1	20	26	9
Mainland	92	0	6	27	92	46
TOTAL	440	4	39	174	440	150

^a The State of Alaska's Habitat Division identifies over 800 streams in the Kodiak Management Area which have documented use by anadromous fish (ADF&G 1993b). Many of these streams are very small and may only be used by pink salmon in years with very large returns. The streams identified in this table are depicted on the 1993 Kodiak Area salmon statistical map, and have documentable use each year.

^b These estimates are based on current knowledge and, in fact, are expected to change as more system specific data is collected.

Table 2. Biological escapement goals for salmon, by species, by District, in the Kodiak Management Area, 1994.

DISTRICT	SOCKEYE ESCAPEMENT	PINK ESCAPEMENT		CHUM ESCAPEMENT	COHO ESCAPEMENT	CHINOOK ESCAPEMENT
	GOAL	GOAL		GOAL	GOAL	GOAL
	Minimum Maximum	Minimum/Maximum		Minimum Maximum	Minimum Maximum	Minimum Maximum
		Even Year	Odd Year			
AFOGNAK	83,000	83,000	148,000		13,500	
	154,000	249,000	444,000		23,600	
NORTHWEST	56,000	220,000	315,000	72,000	9,000	
	90,000	660,000	915,000	216,000	14,000	
SOUTHWEST	760,500	30,000	1,250,000	50,000	33,000	11,000
	1,201,000	90,000	2,550,000	150,000	52,000	19,000
ALITAK	386,000	212,000	162,000	38,000	10,500	100
	550,000	636,000	486,000	114,000	20,000	300
EASTSIDE	29,500	140,000	150,000	88,000	10,000	
	64,000	420,000	450,000	254,000	15,000	
NORTHEAST	10,000	110,000	120,000	20,000	10,475	
	15,000	330,000	360,000	60,000	16,555	
MAINLAND	33,500	215,000	256,000	242,000	4,000	
	66,000	645,000	768,000	726,000	9,000	
TOTAL	1,358,500	1,010,000	2,401,000	510,000	90,475	11,100
	2,140,000	3,030,000	6,003,000	1,530,000	150,155	19,300

Table 3. Potential vs. actual salmon production (wild stock) in the Kodiak Management Area, 1994.

SPECIES	PRODUCTION POTENTIAL			HARVEST		
	LONG TERM AVERAGE			POTENTIAL	ACTUAL	
	Targeted Escapement Goal ^a	Return Per Spawner ^b	Potential Total Return	Long Term Average	46 Year Average (1948-1994) ^c	10 Year Average (1984-1994) ^c
CHINOOK	15,000	2.5	37,500	22,500	5,000	17,000
SOCKEYE	2,100,000	2.5	5,250,000	3,150,000	1,220,000	3,385,000
COHO	150,000	2.5	375,000	225,000	104,000	269,000
Odd Year PINK	3,000,000	3.5	10,500,000	7,500,000	7,182,000	13,535,000
Even Year	4,500,000	3.5	15,750,000	11,250,000	8,633,000	9,086,000
CHUM	1,020,000	2.8	2,856,000	1,836,000	784,000	794,000
Odd Year TOTAL	6,285,000	-	19,018,500	13,454,000	9,296,000	18,000,000
Even Year	7,785,000	-	24,268,500	16,483,500	10,747,000	13,551,000

^a The expected indexed escapement within the biological escapement goal range. KMA fisheries are normally managed to achieve this level of escapement.

^b Return per spawner will vary each year. These values are averages around which natural survival and return will fluctuate somewhat (Barrett, Personal Communication, October 1993).

^c 1989 harvest data not included in estimates.

Table 4. Historical salmon catch (numbers of fish to nearest thousand) by species in the Kodiak Management Area, 1881-1994.

Year ^a	Chinook	Sockeye	Coho	Pink	Chum	Total
1881						0
1882		59,000				59,000
1883		189,000				189,000
1884		282,000				282,000
1885		469,000				469,000
1886		646,000				646,000
1887		1,005,000				1,005,000
1888		2,781,000				2,781,000
1889		3,755,000				3,755,000
1890		3,593,000				3,593,000
1891		3,846,000				3,846,000
1892		3,126,000				3,126,000
1893		3,245,000				3,245,000
1894		3,830,000				3,830,000
1895		2,247,000	8,000			2,255,000
1896		3,329,000				3,329,000
1897		2,786,000	2,000			2,787,000
1898		2,033,000	19,000			2,052,000
1899	1,000	1,935,000	32,000			1,968,000
1900	5,000	3,450,000	32,000			3,488,000
1901	4,000	4,826,000		2,000		4,832,000
1902	3,000	3,868,000	35,000			3,906,000
1903	1,000	1,826,000	120,000	10,000		1,957,000
1904	3,000	2,875,000	103,000	5,000		2,987,000
1905	2,000	2,142,000	87,000			2,232,000
1906	4,000	3,980,000	24,000			4,008,000
1907	4,000	4,232,000	38,000			4,275,000
1908	3,000	2,488,000	74,000	286,000		2,851,000
1909	4,000	1,915,000	52,000	154,000		2,124,000
1910	2,000	1,955,000	44,000	215,000		2,216,000
1911	1,000	2,686,000	22,000	230,000	6,000	2,945,000
1912	1,000	2,246,000	17,000	547,000	25,000	2,836,000
1913	1,000	1,663,000	28,000	590,000	4,000	2,286,000
1914	1,000	1,255,000	32,000	1,726,000	13,000	3,028,000
1915	1,000	1,664,000	52,000	252,000	20,000	1,990,000
1916	1,000	3,373,000	50,000	3,182,000	29,000	6,635,000
1917	1,000	3,646,000	30,000	225,000	16,000	3,919,000
1918	2,000	1,894,000	78,000	2,467,000	82,000	4,524,000
1919	2,000	1,619,000	104,000	283,000	60,000	2,068,000
1920	2,000	1,958,000	89,000	1,977,000	55,000	4,081,000
1921	1,000	2,858,000	46,000	68,000	25,000	2,997,000
1922	1,000	1,097,000	120,000	2,766,000	224,000	4,208,000
1923	2,000	1,090,000	78,000	929,000	39,000	2,137,000
1924	1,000	1,408,000	121,000	5,435,000	118,000	7,082,000
1925	2,000	1,693,000	93,000	2,674,000	212,000	4,674,000
1926	1,000	3,015,000	174,000	4,607,000	325,000	8,122,000
1927	4,000	1,155,000	152,000	5,297,000	418,000	7,026,000
1928	3,000	1,592,000	291,000	1,535,000	726,000	4,147,000
1929	3,000	712,000	144,000	6,108,000	1,058,000	8,026,000
1930	5,000	466,000	229,000	1,651,000	419,000	2,771,000
1931	2,000	1,183,000	170,000	6,840,000	184,000	8,378,000
1932	2,000	1,058,000	52,000	4,720,000	237,000	6,069,000
1933	1,000	1,428,000	91,000	6,574,000	537,000	8,632,000
1934	1,000	1,829,000	90,000	7,642,000	661,000	10,223,000
1935	1,000	1,614,000	77,000	10,781,000	382,000	12,854,000
1936	3,000	2,657,000	184,000	5,648,000	328,000	8,820,000
1937	1,000	1,881,000	165,000	16,787,000	346,000	19,181,000
1938	1,000	1,966,000	155,000	8,398,000	640,000	11,160,000

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Table 4. (page 2 of 3)

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1939	2,000	1,786,000	112,000	11,741,000	642,000	14,284,000
1940	1,000	1,318,000	148,000	9,998,000	673,000	12,139,000
1941	3,000	1,730,000	200,000	7,602,000	445,000	9,978,000
1942	1,000	1,282,000	107,000	6,093,000	565,000	8,047,000
1943	1,000	1,991,000	60,000	12,480,000	454,000	14,985,000
1944	1,000	1,818,000	52,000	4,955,000	507,000	7,332,000
1945	2,000	2,041,000	60,000	9,045,000	559,000	11,707,000
1946	0	839,000	56,000	9,546,000	298,000	10,740,000
1947	0	993,000	76,000	8,857,000	295,000	10,221,000
1948	1,000	1,260,000	32,000	5,968,000	331,000	7,594,000
1949	1,000	892,000	54,000	4,928,000	700,000	6,574,000
1950	2,000	921,000	41,000	5,305,000	685,000	6,953,000
1951	2,000	468,000	49,000	2,100,000	483,000	3,103,000
1952	1,000	604,000	52,000	4,577,000	1,243,000	6,476,000
1953	3,000	317,000	42,000	5,175,000	548,000	6,084,000
1954	1,000	325,000	66,000	8,439,000	1,251,000	10,083,000
1955	2,000	164,000	35,000	10,794,000	482,000	11,478,000
1956	1,000	271,000	53,000	3,319,000	705,000	4,349,000
1957	1,000	234,000	35,000	4,716,000	1,208,000	6,195,000
1958	2,000	288,000	21,000	4,039,000	931,000	5,280,000
1959	2,000	330,000	15,000	1,967,000	734,000	3,047,000
1960	1,000	363,000	54,000	6,738,000	1,300,000	8,456,000
1961	1,000	408,000	29,000	3,926,000	519,000	4,882,000
1962	1,000	785,000	55,000	14,114,000	795,000	15,749,000
1963	0	407,000	57,000	5,480,000	305,000	6,250,000
1964	1,000	498,000	36,000	12,044,000	1,134,000	13,714,000
1965	1,000	346,000	27,000	2,887,000	431,000	3,692,000
1966	1,000	632,000	68,000	10,756,000	763,000	12,218,000
1967	2,000	309,000	10,000	188,000	227,000	735,000
1968	2,000	760,000	57,000	8,768,000	750,000	10,338,000
1969	2,000	591,000	49,000	12,501,000	535,000	13,678,000
1970	1,000	917,000	66,000	12,037,000	919,000	13,940,000
1971	1,000	478,000	23,000	4,333,000	1,541,000	6,377,000
1972	1,000	223,000	17,000	2,486,000	1,164,000	3,890,000
1973	1,000	167,000	4,000	519,000	318,000	1,008,000
1974	1,000	419,000	14,000	2,646,000	249,000	3,328,000
1975	0	136,000	24,000	2,943,000	84,000	3,187,000
1976	1,000	641,000	24,000	11,078,000	740,000	12,484,000
1977	1,000	623,000	28,000	6,252,000	1,072,000	7,977,000
1978	3,000	1,072,000	49,000	15,004,000	814,000	16,942,000
1979	2,000	632,000	141,000	11,288,000	358,000	12,420,000
1980	1,000	651,000	139,000	17,291,000	1,076,000	19,157,000
1981	1,000	1,289,000	122,000	10,337,000	1,345,000	13,094,000
1982	1,000	1,205,000	344,000	8,076,000	1,266,000	10,892,000
1983	4,000	1,232,000	158,000	4,603,000	1,085,000	7,082,000
1984	5,000	1,950,000	230,000	10,844,000	649,000	13,678,000
1985	5,000	1,843,000	284,000	7,335,000	431,000	9,898,000
1986	4,000	3,188,000	169,000	11,808,000	1,135,000	16,304,000
1987	5,000	1,793,000	193,000	5,076,000	682,000	7,748,000
1988	22,000	2,699,000	303,000	14,409,000	1,426,000	18,860,000
1989	5,000	2,629,000	141,000	22,649,000	836,000	26,259,000
1990	19,000	5,248,000	294,000	5,984,000	578,000	12,122,000
1991	22,000	5,704,000	325,000	16,643,000	1,029,000	23,723,000
1992	24,000	4,168,000	280,000	3,311,000	680,000	8,462,000
1993	42,000	4,378,000	313,000	34,019,000	588,000	39,341,000
1994	23,000	2,877,000	296,000	8,163,000	739,000	12,098,000

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Table 4. (page 3 of 3)

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
Averages						
All Years	3,000	1,722,000	96,000	6,431,000	577,000	8,829,000
Years 1948-1994	5,000	1,220,000	104,000	8,252,000	784,000	10,366,000
All Even Years 1948-1994				8,633,000		10,747,000
All Odd Years 1949-1993 ^b				7,182,000		9,296,000
Average 1984-1994	17,000	3,385,000	269,000	11,759,000	794,000	16,223,000
Odd Years 1983-1993 ^b				13,535,000		18,000,000
Even Years 1984-1994				9,086,000		13,551,000

^a For the period 1882-1947, the harvest data was derived from "casepack" information supplied by commercial buyers and processors. For the period 1948-present, the harvest data was derived from "fish ticket" information summarized by ADF&G.

^b Averages do not include harvest data for 1989. The 1989 harvest data shown is unique from all other years. The 1989 harvest by species in this table is the summation of the actual harvest which did occur and the projected harvest which would have occurred if there had not been restrictions on the 1989 fishery (Barrett, 1990). In 1989 there was only limited commercial salmon fishing allowed because of the presence of oil contaminated waters in the Kodiak Area due to the M/V EXXON VALDEZ oil spill.

Table 5. Summary of limited entry permit activity in the commercial salmon fishery, by gear type, in the Kodiak Management Area, 1975-1994.

	Purse Seine ^a		Beach Seine ^a		Set Gillnet ^a		Total ^a		Percent
	Fishable	Fished	Fishable	Fished	Fishable	Fished	Fishable	Fished	
1975	468	280	26	8	229	116	723	404	56
1976	394	325	23	17	187	140	604	482	80
1977	378	336	32	24	186	147	596	507	85
1978	389	372	34	29	188	160	611	561	92
1979	387	362	34	28	186	164	607	554	91
1980	387	370	35	33	187	168	609	571	94
1981	387	325	35	30	187	169	609	524	86
1982	386	345	35	30	187	170	608	545	90
1983	383	342	35	27	188	174	606	543	90
1984	384	296	35	25	188	168	607	489	81
1985	384	270	34	21	188	169	606	460	76
1986	385	287	34	14	187	174	606	475	78
1987	386	297	33	18	188	173	607	488	80
1988	387	323	33	21	188	179	608	523	86
1989 ^b	388	4	33	1	189	87	610	92	15
1990	388	354	33	21	189	184	610	559	92
1991	388	348	33	17	189	185	610	550	90
1992	391	336	33	12	190	178	614	526	86
1993	387	324	36	9	190	176	613	509	83
1994	387	286	34	5	190	169	611	460	75
19 Year Average (1975-94) ^c									
	391	325	33	20	190	166	614	512	83
5 Year Average (1990-94) ^c									
	388	330	34	13	190	178	612	521	85

^a Data from Commercial Fisheries Entry Commission records and ADF&G Fish Ticket summaries.

^b 1989 effort levels were very low due to extensive fishery closures because of the presence of oil from the Exxon Valdez spill.

^c 1989 data not included in averages.

Table 6. Resident vs. nonresident commercial salmon fishing limited entry permit ownership in the Kodiak Management Area, 1987-1994.

YEAR/STATUS	PURSE SEINE		BEACH SEINE		SET GILLNET		TOTAL	
	Number	%	Number	%	Number	%	Number	%
1994^a								
RESIDENT	289	75	31	89	151	80	471	77
NONRESIDENT	94	24	3	11	37	19	134	22
INTERIM	4	1	0	0	2	1	6	1
TOTAL	387		34		190		611	
1993^a								
RESIDENT	289	75	32	89	153	80	474	77
NONRESIDENT	94	24	4	11	35	19	133	22
INTERIM	4	1	0	0	2	1	6	1
TOTAL	387		36		190		613	
1992^a								
RESIDENT	284	73	30	91	140	74	454	74
NONRESIDENT	103	26	3	9	49	26	155	25
INTERIM	4	1	0	0	1	<1	6	1
TOTAL	391		33		190		614	
1991^a								
RESIDENT	281	73	20	91	136	73	449	74
NONRESIDENT	102	26	3	9	50	27	155	25
INTERIM	5	1	0	0	1	<1	6	1
TOTAL	388		33		189		610	
1990^a								
RESIDENT	283	73	29	88	142	75	454	75
NONRESIDENT	99	25	4	12	46	24	149	24
INTERIM	6	2	0	0	1	1	7	1
TOTAL	388		33		189		610	
1989^a								
RESIDENT	285	73	29	88	145	77	459	75
NONRESIDENT	97	25	4	12	43	23	144	24
INTERIM	6	2	0	0	1	<1	7	1
TOTAL	388		33		189		610	
1988^a								
RESIDENT	286	74	31	86	148	79	465	76
NONRESIDENT	96	24	2	6	39	21	137	23
INTERIM	5	2	0	8	1	<1	6	1
TOTAL	387		33		188		610	
1987^a								
RESIDENT	295	73	31	83	151	80	477	79
NONRESIDENT	86	22	2	6	36	19	124	20
INTERIM	5	5	0	11	1	1	6	1
TOTAL	386		33		188		607	

^a Data from Commercial Fisheries Entry Commission records. Numbers reflect only permit ownership and not actual participation in Kodiak Area commercial salmon fisheries.

Table 7. Commercial salmon fisheries limited entry permits issued, by residence of permit holder, for the Kodiak Management Area, 1994.

Fishery	Residence ^a	Total # Permits
PURSE	Anchor Point, AK	3
SEINE	Anchorage, AK	14
	Big Lake, AK	2
	Chignik, AK	1
	Chignik Lagoon, AK	2
	Chugiak, AK	1
	Clam Gulch, AK	1
	Eagle River, AK	2
	Fairbanks, AK	1
	Girdwood, AK	2
	Homer, AK	15
	Juneau, AK	2
	Kasilof, AK	2
	Kenai, AK	2
	Kodiak, AK	169
	Larsen Bay, AK	5
	Ninilchik, AK	5
	Old Harbor, AK	27
	Ouzinkie, AK	10
	Petersburg, AK	2
	Port Lions, AK	12
	Sand Point, AK	1
	Seldovia, AK	3
	Seward, AK	3
	Soldotna, AK	2
	Wasilla, AK	3
	ARKANSAS	1
	ARIZONA	1
	CALIFORNIA	3
	MICHIGAN	1
	MONTANA	1
	OREGON	10
	WASHINGTON	78
Total Number of Permits		387
Total Number of Alaskan Resident Permits		292
% of Total Permits Held by Alaskan Residents		76%
Total Number of Kodiak Resident Permits		223
% of Total Permits Held by Kodiak Residents		58%
BEACH	Anchor Point, AK	1
SEINE	Anchorage, AK	2
	Chugiak, AK	1
	Homer, AK	2
	Karluk, AK	1
	Kasilof, AK	1
	Kodiak, AK	18

-Continued-

Table 7. (page 2 of 2)

Fishery	Residence ^a	Total # Permits
	Larsen Bay, AK	2
	Old Harbor, AK	1
	Seward, AK	1
	Sterling, AK	1
	OREGON	1
	WASHINGTON	2
	Total Number of Permits	34
	Total Number of Alaskan Resident Permits	31
	% of Total Permits Held by Alaskan Residents	92%
	Total Number of Kodiak Resident Permits	22
	% of Total Permits Held by Kodiak Residents	65%
SET	Akhiok, AK	2
GILLNET	Anchor Point, AK	1
	Anchorage, AK	12
	Douglas, AK	4
	Fairbanks, AK	2
	Homer, AK	1
	Kodiak, AK	104
	Larsen Bay, AK	11
	Nikiski, AK	1
	Old Harbor, AK	4
	Ouzinkie, AK	3
	Palmer, AK	5
	Port Bailey, AK	1
	Port Lions, AK	1
	Soldotna, AK	1
	ARIZONA	2
	COLORADO	1
	FLORIDA	3
	IDAHO	1
	INDIANA	3
	MINNESOTA	1
	MISSOURI	1
	NEVADA	1
	OREGON	6
	SOUTH DAKOTA	1
	TEXAS	3
	WASHINGTON	14
	Total Number of Permits	190
	Total Number of Alaskan Resident Permits	153
	% of Total Permits Held by Alaskan Residents	81%
	Total Number of Kodiak Resident Permits	126
	% of Total Permits Held by Kodiak Residents	67%

^a Data from Commercial Fisheries Entry Commission records.

Table 8. Subsistence salmon fishery harvest summary by species by year for the Kodiak Management Area, 1962-1994.

Year	Permits Issued	Permits Returned	Percent Returned	Chinook	Sockeye	Coho	Pink	Chum	Total
1962	74	13	18	0	0	433	397	20	850
1963	74	15	20	0	297	576	836	195	1,904
1964	43	9	21	6	332	184	88	71	681
1965	67	7	10	2	19	318	244	12	595
1966	48	13	27	0	295	331	334	393	1,353
1967	84	29	35	2	1,306	571	894	344	3,117
1968	132	28	21	0	658	433	529	45	1,665
1969	242	30	12	1	481	338	620	30	1,470
1970	213	49	23	1	959	939	797	265	2,961
1971	267	131	49	5	3,442	1,720	1,276	472	6,915
1972	329	176	54	11	3,633	1,531	2,516	2,729	10,420
1973	400	149	37	7	4,453	2,289	1,393	1,166	9,308
1974	367	90	25	1	1,909	846	1,094	128	3,978
1975	508	90	18	1	1,141	922	947	221	3,232
1976	536	243	45	4	4,338	962	2,275	370	7,949
1977	739	451	61	54	8,119	2,508	2,849	317	13,847
1978	860	539	63	50	7,239	3,699	2,747	572	14,307
1979	1,085	697	64	111	10,376	3,840	3,300	333	17,960
1980	1,239	756	61	67	13,746	4,407	2,755	566	21,541
1981	1,166	733	63	44	12,756	3,729	2,278	470	19,277
1982	1,276	993	78	110	16,615	7,192	3,558	667	28,142
1983	1,307	1,082	83	111	15,526	6,283	2,536	800	25,256
1984	1,240	1,061	86	265	17,620	5,808	1,877	720	26,290
1985	1,476	1,196	81	172	16,231	8,873	2,756	855	28,887
1986	1,244	1,049	84	91	14,451	7,087	2,371	605	24,605
1987	1,124	904	80	101	13,277	6,737	2,409	1,316	23,840
1988	1,098	706	64	108	10,142	4,074	1,274	366	15,964
1989	2,800 ^a	715	N/A	41	11,998	3,707	1,492	367	17,605
1990	2,900 ^a	1,181	N/A	131	17,972	8,646	1,605	655	29,009
1991	1,406	1,239	88	175	21,590	8,201	1,743	714	32,423
1992	1,561	1,176	75	317	20,218	8,544	1,642	643	31,364
1993	1,496	834	56	243	19,521	7,188	2,696	838	30,486
1994 ^b		479		90	6,559	2,434	1,118	219	10,430
Recent 10 Year Average ^b									
1984 - 1993				151	15,932	6,829	1,975	706	25,593
Previous 10 Year Averages									
1974 - 1983				55	9,177	3,439	2,434	444	15,549
1964 - 1973				4	1,558	865	869	553	3,849
TOTAL 1962-1993 ^b				1,989	251,438	106,054	51,474	16,442	427,397
AVERAGE 1962-1993 ^b				64	8,111	3,421	1,660	530	13,787

^a Permits were mailed to all previous applicants, totaling approximately 2,800. Many were "returned to sender" as "undeliverable". These names were removed from the permittee list.

^b Only partial data available for 1994. Data from permits returned through 1/6/95 only. Many harvest reports are returned in the spring when subsistence users come into the ADF&G office in Kodiak to renew their subsistence permits.

Table 9. Sport fish salmon harvest in the Kodiak regulatory area of the Kodiak Management Area, 1978-1993.

Year	Pink	Coho	Sockeye	Chinook	Chum	Total
1978	17,739	4,927	1,776	350	1,287	26,079
1979	15,871	11,522	2,436	752	500	31,081
1980	18,969	12,692	2,178	327	525	34,691
1981	12,259	10,584	1,620	789	637	25,889
1982	18,850	13,329	3,055	1,120	1,324	37,678
1983	8,936	7,823	3,150	729	816	21,454
1984	12,779	14,612	5,385	921	1,321	35,018
1985	13,423	13,625	7,536	762	865	36,211
1986	14,509	20,873	5,259	520	336	41,497
1987	11,662	16,912	4,165	379	560	33,678
1988	19,044	18,809	6,222	1,564	1,546	47,185
1989	17,794	19,802	6,789	1,087	631	46,103
1990	7,464	13,728	6,056	996	191	28,435
1991	12,106	17,691	5,049	2,508	1,517	38,871
1992	5,904	13,668	6,240	2,217	625	28,654
1993	12,324	21,241	7,849	5,092	504	47,010
<hr/>						
1978-82 Average	16,738	8,537	2,213	668	855	31,084
1983-87 Average	12,261	14,769	5,099	662	780	33,572
1988-93 Average	12,439	17,490	6,368	2,244	835	39,376

^a Data from Schwarz (*in press*). The Kodiak regulatory area consists of only the Kodiak Island archipelago portion of the commercial fisheries Kodiak Management Area.

Table 10. Commercial salmon harvest in 1994 and harvest projections for the Kodiak Management Area, 1995.

	CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL
1994 Projected Harvest	25,000	2,428,100	325,000	13,700,000	610,000	17,088,100
1994 Actual Harvest	22,600	2,877,500	296,200	8,162,600	738,800	12,097,700
1995 Projected Harvest	25,000	2,400,000	310,000	18,235,000	800,000	21,770,000

FISHERY	1994 HARVEST ^a		1995 HARVEST ^{a,b}
	Projection	Actual ^c	Projection as of 1/5/95
Early Run Sockeye Salmon Fisheries (6/9-7/15)			
Cape Igvak	262,500	295,700	280,000
Karluk	400,000	652,800	200,000
Ayakulik	105,000	0	45,000
Frazer	420,000	477,200	420,000
Upper Station	70,000	57,700	50,000
Minor Systems	70,000	36,100	50,000
Minor Enhancements	-	4,900	90,000
Other	100,000	142,500	70,000
SubTotal	1,427,500	1,666,900	1,205,000
Late Run Sockeye Salmon Fisheries (7/16-9/15)			
Afognak (Hatchery)	5,000	9,300	30,000
Cape Igvak	140,600	26,600	120,000
Karluk	175,000	355,200	350,000
Ayakulik	65,000	106,300	30,000
Frazer	105,000	119,300	105,000
Upper Station	250,000	277,700	300,000
Minor Systems	75,000	8,300	75,000
Spiridon	135,000	263,800	160,000
Other	50,000	44,100	25,000
SubTotal	1,000,600	1,210,600	1,195,000
TOTAL SOCKEYE	2,428,100	2,877,500	2,400,000
Coho Salmon Fisheries (8/1-10/1)			
Afognak (Hatchery)	75,000	45,900	15,000
Afognak (Natural)	40,000	47,100	35,000
Westside	85,000	107,100	135,000
Alitak	20,000	32,200	25,000
Eastside/Northend Kodiak	75,000	43,100	60,000
Mainland	30,000	20,800	40,000
SubTotal	325,000	296,200	310,000
Pink Salmon Fisheries (7/6-9/5)			
Afognak (Hatchery)	1,400,000	2,051,400	7,965,000
Afognak (Natural)	700,000	623,400	1,150,000
Westside Kodiak	5,000,000	3,315,000	4,650,000
Alitak	2,000,000	1,120,800	2,365,000
Eastside/Northend Kodiak	3,500,000	858,200	1,750,000
Mainland	1,100,000	193,800	355,000
SubTotal	13,700,000	8,162,600	18,235,000

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Table 10. (page 2 of 2)

FISHERY	1994 HARVEST ^a		1995 HARVEST ^{a,b}
	Projection	Actual ^c	Projection as of 1/5/95
Chum Salmon Fisheries (6/6-9/5)			
Afognak (Hatchery)	10,000	5,000	150,000
Afognak (Natural)	50,000	34,900	31,000
Westside Kodiak	250,000	286,100	213,000
Alitak	50,000	112,100	38,000
Eastside/Northend Kodiak	150,000	209,700	148,000
Mainland	<u>100,000</u>	<u>91,000</u>	<u>220,000</u>
SubTotal	610,000	738,800	800,000
GRAND TOTAL	17,088,100^d	12,097,700^e	21,770,000^f

^a Numbers of fish.

^b 1995 harvest projections as of 1/5/9.

^c Actual harvest estimates by fishery as of 1/5/95.

^d Includes 25,000 chinook - projected harvest.

^e Includes 22,600 chinook - actual harvest.

^f Includes 25,000 chinook - projected harvest.

Table 11. Pink salmon preemergent fry sampling results, for the 1995 adult pink return, Kodiak Area, 1994.

Stream	Digs	Dig Dates	Live Fry	Live Eggs	Dead Fry	Dead Eggs	1991 Index Live Fry/M ²	% Digs With Fry	1992 Index	1990 Index	Range of Development	H ₂ O Temp.
Perenosa - Up	20	4/07/94	273	0	100	104	73.44	35.0	2.15	194.22	70 - 90	2.0°C
Perenosa - Down	30	4/06/92	1037	5	323	1,559	185.97	60.0	317.10	31.56	40 - 95	2.0°C
Perenosa (Total)	(50)		(1,310)	(5)	(423)	(1,663)	(140.96)	(50.0)	(191.09)	(72.23)		
Paramanoff	40	4/04/94	580	0	156	601	78.01	30.0	102.76	278.01	30 - 99	2.0°C
Afognak	50	4/08/94	63	0	0	449	6.78	22.0	5.27	-	40 - 99	4.0°C
Danger	40	4/04/94	1,542	0	112	754	208.00	85.0	347.55	294.27	20 - 99	1.5°C
Seal Bay (N)	(25)	4/07/94	(2,051)	(0)	(166)	(420)	(441.38)	(76.0)	(522.29)	(868.98)	40 - 90	4.0°C
L. Waterfall (N)-Up	(10)	4/07/94	(147)	(0)	(0)	(6)	(79.09)	(20.0)	(189.91)	(-)	80 - 99	0.0°C
L. Waterfall (N)-Dn	(10)	4/07/94	(169)	(1)	(114)	(1,608)	(90.92)	(90.0)	(460.53)	(69.94)	60 - 95	2.5°C
Afognak Total	180		3,495	5	691	3,467	104.46	45.6%	154.61	214.17	20 - 99%	
Baumans	30	4/03/94	3,029	2	76	3,785	543.20	100.0	319.57	240.49	20 - 95	3.0°C
Terror	50	4/03/94	74	1	5	1,755	7.96	16.0	7.75	0.75	99	3.0°C
Uganik	60	3/29/94	15	0	19	1,209	1.35	11.7	27.65	9.42	90 - 99	3.0°C
Zachar - Up	30	3/22/94	346	0	85	85	62.05	35.0	1.61	17.40	70	2.0°C
Zachar - Down	20	3/22/94	235	0	1	448	63.22	10.0	23.40	4.04	97 - 99	1.0°C
Zachar (Total)	(50)		(581)	(0)	(86)	(533)	(62.52)	(20.0)	(10.33)	(12.05)		
Uyak 202	60	3/19/94	5,722	0	156	467	513.07	50.0	1,102.99	1,069.01	30 - 99	2.0°C
Uyak 203	20	3/22/94	1	0	0	1	0.27	5.0	101.95	237.80	50	2.0°C
Beaver Pond (N)	(40)	4/05/94	(2,511)	(0)	(2)	(60)	(337.73)	(55.0)	(122.31)	(-)	60 - 99	4.0°C
Westside Total	270		9,422	3	342	7,750	187.74	31.9%	296.64	286.36	20 - 99%	
Deadman	60	3/22/94	5,632	0	532	969	505.00	68.4	756.21	546.43	30 - 95	2.5°C
Narrows	30	3/25/94	1,365	0	1	41	244.79	56.7	256.41	264.17	60 - 95	1.0°C
Dog Salmon - Up	40	3/25/94	2,170	0	358	240	291.86	67.5	385.32	269.27	70 - 95	3.0°C
Dog Salmon - Down	20	3/25/94	18	0	4	4	4.84	10.0	0.00	0.54	95	3.0°C
Dog Salmon (Total)	(60)		(2,188)	(0)	(362)	(244)	(196.19)	(48.4)	(256.95)	(179.69)		
Humpy - Up	10	3/29/94	1,657	0	40	158	891.47	100.0	240.49	401.35	50 - 90	4.0°C
Humpy - Down	60	3/29/94	3,080	3	2,885	1,207	276.17	80.0	686.49	495.86	30 - 95	5.0°C
Humpy (Total)	(90)		(4,737)	(3)	(2,925)	(1,365)	(364.07)	(82.9)	(537.78)	(464.35)		
Alitak Total	220		13,922	3	3,280	2,619	340.46	65.9%	487.00	388.73	30 - 95%	

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Table 11. (page 2 of 2)

Stream	Digs	Dig Dates	Live Fry	Live Eggs	Dead Fry	Dead Eggs	1994 Index LiveFry/M ²	% Digs WithFry	1992 Index	1990 Index	Range of Development	H ₂ O Temp.
Kiliuda	40	4/02/94	77	0	5	14	10.36	5.0	142.97	76.93	99	4.0°C
Barling	40	4/02/94	167	0	1	2,164	22.46	17.5	131.00	51.65	95 - 99	4.0°C
Kaiugnak	50	3/25/94	2,184	0	588	3,319	235.00	84.0	487.32	739.32	40 - 99	2.0°C
Seven Rivers - Up	10	3/29/94	1,240	0	451	625	667.12	90.0	567.23	364.05	60 - 95	3.0°C
Seven Rivers - Down	60	3/29/94	4,584	5	59	6,433	411.03	91.7	607.40	394.74	30 - 98	3.0°C
Seven Rivers(Total)	(70)		(5,824)	(5)	(910)	(7,058)	(447.62)	(91.5)	(594.01)	(383.18)		
Saltery	50	3/12/94	2,418	37	20	2,885	260.18	80.0	199.28	521.00	80 - 99	3.0°C
Hurst	40	3/12/94	288	0	5	538	38.74	45.0	194.89	102.76	70 - 80	2.0°C
Sid Olds	50	3/13/94	455	0	0	1,758	48.96	36.0	154.41	139.56	40 - 90	1.0°C
American	60	3/10/94	2,230	20	41	411	199.96	51.7	96.57	255.73	10 - 80	4.0°C
Sheratin	50	3/16/94	223	0	0	1,246	23.99	32.0	44.44	39.81	60 - 99	3.0°C
Buskin - Up	20	3/11/94	778	0	71	440	209.28	85.0	60.53	216.01	60 - 80	1.0°C
Buskin - Down	40	3/11/94	331	0	4	1,596	44.52	45.0	113.38	26.50	40 - 80	1.5°C
Buskin (Total)	(60)		(1,109)	(0)	(75)	(2,036)	(99.44)	(70.0)	(95.76)	(89.67)		
Monashka (N)	(20)	3/15/94	(25)	(0)	(0)	(1,019)	(6.72)	(30.0)	(0)	-	99	1.0°C
Pillar (N)	(25)	3/15/94	(204)	(1)	(2)	(1,249)	(47.56)	(68.0)	(0)	-	60 - 99	1.5°C
General Total	510		14,975	62	1,306	21,429	157.97	51.4%	241.56	257.72	10 - 99%	
KODIAK-AFOGNAK												
TOTAL	1,180		41,814	73	5,619	35,265	190.64	50.3%	289.21	289.77	10 - 99%	
Kukak	0		-	-	-	-	-	-	6.73	-		
Missak	0		-	-	-	-	-	-	401.35	131.63		
Kinak	0		-	-	-	-	-	-	110.02	161.51		
Geographic	0		-	-	-	-	-	-	0.00	572.43		
Dakavak	0		-	-	-	-	-	-	0.00	0.36		
Kashvik	0		-	-	-	-	-	-	59.31	0.81		
Alinchak	0		-	-	-	-	-	-	12.37	54.52		
Portage	0		-	-	-	-	-	-	-	2.53		
Oil	0		-	-	-	-	-	-	-	225.68		
Jute	0		-	-	-	-	-	-	-	14.53		
Kanatak	0		-	-	-	-	-	-	-	186.51		
Big Creek	0		-	-	-	-	-	-	137.32	131.63		
MAINLAND TOTAL	0		-	-	-	-	-	-	99.94	112.73		

Temperature Data: March Mean Temp. = 30.4° f; Deviation from March Norm = -2.5° f. April Mean Temp. = 38.7° f; Deviation from April Norm = +1.2° f.

(N) = Non-Index Streams, results not included in District totals.

Table 12. Escapement summary for systems with fish weirs in the Kodiak Management Area, 1994.

Weir Locations	Dates		Salmon Species Enumerated					Total
	Installed	Removed	Sockeye	Chinook	Pink	Coho	Chum	
1. Karluk	5/09	9/23	848,029	12,049	438,991	23,263	135	1,322,467
2. Ayakulik	5/21	9/05	380,181	9,138	195,449	33,658	103	618,529
3. Dog Salmon	6/01	9/05	240,913	385	82,903	4,944	4,274	333,419
4. Frazer Lake ^a	6/16	8/05	206,071 ^a	189 ^a	0 ^a	0 ^a	3 ^a	206,263 ^a
5. Upper Station	5/30	9/10	259,320	6	14,000	4,836	2	278,164
6. Akalura	6/06	9/06	13,681	0	48,799	1,785	0	64,265
7. Saltery	6/19	9/21	58,975	1	1,560	2,173	30	62,739
8. Buskin	6/01 8/16	7/23 9/30	11,783	6	89,711	8,146	17	109,663
9. Litnik	5/27	9/17	80,570	5	49,756	11,965	8	142,304
10. Paul's Bay	6/07	9/06	16,100	0	7,002	12,538	28	35,668
11. Malina	5/28	8/11	9,042	0	8,035	0	0	17,077
12. Big Creek (Shuyak)	8/07	9/30	27	0	2,065	3,960	0	6,052
TOTALS			1,918,621	21,590	938,271	107,268	4,597	2,990,347

^a Numbers not used in species totals as Frazer Lake salmon are initially counted through Dog Salmon weir.

Table 13. Historical indexed salmon escapements by species in the Kodiak Management Area, 1962-1994.

Year	Chinook	Sockeye	Coho	Pink	Chum
1962		922,500		4,600,000	297,900
1963		502,227		1,026,075	75,520
1964		600,346		3,360,000	261,429
1965		561,980		772,874	67,156
1966		652,578		2,100,000	143,700
1967		720,683		698,710	136,079
1968	703	645,612		2,800,000	121,000
1969	7,752	592,020		1,581,335	77,285
1970	3,900	573,603		3,392,577	123,150
1971	4,524	456,197		1,070,173	249,327
1972	3,049	605,491		1,053,391	335,115
1973	4,762	543,111		604,592	258,044
1974	1,622	995,925		2,041,099	86,383
1975	3,059	704,801		1,100,555	156,761
1976	8,411	1,075,226		3,105,320	312,914
1977	13,824	1,269,374	59,095	2,212,488	742,384
1978	14,677	1,000,353	37,479	5,006,273	482,956
1979	14,441	1,410,800	94,000	3,067,647	607,430
1980	5,850	1,831,748	28,000	6,492,822	830,070
1981	15,720	1,391,593	59,000	3,188,869	741,981
1982	10,773	1,603,692	86,000	5,370,049	1,023,923
1983	27,445	1,300,506	104,000	2,089,704	824,954
1984	14,429	1,467,780	123,000	4,512,124	682,936
1985	13,876	2,574,539	191,417	3,168,197	727,883
1986	11,046	2,001,279	170,000	4,068,615	655,817
1987	23,744	1,551,543	153,000	2,978,510	641,579
1988	35,152	1,661,532	96,140	3,236,931	558,531
1989 ^a	26,131	3,022,886	166,622	14,642,587	1,432,609
1990	25,972	2,006,241	151,420	6,024,900	474,620
1991	27,306	2,515,659	259,850	4,317,610	934,336
1992	19,013	1,968,058	289,592	3,515,624	530,128
1993	22,113	1,705,440	159,996	4,291,581	234,381
1994	21,591	2,041,511	206,418	3,994,020	545,391
Recent 10 Year Average (1984-1994)	21,424	1,949,358	180,083	4,010,811	598,560
Odd Year Average ^b (1983-1993)				3,369,120	
Even Year Average (1984-1994)				4,225,369	
Average all years	13,644	1,232,936	126,023	3,026,333	435,658

^a Limited commercial fisheries were conducted due to oil contamination from the Exxon Valdez oilspill.

^b 1989 not included in averages

Table 14. Exvessel values in dollars by salmon species, 1975-1994.

Year	Chinook	Sockeye	Coho	Pink	Chum
1975	836	388,555	108,071	4,240,025	179,565
1976	6,958	2,636,564	102,515	14,552,488	1,826,022
1977	13,512	3,661,365	159,595	9,959,805	5,076,047
1978	43,180	7,713,210	378,732	19,254,365	2,963,584
1979	33,685	4,836,232	1,068,034	15,688,443	1,463,696
1980	9,475	2,814,265	720,496	19,691,404	4,173,758
1981	30,350	8,403,460	796,355	17,575,866	5,888,365
1982	15,625	6,432,027	2,389,854	6,120,582	3,858,698
1983	40,145	6,146,376	695,042	3,833,780	2,688,079
1984	97,661	11,411,174	1,811,065	10,739,311	1,886,142
1985	136,074	10,760,252	1,986,232	6,221,026	1,327,343
1986	73,725	26,342,926	966,832	8,631,348	2,741,828
1987	69,552	19,604,648	1,357,790	7,788,380	2,275,289
1988	429,365	41,900,619	3,284,487	43,818,589	14,378,886
1990	243,267	41,903,813	1,802,779	6,416,863	2,229,109
1991	195,336	26,862,765	1,272,601	6,545,245	2,142,784
1992	347,817	34,334,081	1,375,402	1,860,508	1,971,038
1993	251,518	17,954,967	1,052,308	12,769,226	880,795
1994	251,984	17,917,701	1,415,923	4,667,445	988,253

Table 16. Excerpt from harvest strategy, pink salmon fishing periods.

Pink Salmon

The total projected pink salmon harvest is 13,700,000 fish, which includes Kitoi Bay Hatchery's projected contribution of 1,400,000 pinks, represents an above average "even year" harvest.

Preemergent pink salmon fry sampling of the Kodiak Management Area index streams was conducted in March and April of 1993. The sampling indicated generally good over winter survival of the eggs and sac fry. These fry were from a fair brood year escapement of 1992; the indexed escapement estimate was 3.5 million pink salmon. Sampling resulted in an unweighted live fry index of 205.84 live fry per square meter of spawning area. This live fry index is the sixth highest even year index on record. Early spring conditions in 1993 may not have been entirely favorable for outmigration and rearing of fry in the nearshore ocean environment. Ambient air temperatures, as measured in Kodiak, were well above the average for March through June, but cloudy and rainy conditions predominated on the east side of Kodiak and Afognak Islands during April and May. Cloudy weather and cool water temperatures delayed the spring plankton bloom, and may have negatively affected marine survival(Tim Joyce, Kitoi Bay Hatchery, personal communication). **For planning purposes, the actual 1994 harvest, of hatchery and wild production combined, is likely to approach the lower end of the forecast range at 12.2 million pink salmon and likely will not exceed the point estimate of 13.7 million pink salmon.**

In addition to the three management criteria identified in the introduction of this document, the harvest strategy for pink salmon utilizes: 1) a fixed opening date (July 6), 2) a reliable pink salmon forecasting program to set the length of the initial fishing periods, and 3) coordinates specific fisheries whenever possible to allow for dispersion of the purse seine fleet.

In consideration of the forecasted pink salmon run, the pattern of fishing periods for those management units where pink salmon are the targeted management species is expected to vary. Fishing periods will range from 2½ to 3½ days per week from July 6 through approximately August 25. During the peak harvest period of late July to mid August fishing periods may be extended to seven days per week.

Listed below are projected fishing period scenarios which can be used for planning purposes by both ADF&G and industry.

First Period: 2½ days (57 hours) - 12:00 Noon July 6 through 9:00 P.M. July 8. In recent years this initial fishing period has varied between 2-1/2 to 4-1/2 days in duration. This period provides harvest data important for early run strength assessment for Area K's pink salmon run

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as well as for specific chum salmon stocks. No extensions in fishing time based on pink or chum salmon harvests would occur during this period. The increased closed water area will remain in effect in the East Arm of Uganik Bay.

Second Period: 3½ days (81 hours) - 12:00 Noon July 12 through 9:00 P.M. July 15. This second period will help ensure that early run pink salmon stocks and several major chum salmon stocks are adequately harvested and escapements are ensured. Assessment of run strength for both species (pink and chum) emphasize harvest data. No extensions in fishing time based on pink or chum salmon harvests would occur during this period.

Third Period: 3½ days (81 hours) - 12:00 Noon July 19 through 9:00 P.M. July 22. This third period will occur following a 3½ day closure, allowing an influx of pink and chum salmon into terminal areas which will enhance the build-up of potential escapement. At this time a combination of harvest and early escapement/build-up information will provide indications of the actual run strength for major pink salmon fisheries. No extensions in fishing time are expected during this period.

Fourth Period: 3½ days (81 hours) - 12:00 Noon July 26 through 9:00 P.M. July 29. This fourth period is a very critical period in that harvest should increase substantially and a fairly accurate assessment of total run strength should be evident by period's end. Extensions in fishing time commonly occur off of this period, during years when the pink and chum salmon runs are equal to or stronger than expected. The initial pink salmon opening for the Kitoi Bay Section should occur at the beginning of this fishing period.

Fifth Period: 3½ days (81 hours) - 12:00 Noon August 2 through 9:00 P.M. August 5. This fifth period should yield the peak harvest day and should be the peak harvest period, provided normal run timing occurs. If preseason expectations appear valid, extensions in fishing time could occur in portions of the management area. This period commonly yields the first significant announcement of differential fishing time by management unit as heavy production areas are targeted for extensions, while moderate or lower production areas are not.

Sixth Period: 3½ days (81 hours) - 12:00 Noon August 9 through 9:00 P.M. August 12. This sixth period should be the first postpeak period and is important from the standpoint that returns to major late production systems should be evident by period's end. This is a critical period for considering increases in closed water sanctuaries to enhance escapement levels. Furthermore, a final evaluation of run strength is used to determine if further reductions in fishing time are needed for the remaining periods to ensure adequate escapement. A strategy for "topping off" escapement for all systems is developed from this period.

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Seventh Period: 3½ days (78 hours) - 12:00 Noon August 16 through 6:00 P.M. August 19. During this seventh period, a blended multi-species management approach is used for those sections where pink salmon were the targeted species for the previous six periods. Emphasis will still be on harvesting excess, good quality pink salmon and on achieving pink salmon escapement goals. Major concerns, however, will be directed toward the run strength of late run sockeye and chum salmon.

Eighth Period: 3½ days (78 hours) - 12:00 Noon August 23 through 6:00 P.M. August 26. This eighth period will be primarily a cleanup period for most pink salmon stocks. Escapement requirements should be assured at this point. Excess pink salmon of acceptable quality should be available for harvest in near terminal areas. Again, this period will require a major emphasis on multi-species management; it is a critical management period for late run sockeye and chum salmon stocks, as well as early run coho salmon stocks.

Changes in these scenarios should be expected if significant deviations in the actual pink salmon return occurs. Less fishing time should be expected in management units where chum salmon are the targeted management species.

Table 17. Pink and chum harvest by day, Kodiak Management Area, 1970-1994.

Date	Daily		Average		Cumulative		Percent	
	Pinks	Chums	Pinks	Chums	Pinks	Chums	Pinks	Chums
6/01	1	13	0	1	0	1	0	0
6/02	4	73	0	3	0	4	0	0
6/03	999	661	42	28	42	31	0	0
6/04	0	0	0	0	42	31	0	0
6/05	0	0	0	0	42	31	0	0
6/06	85	0	4	0	45	31	0	0
6/07	718	105	30	4	75	36	0	0
6/08	1,821	715	76	30	151	65	0	0
6/09	1,987	3,734	83	156	234	221	0	0
6/10	3,311	12,754	138	531	372	752	0	0
6/11	791	1,923	33	80	405	832	0	0
6/12	1,455	3,243	61	135	466	968	0	0
6/13	3,703	6,392	154	266	620	1,234	0	0
6/14	10,534	13,808	439	575	1,059	1,809	0	0
6/15	29,654	30,817	1,236	1,284	2,294	3,093	0	0
6/16	21,485	25,240	895	1,052	3,190	4,145	0	1
6/17	21,618	17,414	901	726	4,090	4,871	0	1
6/18	34,545	22,447	1,439	935	5,530	5,806	0	1
6/19	36,173	26,148	1,507	1,090	7,037	6,895	0	1
6/20	88,516	29,550	3,688	1,231	10,725	8,127	0	1
6/21	62,763	30,242	2,615	1,260	13,340	9,387	0	1
6/22	45,120	44,692	1,880	1,862	15,220	11,249	0	1
6/23	154,839	43,611	6,452	1,817	21,672	13,066	0	2
6/24	74,568	37,871	3,107	1,578	24,779	14,644	0	2
6/25	45,764	52,397	1,907	2,183	26,686	16,827	0	2
6/26	58,598	70,189	2,442	2,925	29,127	19,752	0	2
6/27	102,772	81,590	4,282	3,400	33,409	23,151	0	3
6/28	73,497	57,250	3,062	2,385	36,472	25,537	0	3
6/29	89,962	49,875	3,748	2,078	40,220	27,615	0	3
6/30	123,831	59,844	5,160	2,494	45,380	30,108	0	4
7/01	113,871	56,807	4,745	2,367	50,124	32,475	1	4
7/02	141,241	60,832	5,885	2,535	56,009	35,010	1	4
7/03	133,731	47,539	5,572	1,981	61,582	36,991	1	5
7/04	155,165	47,130	6,465	1,964	68,047	38,954	1	5
7/05	215,961	56,941	8,998	2,373	77,045	41,327	1	5
7/06	401,791	131,722	16,741	5,488	93,786	46,815	1	6
7/07	1,222,124	322,234	50,922	13,426	144,708	60,242	2	7
7/08	1,385,296	344,674	57,721	14,361	202,429	74,603	2	9
7/09	1,167,115	235,443	48,630	9,810	251,059	84,413	3	10
7/10	947,975	166,392	39,499	6,933	290,558	91,346	3	11
7/11	507,255	126,716	21,136	5,280	311,693	96,626	3	12
7/12	729,541	158,325	30,398	6,597	342,091	103,223	4	13
7/13	1,529,969	235,758	63,749	9,823	405,840	113,046	4	14
7/14	2,103,635	328,210	87,651	13,675	493,491	126,722	5	16
7/15	2,355,528	336,173	98,147	14,007	591,638	140,729	6	17
7/16	2,367,690	332,642	98,654	13,860	690,292	154,589	7	19
7/17	2,164,145	213,552	90,173	8,898	780,464	163,487	8	20
7/18	1,070,092	127,682	44,587	5,320	825,052	168,807	9	21
7/19	1,494,264	174,492	62,261	7,271	887,313	176,078	10	22
7/20	3,084,910	291,151	128,538	12,131	1,015,851	188,209	11	23
7/21	4,067,217	387,574	169,467	16,149	1,185,318	204,358	13	25
7/22	5,087,310	341,409	211,971	14,225	1,397,289	218,583	15	27
7/23	4,721,868	273,977	196,745	11,416	1,594,034	229,999	17	28
7/24	4,346,079	277,695	181,087	11,571	1,775,120	241,570	19	30
7/25	3,760,173	266,137	156,674	11,089	1,931,794	252,659	21	31
7/26	4,829,912	334,617	201,246	13,942	2,133,041	266,601	23	33
7/27	6,863,188	449,910	285,966	18,746	2,419,007	285,347	26	35
7/28	7,829,285	476,124	326,220	19,839	2,745,227	305,186	30	38
7/29	8,378,642	428,326	349,110	17,847	3,094,337	323,033	33	40
7/30	8,983,245	400,018	374,302	16,667	3,468,639	339,700	37	42
7/31	6,951,000	366,003	289,625	15,250	3,758,264	354,950	40	44
8/01	5,991,757	295,676	249,657	12,320	4,007,920	367,270	43	45
8/02	7,898,733	410,177	329,114	17,091	4,337,034	384,361	47	47
8/03	9,258,099	656,414	385,754	27,351	4,722,788	411,711	51	51

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Table 17. (page 2 of 2)

Date	Daily		Average		Cumulative		Percent	
	Pinks	Chums	Pinks	Chums	Pinks	Chums	Pinks	Chums
8/04	10,616,443	625,436	442,352	26,060	5,165,140	437,771	56	54
8/05	9,886,286	529,220	411,929	22,051	5,577,069	459,822	60	57
8/06	9,009,728	442,827	375,405	18,451	5,952,474	478,273	64	59
8/07	6,957,777	298,378	289,907	12,432	6,242,381	490,705	67	61
8/08	5,300,502	260,271	220,854	10,845	6,463,236	501,550	70	62
8/09	6,213,743	462,407	258,906	19,267	6,722,142	520,817	72	64
8/10	7,702,522	646,428	320,938	26,935	7,043,080	547,752	76	68
8/11	8,074,620	650,212	336,443	27,092	7,379,523	574,844	79	71
8/12	7,000,930	507,593	291,705	21,150	7,671,228	595,993	83	74
8/13	6,330,204	401,464	263,759	16,728	7,934,987	612,721	85	76
8/14	4,305,105	234,034	179,379	9,751	8,114,366	622,472	87	77
8/15	3,926,057	216,345	163,586	9,014	8,277,952	631,487	89	78
8/16	3,916,962	565,821	163,207	23,576	8,441,158	655,063	91	81
8/17	3,159,322	448,624	131,638	18,693	8,572,797	673,755	92	83
8/18	2,642,360	380,627	110,098	15,859	8,682,895	689,615	93	85
8/19	2,165,166	241,390	90,215	10,058	8,773,110	699,673	94	86
8/20	2,433,953	203,797	101,415	8,492	8,874,525	708,164	95	87
8/21	1,599,998	115,673	66,667	4,820	8,941,192	712,984	96	88
8/22	1,274,591	121,722	53,108	5,072	8,994,300	718,056	97	89
8/23	1,257,191	341,778	52,383	14,241	9,046,683	732,297	97	90
8/24	1,120,502	247,291	46,688	10,304	9,093,370	742,600	98	92
8/25	1,028,696	243,153	42,862	10,131	9,136,232	752,732	98	93
8/26	751,795	142,471	31,325	5,936	9,167,557	758,668	99	94
8/27	713,906	98,051	29,746	4,085	9,197,303	762,753	99	94
8/28	621,217	147,422	25,884	6,143	9,223,187	768,896	99	95
8/29	533,100	156,299	22,213	6,512	9,245,400	775,408	99	96
8/30	383,538	105,871	15,981	4,411	9,261,381	779,820	100	96
8/31	199,869	75,739	8,328	3,156	9,269,709	782,976	100	97
9/01	194,099	138,175	8,087	5,757	9,277,796	788,733	100	97
9/02	141,476	79,033	5,895	3,293	9,283,691	792,026	100	98
9/03	78,803	111,959	3,283	4,665	9,286,974	796,691	100	98
9/04	61,221	58,519	2,551	2,438	9,289,525	799,129	100	99
9/05	24,568	23,175	1,024	966	9,290,549	800,095	100	99
9/06	20,594	48,987	858	2,041	9,291,407	802,136	100	99
9/07	15,410	56,208	642	2,342	9,292,049	804,478	100	99
9/08	11,831	38,411	493	1,600	9,292,542	806,078	100	100
9/09	6,416	18,139	267	756	9,292,809	806,834	100	100
9/10	5,406	13,546	225	564	9,293,035	807,399	100	100
9/11	1,666	15,191	69	633	9,293,104	808,032	100	100
9/12	680	8,478	28	353	9,293,132	808,385	100	100
9/13	755	7,469	31	311	9,293,164	808,696	100	100
9/14	8,240	2,281	343	95	9,293,507	808,791	100	100
9/15	4,535	3,583	189	149	9,293,696	808,940	100	100
9/16	340	2,142	14	89	9,293,710	809,030	100	100
9/17	46	2,881	2	120	9,293,712	809,150	100	100
9/18	7	909	0	38	9,293,712	809,187	100	100
9/19	3,859	654	161	27	9,293,873	809,215	100	100
9/20	3	728	0	30	9,293,873	809,245	100	100
9/21	107	530	4	22	9,293,878	809,267	100	100
9/22	0	2,088	0	87	9,293,878	809,354	100	100
9/23	0	273	0	11	9,293,878	809,366	100	100
9/24	5,174	539	216	22	9,294,093	809,388	100	100
9/25	45	839	2	35	9,294,095	809,423	100	100
9/26	0	418	0	17	9,294,095	809,440	100	100
9/27	0	529	0	22	9,294,095	809,462	100	100
9/28	1,292	253	54	11	9,294,149	809,473	100	100
9/29	4	1,739	0	72	9,294,149	809,545	100	100
9/30	424	808	18	34	9,294,167	809,579	100	100
Total	223,060,005	19,429,898	9,294,167	809,579				

Table 18. Management chronology by management unit for eastside salmon stocks, Kodiak Management Area.

DATE		6/1	6/14	6/21	7/6	7/10	8/25	9/6	10/31
MANAGEMENT UNIT									
NORTHEAST KODIAK DISTRICT	Outer Chiniak Bay	CLOSED			LOCAL AND MIXED PINK		LOCAL PINK COHO	LOCAL COHO	
	Inner Chiniak Bay	CLOSED			LOCAL AND MIXED PINK AND CHUM		LOCAL PINK COHO	LOCAL COHO	
	Buskin River	CLOSED			LOCAL PINK BUSKIN SOCKEYE	LOCAL PINK AND CHUM	LOCAL PINK COHO, CHUM	LOCAL COHO	
	Monashka/Mill Bay	CLOSED			LOCAL AND MIXED PINK		LOCAL PINK COHO	LOCAL COHO	
EASTSIDE KODIAK DISTRICT	Seven Rivers	CLOSED	CLOSED	CLOSED	LOCAL AND MIXED PINK AND CHUM		LOCAL PINK COHO	LOCAL COHO	
	Two Headed	CLOSED	CLOSED	CLOSED	LOCAL AND MIXED PINK AND CHUM		LOCAL PINK COHO	LOCAL COHO	
	Sitkalidak	CLOSED	CLOSED	CLOSED	LOCAL AND MIXED PINK AND CHUM		LOCAL PINK, CHUM, COHO	LOCAL COHO	
	Outer Ugak Bay	CLOSED	CLOSED	PASAGSHAK SOCKEYE	LOCAL AND MIXED PINK AND CHUM		LOCAL PINK, CHUM, COHO	LATE CHUM COHO	
	Inner Ugak Bay	CLOSED	CLOSED	SALTARY SOCKEYE	LOCAL PINK & CHUM SALTARY SOCKEYE	LOCAL PINK AND CHUM	LOCAL PINK COHO	COHO	

Local and mixed sockeye 33 hour fishing period.

Table 19. Chinook and coho salmon harvest percents July 6-25, 1970-1994.

YEAR	CHINOOK			COHO		
	7/6-7/25	PERCENTAGE	ALL SEASON	7/6-7/25	PERCENTAGE	ALL SEASON
70	542	49	1,089	14,522	22	66,421
71	384	42	920	467	2	22,844
72	703	54	1,300	3,438	21	16,587
73	652	82	800	991	28	3,573
74	235	43	545	688	5	13,631
75	33	33	101	849	4	23,659
76	443	58	766	3,095	13	23,714
77	113	19	585	2,078	7	27,920
78	1,513	47	3,228	2,934	6	48,795
79	1,137	60	1,907	20,260	14	140,629
80	156	30	529	4,135	3	139,154
81	278	20	1,418	4,148	3	121,544
82	251	21	1,214	3,529	1	344,823
83	2,115	55	3,839	12,243	8	157,612
84	1,583	34	4,657	14,391	6	229,524
85	806	16	4,970	6,479	2	284,166
86	1,221	28	4,381	21,952	13	168,690
87	2,050	44	4,613	11,895	6	192,433
88	9,662	43	22,374	26,714	9	303,298
89	33	31	106	14	1	2,599
90	6,858	36	18,806	40,554	14	293,819
91	9,754	44	22,234	73,036	22	324,860
92	5,927	24	24,299	64,536	23	280,085
93	16,415	39	42,199	108,348	35	313,467
94	5,134	23	22,576	44,657	15	296,305
AVG.	2,833	36	7,894	20,248	13	160,006

Table 20. Sockeye salmon harvest, by number and percent, in the Cape Igvak Section Kodiak Management Area, July 6-25, 1970-1994.

YEAR	ALL YEAR SOCKEYE	7/6-25 SOCKEYE	7/6-25 IGVAK	7/6-25 REM. IS.	7/6-25 PERCENT	7/6-25 IGVAK	7/6-25 TOTAL	ALL YEAR SOCKEYE
1970	917,045	163,327	6,894	156,433	17	1	18	82
1971	478,479	100,708	25,160	75,548	16	5	21	79
1972	222,408	152,320	42,230	110,090	49	19	68	32
1973	167,341	63,027	7,244	55,783	33	4	38	62
1974	418,761	119,043	57,192	61,851	15	14	28	72
1975	136,418	69,234	29,544	39,690	29	22	51	49
1976	641,484	232,532	10,575	221,957	35	2	36	64
1977	623,468	333,493	138,522	194,971	31	22	53	47
1978	1,071,782	293,776	91,782	201,994	19	9	27	73
1979	630,756	188,317	7,625	180,692	29	1	30	70
1980	651,394	209,862	40	209,822	32	0	32	68
1981	1,288,949	241,499	68,791	172,708	13	5	19	81
1982	1,203,787	263,415	10,826	252,589	21	1	22	78
1983	1,231,989	550,086	271,188	278,898	23	22	45	55
1984	1,950,439	504,267	20,915	483,352	25	1	26	74
1985	1,842,731	232,578	2,248	230,330	12	0	13	87
1986	3,188,046	830,325	94,601	735,724	23	3	26	74
1987	1,794,224	527,617	95,048	432,569	24	5	29	71
1988	2,698,637	1,279,103	13,150	1,265,953	47	0	47	53
1990	5,248,404	1,271,797	134,452	1,137,345	22	3	24	76
1991	5,704,152	1,724,594	77,385	1,647,209	29	1	30	70
1992	4,167,877	2,013,272	70,163	1,943,109	47	2	48	52
1993	4,377,771	1,393,681	189,595	1,204,086	28	4	32	68
1994	2,877,484	706,876	32,755	674,121	23	1	25	75

Table 21. Commercial harvest of sockeye salmon from the Upper and Lower Cook Inlet Areas (combined) and the Kodiak Area, 1883-1994.

Combined Cook Inlet Sockeye Harvest		Total Kodiak Sockeye Harvest	Combined Cook Inlet Sockeye Harvest		Total Kodiak Sockeye Harvest	Combined Cook Inlet Sockeye Harvest		Total Kodiak Sockeye Harvest
Year			Year			Year		
1880								
1881			1928	1,172,959	1,592,003	1975	706,878	136,418
1882		58,800	1929	1,049,851	712,126	1976	1,722,290	641,484
1883		188,706	1930	917,882	466,409	1977	2,152,567	623,468
1884		282,184	1931	805,526	1,183,074	1978	2,778,071	1,071,782
1885		468,580	1932	1,131,958	1,058,446	1979	988,832	631,735
1886		646,100	1933	1,336,135	1,428,373	1980	1,643,079	651,394
1887		1,004,500	1934	1,815,267	1,828,953	1981	1,549,490	1,288,980
1888		2,781,100	1935	1,355,787	1,613,519	1982	3,391,184	1,204,793
1889		3,754,735	1936	2,390,281	2,657,195	1983	5,237,378	1,231,989
1890		3,592,707	1937	1,581,183	1,881,304	1984	2,374,810	1,950,439
1891		3,846,388	1938	2,425,253	1,965,943	1985	4,338,954	1,843,185
1892		3,126,459	1939	2,334,904	1,786,445	1986	5,022,843	3,188,269
1893	170,000	3,244,609	1940	1,648,952	1,318,233	1987	9,749,034	1,792,819
1894	406,840	3,830,336	1941	1,293,234	1,730,201	1988	7,153,350	2,698,637
1895	324,277	2,246,966	1942	1,540,185	1,281,529	1989	5,173,969	2,628,565
1896	309,863	3,328,846	1943	1,468,279	1,990,557	1990	3,807,959	5,248,339
1897	354,800	2,785,515	1944	1,939,932	1,817,875	1991	2,499,423	5,704,041
1898	551,168	2,033,094	1945	1,556,713	2,041,090	1992	9,284,984	4,167,877
1899	558,529	1,934,771	1946	1,474,473	838,863	1993	4,988,532	4,377,688
1900	585,309	3,450,480	1947	1,473,973	993,394	1994	3,682,810	2,877,484
1901	482,406	4,826,159	1948	2,035,306	1,260,465	1995		
1902	710,280	3,868,101	1949	2,153,213	892,336	1996		
1903	564,189	1,826,163	1950	2,642,374	920,885	1997		
1904	489,348	2,875,118	1951	2,481,170	467,875	1998		
1905	95,547	2,142,367	1952	1,502,491	603,677	1999		
1906	225,506	3,980,462	1953	1,489,972	317,150	2000		
1907	460,620	4,232,454	1954	1,234,607	325,157			
1908	670,774	2,487,848	1955	1,059,079	164,482	Overall	1,705,943	1,721,769
1909	582,562	1,915,230	1956	1,294,799	271,249	Average		
1910	840,187	1,954,717	1957	667,753	234,253	1985-94	5,570,186	3,452,690
1911	1,249,154	2,685,949	1958	495,947	288,014	Average		
1912	1,194,888	2,246,467	1959	634,728	330,087			
1913	1,369,196	1,663,163	1960	948,040	362,525	DECADE AVERAGES		
1914	1,472,829	1,255,444	1961	1,185,079	407,979	1880-1890		1,419,712
1915	1,860,684	1,664,426	1962	1,172,079	784,664	1891-1900	407,598	2,982,746
1916	1,699,323	3,373,055	1963	958,101	407,040	1901-10	512,142	3,010,862
1917	1,659,907	3,645,914	1964	990,709	498,488	1911-20	1,443,299	2,200,562
1918	1,668,394	1,894,466	1965	1,436,352	346,237	1921-30	1,210,954	1,508,709
1919	943,694	1,619,101	1966	1,867,447	631,646	1931-40	1,682,525	1,672,149
1920	1,314,916	1,957,636	1967	1,409,106	308,756	1941-50	1,757,768	1,376,720
1921	983,625	2,857,922	1968	1,200,146	760,393	1951-60	1,180,859	336,447
1922	860,019	1,097,359	1969	815,040	591,481	1961-70	1,180,301	565,373
1923	1,099,465	1,090,117	1970	768,946	917,045	1971-80	1,281,219	504,366
1924	1,056,090	1,407,525	1971	659,032	478,479	1981-90	4,779,897	2,307,602
1925	1,510,861	1,693,057	1972	937,621	222,800	1991-94	5,113,937	4,281,773
1926	1,999,720	3,015,366	1973	699,234	167,341	LAST 10 YR		
1927	1,459,068	1,155,202	1974	524,588	418,761	1984-94	5,279,697	3,316,122

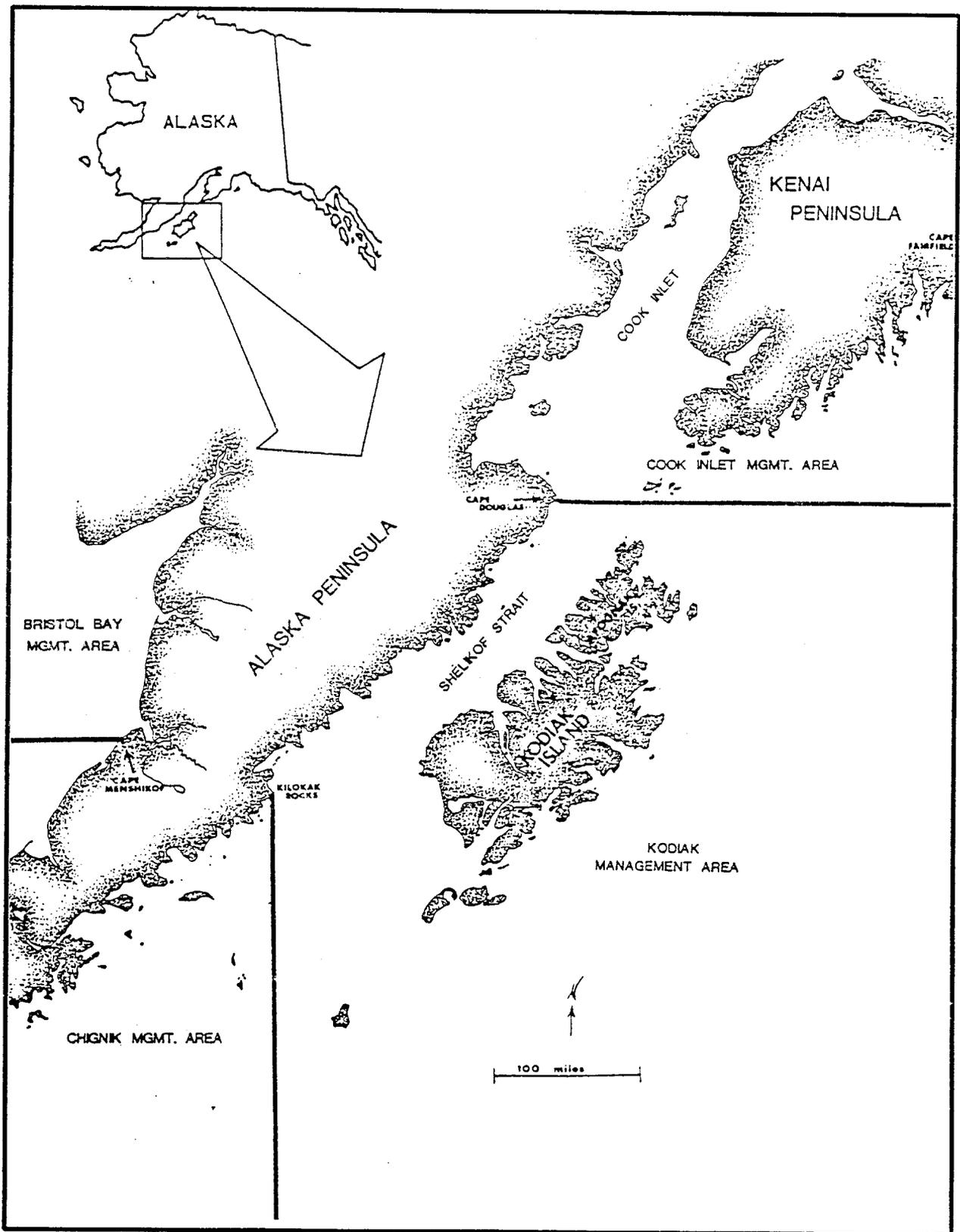


Figure 1. Location of the Kodiak Management Area, 1994.

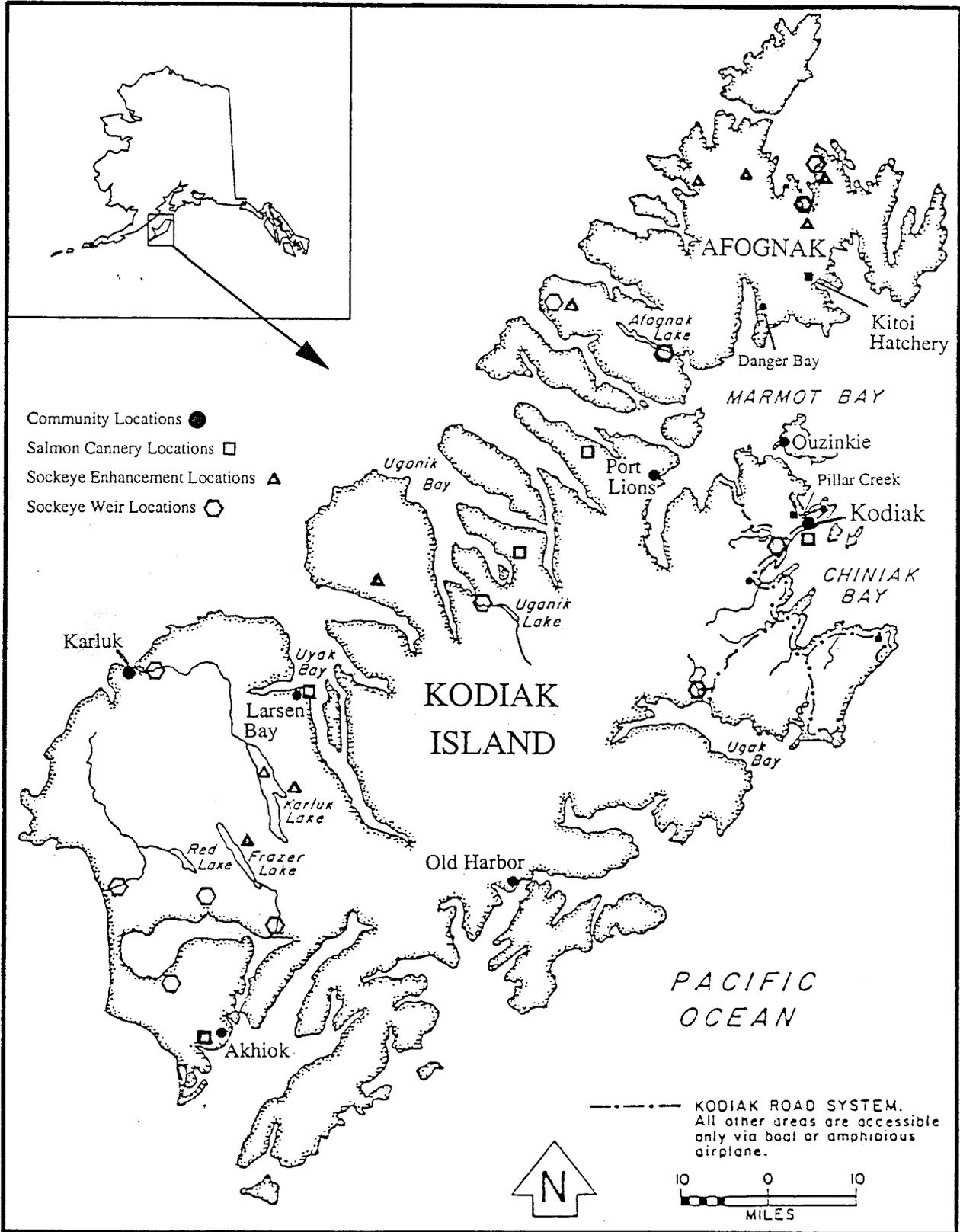


Figure 2. Map of Kodiak Island, showing communities, canneries, and sockeye salmon enhancement and weir locations, of the Kodiak Management Area, 1994.

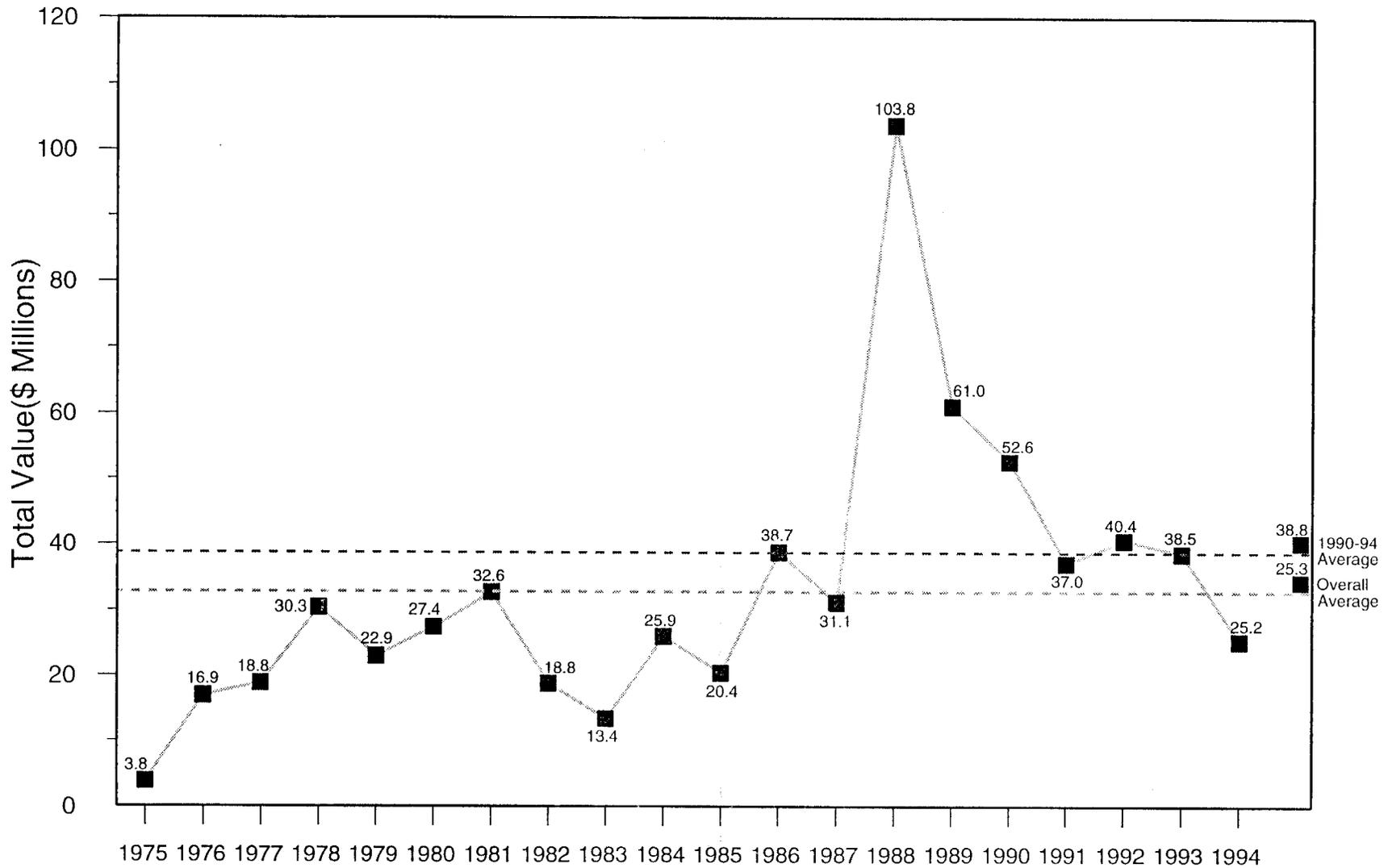
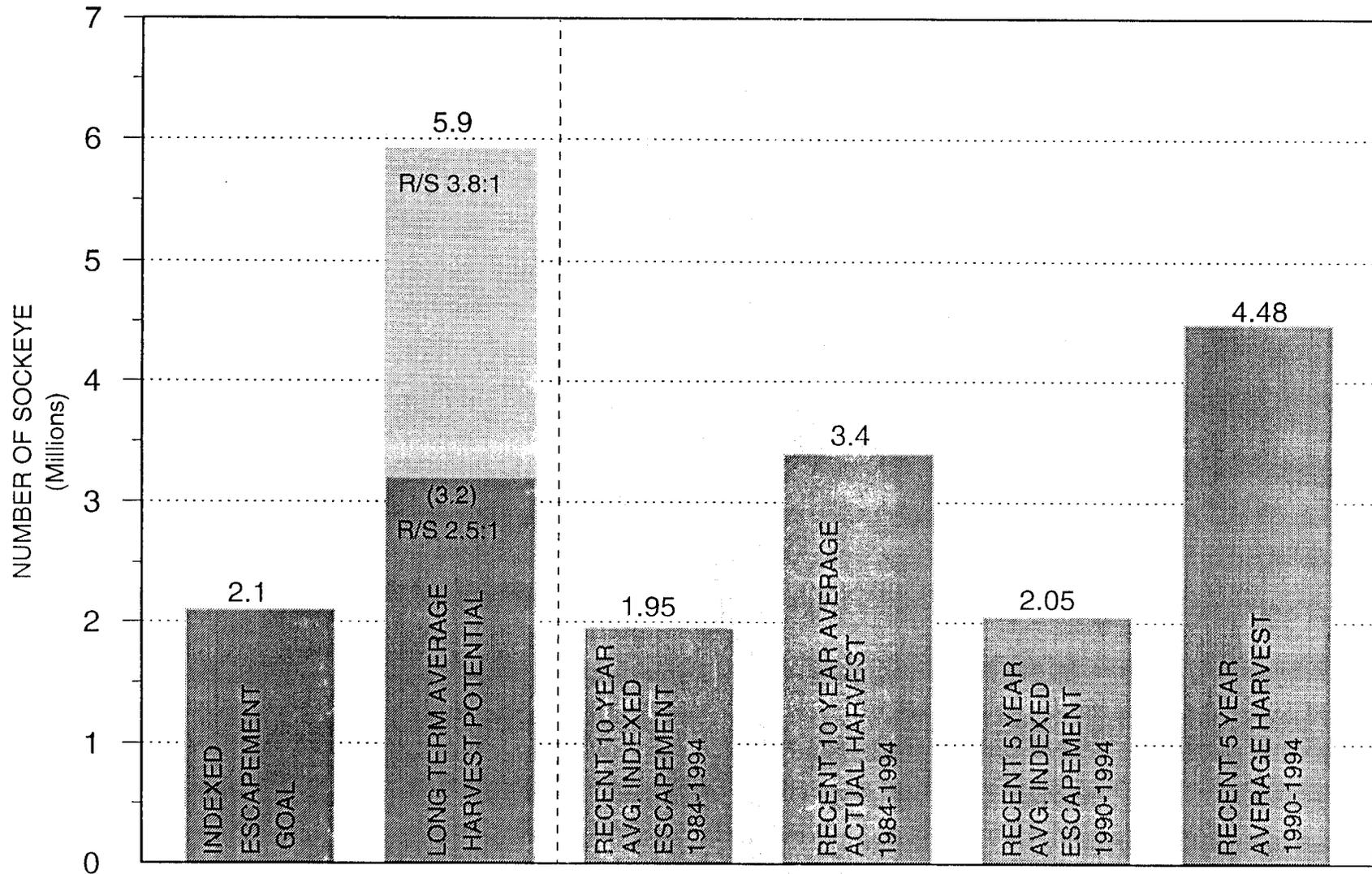


Figure 3. Average ex-vessel value of the commercial salmon fishery in the Kodiak Management Area, 1975-1994.



* ACTUAL HARVEST & ESCAPEMENT NUMBERS DO NOT INCLUDE 1989 DATA.

* R/S = RETURN PER SPAWNER

Figure 5. Sockeye salmon production potential vs. actual harvest, Kodiak Management Area.

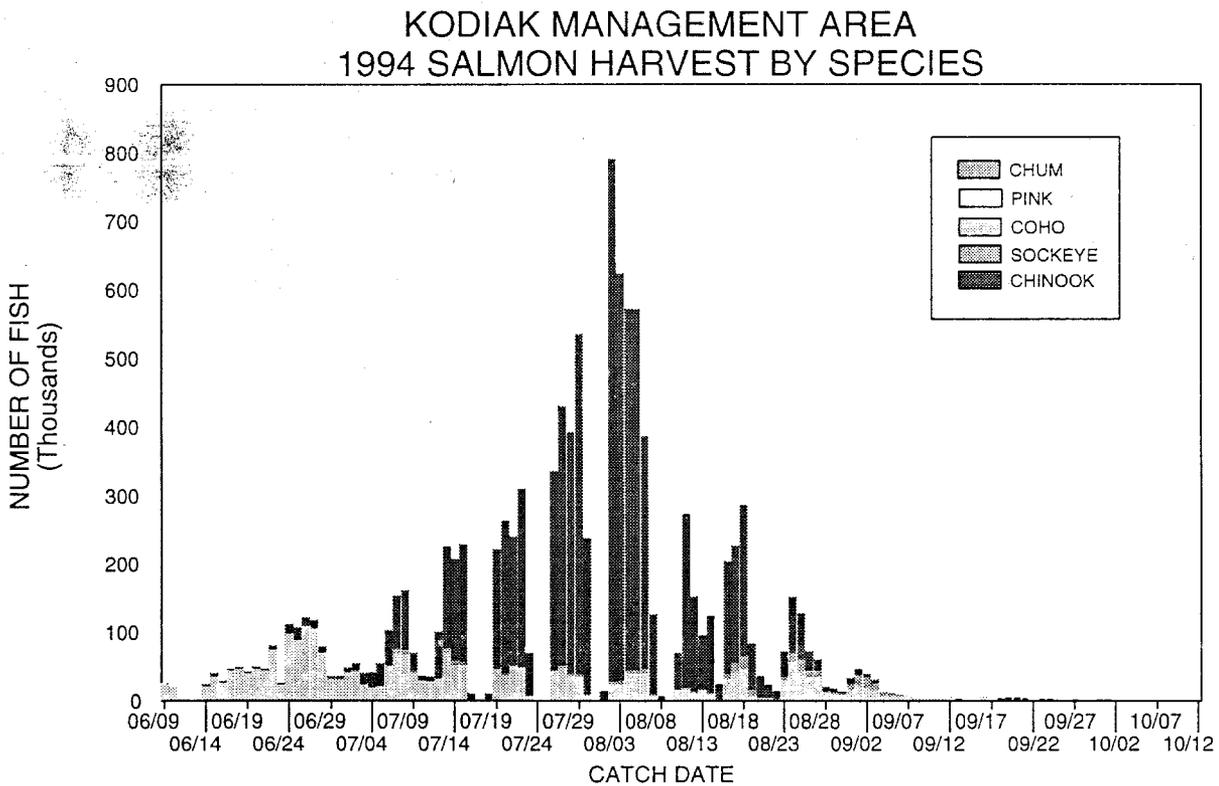
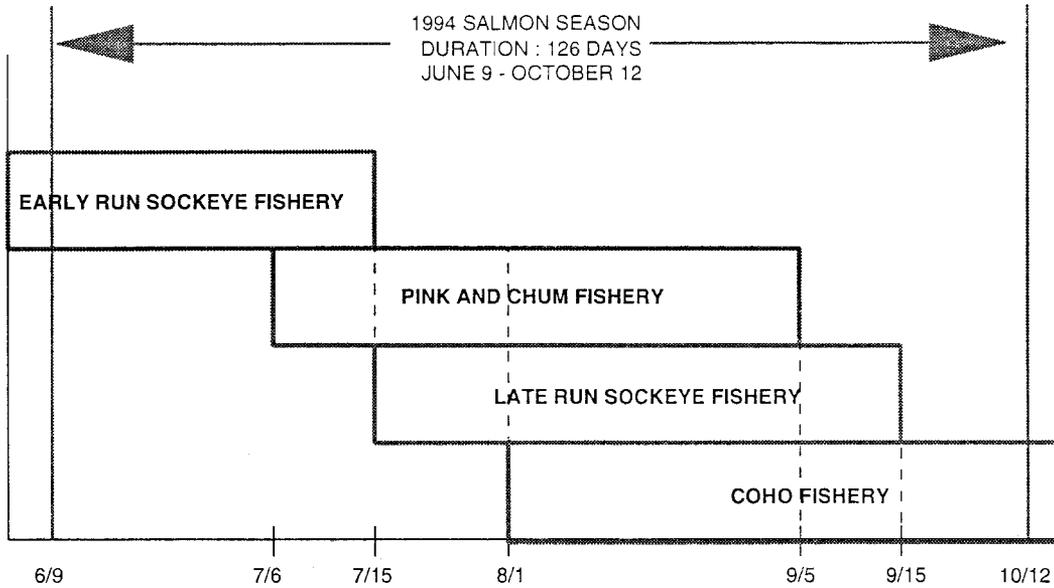


Figure 6. Commercial salmon fisheries management chronology, Kodiak Management Area.

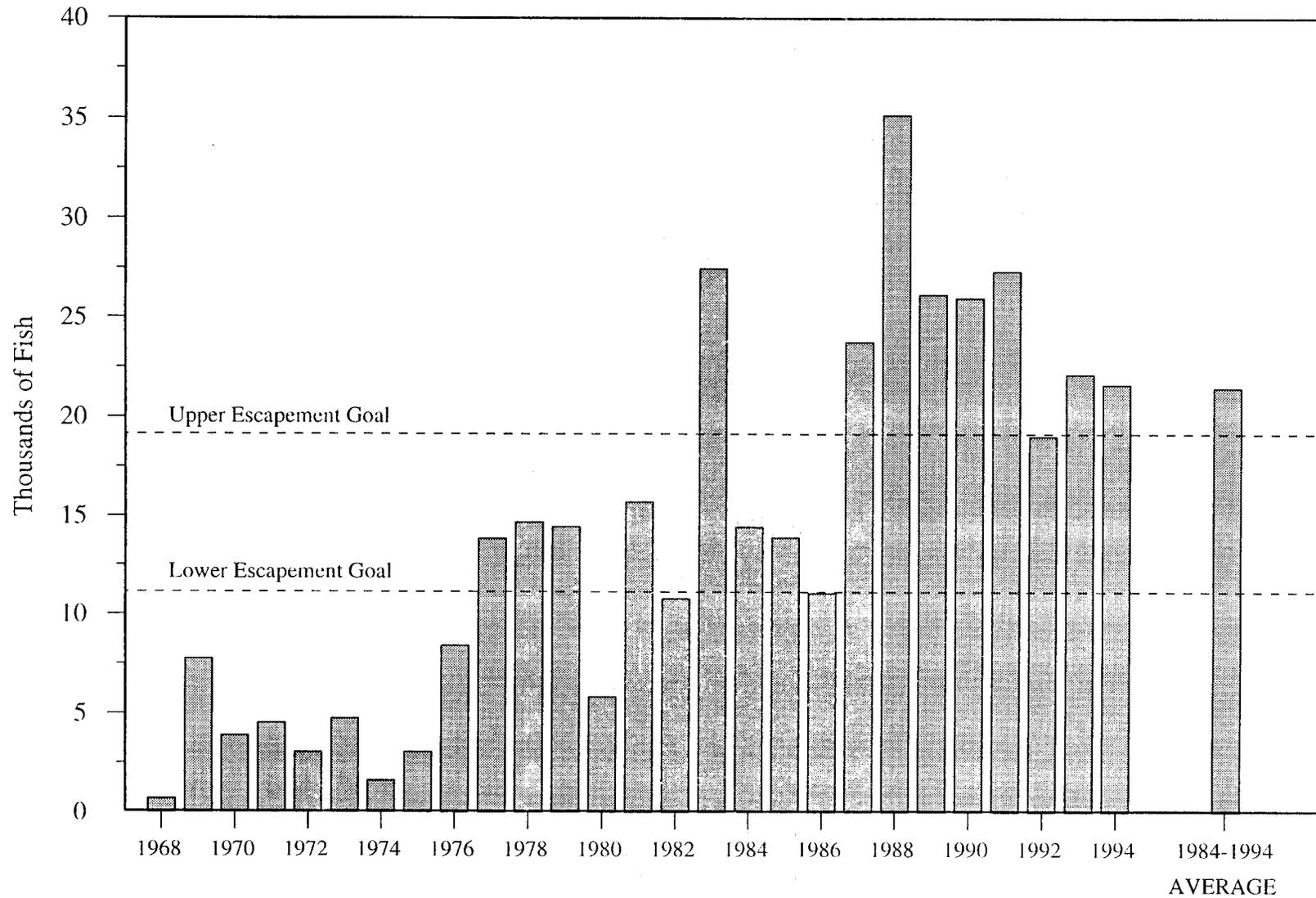


Figure 7. Chinook salmon escapement in the Kodiak Management Area, 1968-1994.

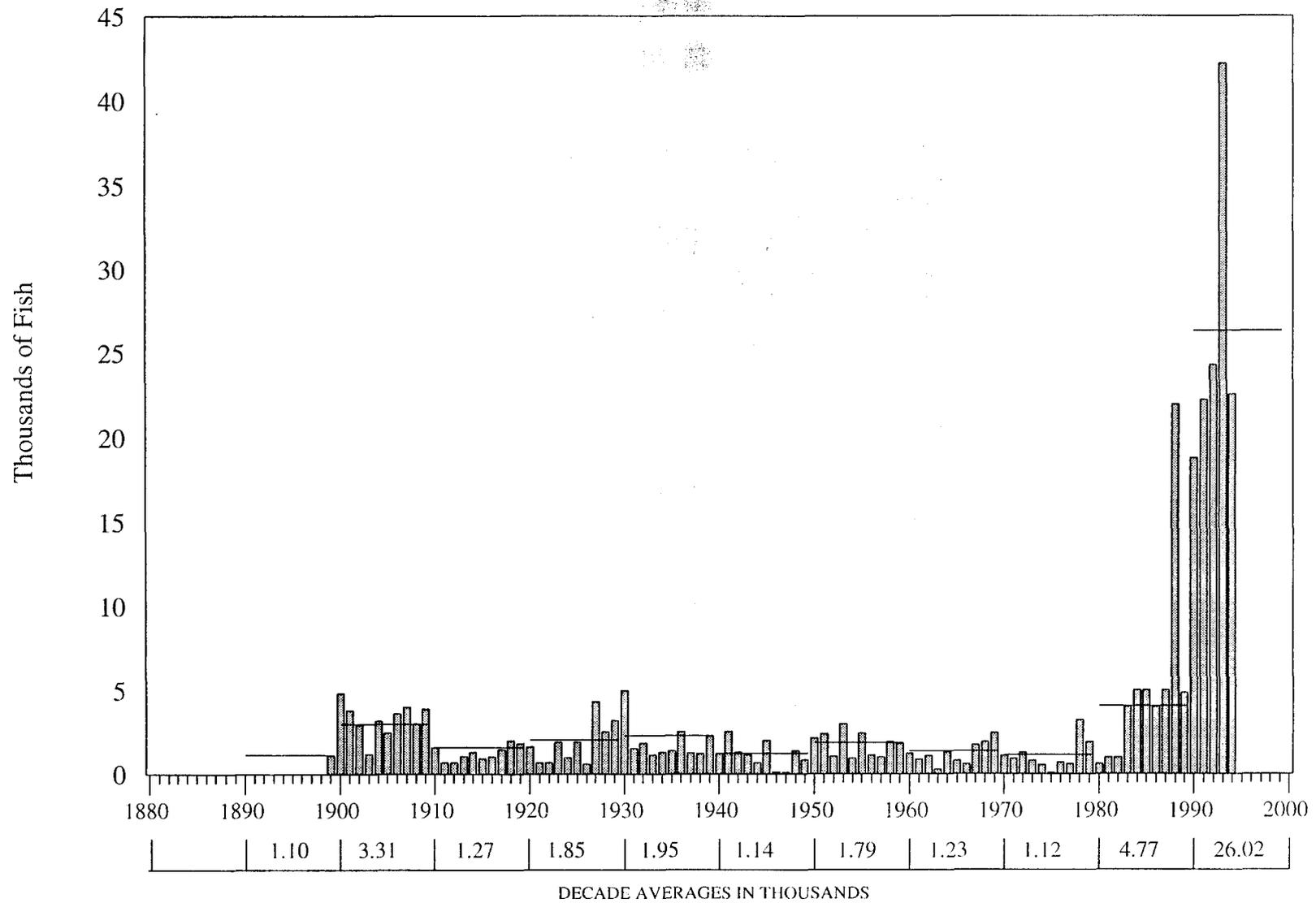


Figure 8. Chinook salmon commercial harvest, all gear combined, in the Kodiak Management Area, 1899 - 1994.

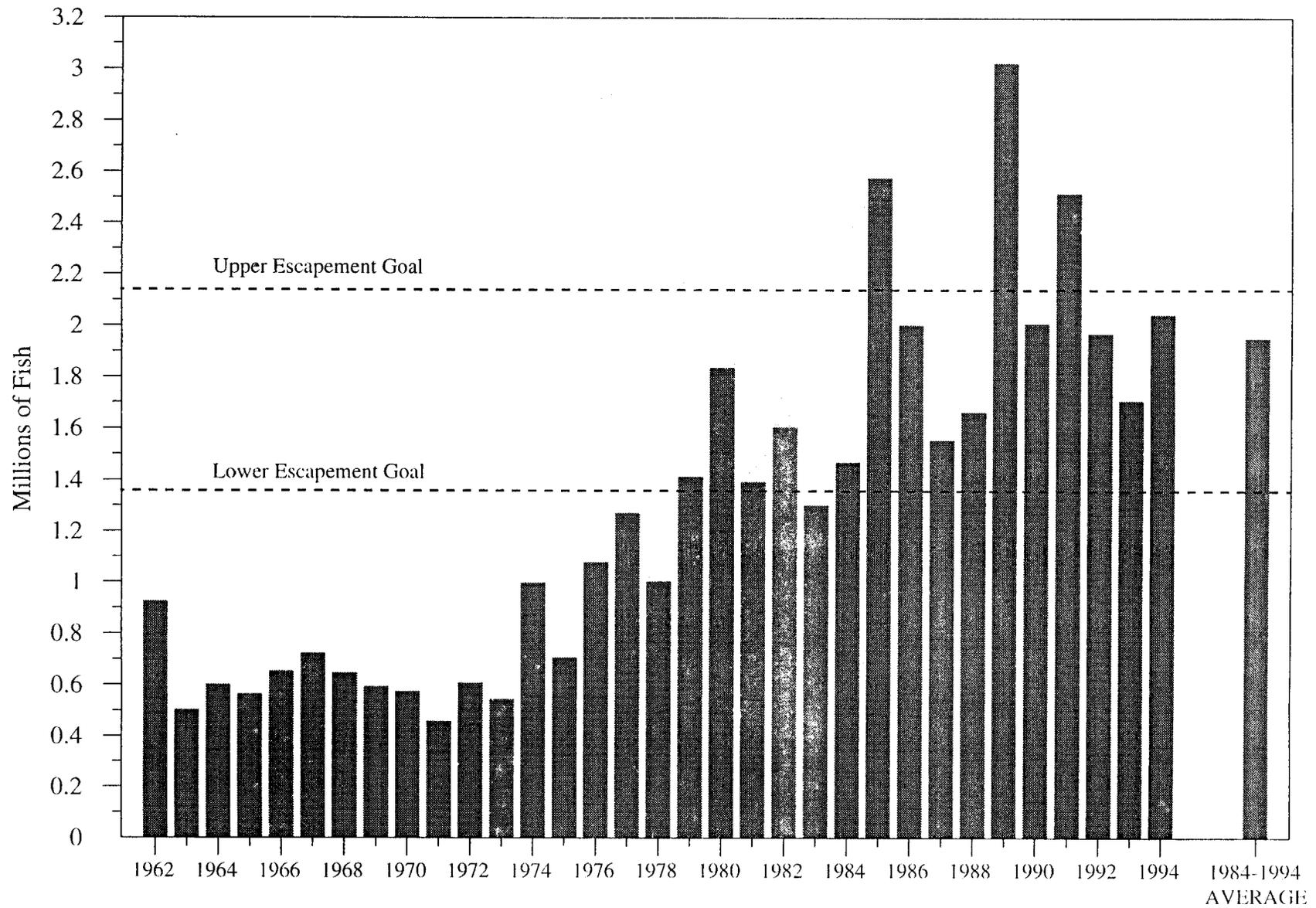


Figure 9. Sockeye salmon escapement in the Kodiak Management Area, 1962-1994.

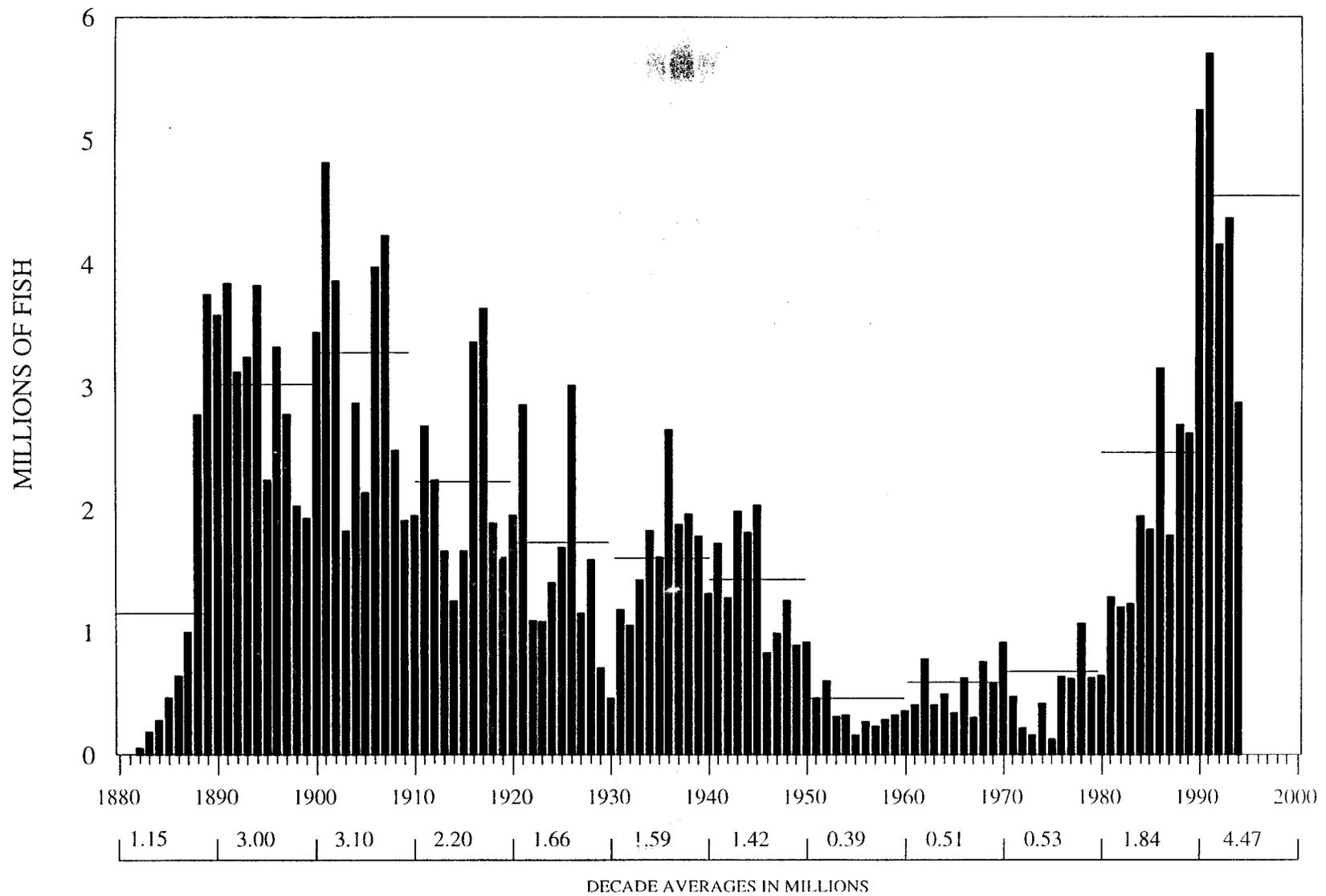


Figure 10. Sockeye salmon commercial harvest, all gear combined, in the Kodiak Management Area, 1882 - 1994.

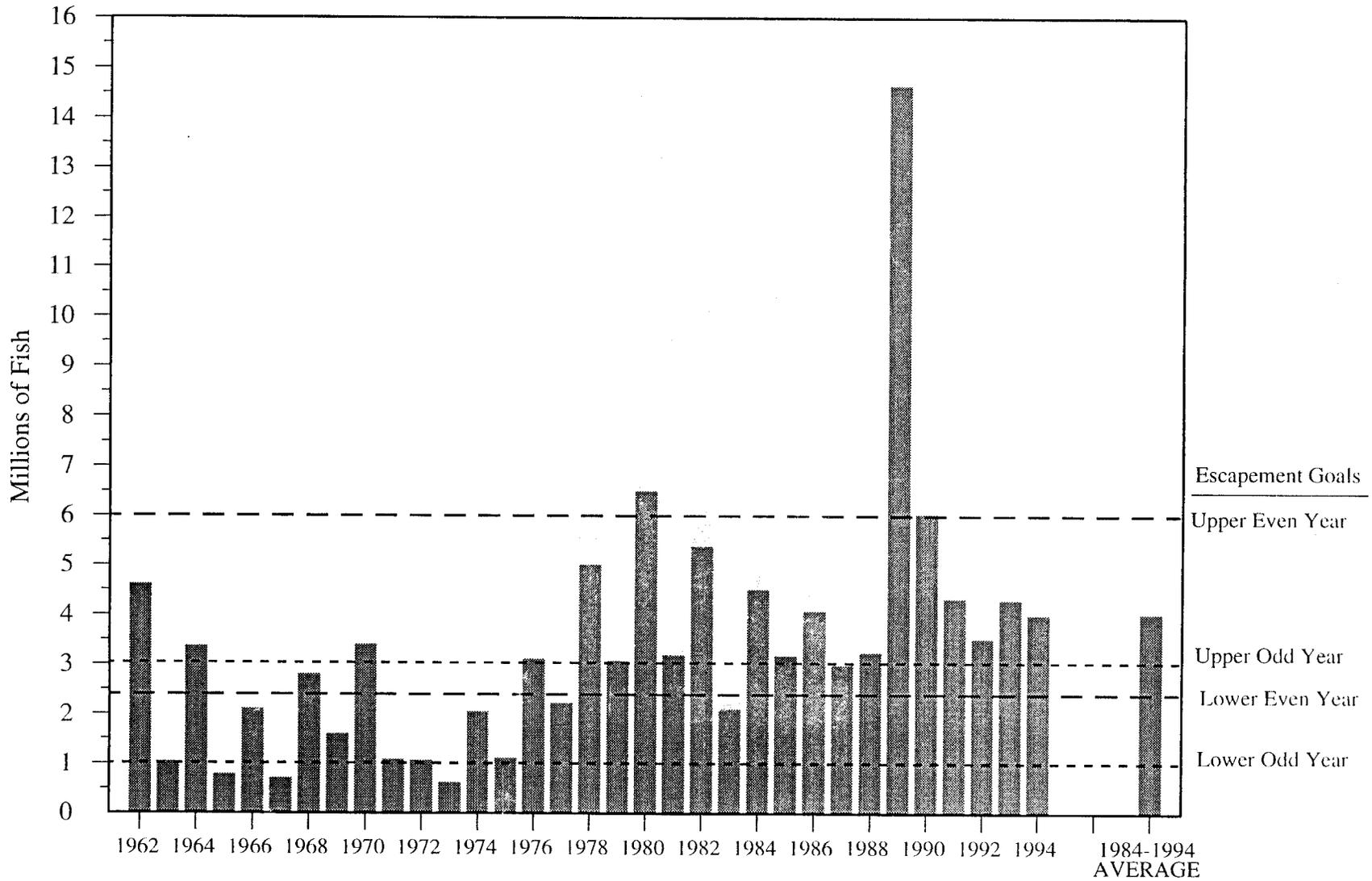


Figure 11. Pink salmon escapement in the Kodiak Management Area, 1962 - 1994.

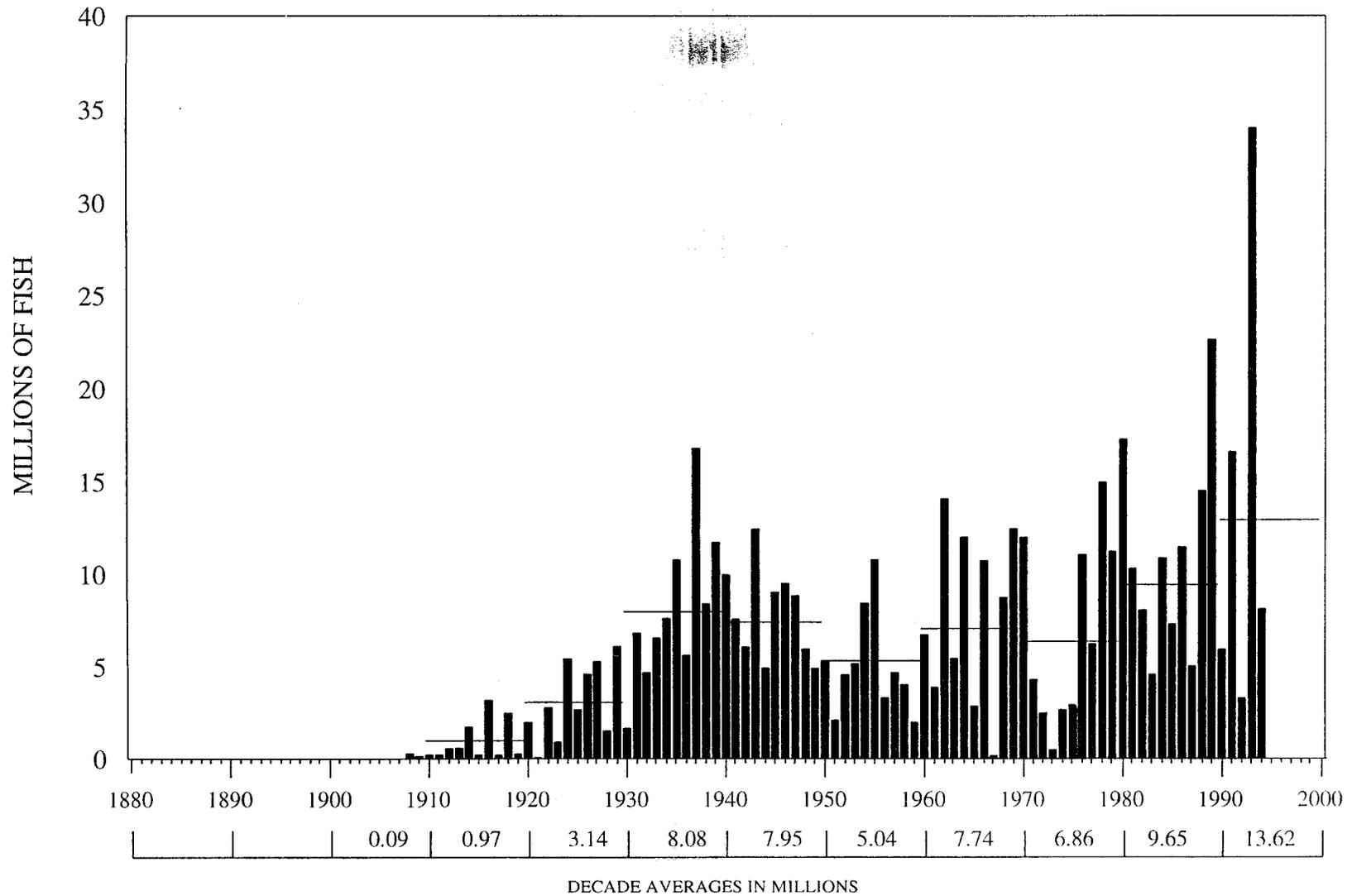


Figure 12. Pink salmon commercial harvest, all gear combined, in the Kodiak Management Area, 1901 - 1994.

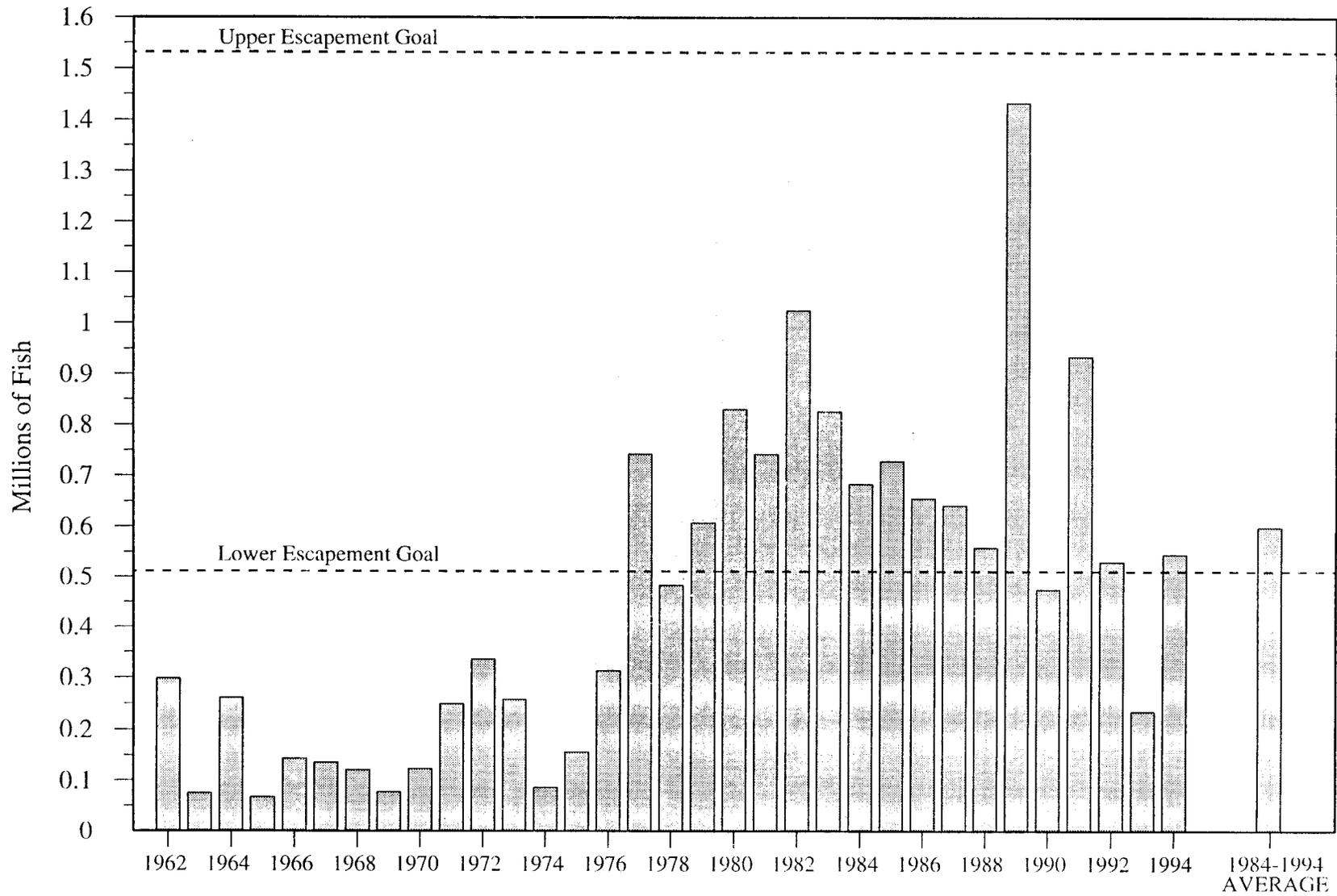


Figure 13. Chum salmon escapement in the Kodiak Management Area, 1962 -1994.

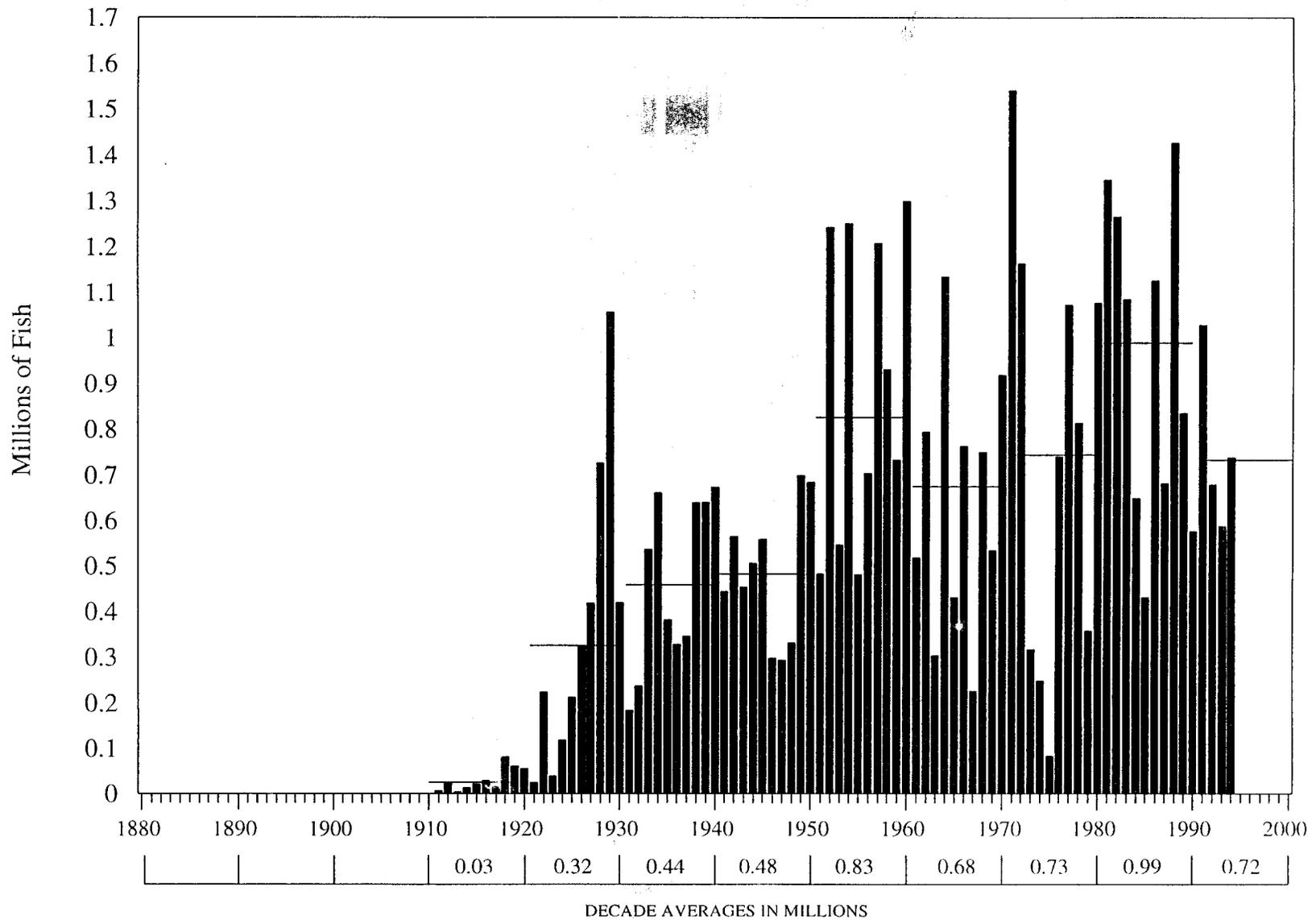


Figure 14. Chum salmon commercial harvest, all gear combined, in the Kodiak Management Area, 1911 - 1994.

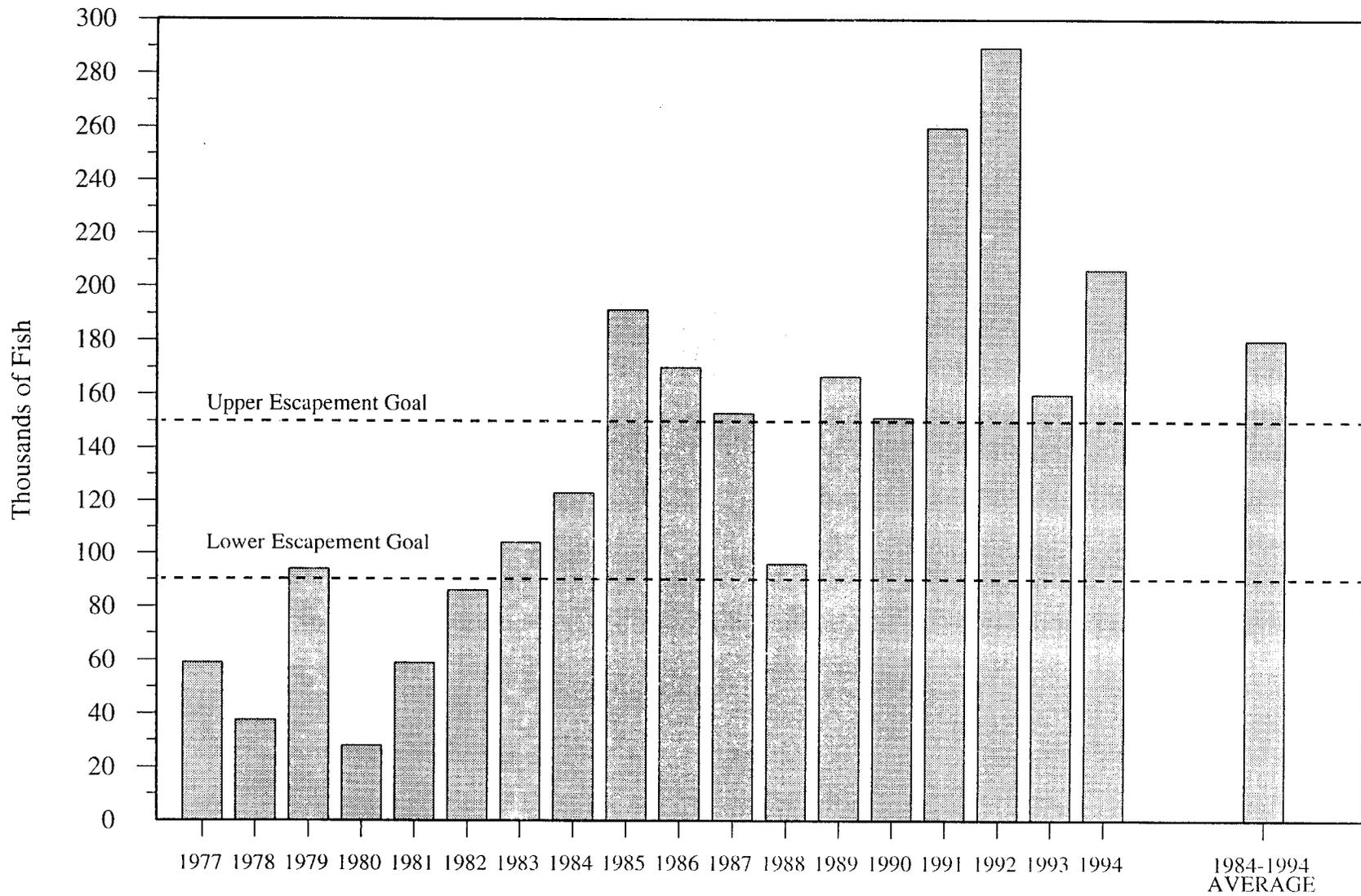


Figure 15. Coho salmon escapement in the Kodiak Management Area, 1977 - 1994.

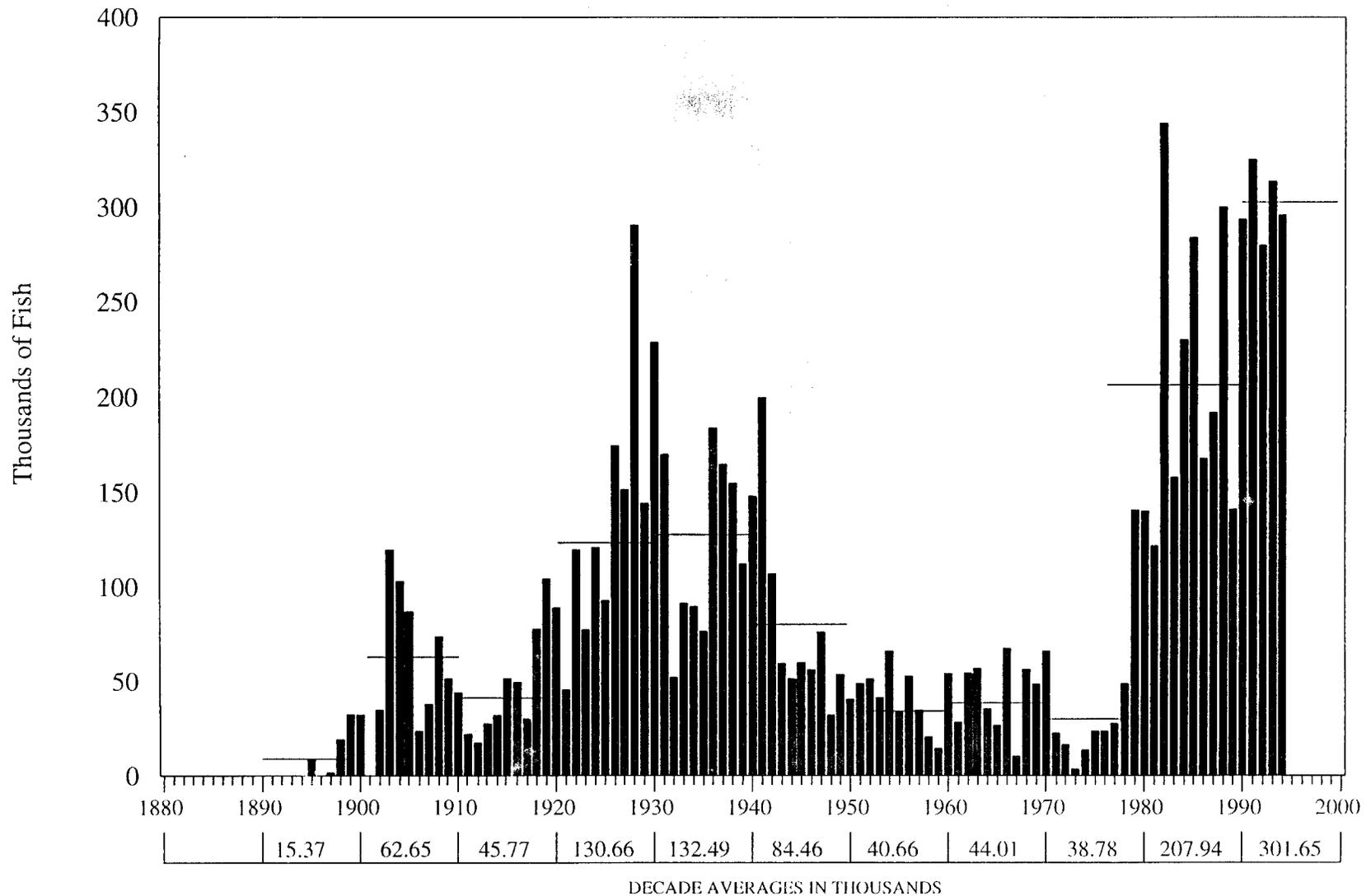


Figure 16. Coho salmon commercial harvest, all gear combined, in the Kodiak Management Area, 1895 - 1994.

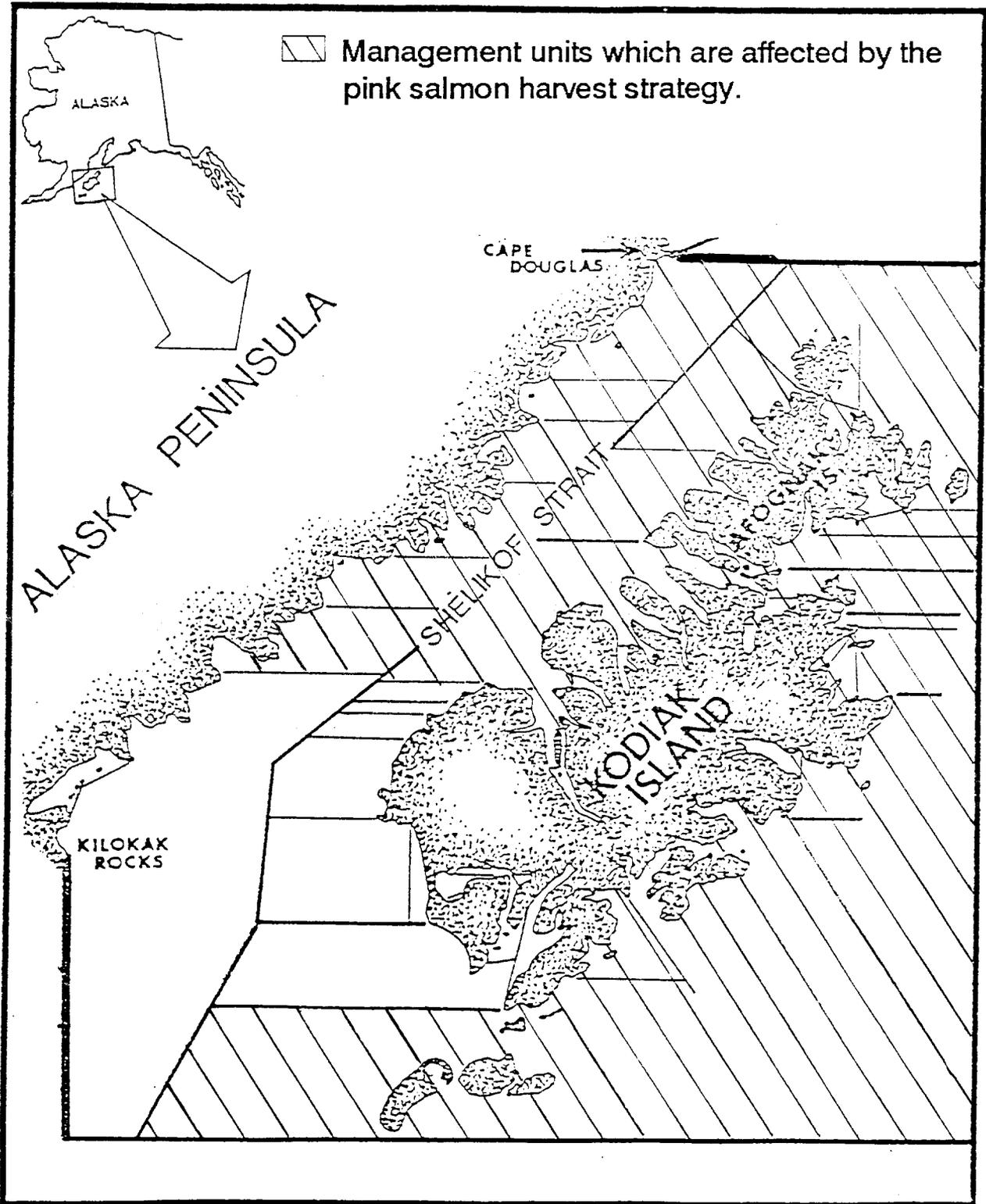


Figure 17. Map of Kodiak Area management units affected by pink salmon harvest strategy.

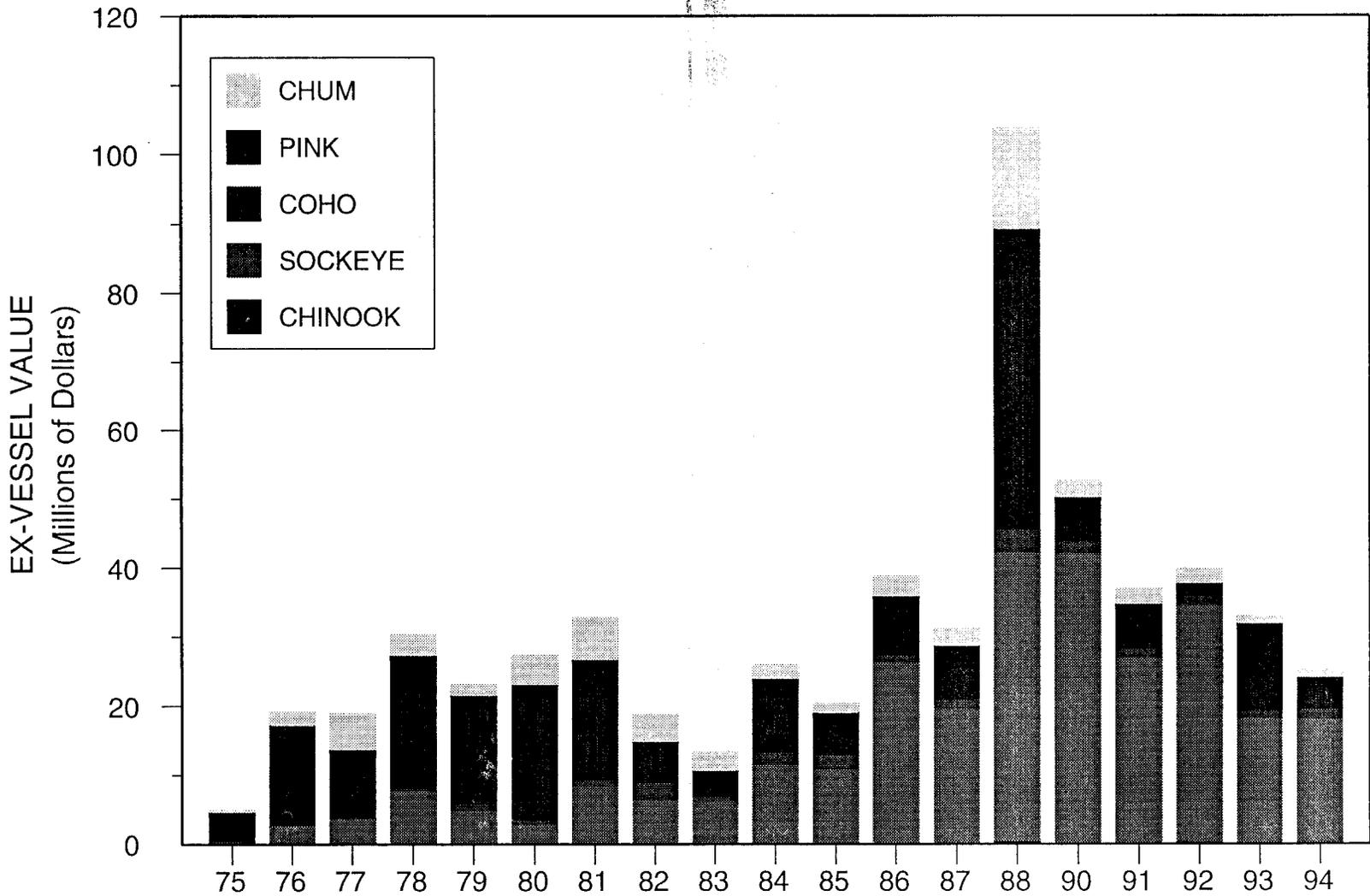


Figure 18. Commercial salmon fishery exvessel value by species, Kodiak Management Area, 1975-1994.

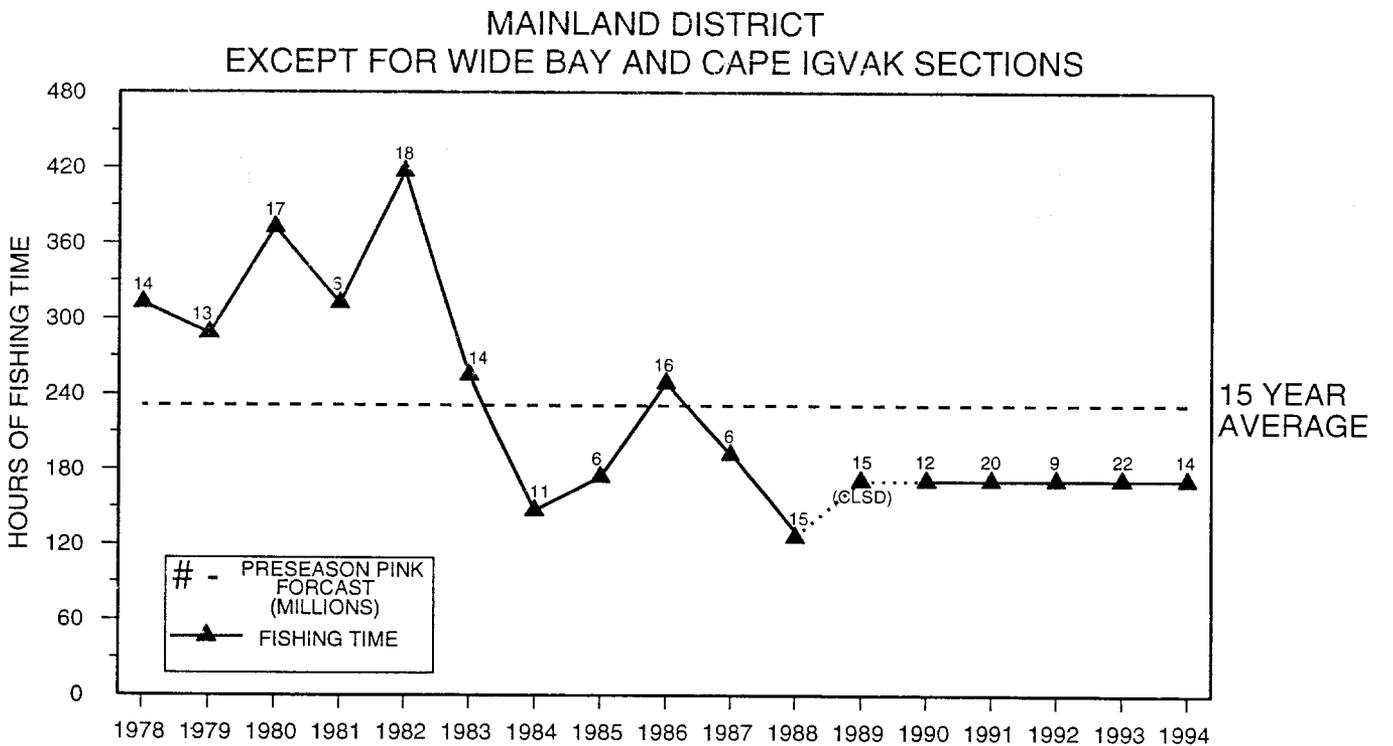
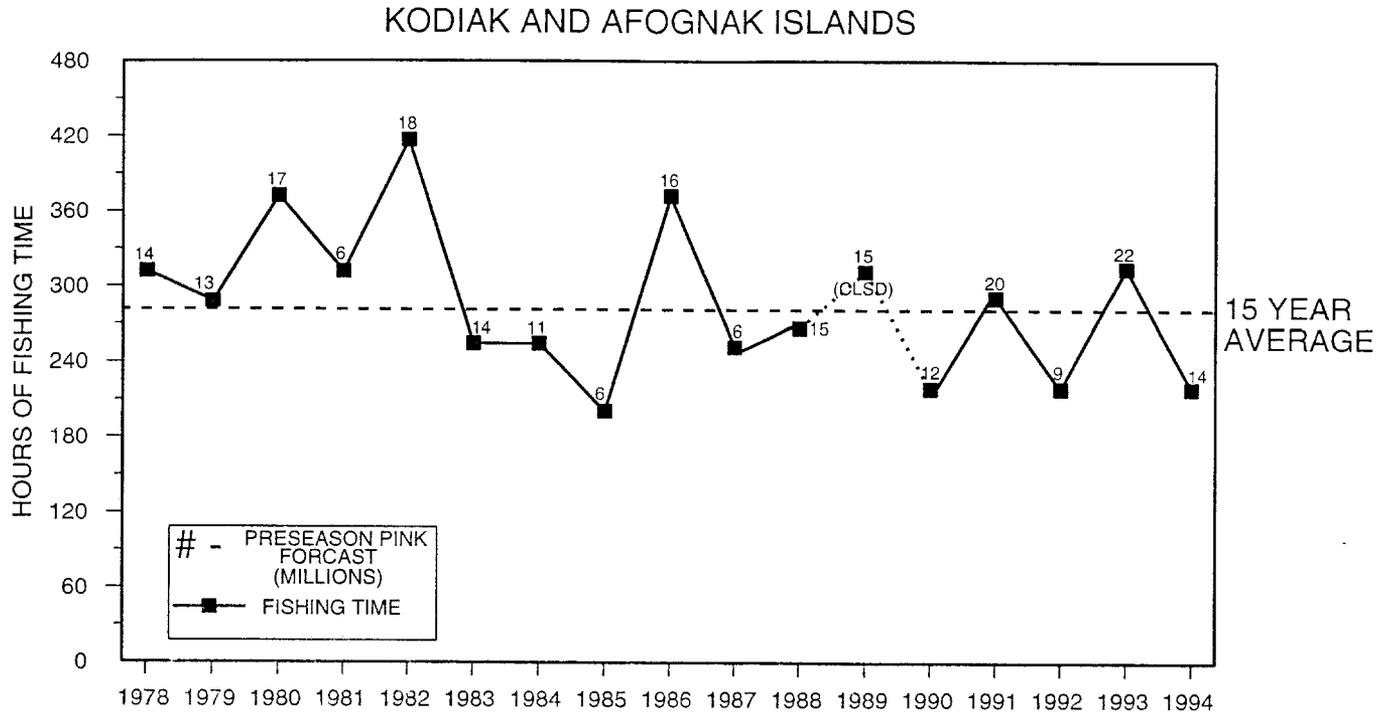


Figure 19. Commercial salmon fishing time vs. preseason pink forecast managed for pink salmon July 6-25, Kodiak Management Area, 1978-1994.

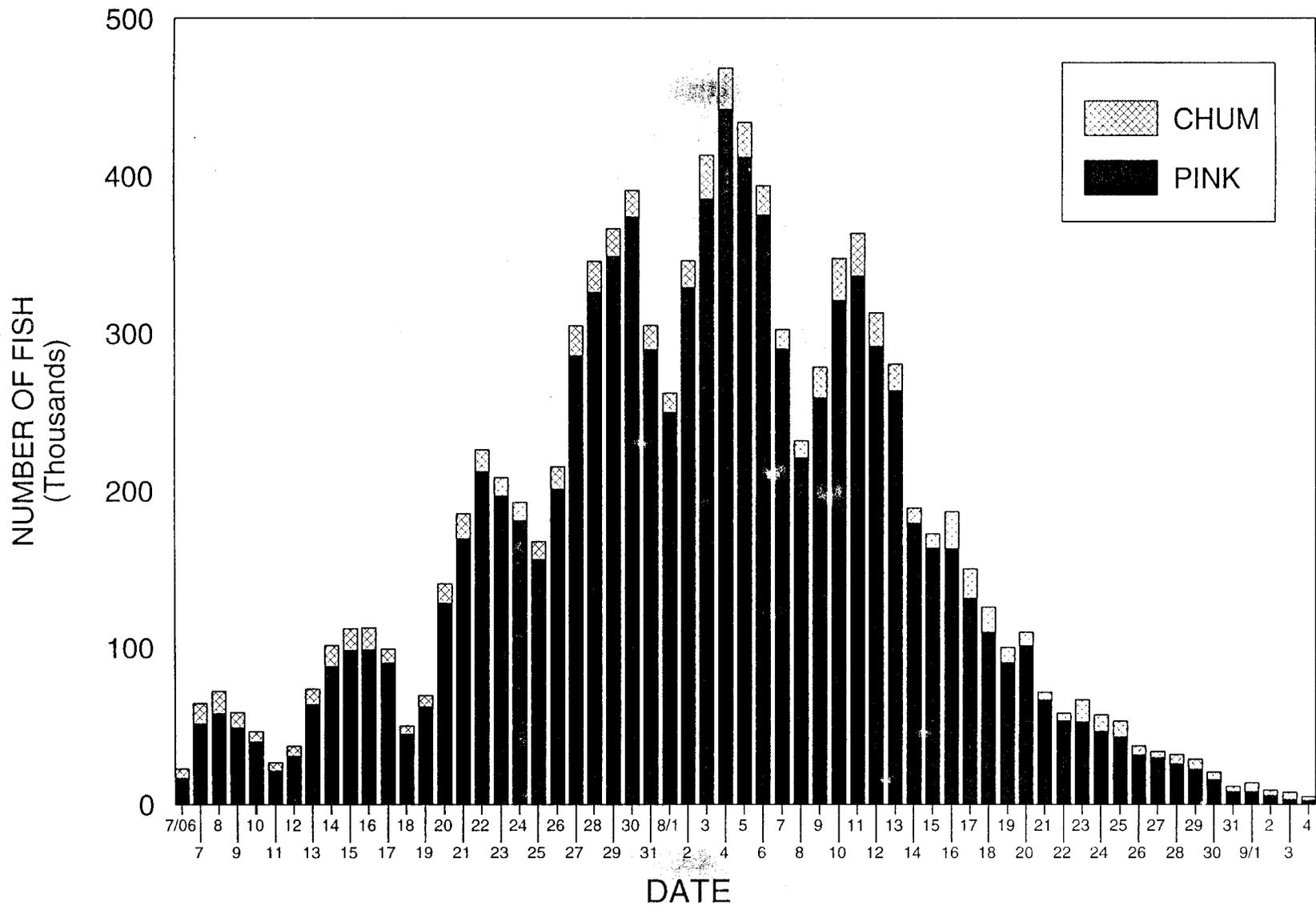


Figure 20. Average pink and chum salmon harvest by day, 1970-1994.

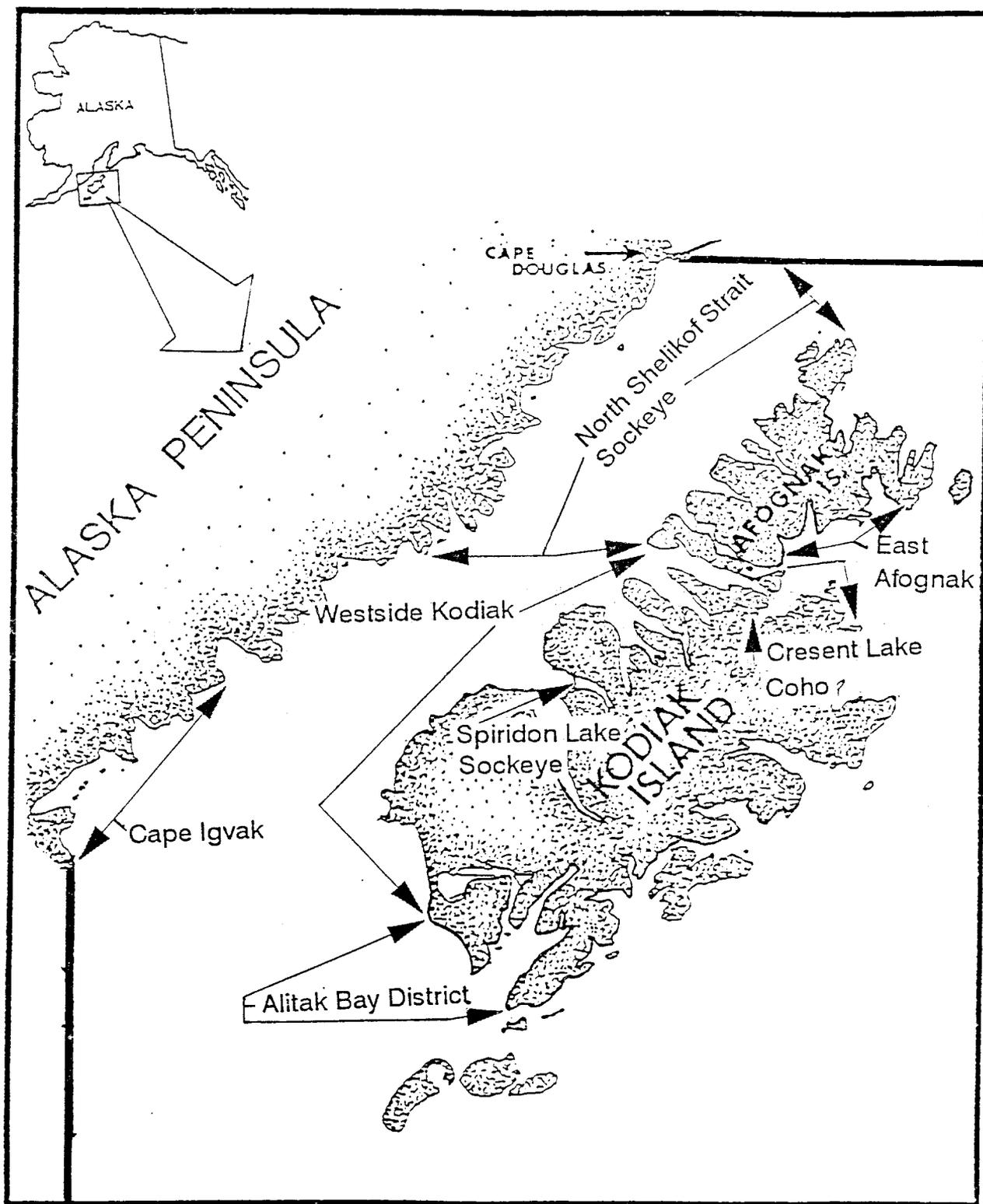


Figure 21. Map of regulatory management plans for the KMA.

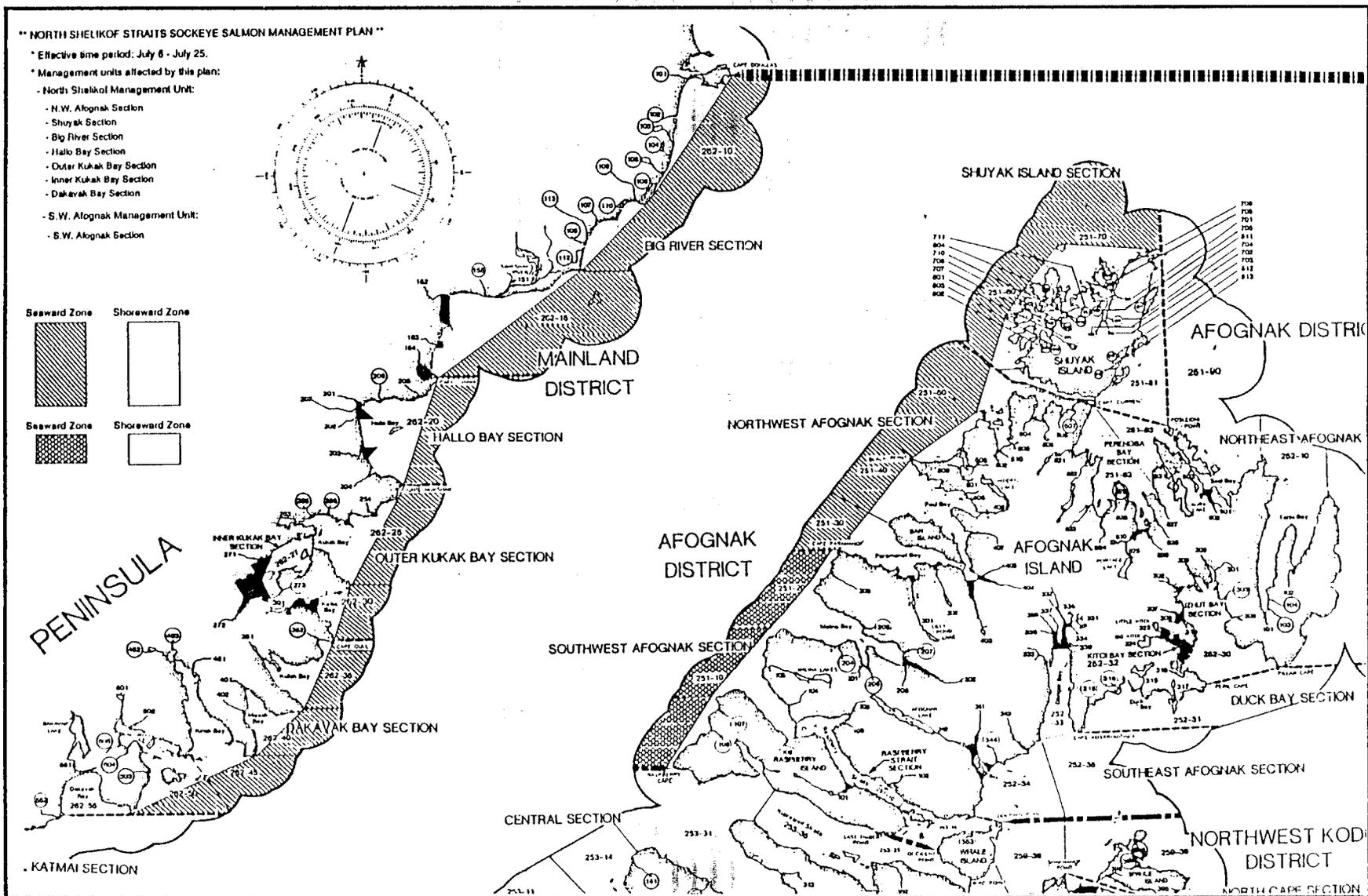


Figure 22. Map of North Shelikof Strait sockeye salmon fishery.

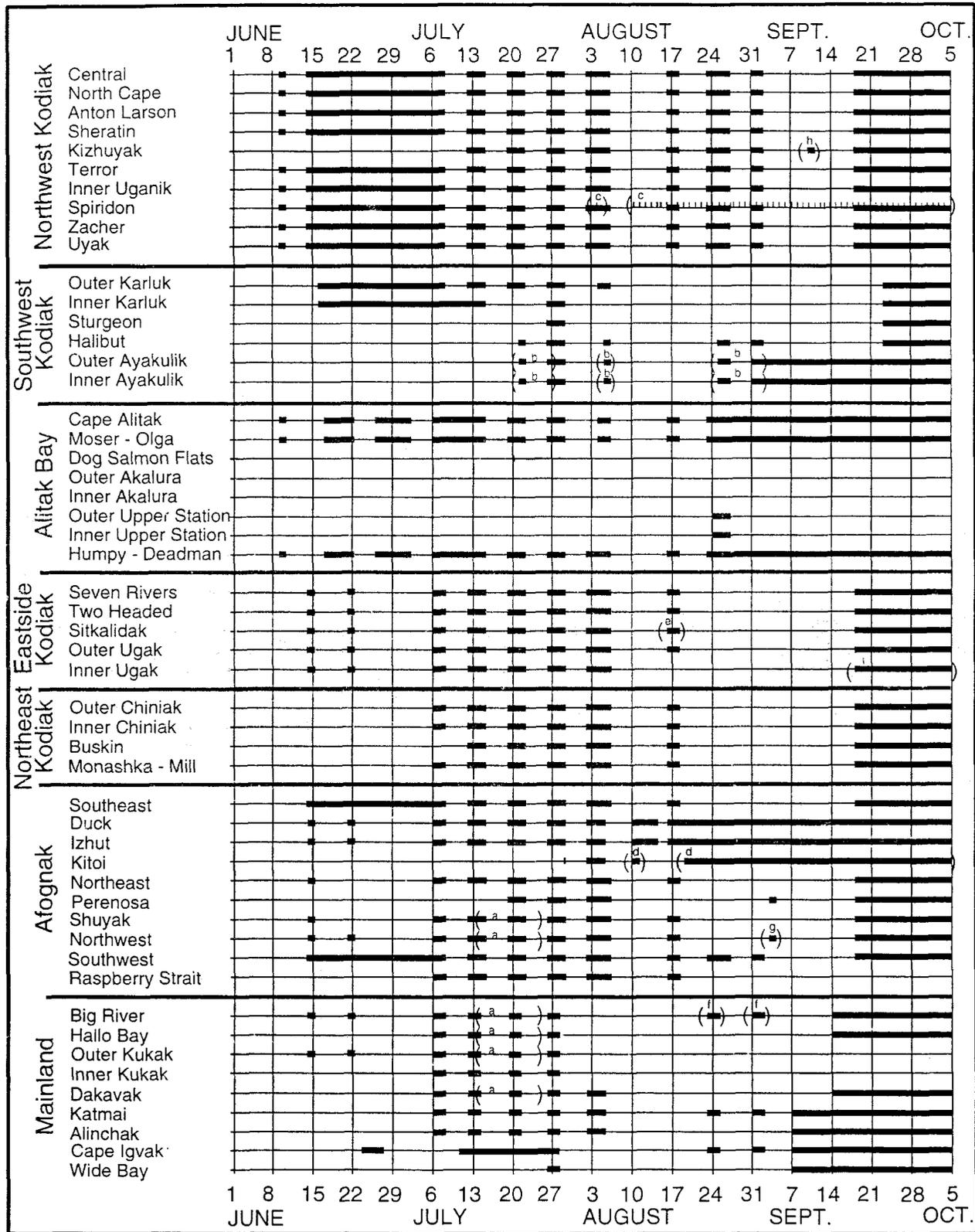


Figure 23. Kodiak Area commercial salmon fishing time by district and section, 1994.

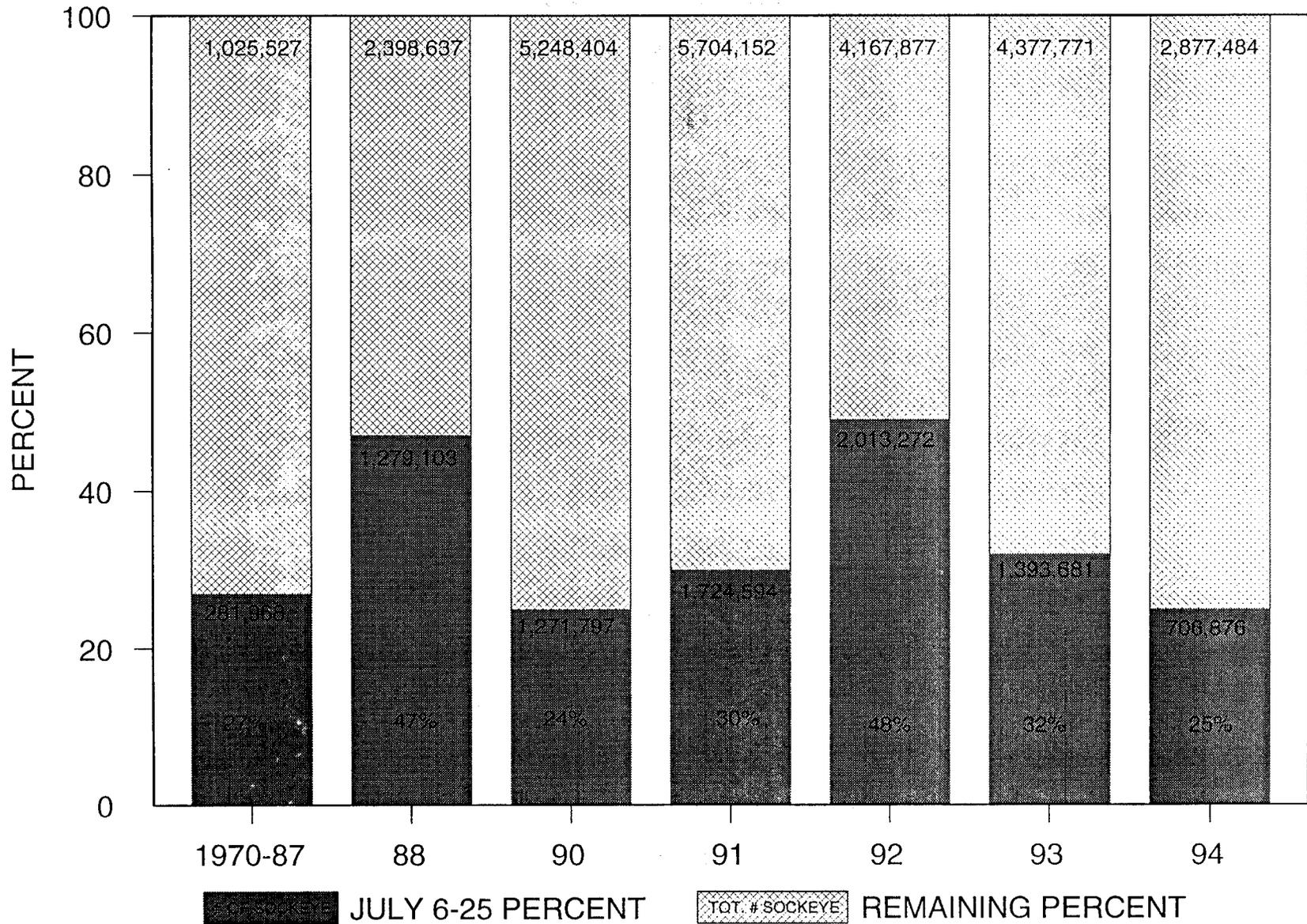


Figure 24. Percent of annual sockeye salmon harvest which occurs - July 6 through July 25, 1970-1994.

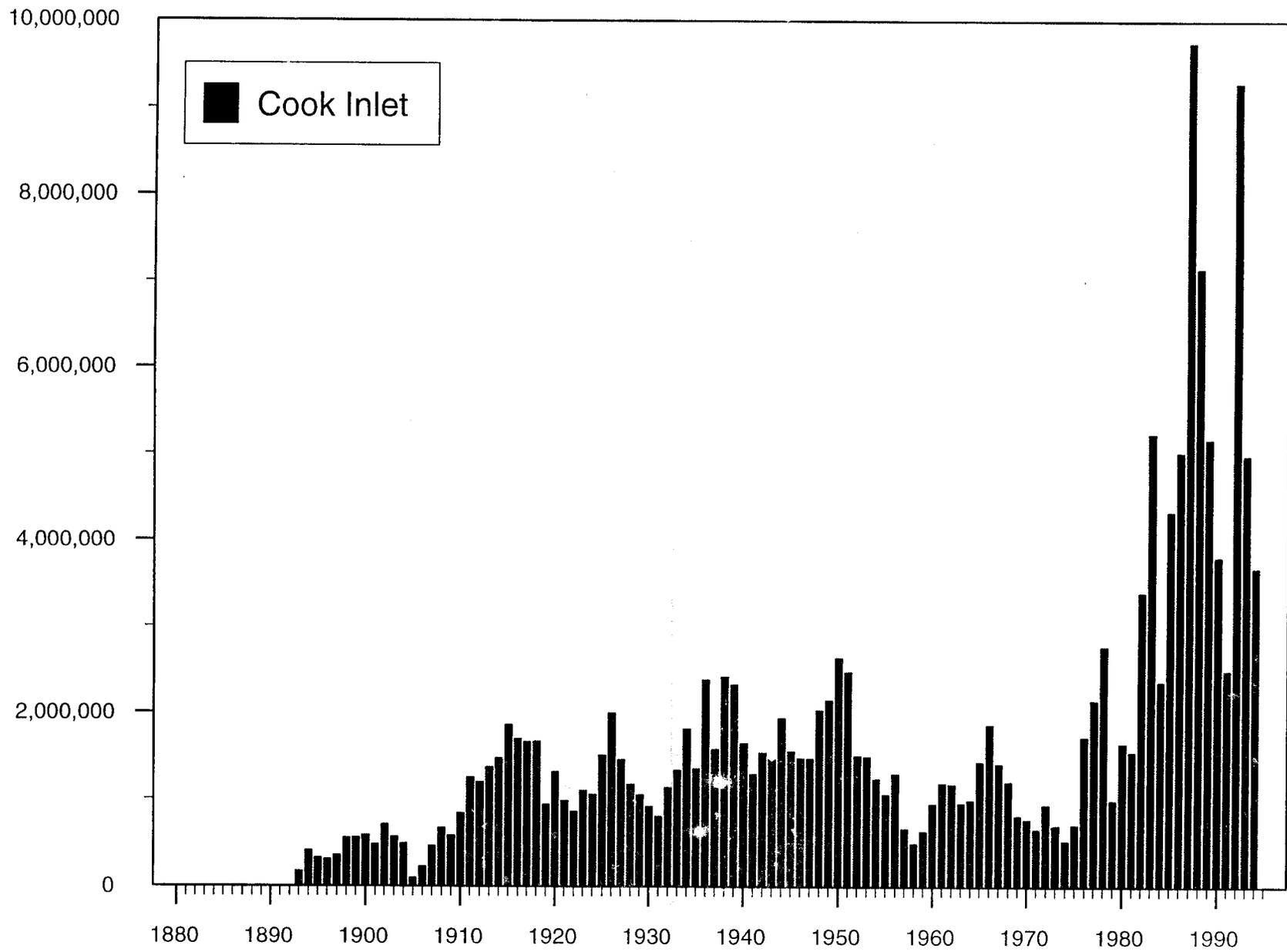


Figure 25. Combined Upper and Lower Cook Inlet sockeye salmon commercial harvest, 1893-1994.

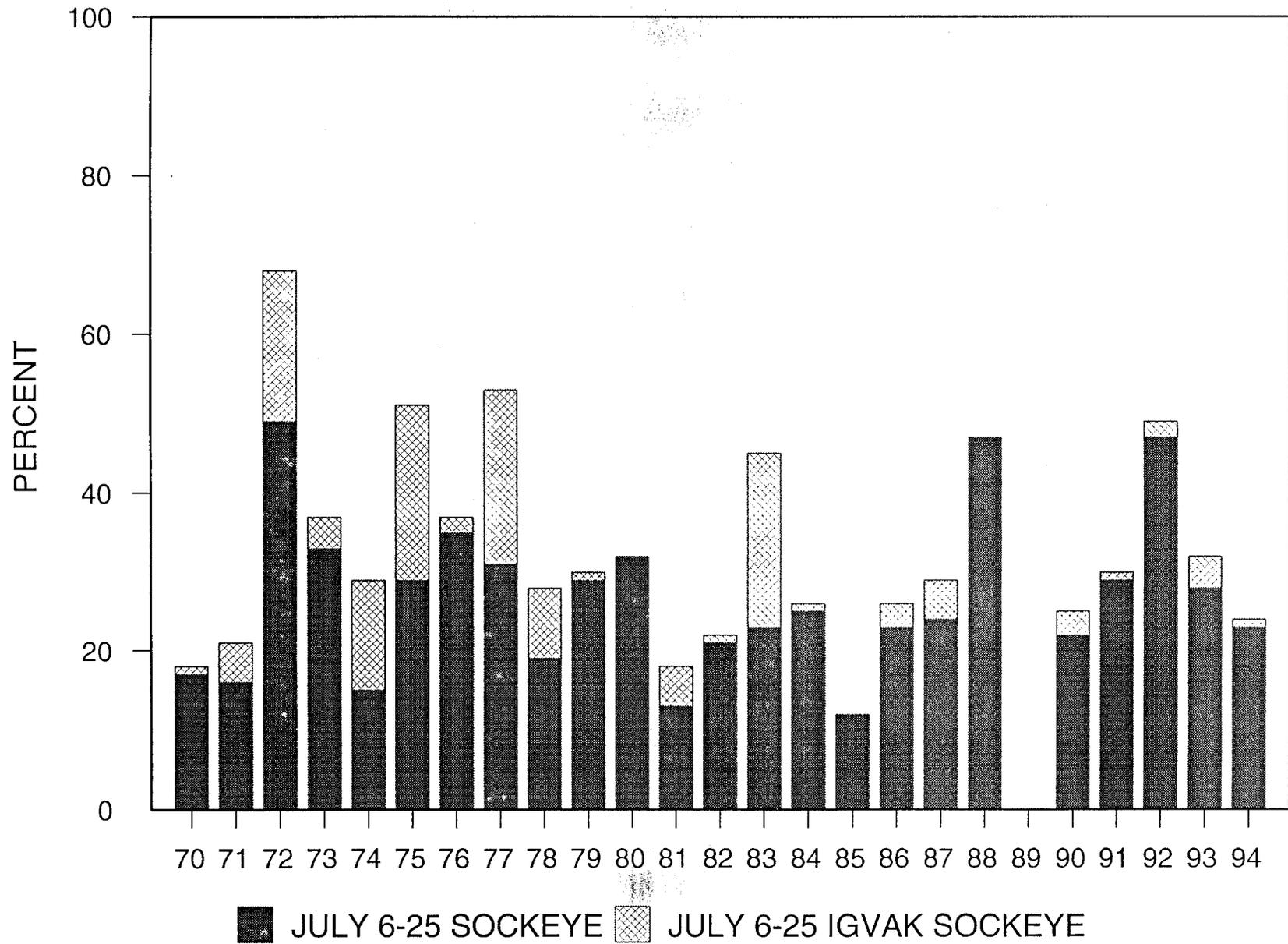


Figure 26. July sockeye salmon harvest in percent, taken in the Cape Igvak fishery, July 6-25, 1970-1994.

KODIAK COMMERCIAL SALMON FISHERIES MAJOR HARVEST AREAS

AREA 1 - North Shelikof Sections

AREA 2 - SW Afognak Section

AREA 3 - NW Kodiak District

AREA 4 - SW Kodiak District

AREA 5 - Alitak Bay District

AREA 6 - Eastside Kodiak District

AREA 7 - NE Kodiak District

AREA 8 - Remaining Afognak Sections

AREA 9 - Katmai & Alinchak Sections

AREA 10- Igvak & Wide Bay Sections

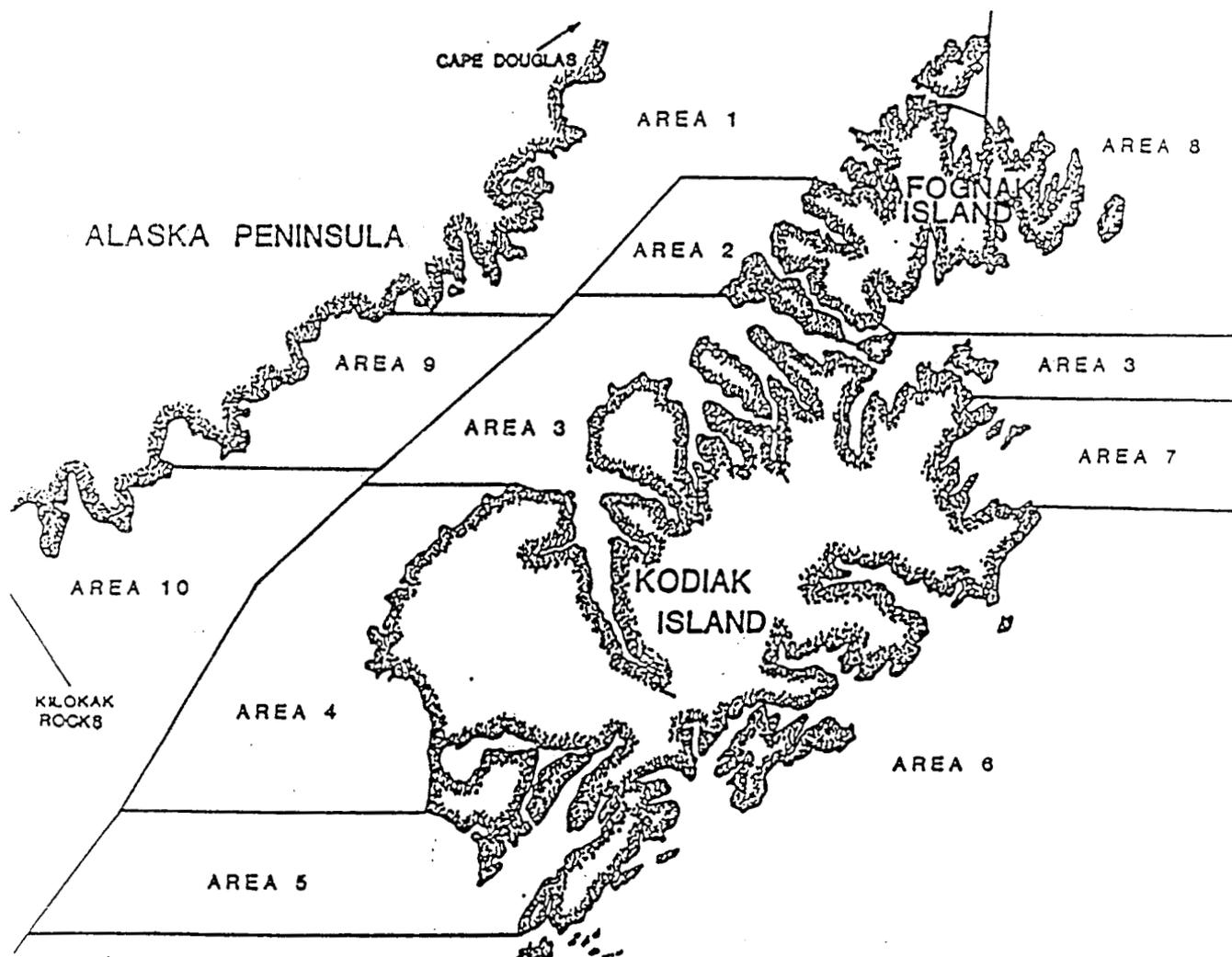


Figure 27. Map of the 10 major salmon harvest areas.

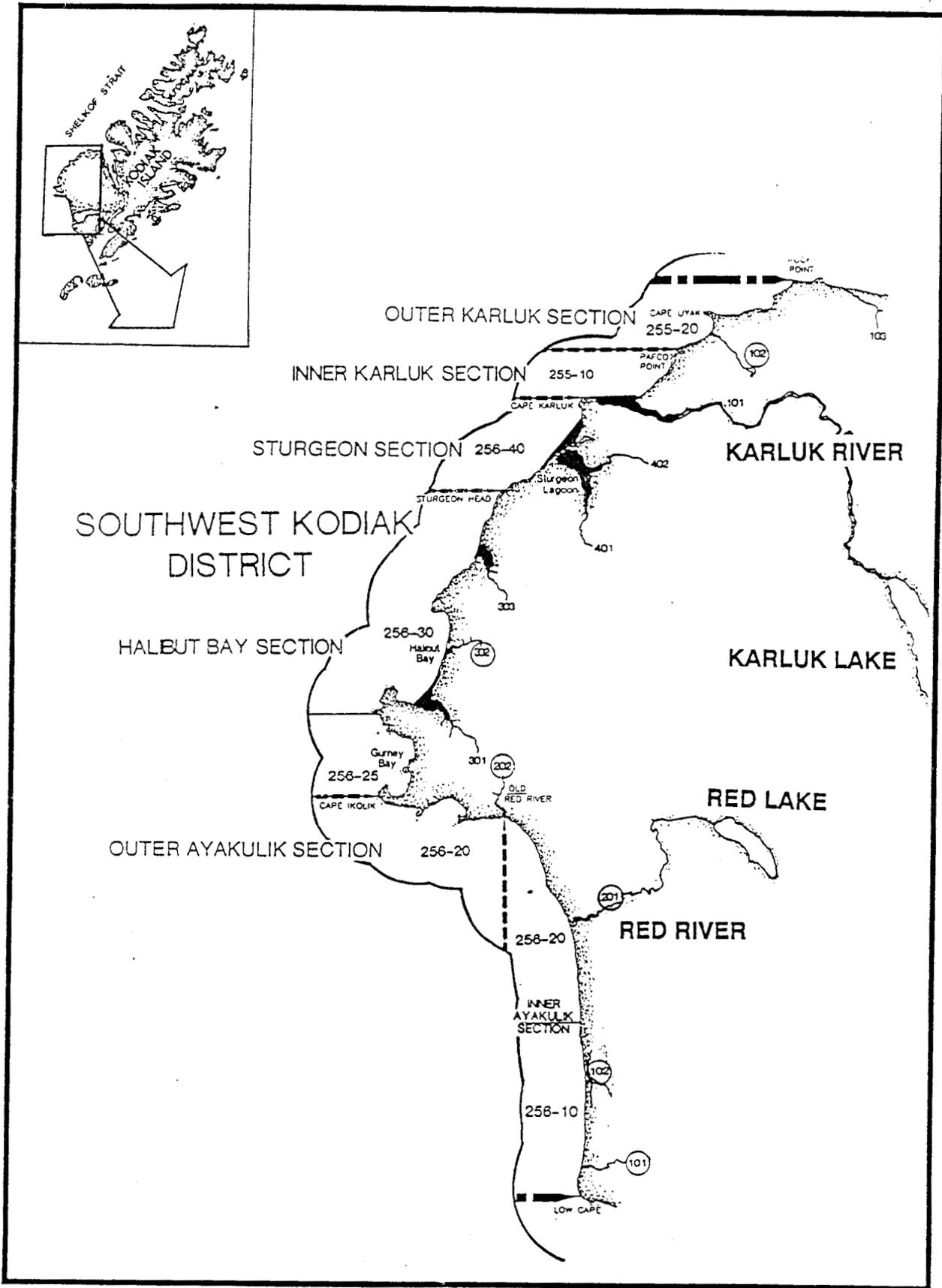


Figure 29. Map of Halibut Bay Section.

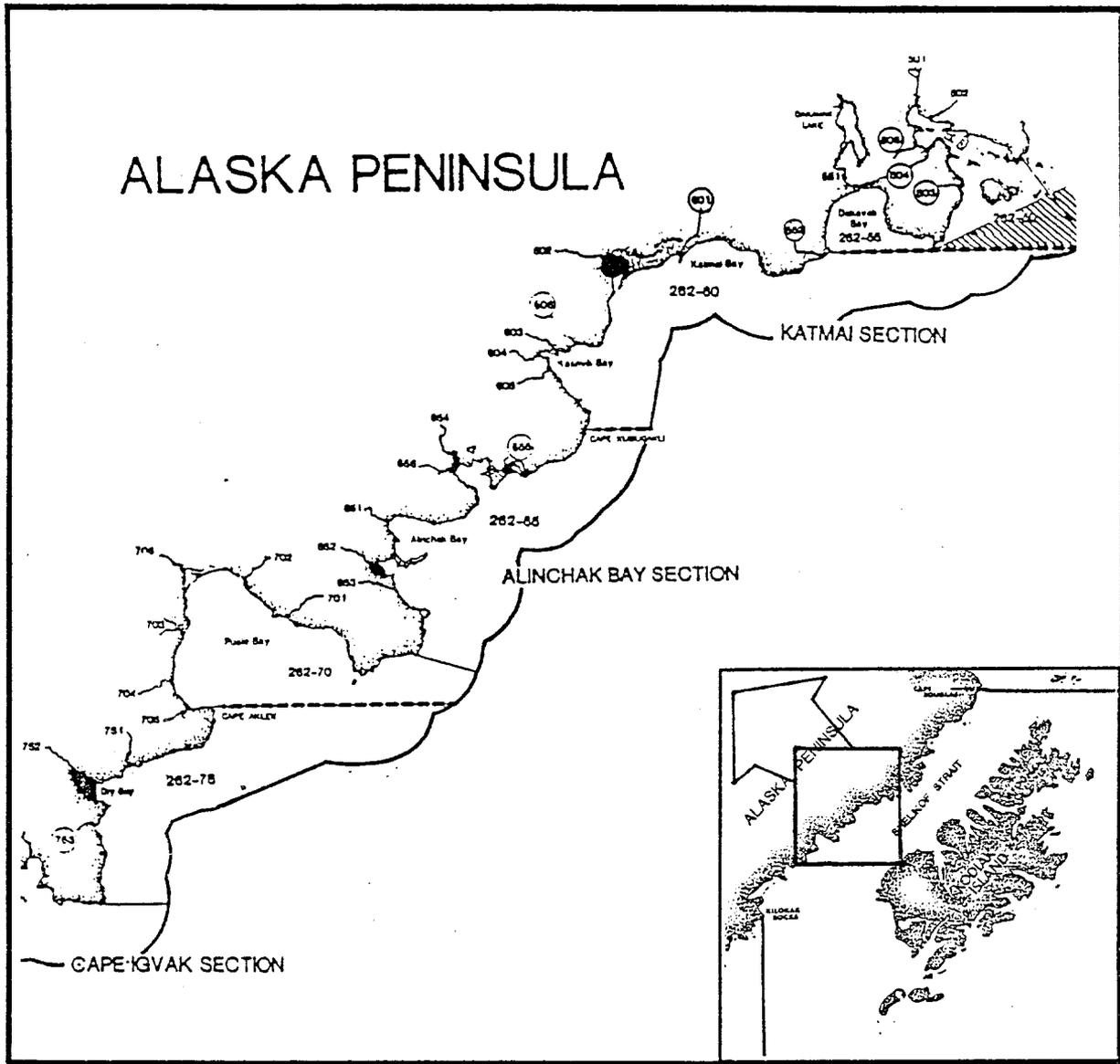
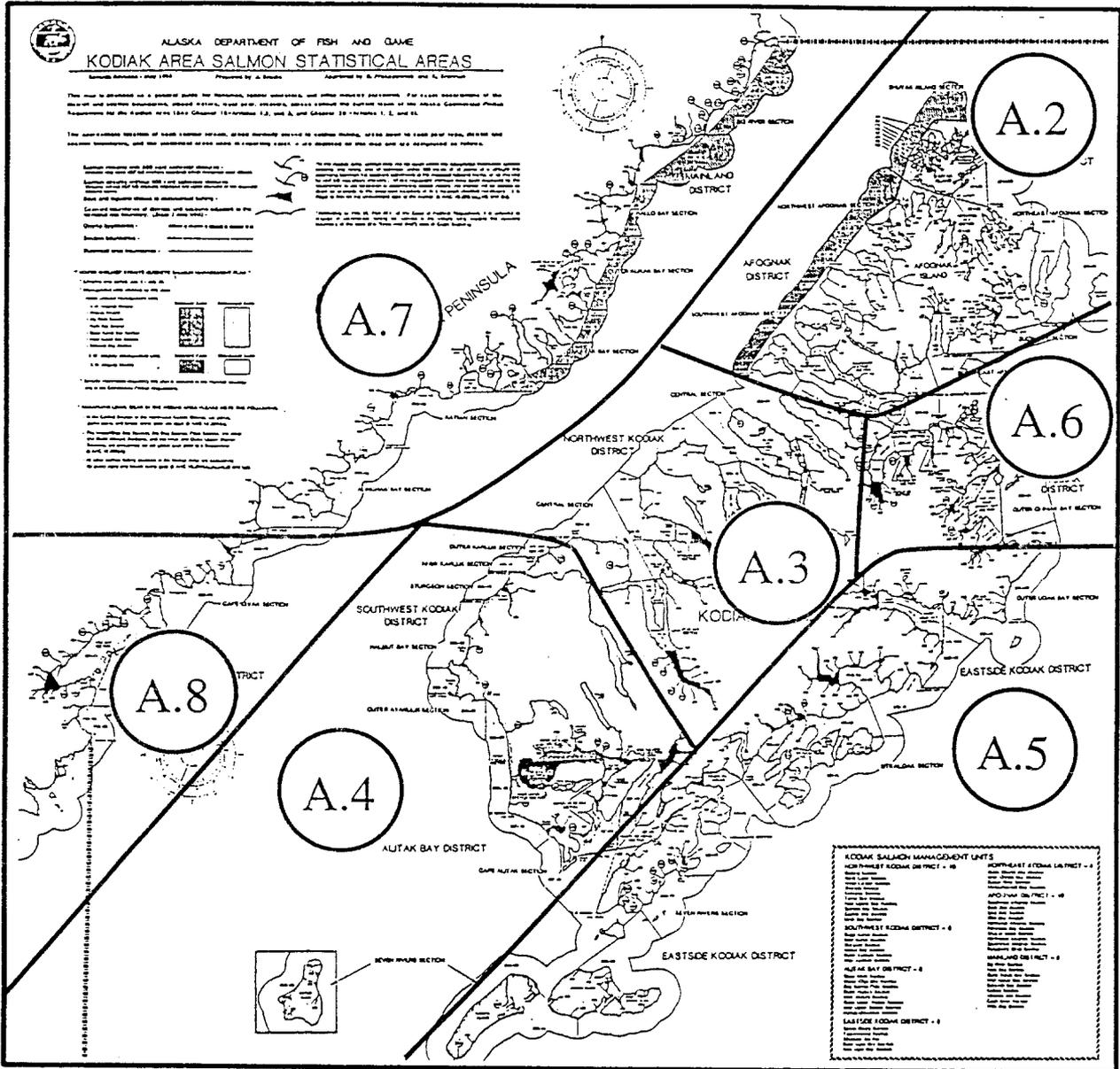
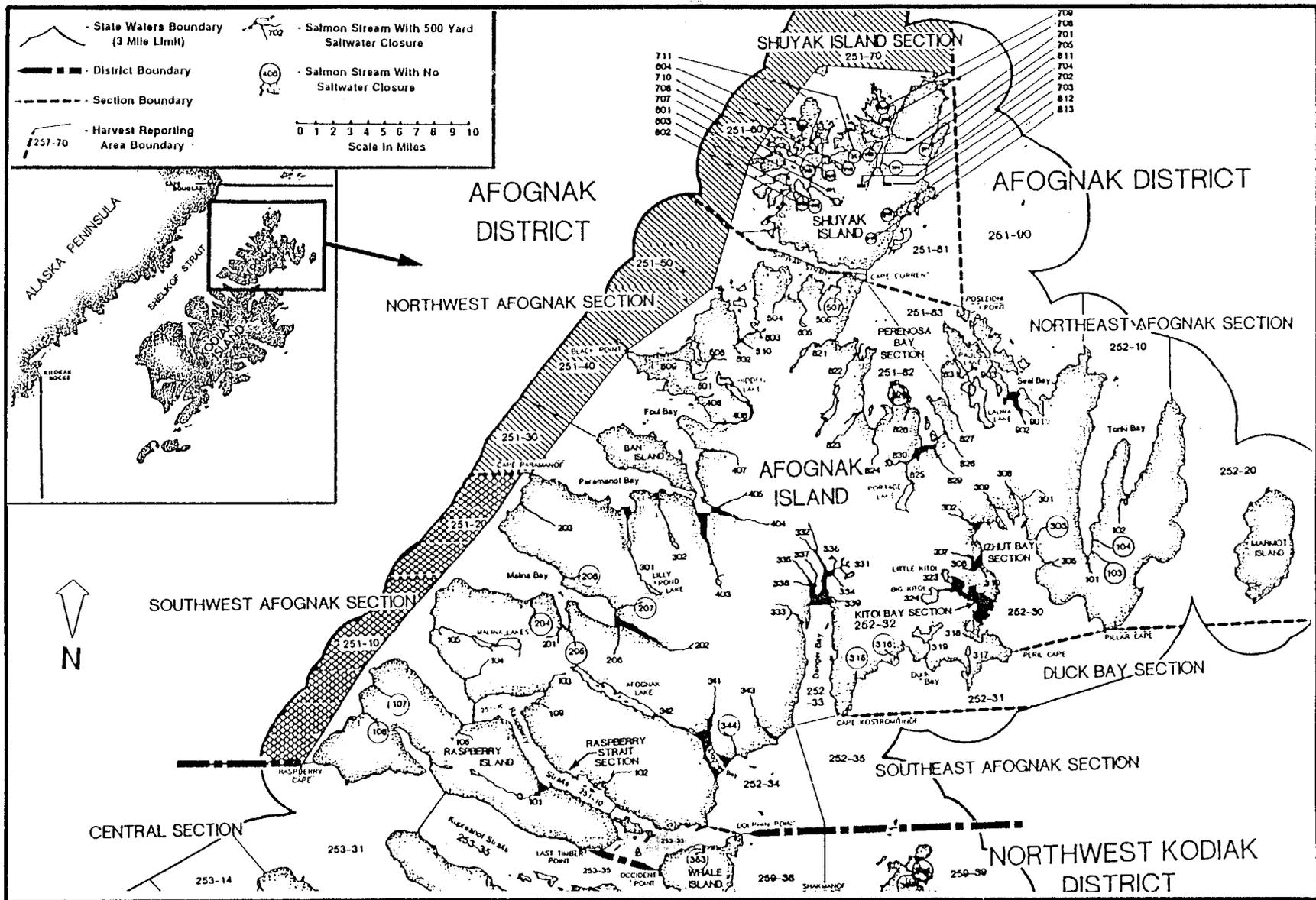


Figure 30. Map of Alinchak and Katmai Bay Sections.

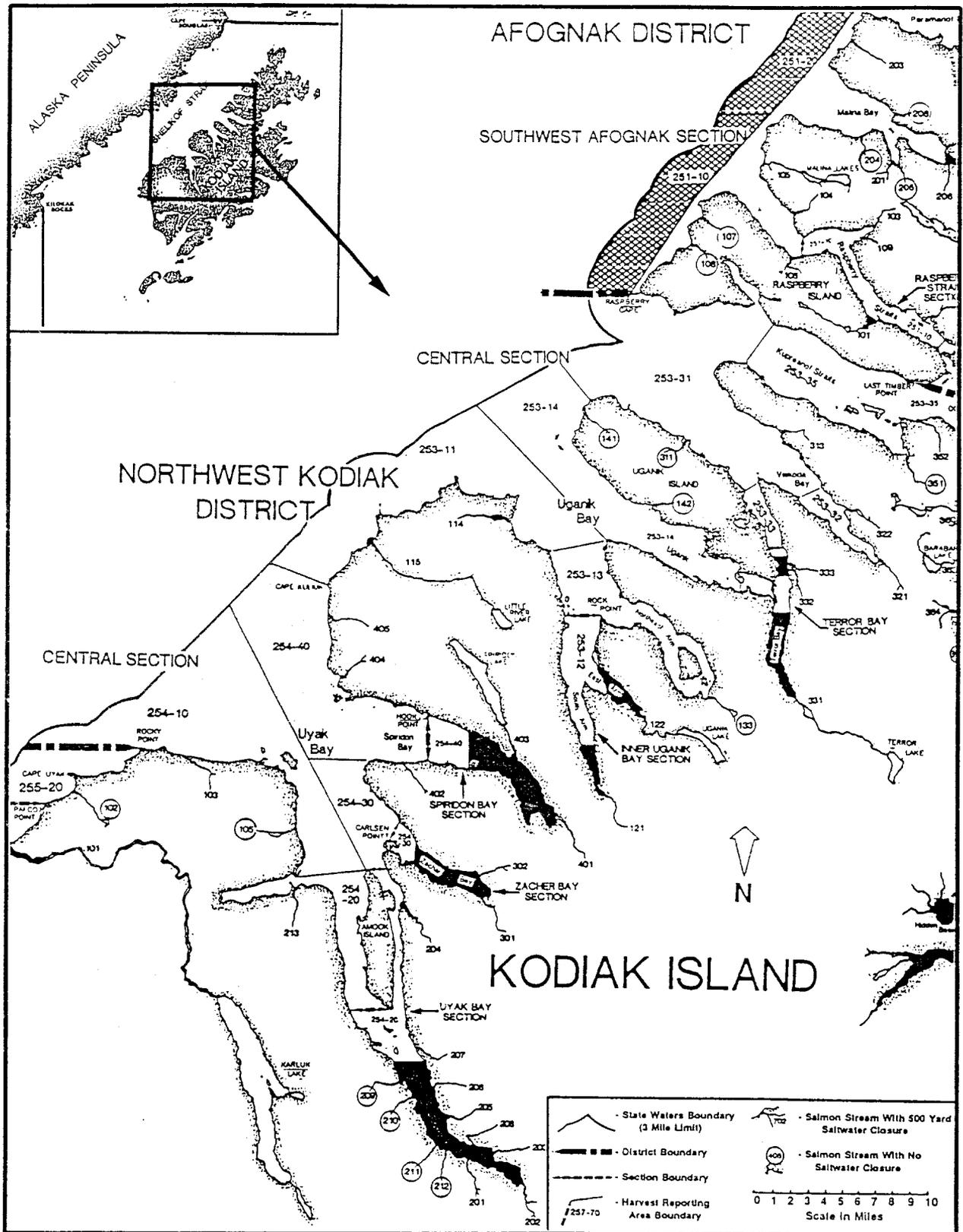
APPENDIX



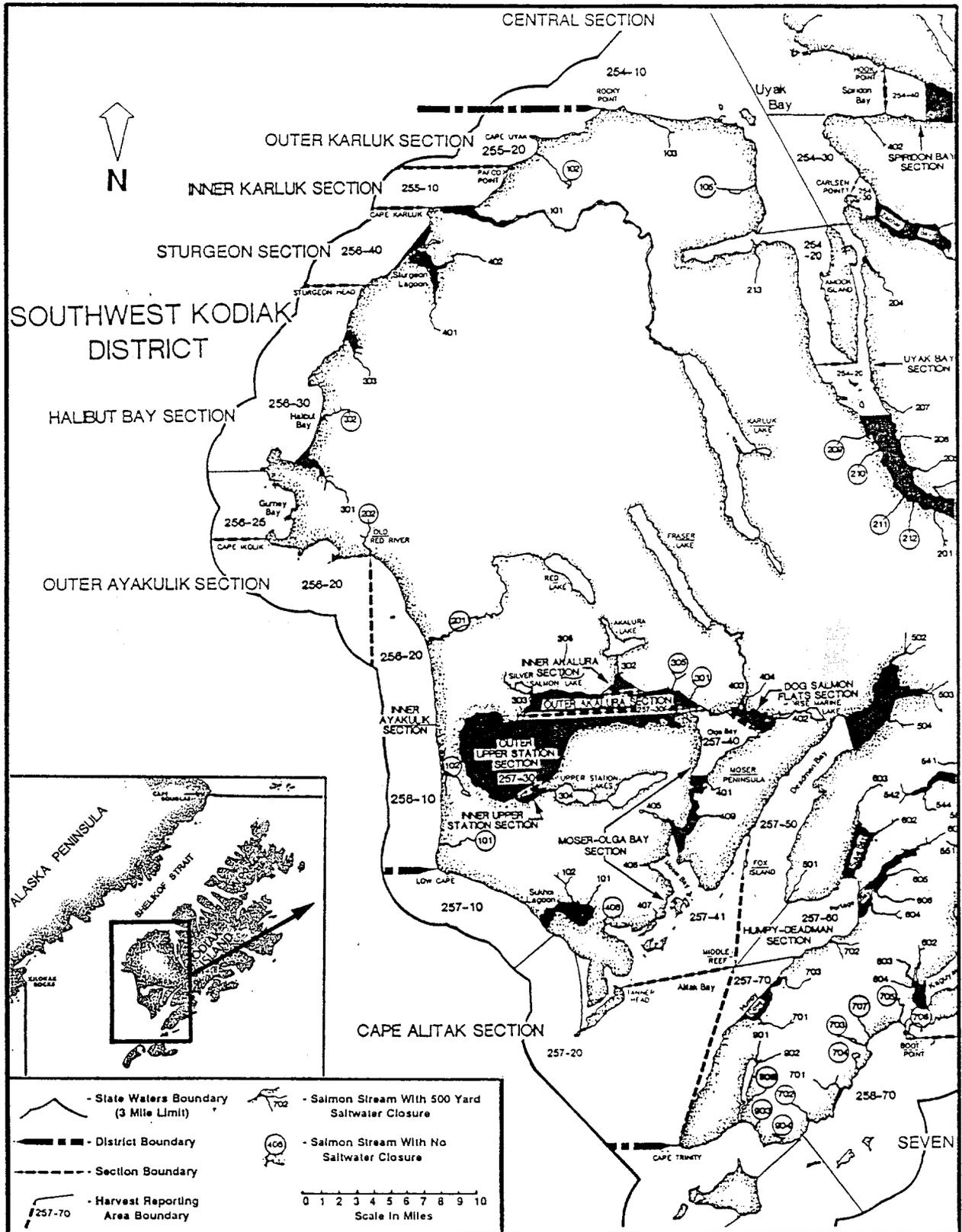
Appendix A.1. Kodiak Management Area salmon fishing district map, with key depicting Appendix number of map enlargements, 1994.



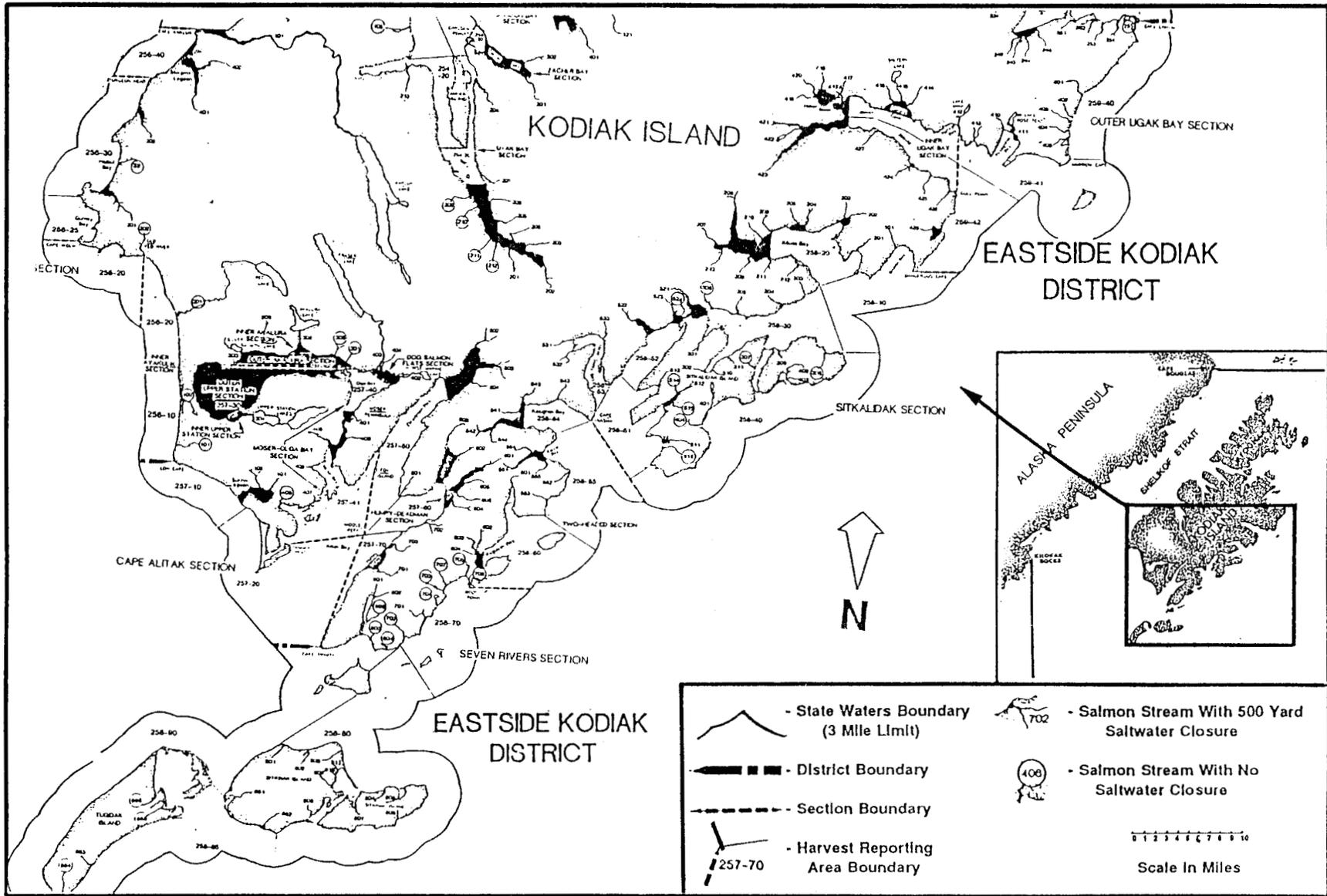
Appendix A.2. Afognak District of the Kodiak Management Area, 1994.



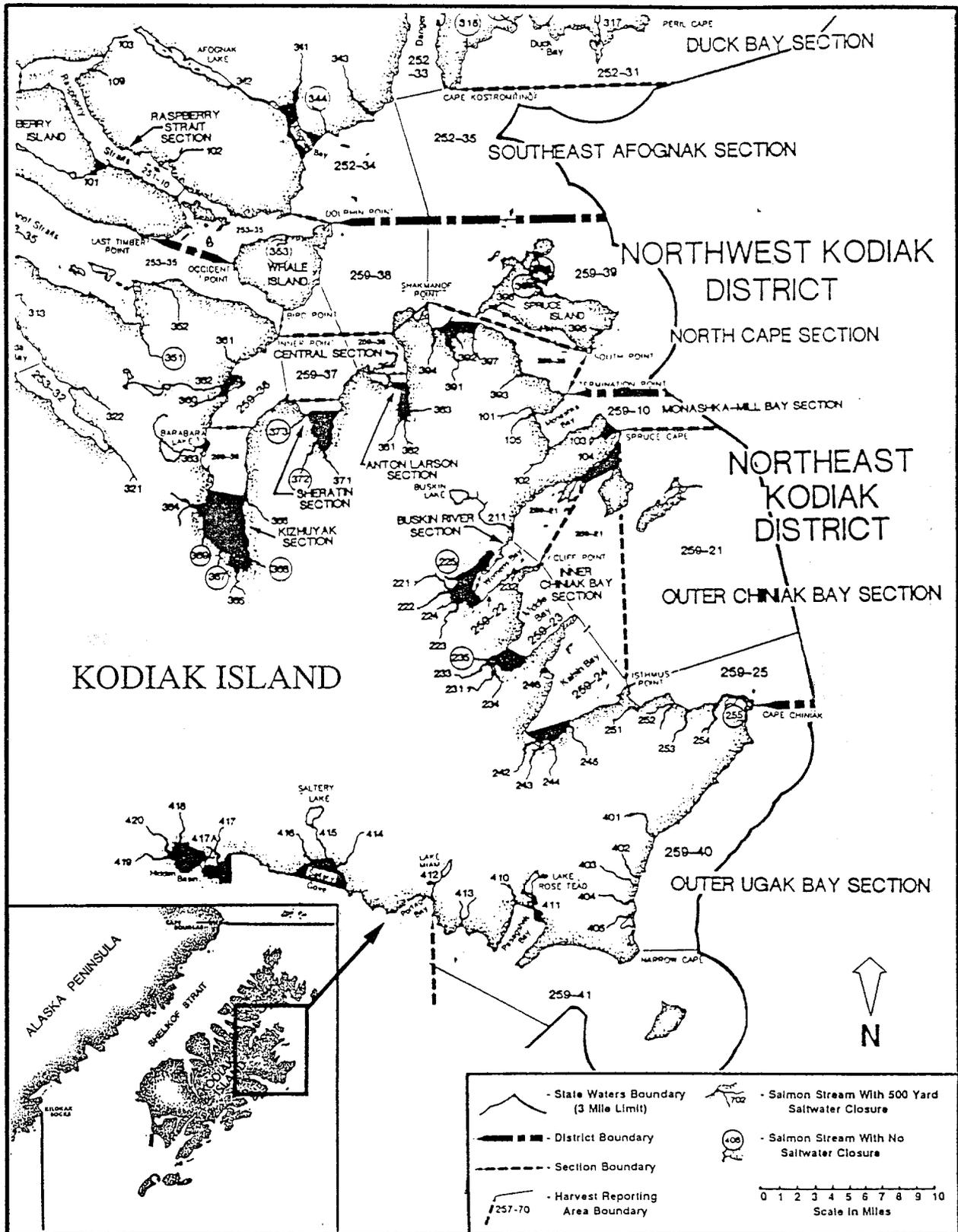
Appendix A.3. Northwest Kodiak District of the Kodiak Management Area, 1994.



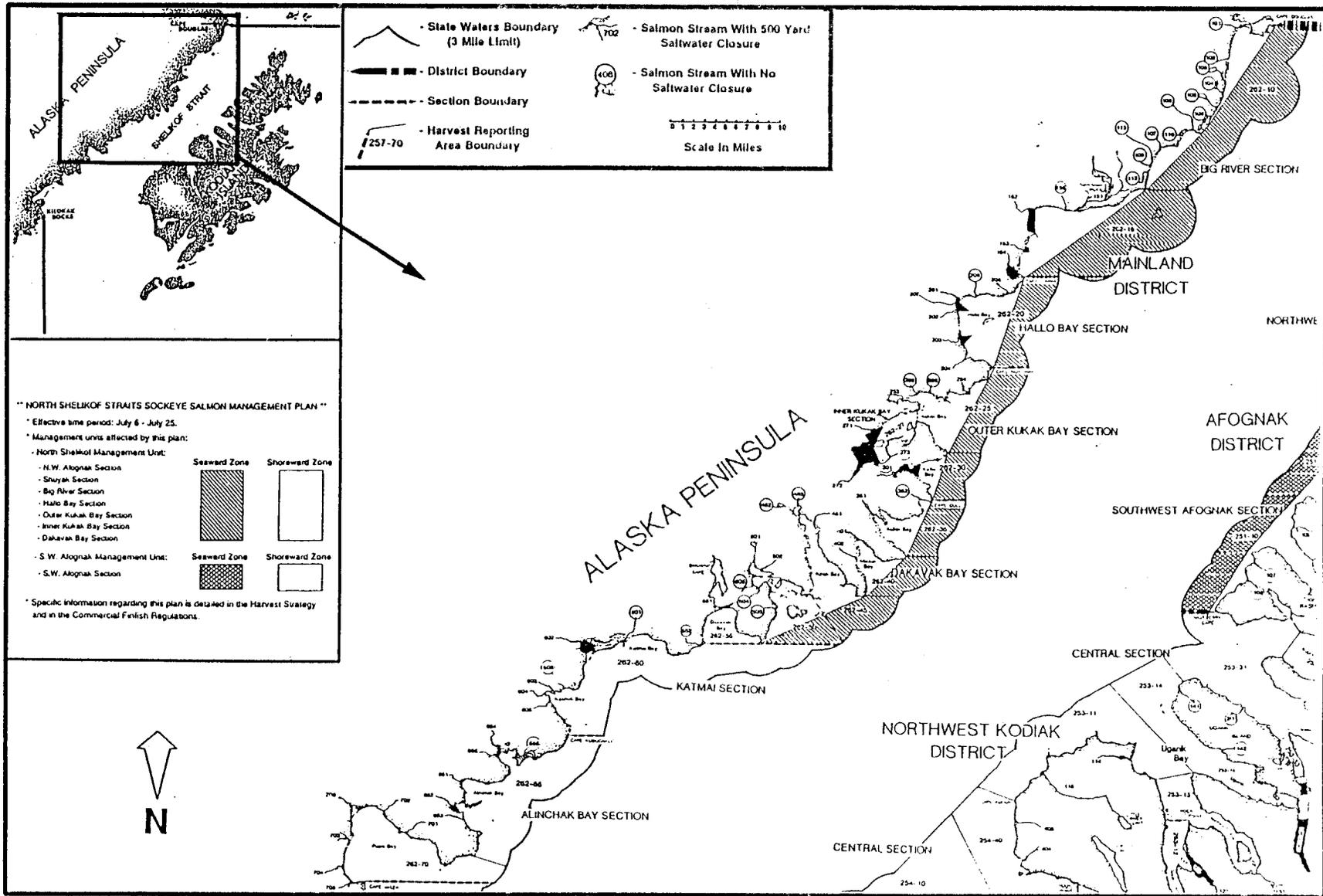
Appendix A.4. Southwest Kodiak and Alitak Bay Districts of the Kodiak Management Area, 1994.



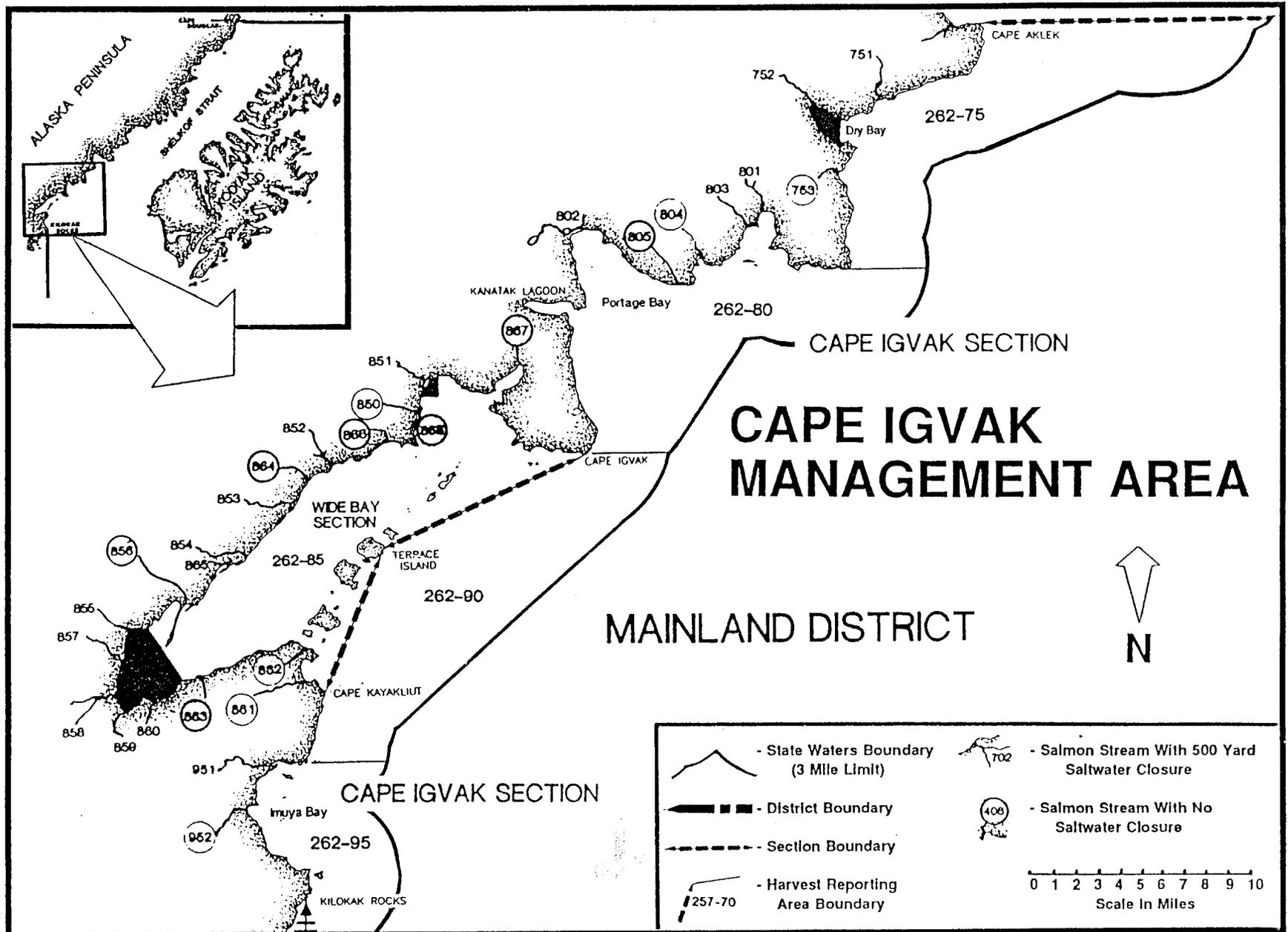
Appendix A.5. Eastside Kodiak District of the Kodiak Management Area, 1994.



Appendix A.6. Northeast Kodiak District, and the North Cape and eastern Central Sections of the Northwest Kodiak District, of the Kodiak Management Area, 1994.



Appendix A.7. North portion of the Mainland District of the Kodiak Management Area, 1994.



Appendix A.8. Cape Igvak management units in the Mainland District of the Kodiak Management Area, 1994.

Appendix B.1. Sockeye salmon escapement goals by spawning system for the Kodiak Management Area^a, 1994.

Name	System Number	Escapement (in 1,000's of fish) ^a		
		Minimum	Mid Pt.	Targeted
<i>Weirs</i>				
Karluk	255-101	560	730	900
Ayakulik	256-201	200	250	300
Upper Station	257-304	200	238	275
Frazer	257-401	140	170	200
Litnik	252-342	40	50	60
Saltery	259-415	20	30	40
Pauls	251-831	20	30	40
Buskin	259-211	10	13	15
Akalura	257-302	40	50	60
Uganik Lake	253-122	40	50	60
Subtotal		1,270	1,611	1,950
<i>Non weir (indexed escapement)^b</i>				
Barabara Cove	259-363	1	3	5
Bear Lake	262-655	1	3	5
Big Bay	251-601	1	3	5
Horse Marine	257-402	5	8	10
Kaflia	262-301	15	20	25
Kaguyak	258-706	0.5	1	1
Kanatak	262-802	1	3	5
Kuliak	262-351	1	3	5
Little Afognak	252-319	1	3	5
Little Danger	252-331	1	1	1
Little Kitoi	252-323	1	1	1
Little River	253-116	15	20	25
Long Lagoon Cr.	251-301	1	3	5
Malina	251-105	5	8	10
Matfay	257-704	0.5	1	1
Miam	259-412	1	3	5
Ocean Beach	258-401	5	8	10
Old Red River	258-202	0.5	1	1
Paramonof	251-301	1	1	1
Pasagshak	259-411	1	3	5
Perenosa	251-825	5	8	10
Pivot Point	258-212	0.5	1	1
Red Fox	251-505	1	1	1
Russian Harbor	258-901	1	1	1
Selief	251-101	1	3	5
Silver Salmon	257-303	1	3	5

-Continued-

Appendix B.1. (page 2 of 2)

Name	System Number	Escapement (in 1,000's of fish) ^a		
		Minimum	Mid Pt.	Targeted
Swikshak	262-151	15	20	25
Slough Crk.	262-105	0.5	1	1
Thorsheim	251-302	5	8	10
<i>Total indexed escapement^b</i>		88.5	143	190.0
<i>Estimated total escapement for indexed systems^c</i>		177	286	380
<i>Estimated total escapement for systems with weirs and indexed by aerial surveys</i>		1,447	1,754	2,140

^a Source: Barrett et al. (1990) and Malloy et al. (1992).

^b Indexed escapement represents a peak aerial escapement count.

^c Indexed escapement expanded by a factor of 2.0 for an estimate of total escapement (Barrett et al. 1985).

Appendix B.2. Pink salmon odd and even year index stream escapement goals for the Kodiak Management Area, 1994.

Index Stream	Stream Number	Even Year Indexed Goal ^{a, b}		Odd Year Indexed Goal ^{a, b}	
		Minimum	Targeted	Minimum	Targeted
AFOGNAK DISTRICT					
Malina	(251-105)	20,000	60,000	5,000	15,000
Paramanof	(251-404)	10,000	30,000	5,000	15,000
Little Waterfall ^C	(251-822)	15,000	45,000	15,000	45,000
Discoverer	(251-830)	20,000	60,000	20,000	60,000
Pauls Bay ^C	(251-831)	3,000	9,000	3,000	9,000
Seal Bay	(251-901)	5,000	15,000	5,000	15,000
Big Danger	(252-332)	15,000	45,000	10,000	30,000
Marka	(252-334)	30,000	90,000	10,000	30,000
Litnik ^C	(252-342)	30,000	90,000	10,000	30,000
	Subtotal	148,000	444,000	83,000	249,000
N.W. KODIAK DISTRICT					
Sheratin	(253-371)	15,000	45,000	10,000	30,000
Baumans	(253-333)	5,000	15,000	5,000	15,000
Terror	(253-331)	40,000	120,000	30,000	90,000
Uganik	(253-122)	80,000	240,000	70,000	210,000
Little	(253-115)	40,000	120,000	15,000	45,000
Zachar	(254-301)	40,000	120,000	20,000	60,000
Browns	(254-204)	40,000	120,000	5,000	15,000
Uyak	(254-202)	50,000	150,000	50,000	150,000
Uyak	(259-203)	5,000	15,000	15,000	45,000
	Subtotal	315,000	945,000	220,000	660,000
S.W. KODIAK DISTRICT					
Karluk ^C	(255-101)	800,000	1,600,000	20,000	60,000
Sturgeon	(256-401)	50,000	150,000	5,000	15,000
Ayakulik ^C	(256-201)	400,000	800,000	5,000	15,000
	Subtotal	1,250,000	2,550,000	30,000	90,000
ALITAK DISTRICT					
Narrows	(257-401)	2,000	6,000	2,000	6,000
Dog Salmon ^C	(257-403)	50,000	150,000	60,000	180,000
Deadman	(257-502)	40,000	120,000	60,000	180,000
Humpy	(257-701)	70,000	210,000	90,000	270,000
	Subtotal	162,000	486,000	212,000	636,000
N.E. KODIAK DISTRICT					
Sid Olds	(259-242)	30,000	90,000	30,000	90,000
American	(259-231)	30,000	90,000	30,000	90,000
Buskin ^C	(259-211)	60,000	180,000	50,000	150,000
	Subtotal	120,000	360,000	110,000	330,000
EASTSIDE KODIAK DISTRICT					
7-Rivers	(258-701)	40,000	120,000	40,000	120,000
Kaiugnak	(258-542)	10,000	30,000	10,000	30,000
Barling	(258-522)	30,000	90,000	30,000	90,000
Kiliuda	(258-207)	20,000	60,000	10,000	30,000
Saltery ^C	(259-415)	20,000	60,000	30,000	90,000
Miam	(259-412)	20,000	60,000	10,000	30,000
Hurst	(259-414)	10,000	30,000	10,000	30,000
	Subtotal	150,000	450,000	140,000	420,000
MAINLAND KODIAK DISTRICT					
Big River	(262-152)	10,000	30,000	10,000	30,000
Village	(262-153)	15,000	45,000	15,000	45,000
Cape Chiniak	(262-205)	5,000	15,000	3,000	9,000
Big Hallo	(262-203)	2,000	6,000	2,000	6,000
Kukak	(262-271)	3,000	9,000	2,000	6,000
Missak	(262-402)	5,000	15,000	3,000	9,000
Kinak	(262-451)	20,000	60,000	20,000	60,000

-Continued-

Index Stream	Stream Number	Even Year Indexed Goal ^{a,b}		Odd Year Indexed Goal ^{a,b}	
		Minimum	Targeted	Minimum	Targeted
MAINLAND KODIAK DISTRICT (continued)					
Geographic	(262-501)	4,000	12,000	4,000	12,000
Dakavak	(262-551)	25,000	75,000	20,000	60,000
Kashvik	(262-604)	25,000	75,000	25,000	75,000
Big Alinchak	(262-651)	30,000	90,000	20,000	60,000
Portage	(262-702)	15,000	45,000	10,000	30,000
Oil	(262-751)	15,000	45,000	10,000	30,000
Jute	(262-801)	2,000	6,000	1,000	3,000
Kanatak	(262-802)	10,000	30,000	10,000	30,000
Big Creek	(262-851)	70,000	210,000	60,000	180,000
	Subtotal	256,000	768,000	215,000	645,000
GRAND TOTAL ^d		2,401,000	6,003,000	1,010,000	3,030,000

^a Source: Barrett et al. (1990) and Malloy et al. (1992).

^b Index escapement for non weir systems are peak counts.

^c Systems where the escapement is counted through weirs.

^d The 51 listed index streams average 73% of the total KMA escapement based on 1969-87 escapement distribution data from 1966 through 1991.

Appendix B.3. Chum salmon indexed escapement goals and estimated total escapement goals for selected streams, 1994.

Index Stream	Stream Number	Indexed Escapement ^a		Estimated Total Escapement ^a		
		Minimum	Targeted	Minimum	Targeted	Mid Point
NORTHWEST KODIAK DISTRICT						
Red Cloud	(259-382)	3,000	9,000	4,173	12,518	8,345
Slough Trail	(259-383)	1,000	3,000	1,391	4,173	2,782
Sheratin	(259-371)	5,000	15,000	6,954	20,863	13,908
Kizhuyak	(259-365)	8,000	24,000	11,127	33,380	22,253
Terror	(253-331)	5,000	15,000	6,954	20,863	13,908
Uganik	(253-122)	10,000	30,000	13,908	41,725	27,817
Spiridon	(254-401)	15,000	45,000	20,863	62,588	41,725
Zachar	(254-301)	15,000	45,000	20,863	62,588	41,725
Uyak	(254-202)	10,000	30,000	13,908	41,725	27,817
Subtotal		72,000	216,000	100,140	300,421	200,281
SOUTHWEST KODIAK DISTRICT						
Sturgeon	(256-401)	50,000	150,000	69,542	208,626	139,084
Subtotal		50,000	150,000	69,542	208,626	139,084
ALITAK DISTRICT						
Big Sukhoi	(257-102)	20,000	60,000	27,817	83,450	55,633
Dog Salmon ^b	(257-403)	2,000	6,000	2,000	6,000	4,000
Narrows	(257-401)	2,000	6,000	2,782	8,345	5,563
Deadman	(257-502)	5,000	15,000	6,954	20,863	13,908
Sulua	(257-603)	8,000	24,000	11,127	33,380	22,253
Portage	(257-601)	1,000	3,000	1,391	4,173	2,782
Subtotal		38,000	114,000	52,070	156,210	104,140
NORTHEAST KODIAK DISTRICT						
Kalsin River	(259-243)	1,000	3,000	1,391	4,173	2,782
Sid Olds	(259-242)	6,000	18,000	8,345	25,035	16,690
American	(259-231)	6,000	18,000	8,345	25,035	16,690
Salt Creek	(259-233)	2,000	6,000	2,782	8,345	5,563
Salonie Creek	(259-223)	1,000	3,000	1,391	4,173	2,782
Russian River	(259-222)	2,000	6,000	2,782	8,345	5,563
Sargent Creek	(259-221)	2,000	6,000	2,782	8,345	5,563
Subtotal		20,000	60,000	27,817	83,450	55,633
EASTSIDE KODIAK DISTRICT						
Sitkinak Chum	(258-807)	3,000	9,000	4,173	12,518	8,345
Kaguyak	(258-602)	5,000	15,000	6,954	20,863	13,908
Kiavak Portage	(258-551)	1,000	3,000	1,391	4,173	2,782
Kaiugnak	(258-603)	3,000	9,000	4,173	12,518	8,345
Barling	(258-522)	3,000	9,000	4,173	12,518	8,345
Midway	(258-521)	5,000	15,000	6,954	20,863	13,908
Newman	(258-513)	3,000	9,000	4,173	12,518	8,345
Natalia	(258-512)	3,000	9,000	4,173	12,518	8,345
Rolling	(258-511)	4,000	12,000	5,563	16,690	11,127
Amee	(258-301)	1,000	3,000	1,391	4,173	2,782
McCord Beach	(258-302)	1,000	3,000	1,391	4,173	2,782
Pivot Point	(258-212)	1,000	3,000	1,391	4,173	2,782
Marker Grove	(258-211)	1,000	3,000	1,391	4,173	2,782
Dukaluk	(258-208)	2,000	6,000	2,782	8,345	5,563
W. Kiliuda	(258-207)	8,000	24,000	11,127	33,380	22,253
E. Kiliuda	(258-206)	3,000	9,000	4,173	12,518	8,345
Burn's Spit	(258-210)	1,000	3,000	1,391	4,173	2,782
Coxcomb Point	(258-205)	6,000	18,000	8,345	25,035	16,690
Dog Bay	(258-204)	6,000	18,000	8,345	25,035	16,690
Shearwater	(258-202)	1,000	3,000	1,391	4,173	2,782
Gull Cape	(259-428)	8,000	24,000	11,127	33,380	22,253
Eagle Harbor	(259-424)	4,000	12,000	5,563	16,690	11,127
Kiliuda Pass	(259-423)	2,000	6,000	2,782	8,345	5,563
Hidden Basin	(259-418)	4,000	12,000	5,563	16,690	11,127

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Appendix B.3. (page 2 of 2)

Index Stream	Stream Number	Indexed		Est. Total		
		Minimum	Desired	Minimum	Desired	Mid Point
Wild Creek	(259-417)	2,000	6,000	2,782	8,345	5,563
Rough Creek	(259-416)	3,000	9,000	4,173	12,518	8,345
Saltery ^b	(259-415)	2,000	6,000	2,000	6,000	4,000
Miam	(259-412)	2,000	6,000	2,782	8,345	5,563
Subtotal		88,000	264,000	121,612	364,836	243,224
MAINLAND DISTRICT						
Productive Forks	(262-108)	1,000	3,000	1,391	4,173	2,782
Swikshak	(262-151)	2,000	6,000	2,782	8,345	5,563
Big River	(262-152)	40,000	120,000	55,633	166,900	111,267
Village Creek	(262-153)	10,000	30,000	13,908	41,725	27,817
Chiniak Lagoon	(262-154)	8,000	24,000	11,127	33,380	22,253
Ninagiak	(262-201)	5,000	15,000	6,954	20,863	13,908
Serpent	(262-203)	10,000	30,000	13,908	41,725	27,817
Cape Chiniak	(262-205)	1,000	3,000	1,391	4,173	2,782
Kukak River	(262-271)	60,000	180,000	83,450	250,351	166,900
Kukak Valley	(262-272)	3,000	9,000	4,173	12,518	8,345
Kinak Creek	(262-451)	2,000	6,000	2,782	8,345	5,563
Dakavak	(262-551)	10,000	30,000	13,908	41,725	27,817
Alagogshak	(262-602)	25,000	75,000	34,771	104,313	69,542
Kashvik	(262-604)	5,000	15,000	6,954	20,863	13,908
Big Alinchak	(262-651)	2,000	6,000	2,782	8,345	5,563
Little Alinchak	(262-652)	1,000	3,000	1,391	4,173	2,782
East Bear	(262-654)	8,000	24,000	11,127	33,380	22,253
West Bear	(262-656)	3,000	9,000	4,173	12,518	8,345
Portage	(262-702)	1,000	3,000	1,391	4,173	2,782
Teresa	(262-703)	8,000	24,000	11,127	33,380	22,253
Trail Creek	(262-704)	8,000	24,000	11,127	33,380	22,253
Dry Bay	(262-752)	8,000	24,000	11,127	33,380	22,253
Jute	(262-801)	1,000	3,000	1,391	4,173	2,782
Kanatak	(262-802)	1,000	3,000	1,391	4,173	2,782
Big Creek	(262-851)	10,000	30,000	13,908	41,725	27,817
Kialagvik	(262-858)	8,000	24,000	11,127	33,380	22,253
Icy Peak	(262-859)	1,000	3,000	1,391	4,173	2,782
Subtotal		242,000	726,000	336,583	1,009,748	673,165
GRAND TOTAL		510,000	1,530,000	707,764	2,123,291	1,415,528
Estimated Total Kodiak Management Area Escapement ^c				784,440	2,353,321	1,568,881

^a Source: Barrett et al. (1990) and Malloy et al. (1992)

^b Systems where the escapement is counted through weirs.

^c The 78 listed index streams supported 90.2% of the total KMA chum escapement in 1989. The estimated total KMA escapement goal minimum, desired, and mid point values were determined from this relationship.

Appendix B.4. Coho salmon escapement goals for fish weir systems in the Kodiak Management Area, 1994.

Weir Site	Interim Goals ^a	Interim Dates															
		8/15		8/20		8/25		8/31		9/5		9/10		9/15		9/20	
		Weir	(Bldup)	Weir	(Bldup)	Weir	(Bldup)	Weir	(Bldup)	Weir	(Bldup)	Weir	(Bldup)	Weir	(Bldup)	Weir	(Bldup)
Karluk (255-101)	Min.	-	-	50	-	100	(1,400)	300	(2,200)	1,500	(3,500)	3,000	(7,000)	8,000	(5,000)	10,000	(5,000)
	Des.	-	-	500	-	1,000	(2,000)	3,000	(4,000)	3,000	(6,000)	6,000	(9,000)	9,000	(8,000)	20,000	(5,000)
Ayakulik (256-201)	Min.	500	(1,000)	3,000	(2,000)	4,000	(3,500)	7,000	(5,000)	10,000	(7,000)	12,000	(6,000)	-	(6,000)	-	(2,000)
	Des.	2,000	(1,500)	6,000	(2,500)	7,000	(5,000)	13,000	(6,000)	15,000	(8,000)	18,000	(9,000)	-	(8,000)	-	(4,000)
Dog Salmon (257-403)	Min.	-	(100)	50	-	500	-	1,500	-	2,000	-	2,500	-	3,500	-	-	(1,000)
	Des.	-	(200)	200	-	1,500	-	3,000	-	4,500	-	4,500	-	5,500	-	-	(3,000)
Upper Station (257-304)	Min.	-	-	50	-	500	-	1,500	-	2,000	-	2,500	-	3,500	-	-	-
	Des.	-	-	200	-	1,500	-	3,500	-	4,000	-	4,500	-	5,500	-	-	-
Akalura (257-302)	Min.	-	-	-	-	50	-	250	-	500	-	1,000	-	1,500	-	-	-
	Des.	-	-	-	-	200	-	1,000	-	1,500	-	2,500	-	3,500	-	-	-
Horse Marine (257-402)	Min.	-	-	-	-	50	-	200	-	400	-	800	-	1,000	-	-	-
	Des.	-	-	-	-	100	-	400	-	800	-	1,600	-	2,500	-	-	-
Saltery (259-415)	Min.	-	-	-	(100)	50	(500)	300	(1,000)	1,000	(1,000)	2,000	(1,000)	2,500	(2,000)	3,000	(2,000)
	Des.	-	-	-	(500)	100	(1,000)	1,000	(2,000)	2,000	(2,000)	3,000	(2,000)	4,000	(3,000)	5,000	(5,000)
Buskin (259-211)	Min.	25	-	100	-	300	-	400	-	1,000	-	2,000	-	2,000	-	3,000	(3,000) ^b
	Des.	100	-	300	-	500	-	1,000	-	2,000	-	3,500	-	4,000	-	5,000	(4,000)
Litnik (252-342)	Min.	500	-	1,000	-	1,500	-	2,000	-	2,500	-	3,000	-	3,500	-	-	-
	Des.	2,000	-	3,000	-	4,000	-	5,000	-	6,000	-	7,000	-	8,000	-	-	-
Pauls (251-831)	Min.	500	-	1,500	-	3,000	-	3,500	-	4,500	-	5,500	-	6,500	-	-	-
	Des.	2,000	-	3,000	-	5,000	-	6,000	-	7,000	-	8,000	-	9,000	-	-	-
Perenosa (251-830)	Min.	50	-	500	-	1,000	-	1,300	-	1,500	-	1,700	-	2,000	-	-	-
	Des.	500	-	1,000	-	3,000	-	2,800	-	3,000	-	3,200	-	3,500	-	-	-
Big Bay (251-601)	Min.	20	-	100	-	150	-	200	-	250	-	300	-	400	(600)	600	(400)
	Des.	100	(200)	200	(300)	300	(300)	400	(400)	500	(600)	600	(1,000)	800	(1,200)	1,300	(700)
Bear Creek (251-706)	Min.	10	-	50	-	100	-	125	-	150	-	175	-	150	-	350	-
	Des.	50	(50)	150	(100)	200	(150)	250	(200)	300	(400)	350	(600)	500	(500)	700	(400)

^a Source: Malloy et al. (1992)

^b Includes 2,000 coho for sport fish harvest.

Appendix B.5. Peak indexed coho salmon escapement goals for Northeast District nonweired systems in the Kodiak Management Area, 1994.

Geographical Location	Stream		Escapement Goals ^{a, b}	
	Name	Number	Minimum	Desired
<i>Monashka/Mill Bay</i>	Monashka	(259-101)	20	35
	Virginia	(259-105)	30	45
	Pillar	(259-102)	30	45
	Island Lake	(259-103)	40	60
Subtotal	4 Streams		120	180
<i>Woman's Bay^c</i>	Buskin	(259-211)	2,000 ^d	4,210 ^d
	Sargent	(259-221)	65	100
	Russian	(259-222)	40	60
	Paramanof	(259-224)	20	30
	Salonie	(259-223)	350	500
	Cliff Point	(259-232)	10	20
Subtotal	6 Streams		2,485	4,210
<i>Middle Bay</i>	Short	(259-235)	10	20
	Salt	(259-233)	20	30
	American	(259-231)	300	400
	Slough	(259-234)	100	200
Subtotal	4 Streams		430	650
<i>Kalsin Bay</i>	Mayflower	(259-246)	30	45
	Sid Olds	(259-242)	450	675
	Kalsin	(259-243)	100	150
	Frank	(259-244)	10	20
	Myrtle	(259-245)	30	45
Subtotal	5 Streams		620	935
<i>Outer Chiniak Bay</i>	Rosalyn	(259-251)	600	1,200
	Twin	(259-252)	40	60
	Capelin	(259-253)	20	30
	Chiniak	(259-254)	100	150
	Chiniak Lagoon	(259-255)	10	20
Subtotal	5 Streams		770	1,460

-Continued-

Appendix B.5. (page 2 of 2)

Geographical Location	Stream		Escapement Goals ^{a, b}	
	Name	Number	Minimum	Targeted
<i>Coastal Chiniak</i>	Sacramento	(259-401)	40	60
	Twin Peaks	(259-402)	10	20
	Valley	(259-403)	10	20
	Barry's	(259-405)	10	20
	Burton's	(259-404)	10	20
Subtotal	5 Streams		70	120
GRAND TOTAL	29 Streams		4,475	7,555

^a Total indexed escapement as of October and November aerial and foot surveys.

^b Source: Malloy et al. (1992). These escapement goals were developed by Kodiak Area fishery biologists, Frank VanHulle and Pete Murray with the Sport Fish Division, and Ken Manthey, Larry Malloy and Dave Prokopowich with the Commercial Fisheries Division. The basis for these goals is the annual escapement and subsequent return data derived from approximately 1970 through 1988.

^c Includes the Buskin River actual total escapement obtained by fish weir count.

^d Buskin River actual weir escapement as of 9/10, an important date for management of the freshwater sport fisheries in Buskin River.

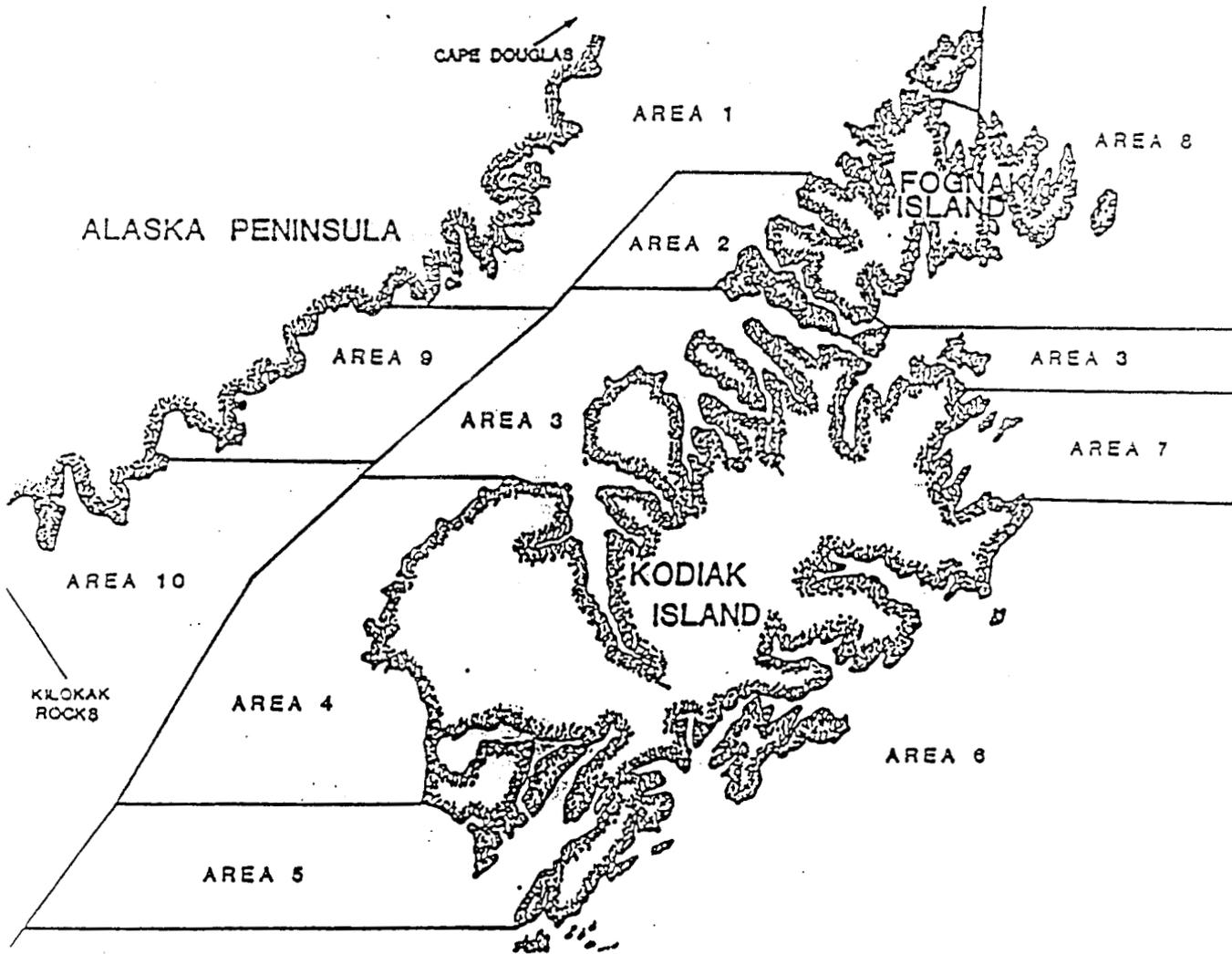
Appendix B.6. Chinook salmon escapement goals, by week, for systems with fish weirs, Kodiak Management Area, 1994.

River	Interim Goals ^a	Interim Dates							
		5/30	6/06	6/13	6/20	6/27	7/04	7/11	7/18
Karluk	Minimum	100	500	1,500	2,500	3,000	3,500	4,000	4,500
(255-101)	Desired	300	800	2,800	4,500	6,000	7,000	7,500	8,000
Ayakulik	Minimum	500	1,000	3,500	4,500	5,000	5,500	6,000	6,500
(256-201)	Desired	1,500	3,000	5,000	6,000	7,000	8,000	9,000	10,000
Dog Salmon	Minimum	-	-	-	20	40	80	100	110
(257-403)	Desired	-	-	-	60	120	240	300	330

^a Escapement goals shown in this table are based upon historical escapement database for 10 year period 1980-1989 and the subsequent return from those escapements. As additional research is conducted on the nature of these chinook salmon populations as well as the carrying capacity/production potential for chinook salmon in these systems, adjustments in these goals may be recommended.

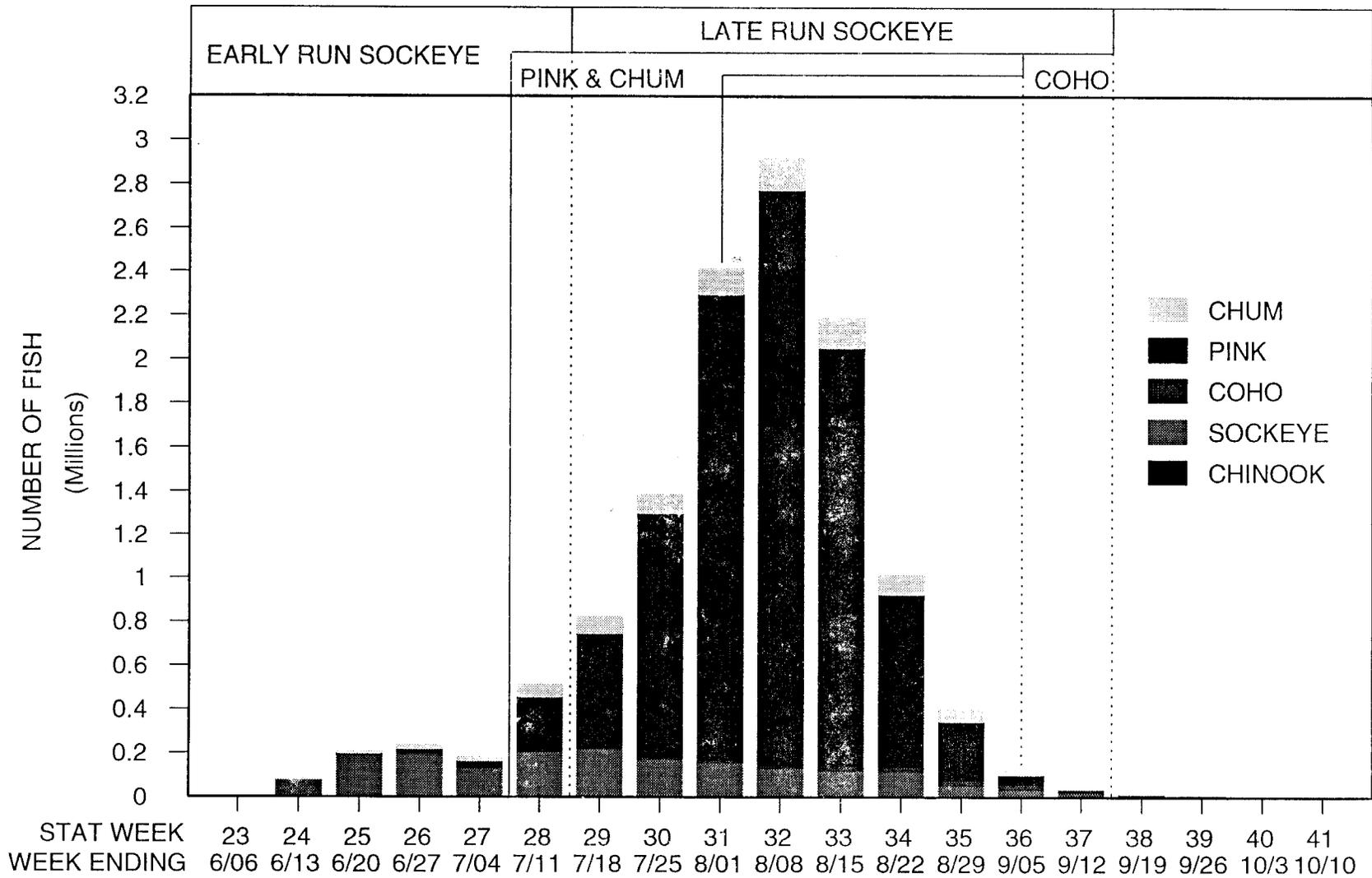
KODIAK COMMERCIAL SALMON FISHERIES MAJOR HARVEST AREAS

- | | |
|----------------------------------|-------------------------------------|
| AREA 1 - North Shelikof Sections | AREA 6 - Eastside Kodiak District |
| AREA 2 - SW Afognak Section | AREA 7 - NE Kodiak District |
| AREA 3 - NW Kodiak District | AREA 8 - Remaining Afognak Sections |
| AREA 4 - SW Kodiak District | AREA 9 - Katmai & Alinchak Sections |
| AREA 5 - Alitak Bay District | AREA 10- Igvak & Wide Bay Sections |



Appendix C.1. Map of 10 major harvest areas.

101

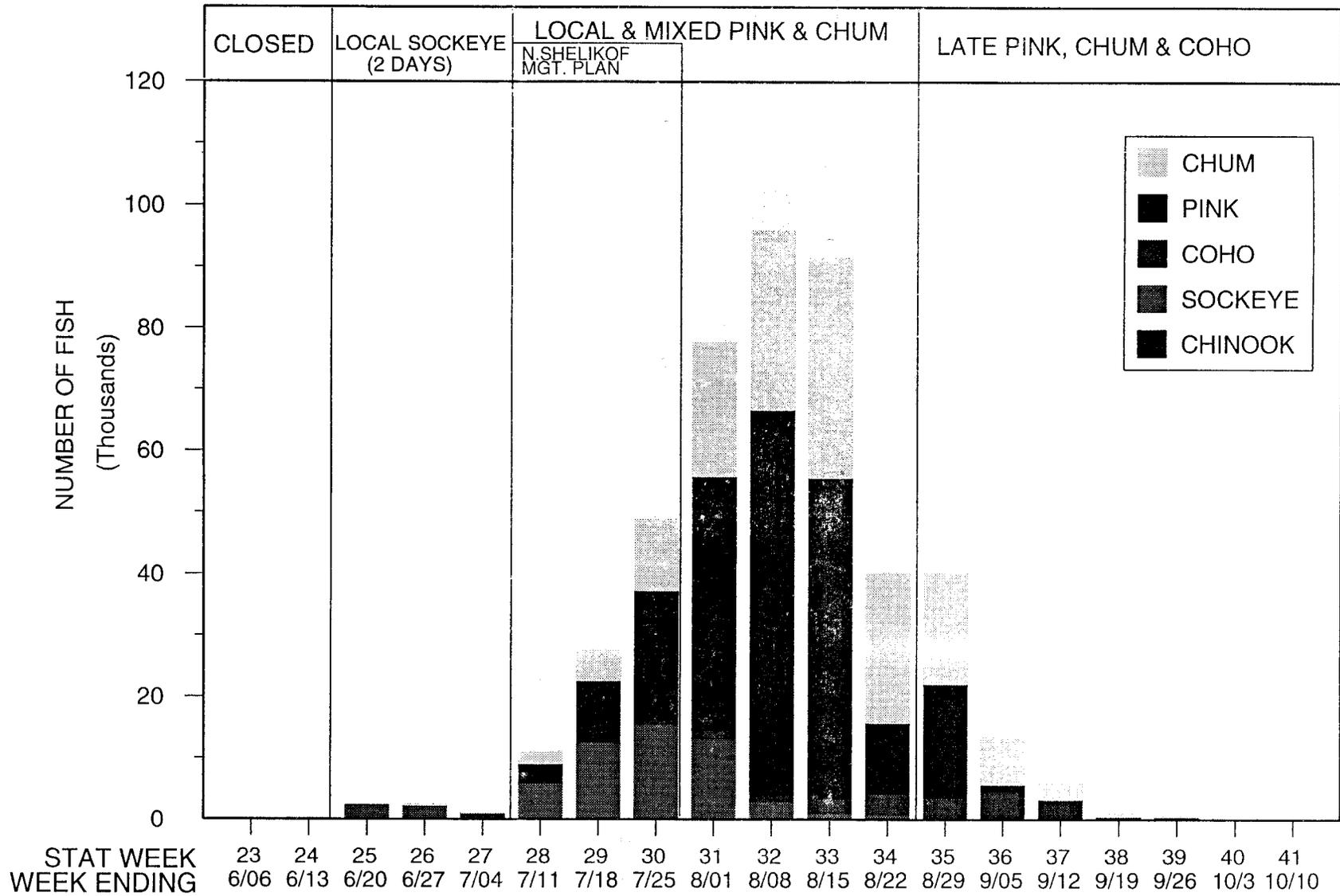


Appendix C.2. Management chronology for the Kodiak Management Area's average harvest by week and species, 1970-1994.

Appendix C.2. (page 2 of 2)

KODIAK MANAGEMENT AREA
 CATCH BY STAT WEEK (AREAS USED- 25100-26299)
 70-94 AVERAGE

CATCH WEEK	CHINOOK	SOCKEYE	COHO	PINK	CHUM
23	1	252	0	45	31
24	584	80795	117	574	1203
25	1223	188399	70	10111	6921
26	851	196919	94	22798	15522
27	546	129847	272	34983	16119
28	1144	204989	3887	246685	58087
29	1024	218259	7348	520897	73066
30	714	171221	9112	1120474	85816
31	633	155582	11831	2127533	118830
32	493	131958	14311	2628730	142341
33	376	121362	20830	1909676	136256
34	145	117332	23472	785279	86608
35	74	54384	22108	270110	56824
36	42	35829	23094	45868	25254
37	27	22113	14128	2583	8292
38	12	10008	5087	741	831
39	5	2855	3313	222	226
40	0	573	868	72	139
41	0	6	65	0	0
Total	7894	1842688	160008	9727382	832365



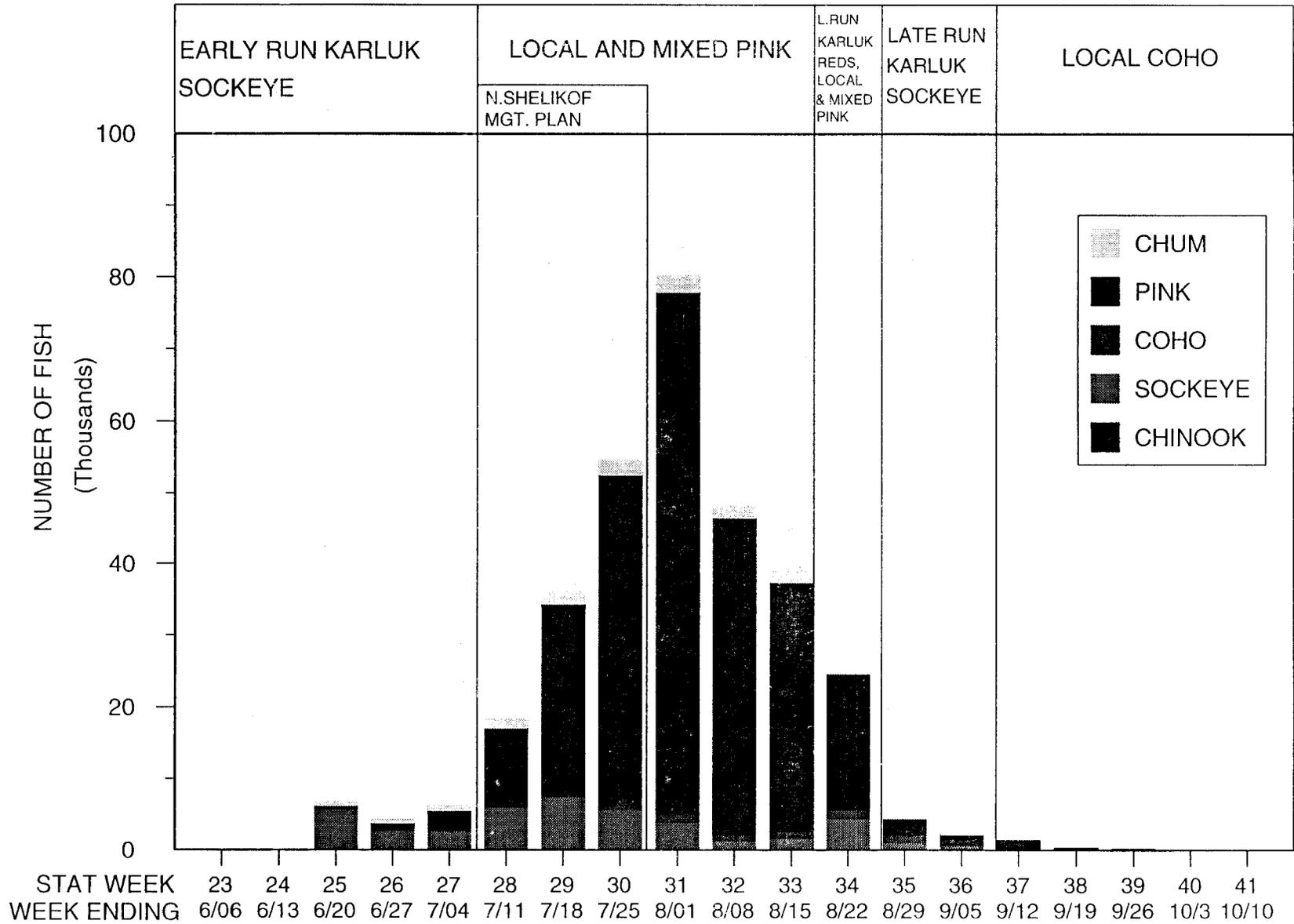
Appendix C.3. Management chronology for the North Shelikof Section's average harvest by week and species, 1970-1994.

Appendix C.3. (page 2 of 2)

NORTH SHELIKOF SECTION

CATCH BY STAT WEEK (AREAS USED- 26210-26255, 25130-25181)
70-94 AVERAGE

CATCH WEEK	CHINOOK	SOCKEYE	COHO	PINK	CHUM
23	0	5	0	0	0
24	1	115	3	1	12
25	3	2269	0	44	11
26	14	2117	0	172	93
27	3	615	10	410	36
28	56	5781	45	3205	1890
29	199	12275	197	9932	4880
30	188	15264	689	21130	11440
31	60	13101	1406	41234	21750
32	21	2860	1078	62661	29376
33	5	1073	2317	52202	35781
34	2	789	3352	11598	24346
35	0	178	3324	18630	18092
36	0	394	4206	1154	7572
37	0	287	3063	17	2434
38	0	11	561	7	363
39	0	0	504	0	32
40	0	12	252	0	19
41	0	0	34	0	0
Total	553	57146	21040	222399	158126

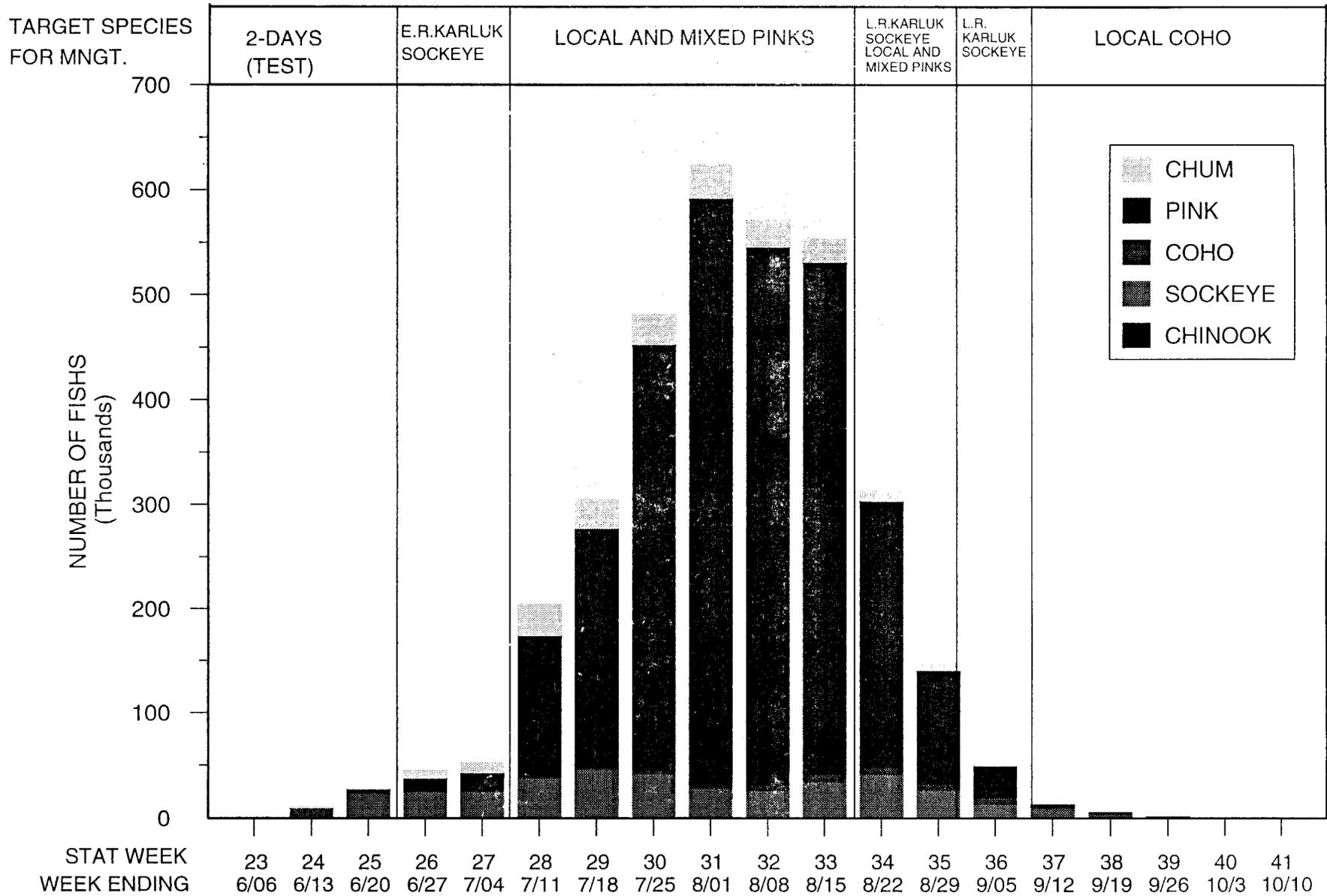


Appendix C.4. Management chronology for the Southwest Afognak Section's average harvest by week and species, 1970-1994.

Appendix C.4. (page 2 of 2)

SOUTHWEST AFOGNAK SECTION
 CATCH BY STAT WEEK (AREAS USED- 25110 & 25120)
 70-94 AVERAGE

CATCH WEEK	CHINOOK	SOCKEYE	COHO	PINK	CHUM
23	0	0	0	0	0
24	7	26	0	1	4
25	195	5460	5	534	461
26	94	2651	2	1024	504
27	75	2526	10	2924	574
28	59	5872	99	11061	1134
29	33	7430	239	26681	1827
30	37	5514	614	46382	2020
31	99	3779	1163	72918	2251
32	38	1233	848	44425	1568
33	26	1613	1020	34776	1420
34	12	4363	1240	19099	597
35	4	1024	1123	2302	104
36	2	635	973	634	26
37	1	353	1062	13	6
38	1	148	189	1	1
39	0	34	168	0	8
40	0	0	53	0	0
41	0	0	2	0	0
Total	682	42659	8809	262774	12507



Appendix C.5. Management chronology for the Northwest Kodiak District's average harvest by week and species, 1970-1994.

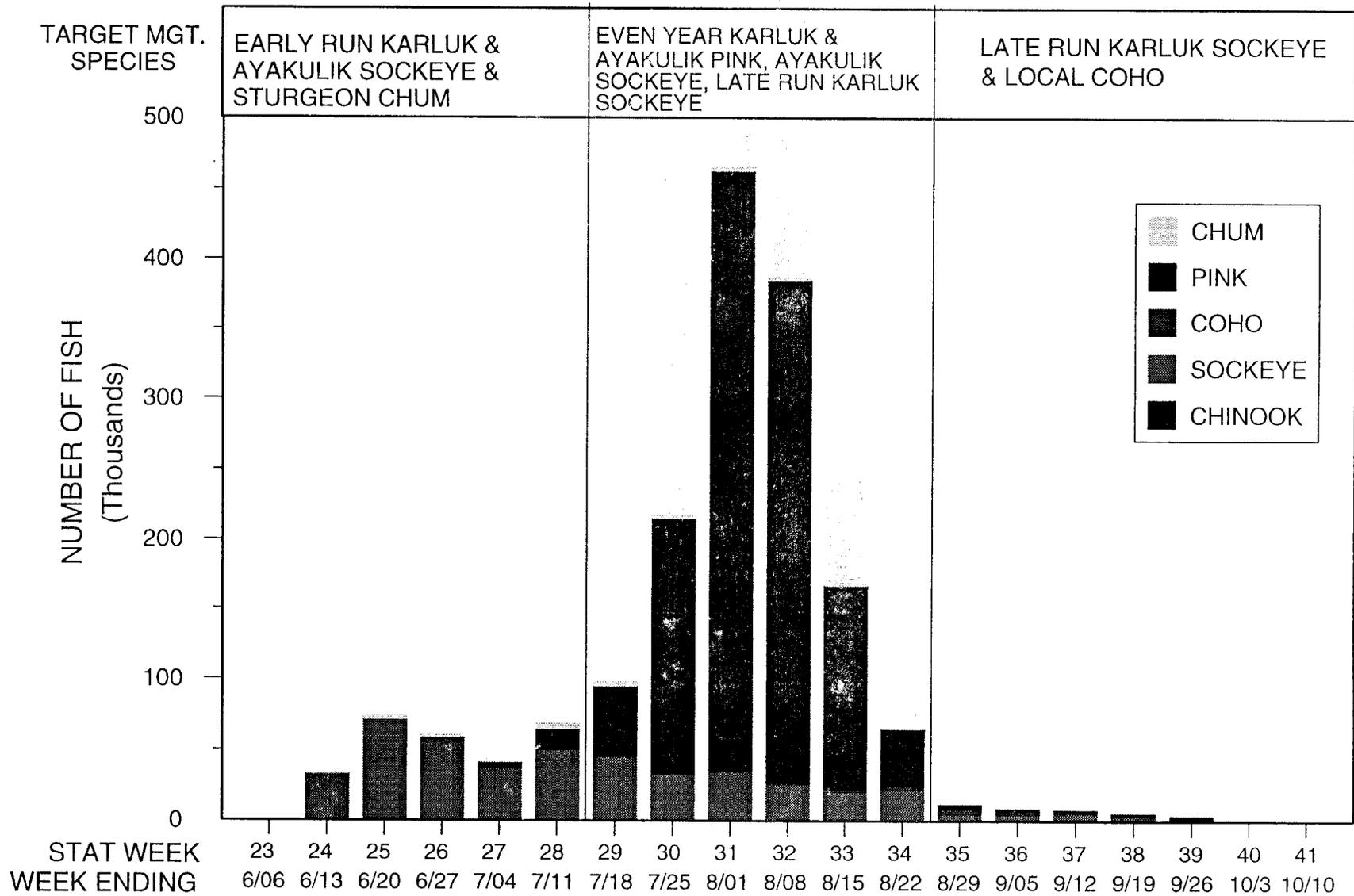
Appendix C.5. (page 2 of 2)

NORTHWEST KODIAK SECTION

CATCH BY STAT WEEK (AREAS USED- 25936-39, 25410-50, 25311-35)
70-94 AVERAGE

CATCH
WEEK

	CHINOOK	SOCKEYE	COHO	PINK	CHUM
23	0	54	0	0	0
24	102	9962	6	141	530
25	212	24438	6	3352	2324
25	204	25025	25	12700	6847
27	200	24634	166	18191	8462
28	209	37875	764	135821	29488
29	193	45285	1791	229890	28043
30	178	41867	2650	408241	28649
31	203	28087	4148	559664	31765
32	193	25873	4645	515207	25173
33	173	34729	6491	490317	21357
34	89	41597	6266	255691	9460
35	55	26532	5386	109071	3755
36	26	13541	5463	30641	1147
37	18	10375	2453	1208	212
38	10	4634	645	40	44
39	3	992	150	220	10
40	0	65	57	0	24
41	0	4	15	0	0
Total	2069	395571	41126	2770392	197289



Appendix C.6. Management chronology for the Southwest Kodiak District's average harvest by week and species, 1970-1994.

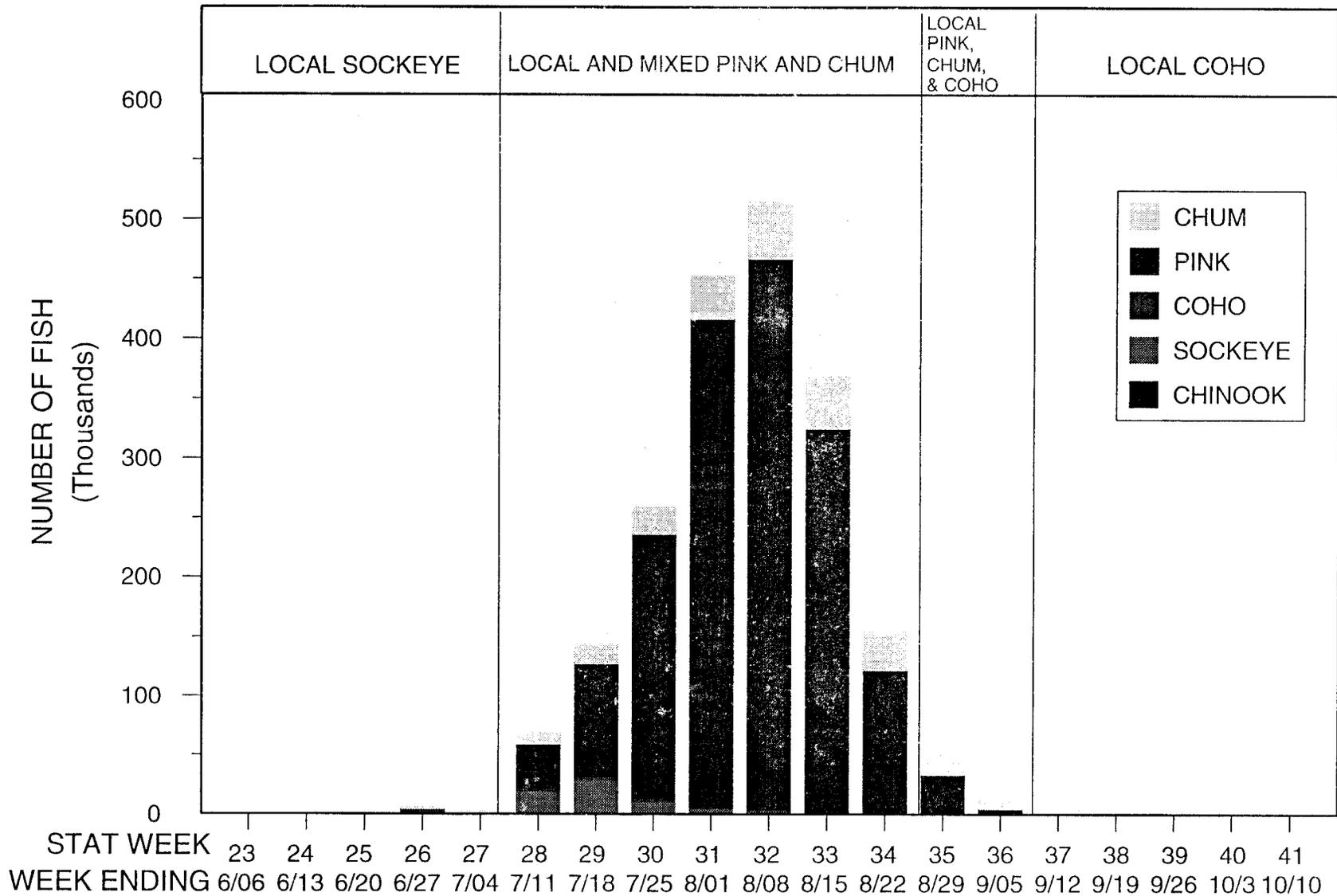
Appendix C.6. (page 2 of 2)

SOUTHWEST KODIAK DISTRICT
 CATCH BY STAT WEEK (AREAS USED- 25510,25520, 25610-25640)
 70-94 AVERAGE

CATCH WEEK	CHINOOK	SOCKEYE	COHO	PINK	CHUM
23	1	89	0	0	1
24	387	33052	108	34	261
25	636	70260	33	505	1842
26	398	57126	6	1323	2211
27	211	36706	14	4802	2662
28	140	49327	88	15324	3734
29	64	44919	259	49780	2343
30	46	32874	478	181826	1588
31	58	34452	932	427537	2565
32	48	25538	982	358407	1782
33	24	20218	1722	145211	896
34	14	22463	2089	40801	388
35	6	4588	3726	4298	140
36	8	4552	3879	1284	119
37	7	5492	2250	104	43
38	1	3554	1889	3	41
39	1	1573	2128	0	45
40	0	471	145	0	19
41	0	0	0	0	0
Total	2051	447252	20726	1231238	20678

ALITAK DISTRICT
 CATCH BY STAT WEEK (AREAS USED- 25710-25770)
 70-94 AVERAGE

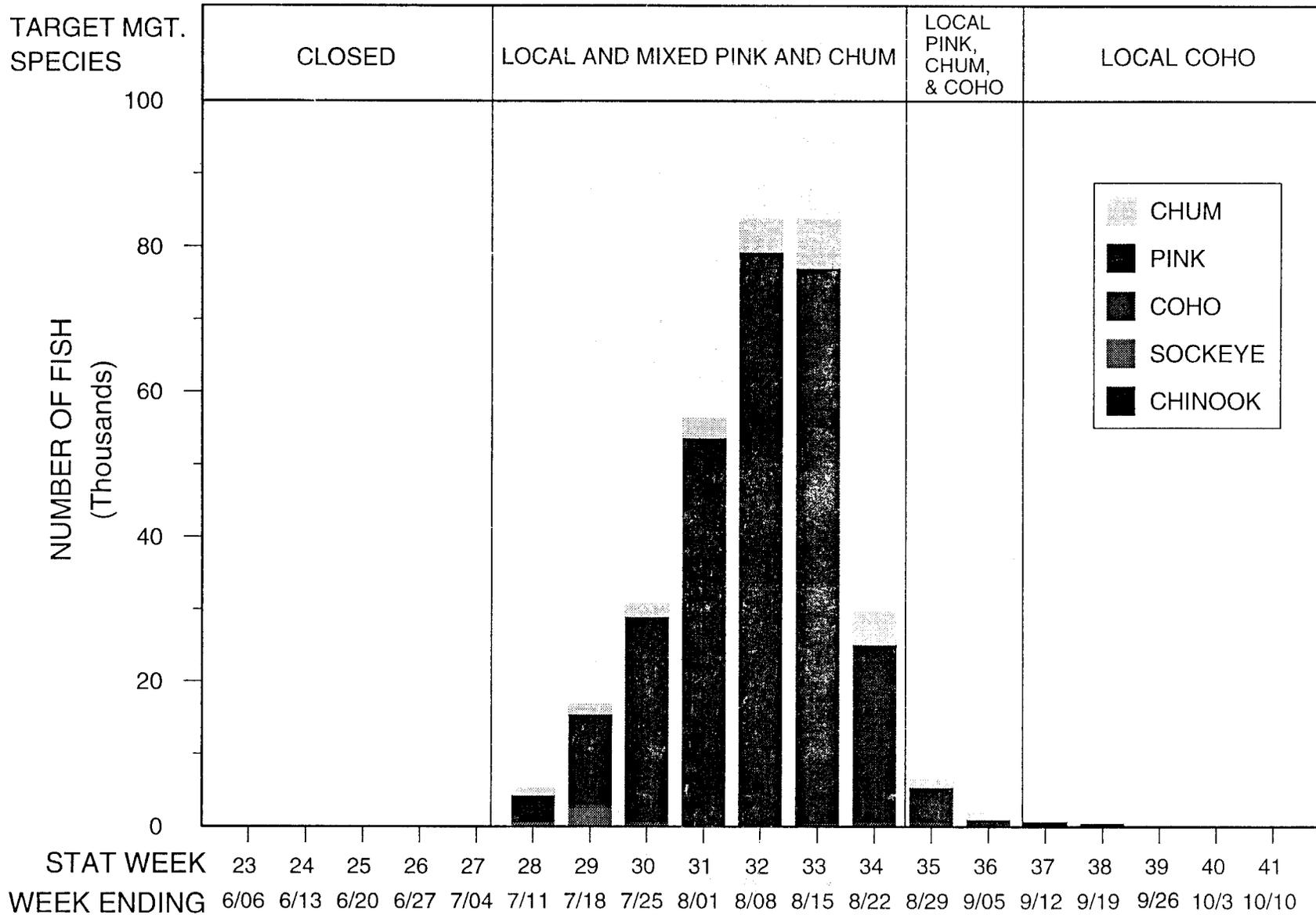
CATCH WEEK	CHINOOK	SOCKEYE	COHO	PINK	CHUM
23	0	32	0	0	0
24	52	22130	1	7	98
25	59	37431	1	203	475
26	46	41415	3	406	784
27	30	44376	27	4780	2358
28	54	62295	111	15377	4731
29	23	38508	141	45347	7680
30	22	42965	297	111012	6645
31	45	66928	612	242618	6867
32	26	66042	929	375001	11372
33	10	61134	1716	269674	9901
34	5	43900	2483	98240	6798
35	5	20932	3196	18848	9022
36	2	16370	4074	2478	3717
37	1	5560	2009	706	2378
38	0	1643	535	2	283
39	0	255	35	0	25
40	0	19	99	0	3
41	0	0	0	0	0
Total	380	571937	16267	1184698	73138



Appendix C.8. Management chronology for the Eastside Kodiak District's average harvest by week and species, 1970-1994.

EASTSIDE KODIAK DISTRICT
 CATCH BY STAT WEEK (AREAS USED- 225940-25942, 25810-25890)
 70-94 AVERAGE

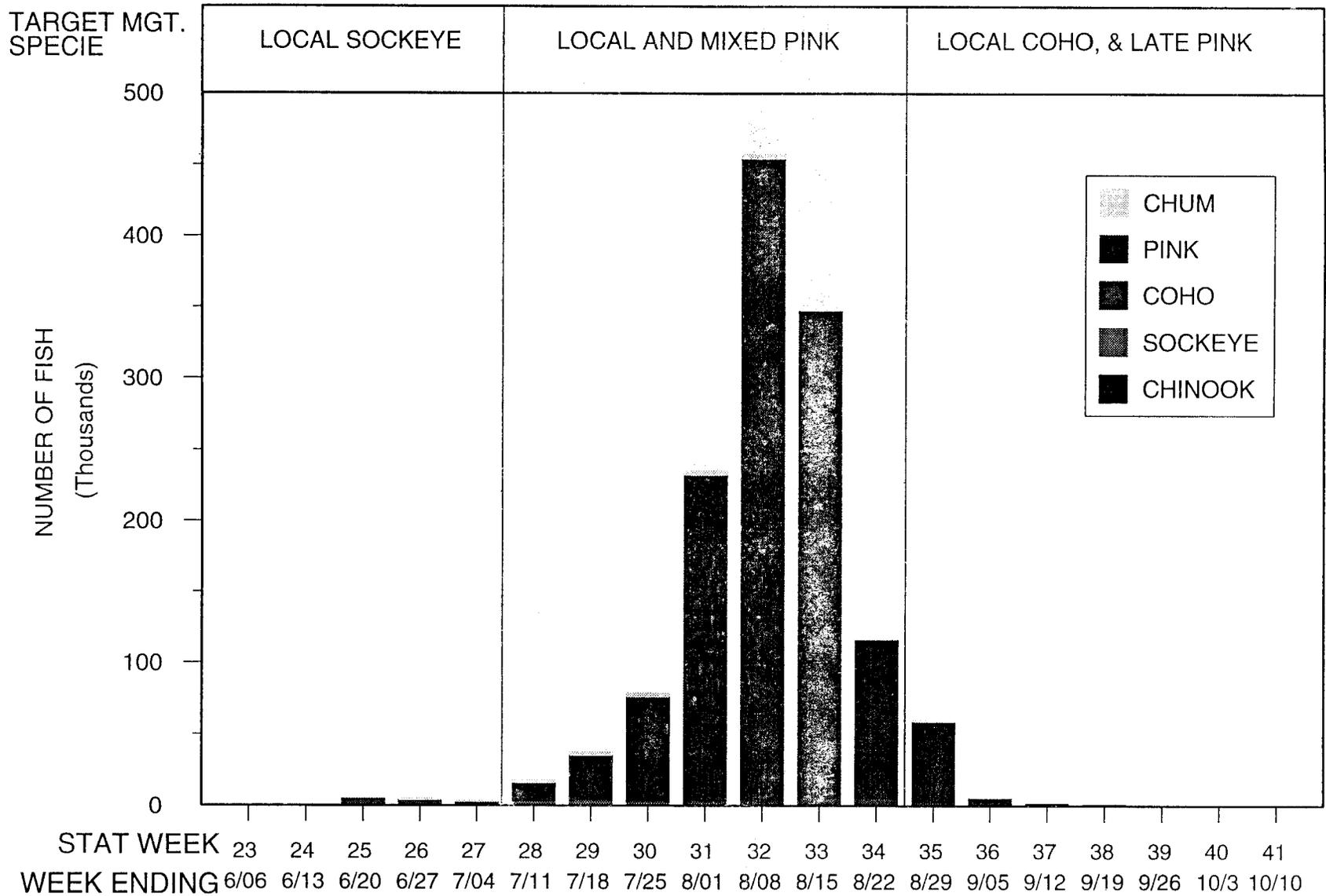
CATCH WEEK	CHINOOK	SOCKEYE	COHO	PINK	CHUM
23	0	0	0	0	0
24	0	0	0	24	2
25	6	1061	2	235	155
26	25	3801	6	526	640
27	2	896	0	820	156
28	358	19070	2062	37959	9517
29	228	28678	2656	95909	15759
30	138	10438	2244	223340	22385
31	80	4674	1238	410977	35392
32	78	2704	1404	463261	46928
33	42	1274	1466	322656	43418
34	14	778	1695	119929	33687
35	4	645	1398	31715	21886
36	2	12	1532	3557	8801
37	0	8	1118	76	2659
38	0	2	334	0	40
39	0	1	120	0	33
40	0	5	141	18	75
41	0	0	0	0	0
Total	977	74045	17417	1711000	241531



Appendix C.9. Management chronology for the Northeast Kodiak District's average harvest by week and species, 1970-1994.

NORTHEAST KODIAK DISTRICT
 CATCH BY STAT WEEK (AREAS USED- 25910-25925)
 70-94 AVERAGE

CATCH WEEK	CHINOOK	SOCKEYE	COHO	PINK	CHUM
23	0	0	0	42	27
24	0	5	0	0	0
25	0	23	0	3	0
26	0	31	0	5	1
27	0	3	0	29	8
28	23	542	144	3655	924
29	25	2560	425	12524	1214
30	10	379	190	28494	1656
31	17	239	64	53390	2667
32	8	88	118	79095	4423
33	5	83	422	76572	6738
34	1	15	562	24630	4413
35	0	6	611	4858	1026
36	0	0	569	493	815
37	0	3	723	60	37
38	0	10	372	5	10
39	0	0	74	0	12
40	0	1	7	0	0
41	0	2	3	0	0
Total	91	3990	4282	283856	23970

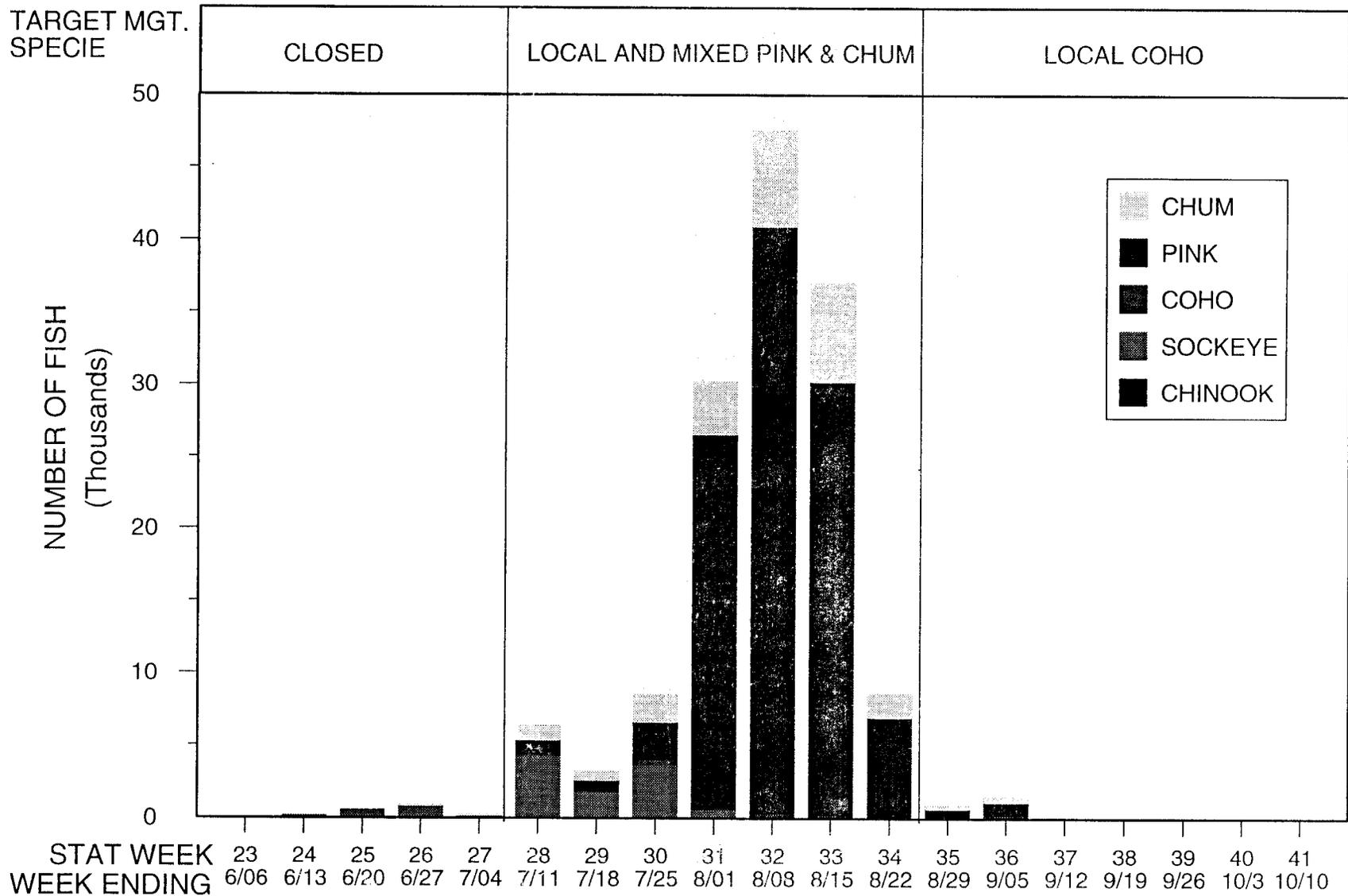


Appendix C.10. Management chronology for the Remaining Afogank Section's average harvest by week and species, 1970-1994.

Appendix C.10. (page 2 of 2)

REMAINING AFOGNAK SECTIONS
 CATCH BY STAT WEEK (AREAS USED- 25182-25190, 25210-25235)
 70-94 AVERAGE

CATCH WEEK	CHINOOK	SOCKEYE	COHO	PINK	CHUM
23	0	27	0	0	3
24	2	249	0	1	5
25	12	4809	0	134	50
26	13	3793	4	506	585
27	10	1846	38	1210	145
28	51	3227	358	12725	1844
29	25	3476	709	31394	2146
30	14	2636	623	73148	2153
31	16	2015	1146	229111	2935
32	18	1520	2453	450670	2698
33	10	1206	3987	342649	1314
34	2	411	4687	111489	484
35	0	60	2922	56196	906
36	0	21	2323	3738	105
37	0	2	1361	272	21
38	0	0	395	679	0
39	0	0	56	0	0
40	0	0	114	54	0
41	0	0	11	0	0
Total	172	25298	21185	1313974	15393

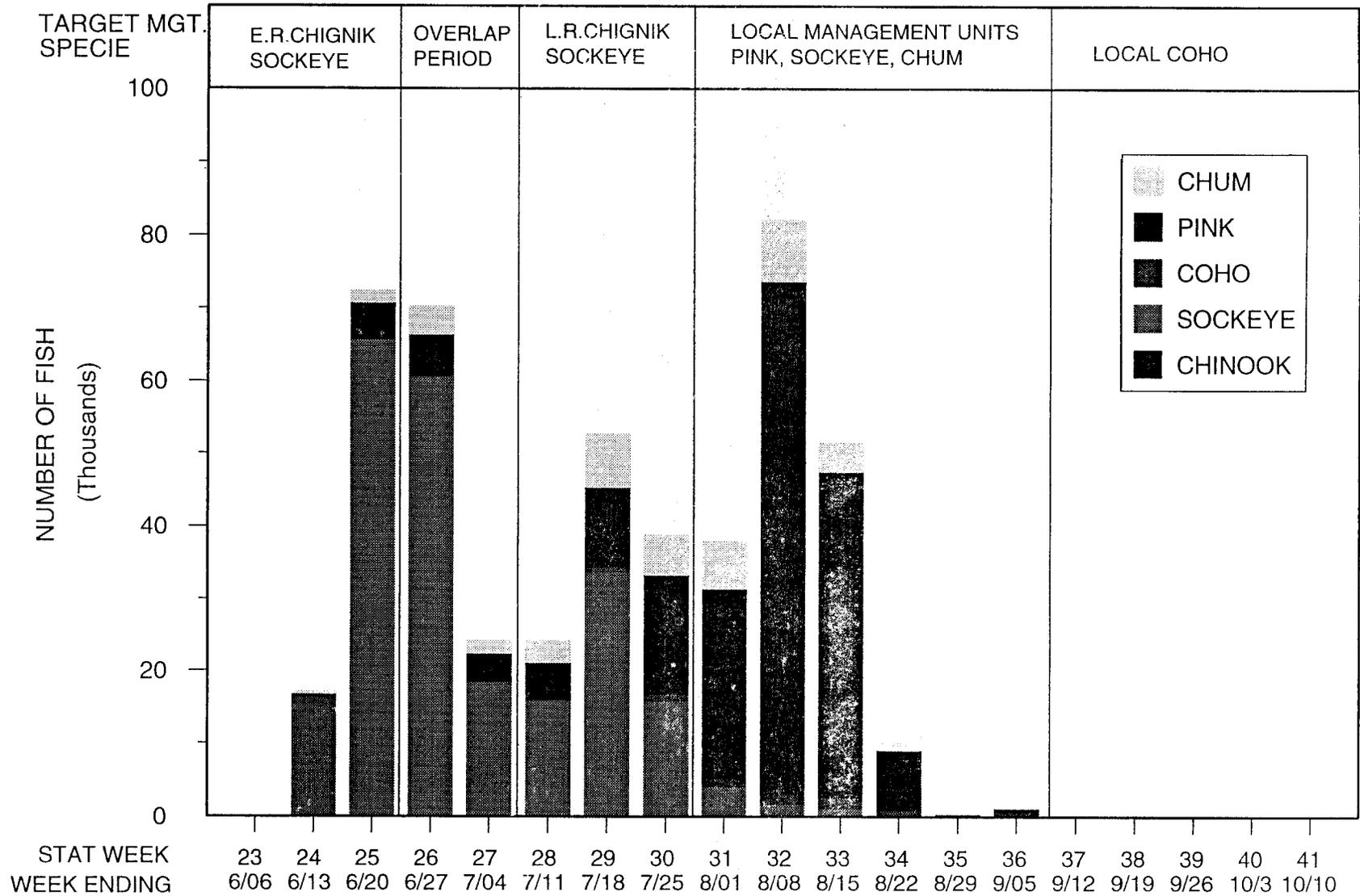


Appendix C.11. Management chronology for the Katmai and Alinchak Section's average harvest by week and species, 1970-1994.

Appendix C.11. (page 2 of 2)

KATMAI/ALINCHAK SECTIONS
 CATCH BY STAT WEEK (AREAS USED- 26260-26270)
 70-94 AVERAGE

CATCH WEEK	CHINOOK	SOCKEYE	COHO	PINK	CHUM
23	0	0	0	0	0
24	0	140	0	1	1
25	1	487	0	29	4
26	1	714	0	108	43
27	0	110	0	59	22
28	76	4212	34	1012	986
29	10	1771	48	779	564
30	15	3643	305	2637	1830
31	4	601	49	25894	3662
32	6	154	167	40635	6564
33	2	58	165	30002	6792
34	0	78	59	6789	1592
35	0	0	67	601	220
36	0	4	253	859	375
37	0	0	33	0	14
38	0	0	34	0	9
39	0	0	0	0	0
40	0	0	3	0	0
41	0	0	0	0	0
Total	114	11974	1218	109404	22674

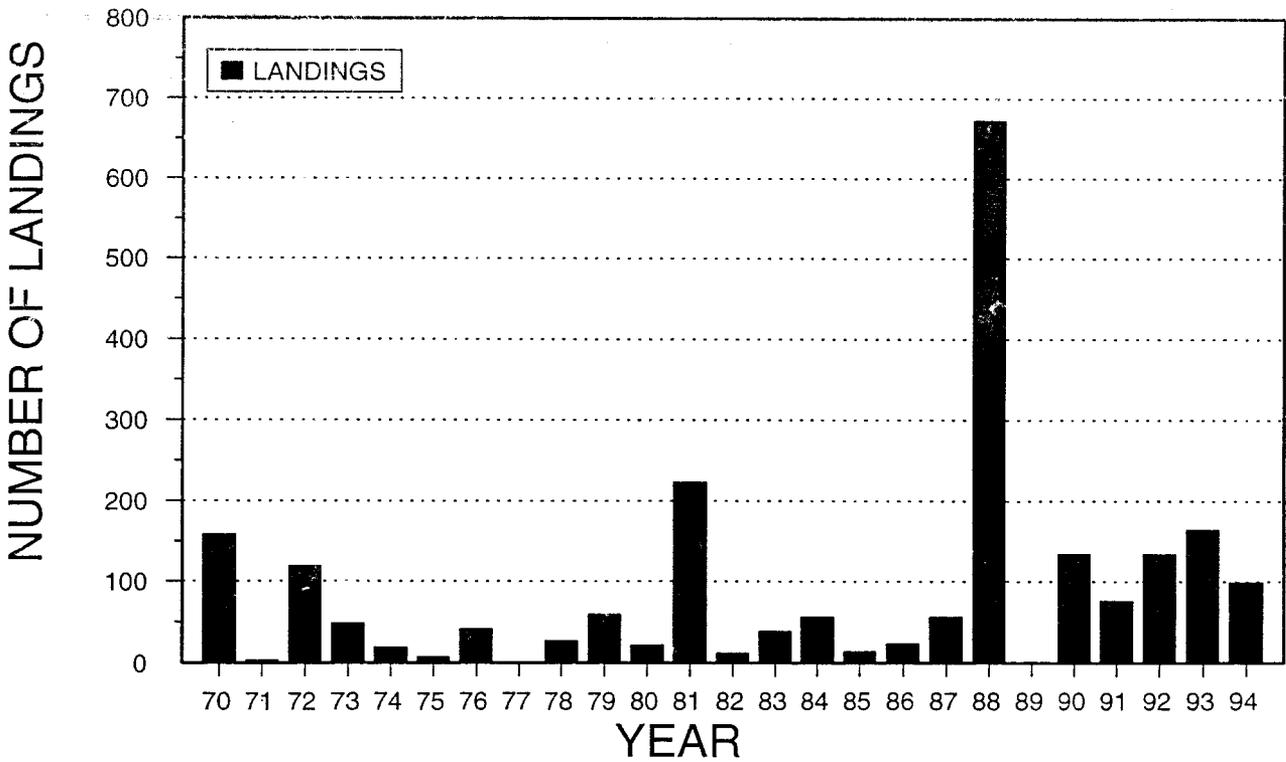
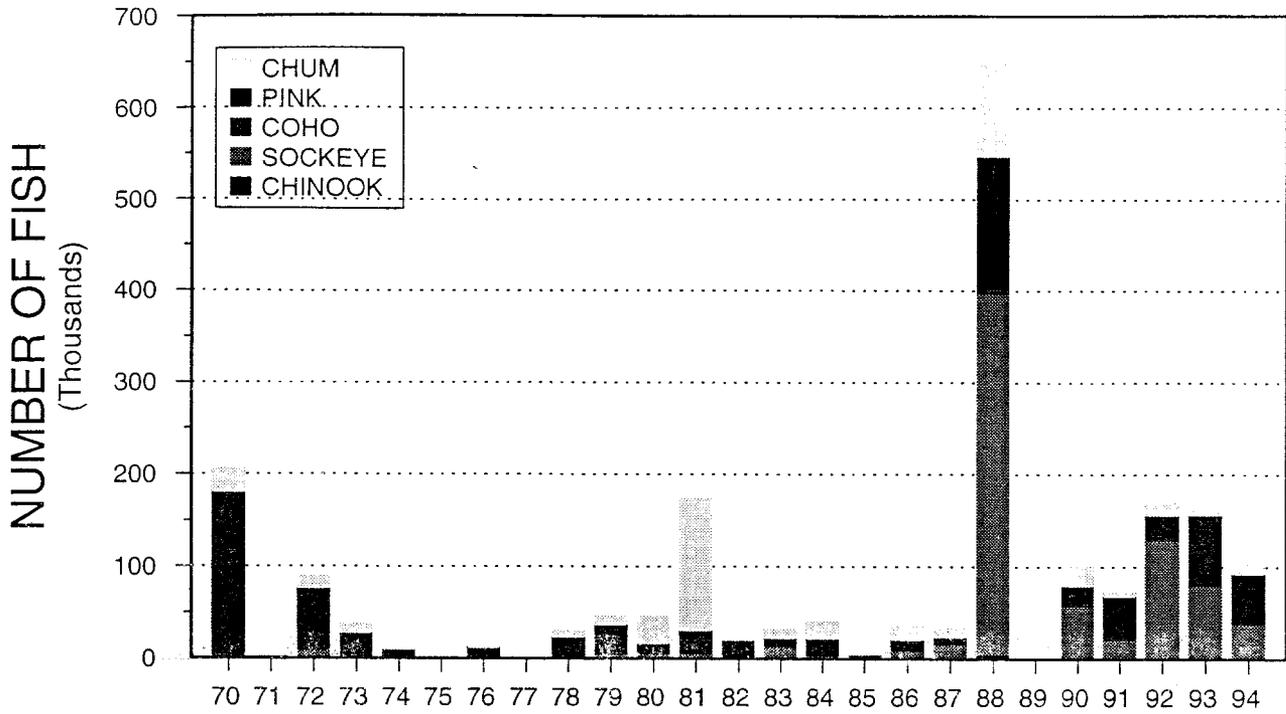


Appendix C.12. Management chronology for the Cape Igvak/Wide Bay Section's average harvest by week and species, 1970-1994.

Appendix C.12. (page 2 of 2)

IGVAK/WIDE BAY SECTIONS
 CATCH BY STAT WEEK (AREAS USED- 26275-26295)
 70-94 AVERAGE

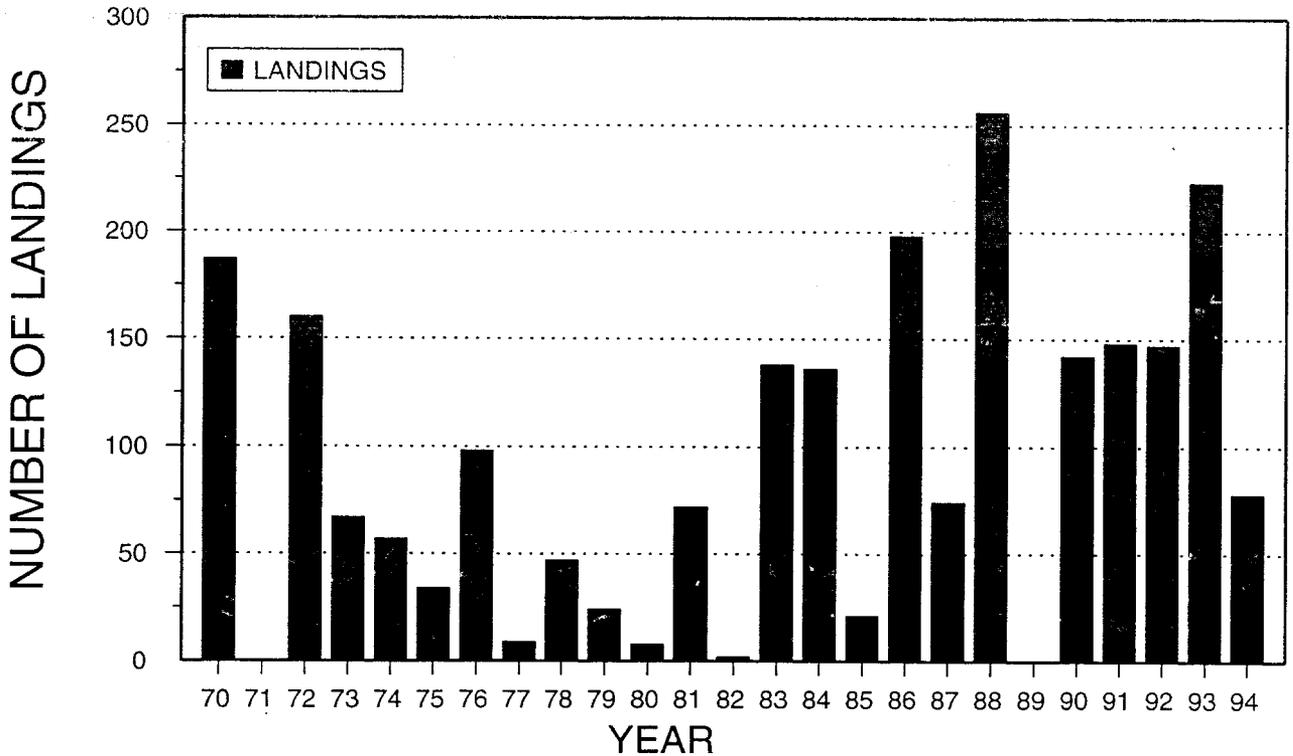
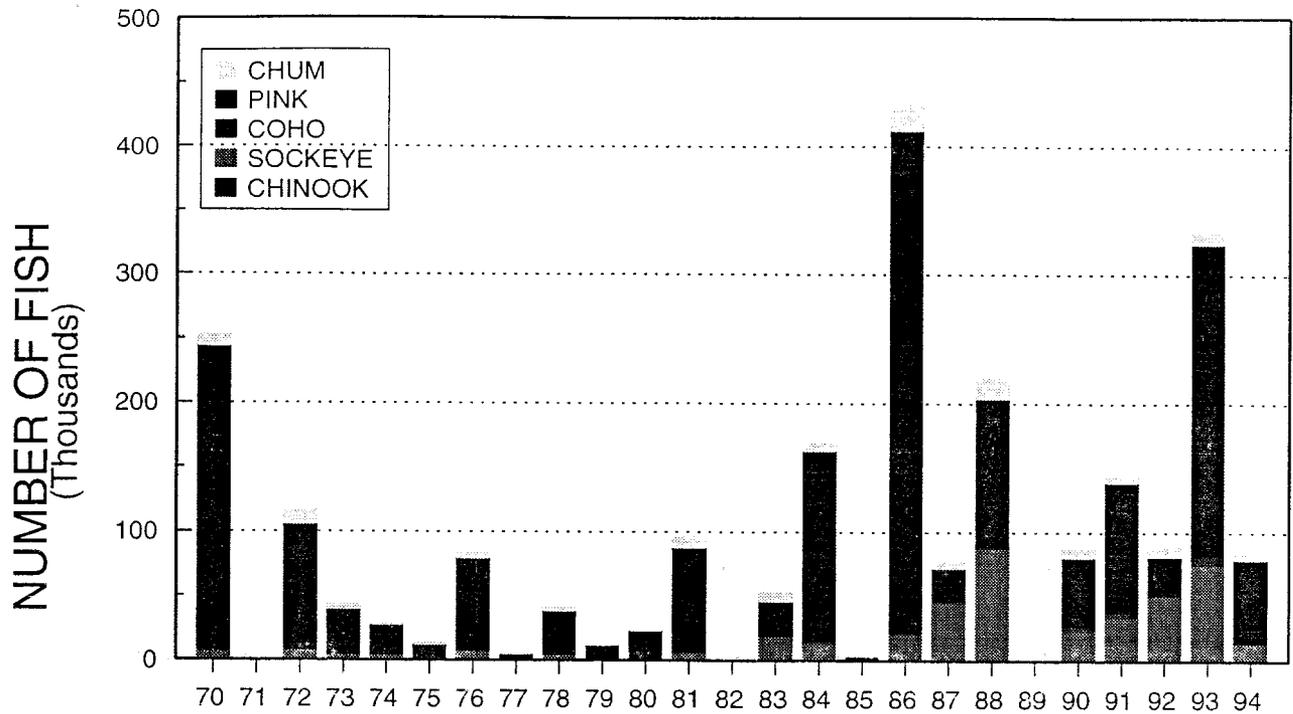
CATCH WEEK	CHINOOK	SOCKEYE	COHO	PINK	CHUM
23	0	11	0	4	0
24	32	16413	0	366	289
25	99	65543	25	5054	1593
26	56	60506	49	5776	3795
27	17	18466	1	3938	1761
28	115	15775	87	5182	2928
29	217	33429	684	11013	7315
30	65	15774	829	16610	5436
31	50	4072	1031	26268	6442
32	51	1611	1434	70615	8418
33	74	1038	1540	44865	3927
34	5	203	578	8325	1077
35	0	53	151	197	502
36	0	317	288	609	224
37	0	11	84	4	150
38	0	5	6	0	0
39	0	0	0	0	0
40	0	0	0	0	0
41	0	0	0	0	0
Total	781	233228	6787	198825	43857



Appendix D.1. North Shelikof Sections harvest and landings by species, by year July 6-25, 1970-1994.

NORTH SHELIKOF SECTIONS, JULY 6-25.

YEAR	LANDINGS	CHINOOK	SOCKEYE	COHO	PINK	CHUM
70	158	8	2,917	892	177,260	25,354
71	3	0	1,449	1	54	2
72	119	59	8,785	379	67,849	12,746
73	48	11	909	20	27,419	8,475
74	19	0	2,357	36	7,657	338
75	7	0	264	1	1,046	230
76	42	11	894	39	11,399	261
77	0	0	0	0	0	0
78	27	3	1,580	3	22,159	6,624
79	59	16	5,238	22	32,228	8,634
80	22	2	6,122	4	10,625	29,661
81	223	7	6,087	80	25,473	141,572
82	12	1	2,420	2	18,493	1,165
83	39	22	13,534	59	9,544	8,753
84	56	21	3,601	59	18,991	18,574
85	14	4	3,934	42	1,460	1,051
86	24	48	9,252	269	11,879	13,405
87	56	281	15,563	376	7,878	8,839
88	672	5,198	391,919	5,922	144,373	101,288
89	0	0	0	0	0	0
90	134	139	57,714	3,911	18,607	19,412
91	76	2,467	18,807	2,707	44,835	3,792
92	134	945	128,368	3,065	24,305	12,009
93	164	1,216	78,415	1,954	75,635	4,247
94	99	164	38,840	2,368	51,969	10,469

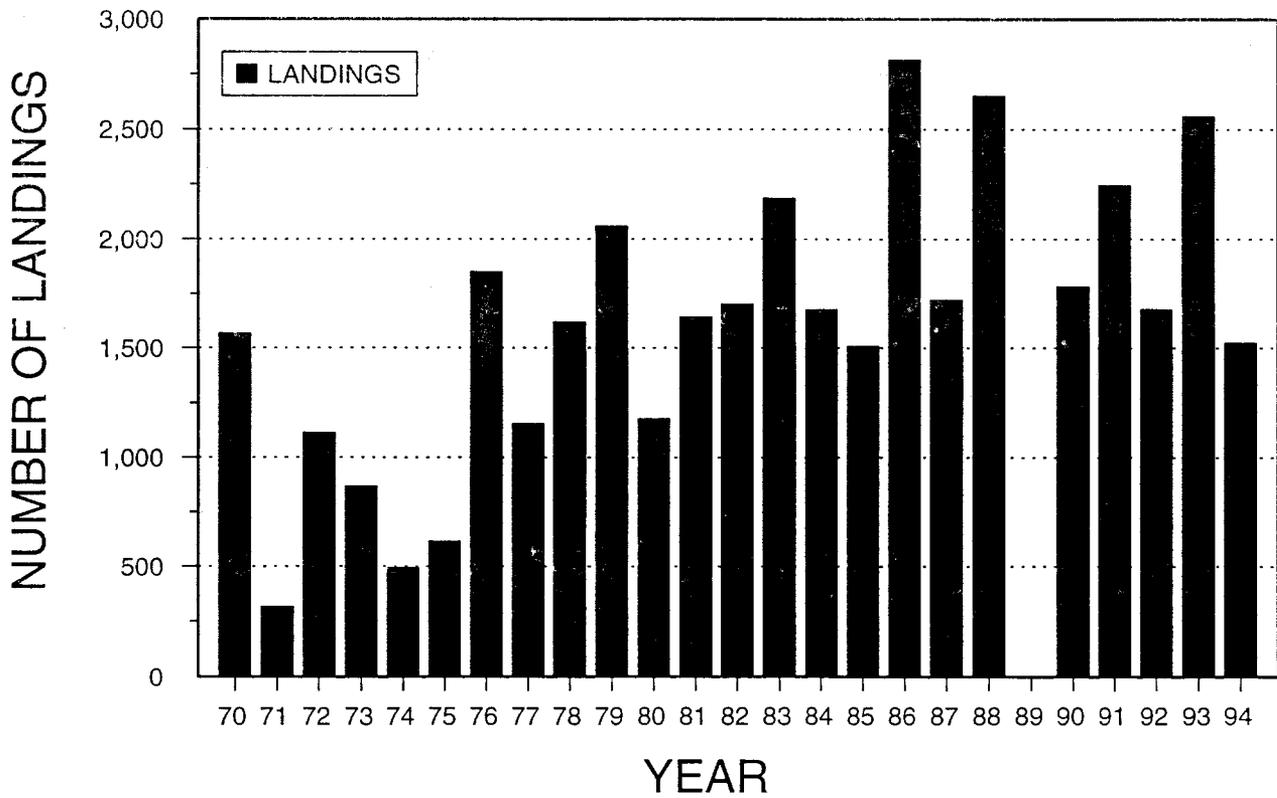
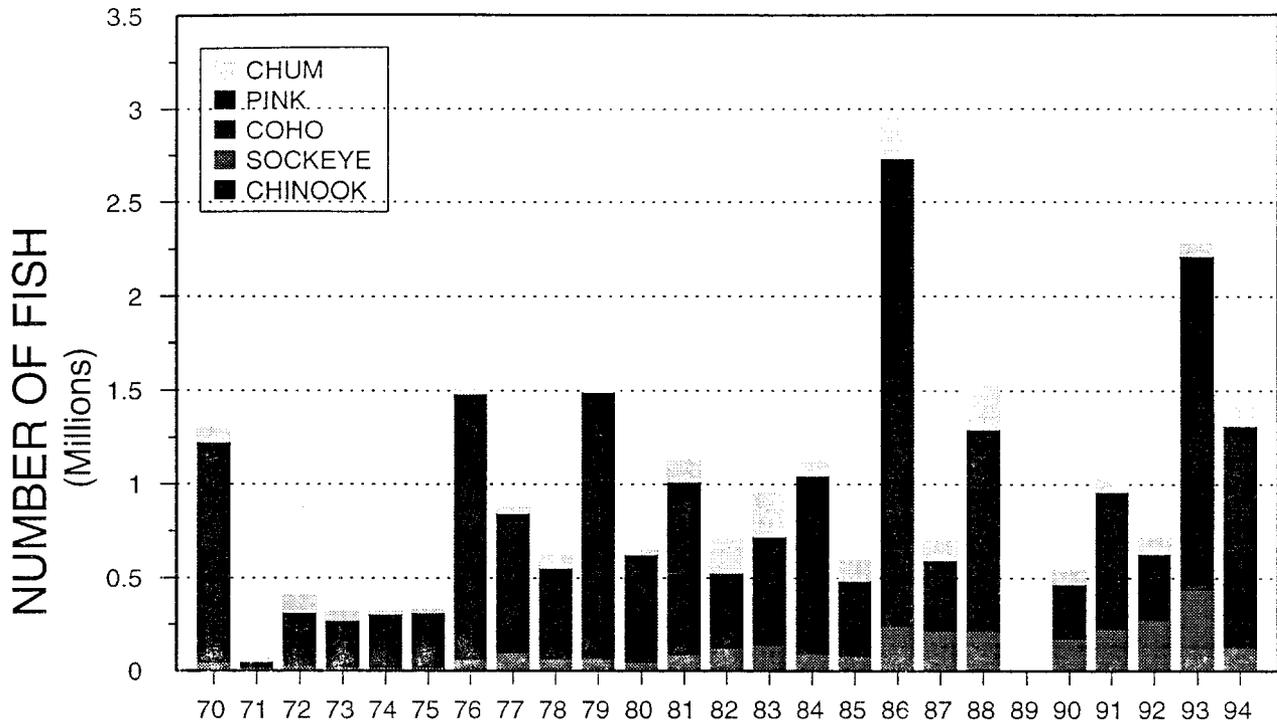


Appendix D.2. Southwest Afognak Section harvest and landings by species, by year July 6-25, 1970-1994.

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SOUTHWEST AFOGNAK SECTION, JULY 6-25.

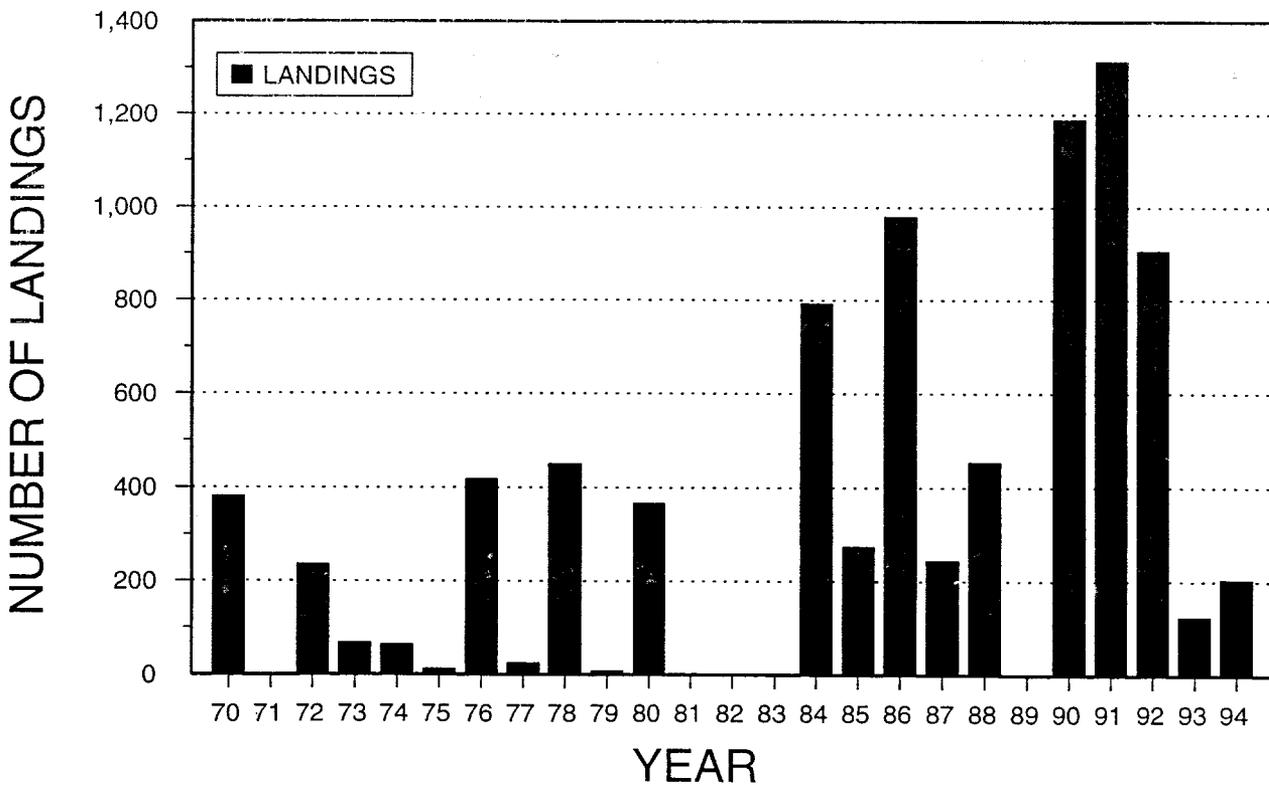
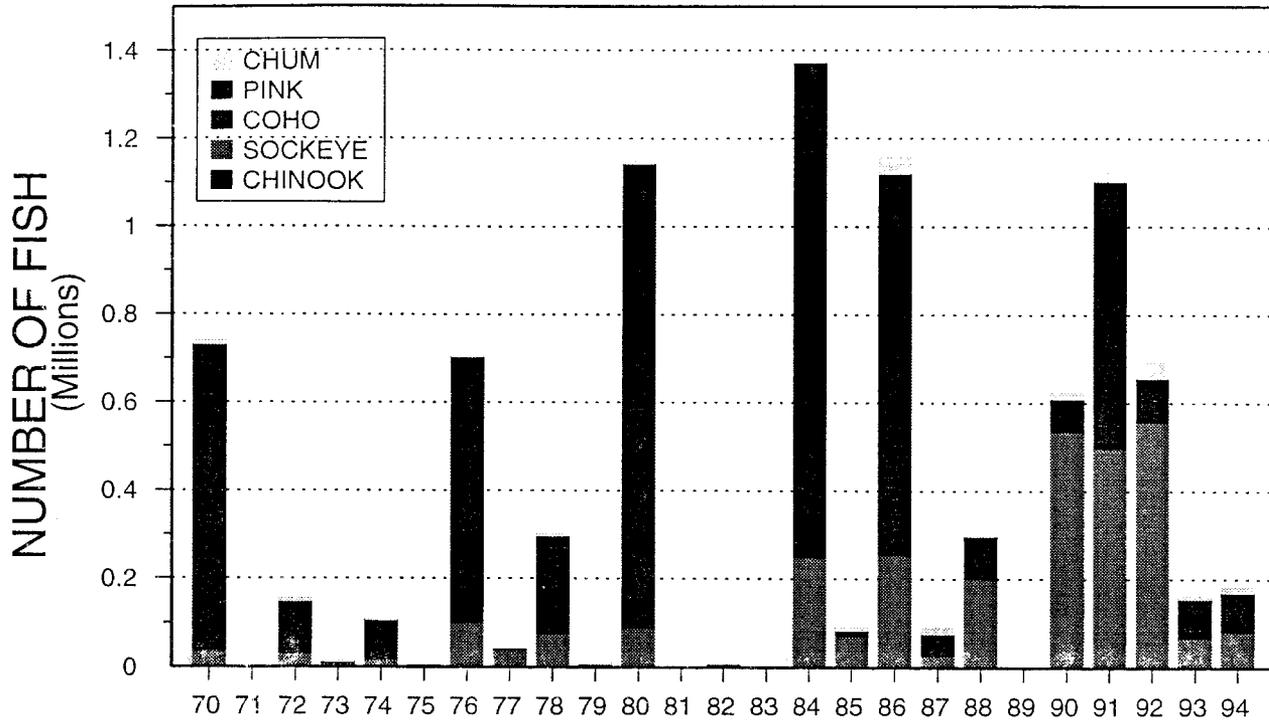
YEAR	LANDINGS	CHINOOK	SOCKEYE	COHO	PINK	CHUM
70	187	79	6,829	1,023	236,493	7,427
71	0	0	0	0	0	0
72	160	68	8,204	189	97,425	9,795
73	67	11	4,292	74	35,023	3,563
74	57	25	3,746	32	23,718	791
75	34	3	2,405	15	9,772	856
76	98	33	7,297	135	71,749	3,914
77	9	1	730	50	4,571	437
78	47	3	4,172	45	33,946	2,436
79	24	10	1,435	371	10,102	299
80	8	1	286	3	22,906	347
81	72	13	6,036	62	81,696	8,493
82	2	3	241	1	147	13
83	138	48	18,961	692	26,553	6,225
84	136	63	14,111	1,346	147,616	5,717
85	21	16	1,740	16	2,329	370
86	198	82	20,680	1,088	390,770	19,229
87	74	12	45,869	427	25,972	3,973
88	256	338	87,209	1,350	114,980	15,929
89	0	0	0	0	0	0
90	142	277	22,944	3,605	53,752	6,036
91	148	309	34,183	3,586	100,680	4,043
92	147	304	50,576	605	30,018	6,826
93	223	858	74,005	7,100	242,923	7,419
94	78	355	13,560	1,002	64,321	3,090



Appendix D.3. Northwest Kodiak District harvest and landings by species, by year July 6-25, 1970-1994.

NORTHWEST KODIAK DISTRICT, JULY 6-25.

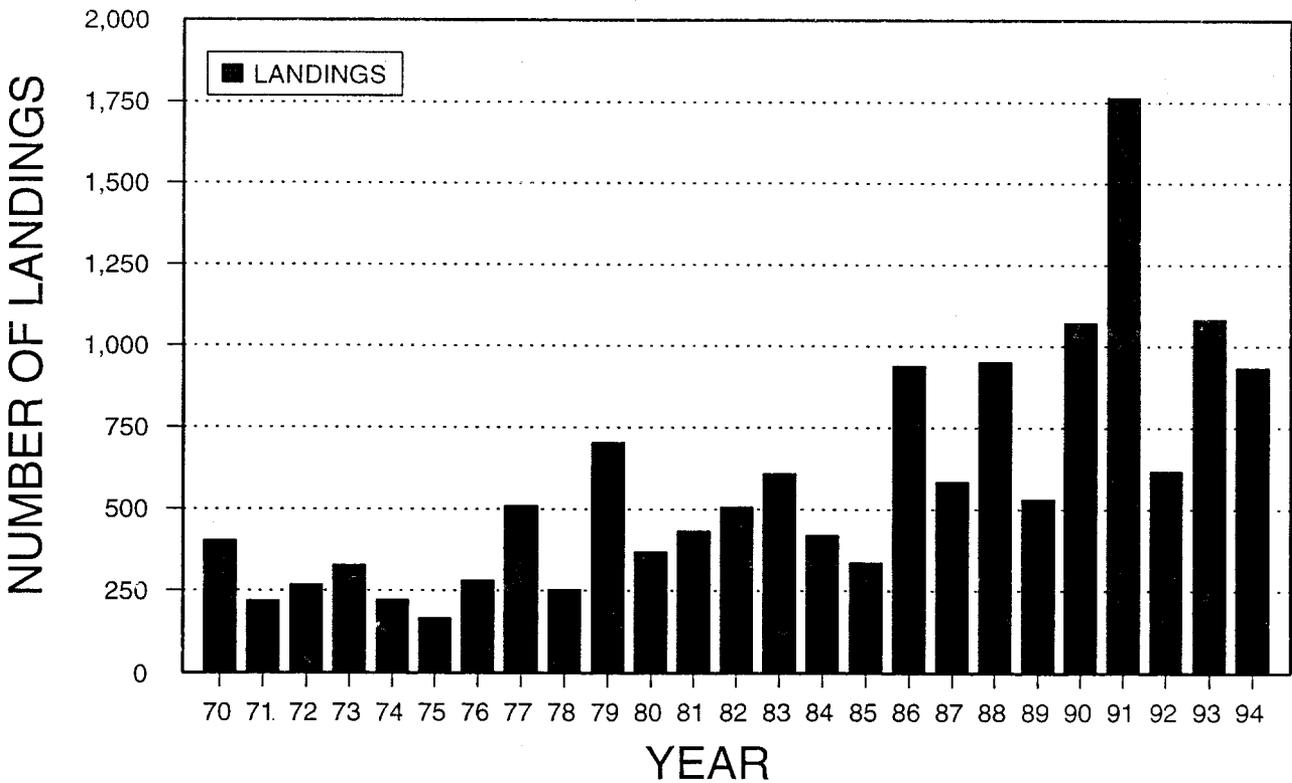
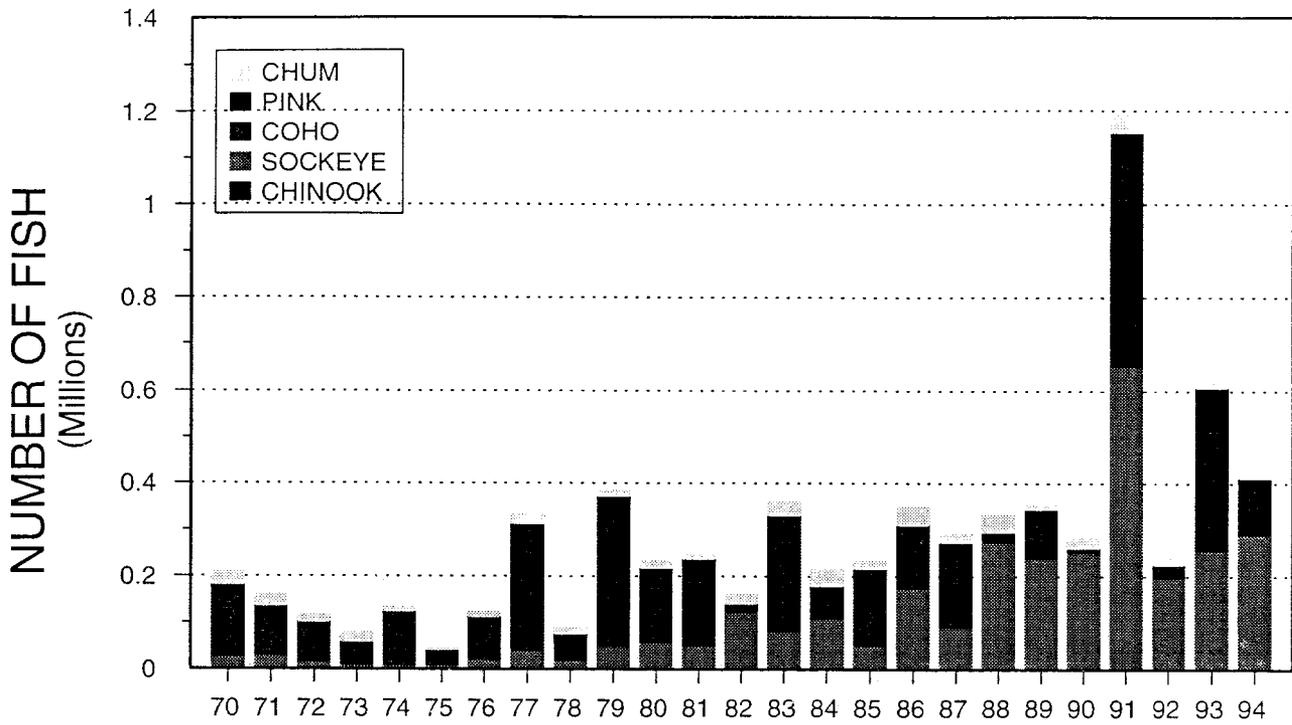
YEAR	LANDINGS	CHINOOK	SOCKEYE	COHO	PINK	CHUM
70	1,567	204	45,282	2,708	1,177,889	72,779
71	319	52	20,354	94	33,342	11,767
72	1,112	266	29,600	572	288,356	86,735
73	865	53	22,768	428	248,999	45,499
74	494	26	23,118	190	285,158	12,030
75	614	17	22,103	240	293,334	10,401
76	1,850	103	61,129	434	1,425,732	24,544
77	1,153	49	97,853	698	750,545	27,114
78	1,619	272	65,036	696	489,125	67,360
79	2,058	307	64,205	8,042	1,424,445	29,104
80	1,176	98	48,284	2,800	576,427	20,842
81	1,643	140	90,278	1,103	925,560	113,942
82	1,703	161	122,632	3,292	402,765	178,478
83	2,185	969	142,765	5,122	573,882	231,227
84	1,677	899	91,552	5,779	952,519	73,176
85	1,508	550	80,850	2,337	403,232	107,722
86	2,813	291	242,332	9,967	2,483,879	207,839
87	1,721	251	213,973	4,206	382,018	99,731
88	2,652	1,542	216,579	8,667	1,070,377	228,796
89	3	0	9	0	1,002	34
90	1,783	1,492	173,052	6,472	288,422	75,102
91	2,244	1,069	222,657	11,707	727,246	72,323
92	1,679	975	271,344	8,416	352,549	82,419
93	2,559	2,224	438,423	25,967	1,753,763	64,072
94	1,525	1,491	126,116	13,145	1,176,929	107,011



Appendix D.4. Southwest Kodiak District harvest and landings by species, by year July 6-25, 1970-1994.

SOUTHWEST KODIAK DISTRICT, JULY 6-25.

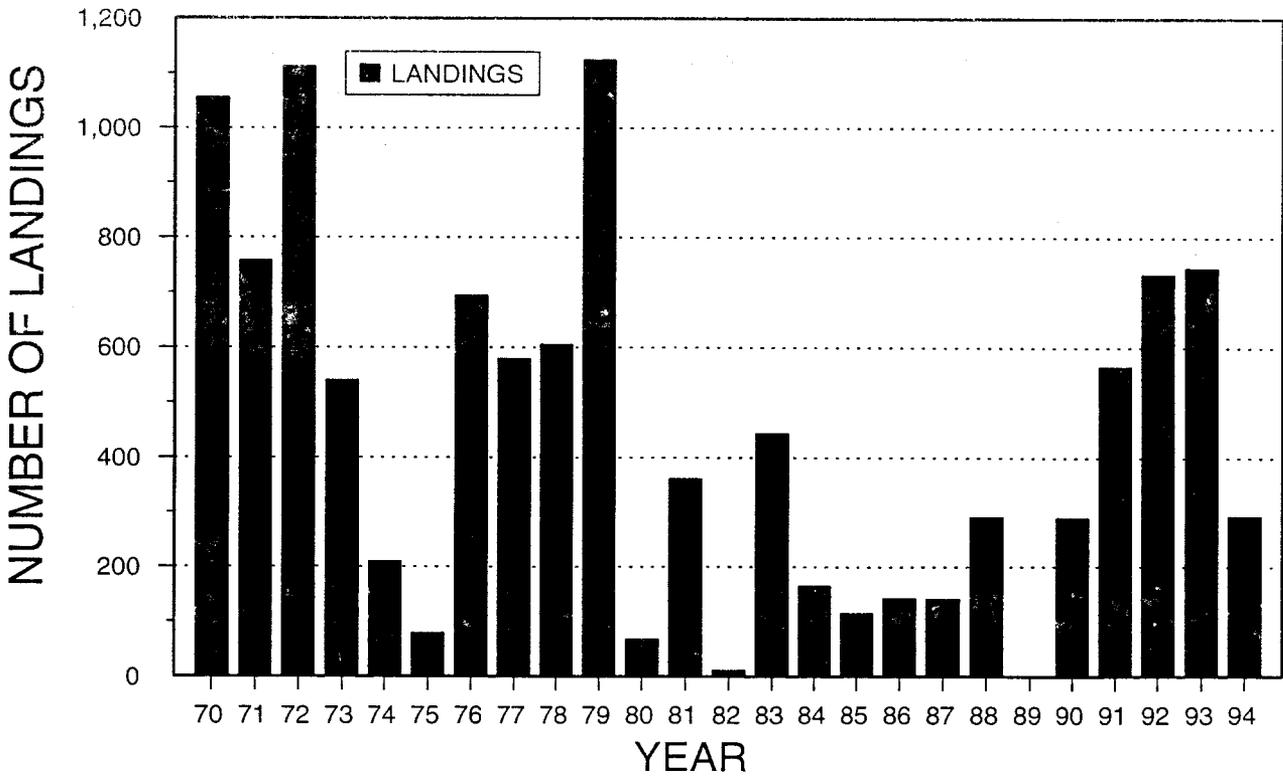
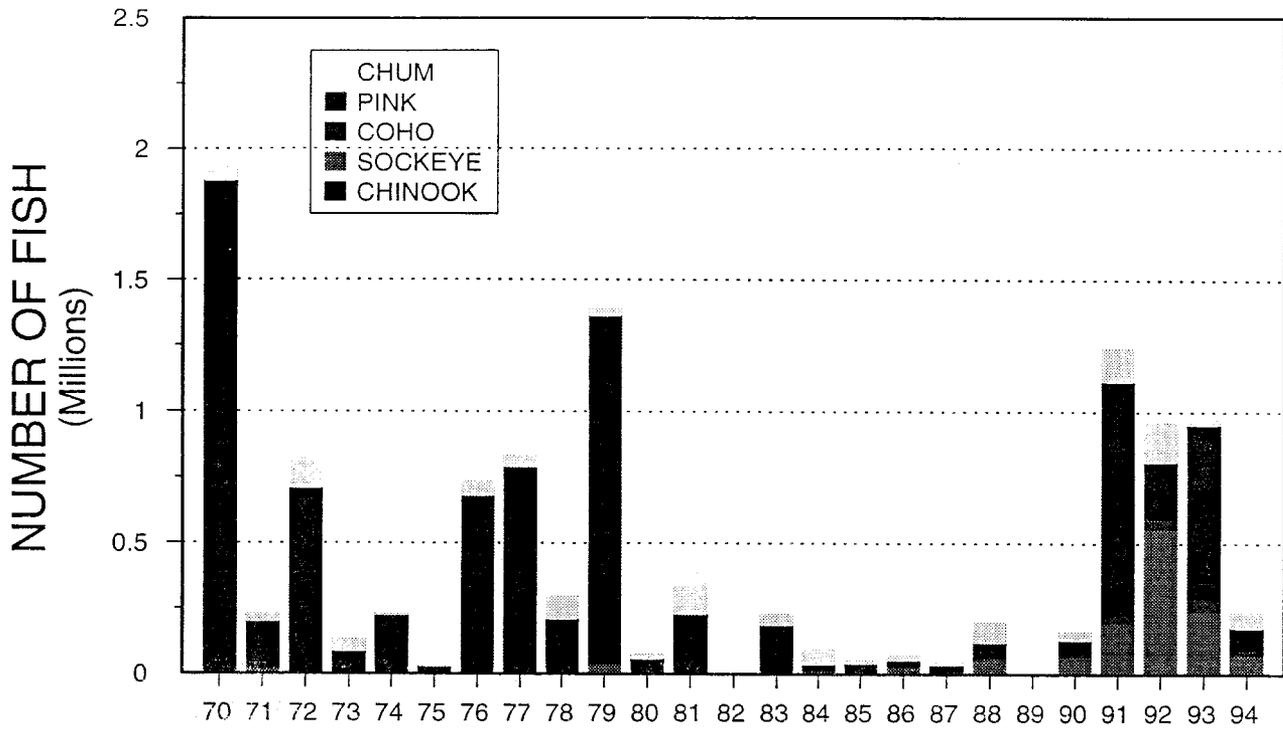
YEAR	LANDINGS	CHINOOK	SOCKEYE	COHO	PINK	CHUM
70	381	20	36,581	729	695,037	5,736
71	0	0	0	0	0	0
72	235	38	29,779	49	119,364	4,125
73	68	8	9,849	2	3,239	335
74	64	4	16,729	20	90,426	419
75	12	2	1,370	7	2,049	66
76	417	32	100,572	73	604,217	2,650
77	24	2	39,663	0	304	1
78	449	644	74,683	61	221,698	3,505
79	8	0	1,404	52	6,771	318
80	366	12	88,087	267	1,055,108	4,228
81	0	0	0	0	0	0
82	1	0	67	0	4,940	0
83	0	0	0	0	0	0
84	793	241	246,684	4,718	1,121,334	8,935
85	273	37	71,584	408	13,214	4,214
86	979	331	253,070	4,534	862,299	34,863
87	244	212	26,036	247	50,974	10,646
88	453	390	200,189	302	96,648	12,550
89	0	0	0	0	0	0
90	1,188	687	533,566	1,414	74,739	11,712
91	1,314	1,392	493,918	4,588	604,424	19,985
92	906	433	556,365	905	99,888	34,580
93	123	404	66,566	518	90,208	5,033
94	203	675	80,925	750	88,390	12,065



Appendix D.5. Alitak Bay District harvest and landings by species, by year July 6-25, 1970-1994.

ALITAK BAY DISTRICT, JULY 6-25.

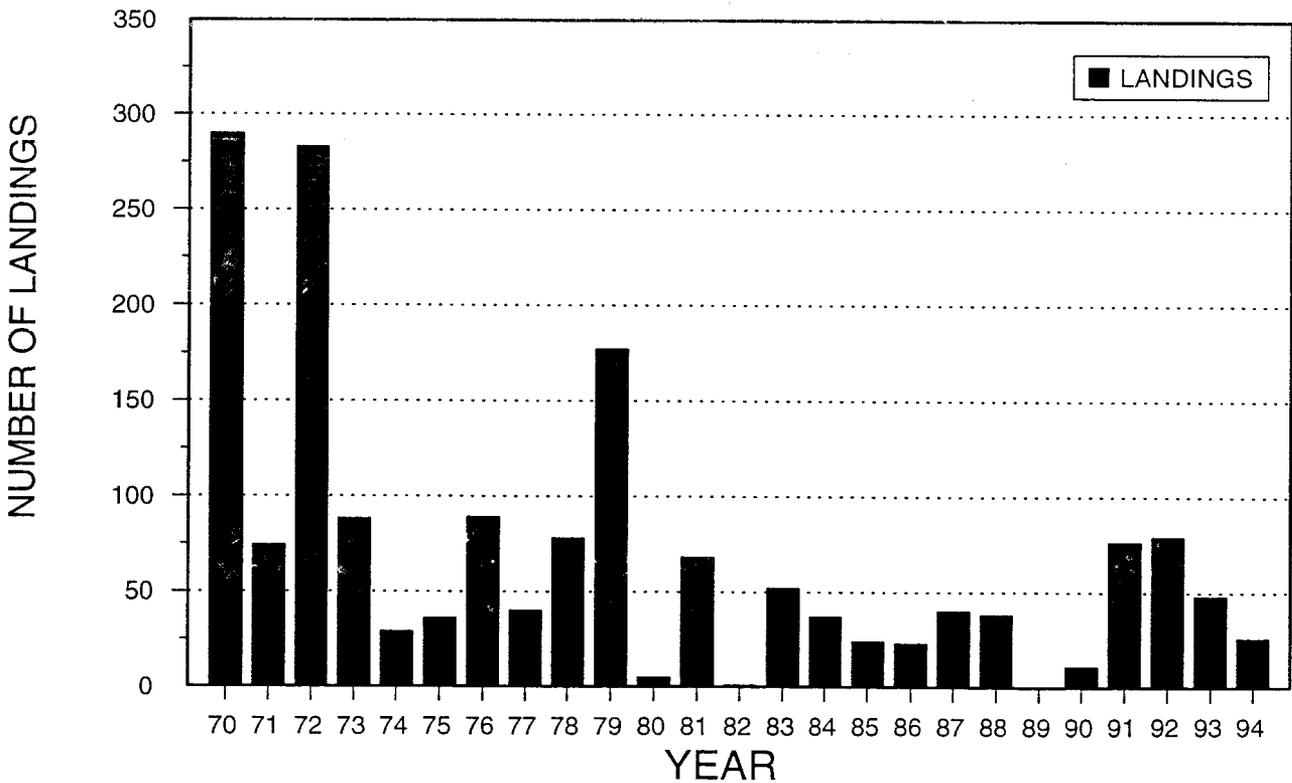
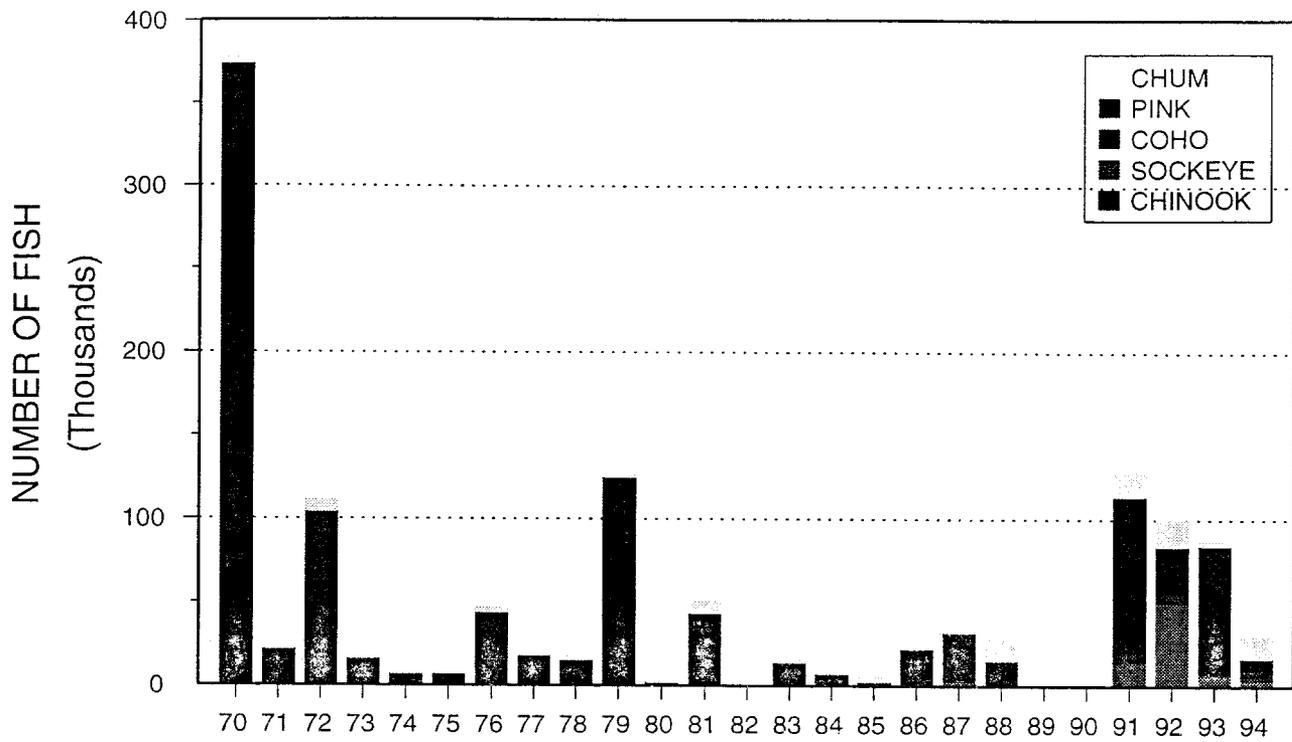
YEAR	LANDINGS	CHINOOK	SOCKEYE	COHO	PINK	CHUM
70	403	0	26,503	188	155,157	25,406
71	220	14	28,971	93	107,728	22,899
72	269	9	15,208	272	87,234	12,690
73	327	4	10,239	111	49,868	19,085
74	222	13	8,742	14	116,684	6,838
75	165	0	9,178	21	33,373	1,167
76	281	8	21,181	44	91,506	8,610
77	509	10	39,306	197	273,767	18,994
78	253	19	18,477	7	58,659	12,296
79	703	63	48,991	429	323,533	10,793
80	368	8	57,518	272	161,008	13,716
81	432	2	50,398	273	187,377	9,317
82	506	14	124,044	47	17,399	17,677
83	608	74	80,914	955	250,200	26,173
84	419	72	108,116	662	70,670	34,423
85	336	45	51,369	683	164,810	14,691
86	939	78	172,616	1,922	136,525	39,433
87	583	39	90,752	313	183,140	15,981
88	951	122	274,237	330	21,059	37,394
89	529	33	238,199	14	107,668	8,065
90	1,071	137	252,162	426	10,049	19,353
91	1,764	414	652,681	1,435	499,521	38,944
92	615	152	196,514	845	28,344	15,106
93	1,083	596	255,881	2,791	348,596	7,713
94	933	343	289,577	981	121,069	14,325



Appendix D.6. Eastside Kodiak District harvest and landings by species, by year July 6-25, 1970-1994.

EASTSIDE KODIAK DISTRICT, JULY 6-25.

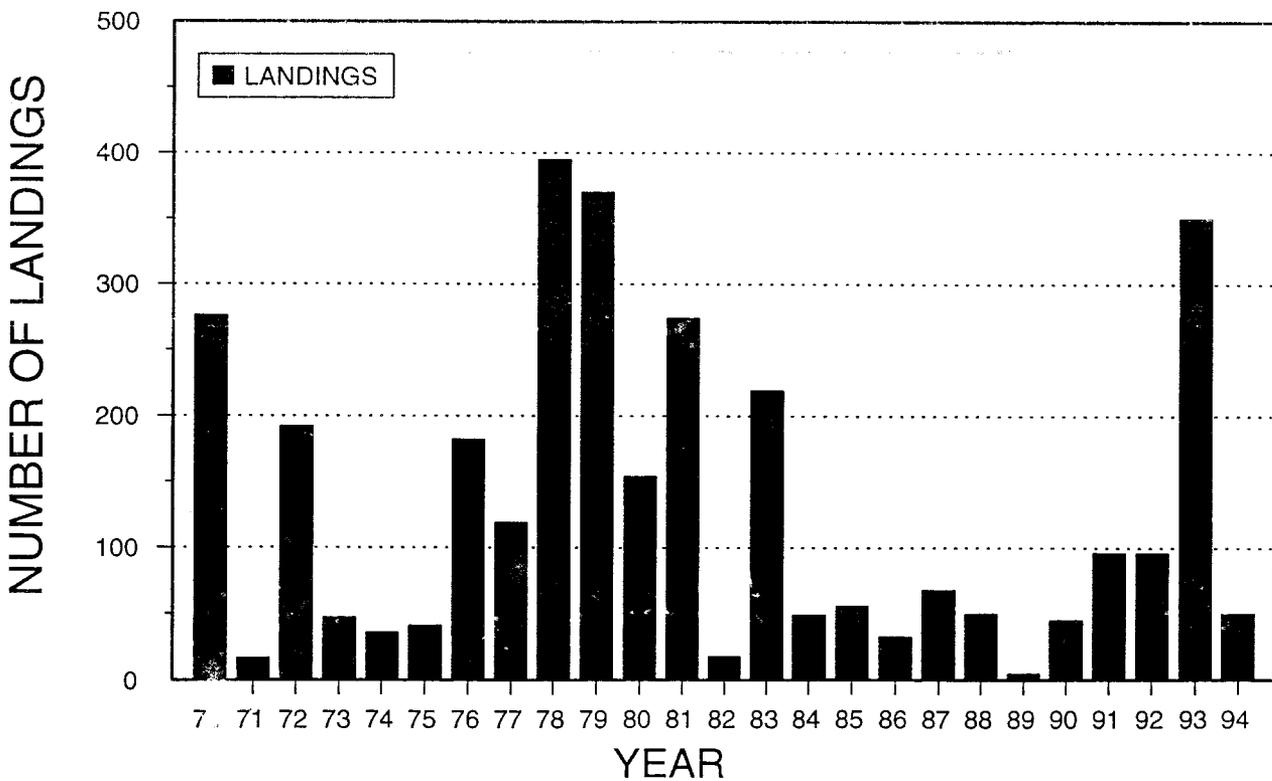
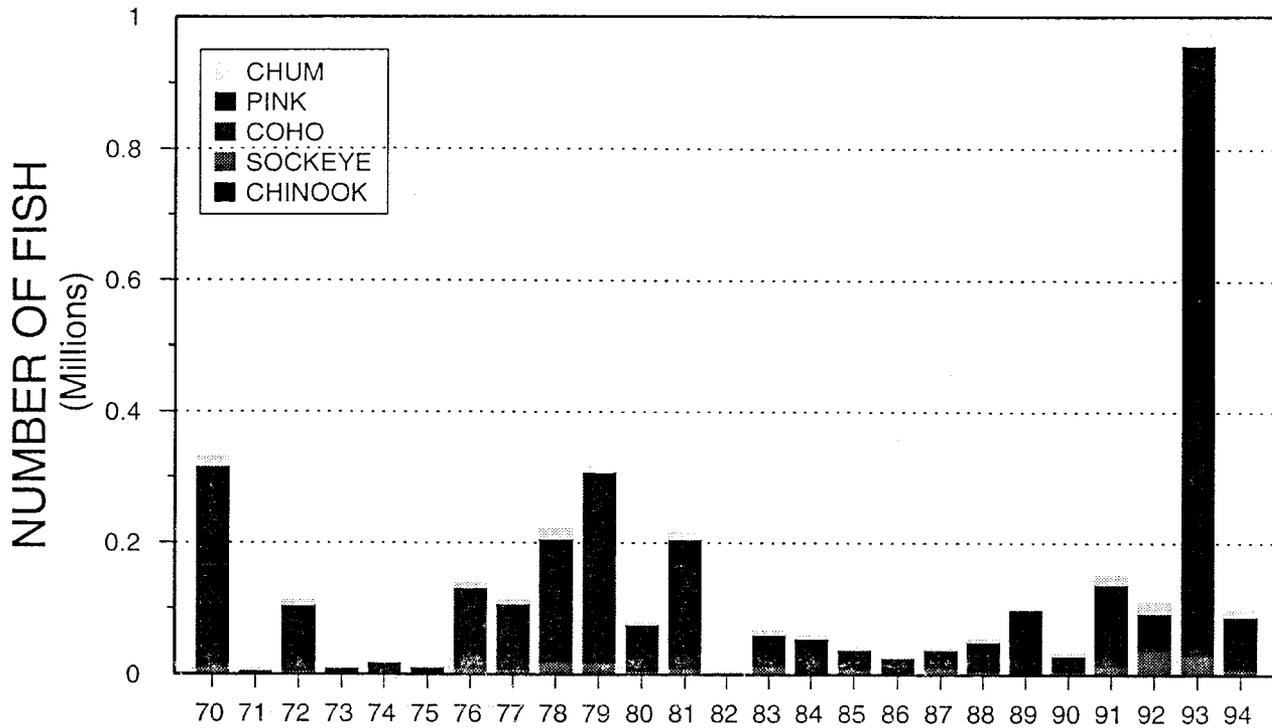
YEAR	LANDINGS	CHINOOK	SOCKEYE	COHO	PINK	CHUM
70	1,056	73	11,444	537	1,866,875	47,339
71	758	277	20,596	227	179,126	25,593
72	1,112	169	8,811	887	700,962	109,780
73	540	466	3,182	239	84,553	44,301
74	210	68	3,530	40	222,101	4,406
75	78	2	1,329	2	27,884	705
76	694	120	10,208	691	669,943	52,072
77	579	16	4,092	202	786,591	40,091
78	605	115	9,315	51	201,634	82,929
79	1,124	676	35,727	3,451	1,322,468	24,302
80	68	5	1,198	20	58,110	19,230
81	361	43	7,746	1,382	220,392	114,543
82	11	7	1,314	105	476	3,040
83	444	210	10,047	577	176,793	42,464
84	165	196	14,687	146	24,861	51,450
85	115	71	12,137	275	28,922	10,914
86	142	178	30,184	278	23,208	14,508
87	141	302	11,198	361	26,175	9,822
88	291	1,413	62,625	5,856	51,896	77,601
89	0	0	0	0	0	0
90	290	1,414	68,693	14,212	47,308	32,507
91	565	2,817	196,917	31,700	886,789	120,056
92	733	1,565	555,240	36,919	217,791	145,512
93	745	6,429	236,578	51,505	659,028	16,416
94	293	732	76,853	17,290	85,226	53,659



Appendix D.7. Northeast Kodiak District harvest and landings by species, by year July 6-25, 1970-1994.

NORTHEAST KODIAK DISTRICT, JULY 6-25.

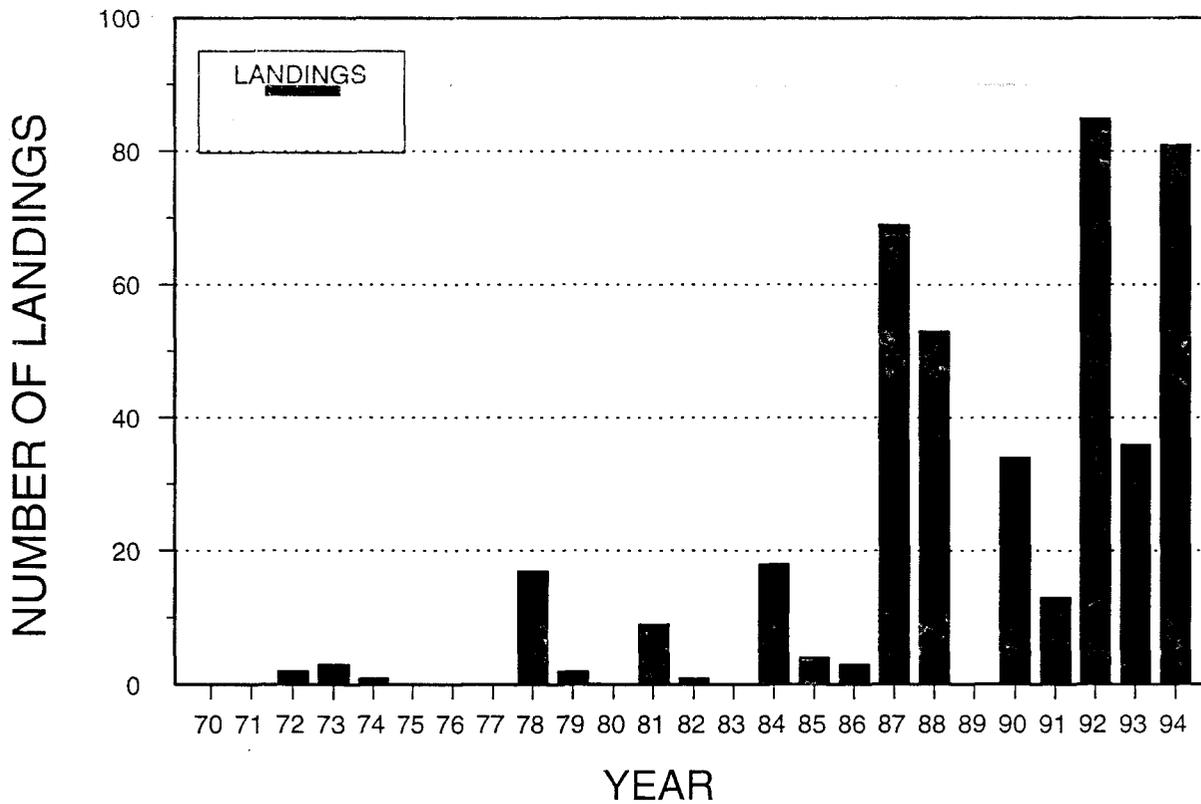
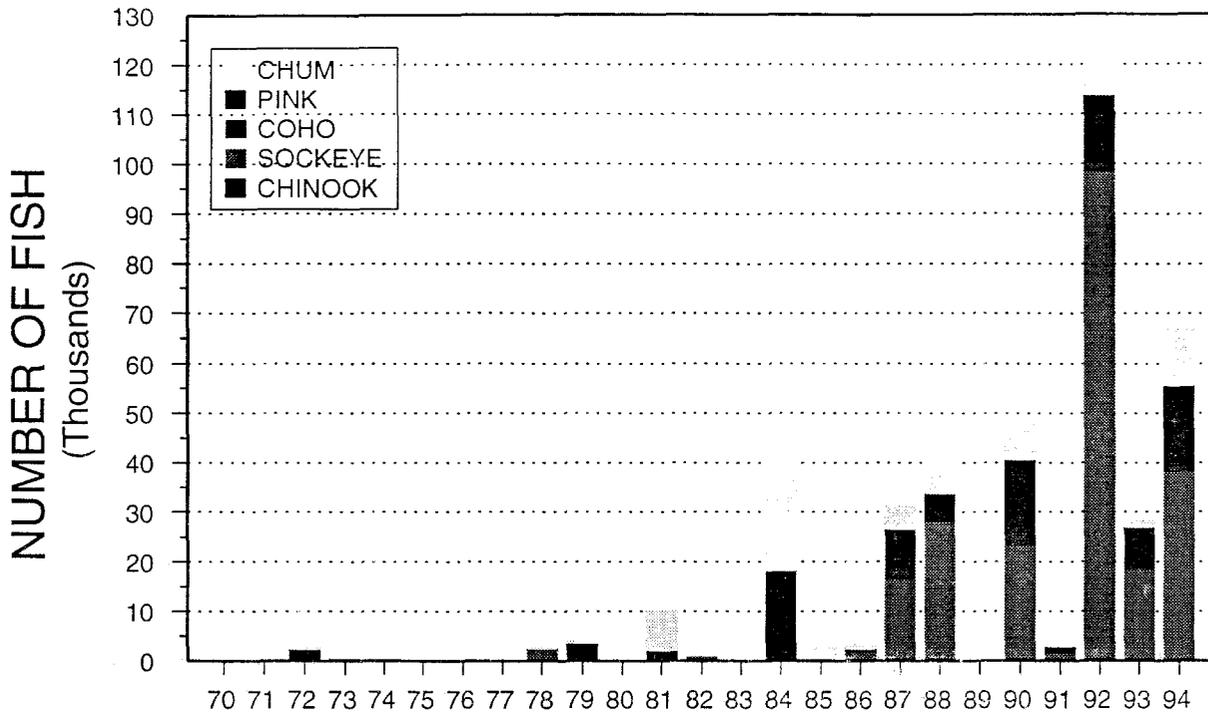
YEAR	LANDINGS	CHINOOK	SOCKEYE	COHO	PINK	CHUM
70	290	65	311	122	373,742	2,776
71	74	6	231	4	21,708	518
72	283	38	426	325	103,522	6,479
73	88	19	213	5	16,211	1,423
74	29	9	307	0	6,890	118
75	36	1	237	1	6,052	31
76	89	74	51	3	43,939	2,481
77	40	0	5	1	18,335	1,043
78	78	253	217	59	15,194	3,406
79	177	34	384	317	124,339	874
80	5	15	0	0	2,177	125
81	68	22	196	23	43,307	6,836
82	1	0	39	0	0	0
83	52	75	888	33	13,306	861
84	37	7	1,169	38	6,138	1,339
85	24	4	345	6	2,376	1,878
86	23	0	1,606	12	20,789	1,093
87	40	13	2,596	309	29,272	1,090
88	38	48	263	29	15,094	12,566
89	0	0	0	0	0	0
90	11	3	5	0	892	642
91	76	228	14,273	6,332	93,066	15,023
92	79	149	49,835	6,325	27,622	15,910
93	48	37	6,636	1,414	76,646	1,721
94	26	296	3,301	2,835	10,890	12,799



Appendix D.8. Remaining Afognak Sections harvest and landings by species, by year July 6-25, 1970-1994.

REMAINING AFOGNAK SECTIONS, JULY 6-25.

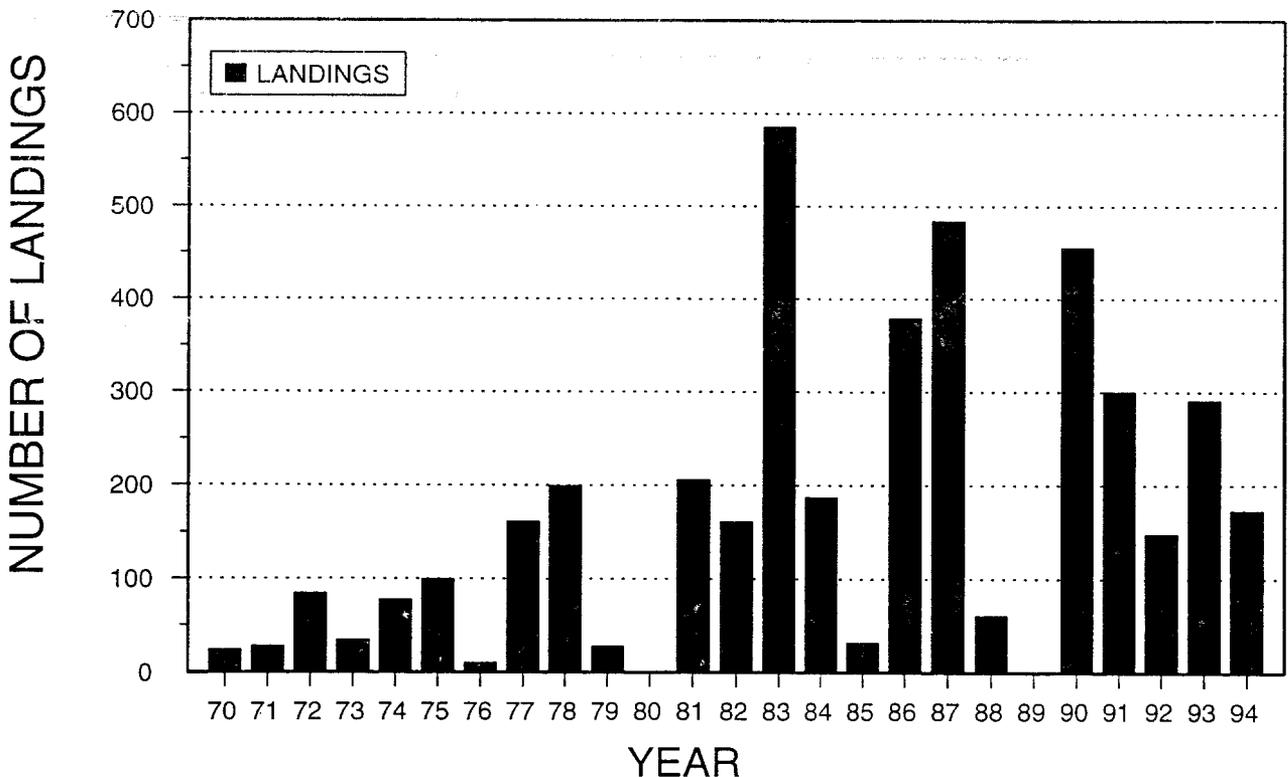
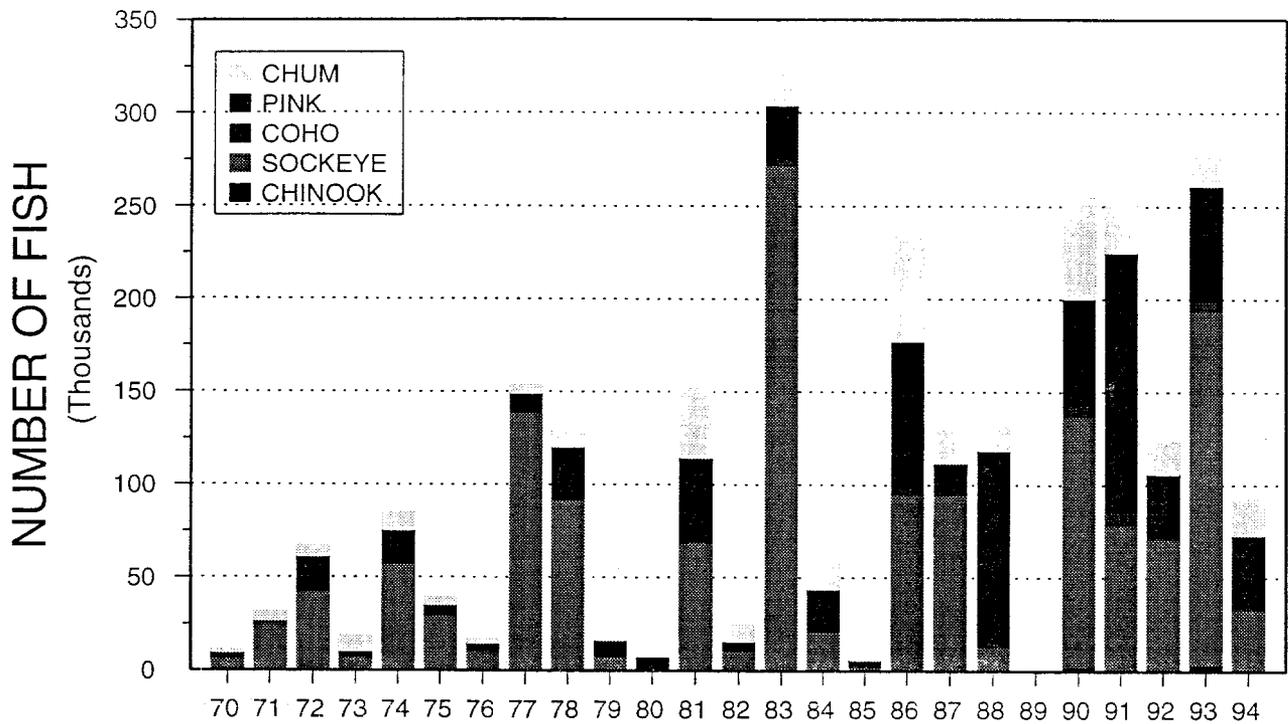
YEAR	LANDINGS	CHINOOK	SOCKEYE	COHO	PINK	CHUM
70	276	15	10,186	2,969	303,670	14,417
71	17	3	1,947	3	4,221	1,252
72	192	40	4,279	537	100,281	6,588
73	47	1	1,613	55	8,509	2,737
74	36	1	2,427	27	15,761	196
75	41	6	2,332	259	8,528	1,187
76	182	45	8,831	746	122,040	5,893
77	119	5	7,445	188	99,690	5,305
78	395	170	17,958	1,617	186,824	14,939
79	370	16	16,178	4,066	288,674	6,951
80	154	14	5,326	457	70,153	2,931
81	274	10	8,697	920	196,829	10,364
82	18	21	1,026	58	404	118
83	219	273	11,789	661	48,059	4,515
84	49	5	3,377	523	51,279	2,616
85	56	22	8,355	1,840	28,413	2,421
86	33	5	3,891	204	21,547	1,053
87	68	14	10,812	2,250	25,023	2,440
88	50	11	5,373	853	43,917	3,613
89	5	0	0	0	97,065	0
90	45	49	5,933	459	22,880	2,968
91	96	121	12,203	3,152	122,479	12,104
92	96	391	36,816	4,126	53,153	14,586
93	350	455	29,291	10,923	917,197	20,739
94	50	470	7,026	3,640	77,700	7,681



Appendix D.9. Katmai and Alinchak Sections harvest and landings by species, by year July 6-25, 1970-1994.

KATMAI & ALINCHAK SECTIONS, JULY 6-25.

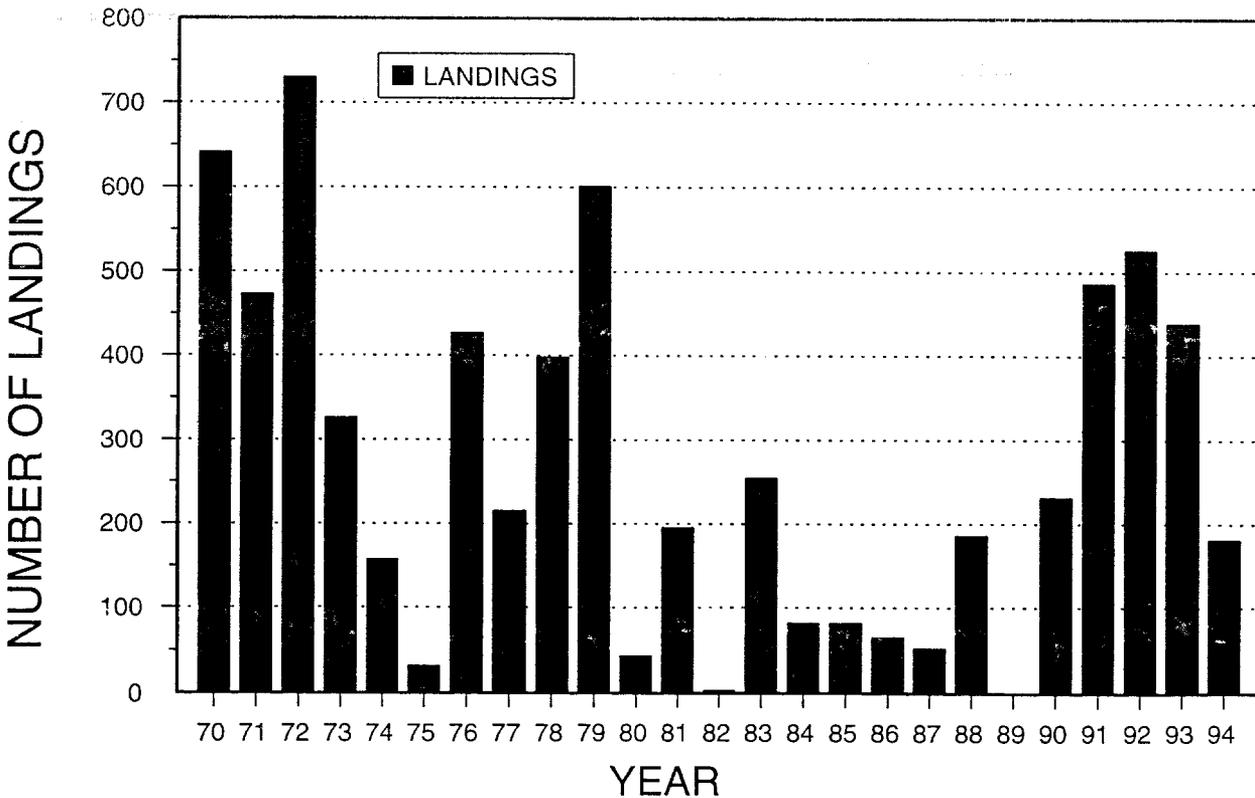
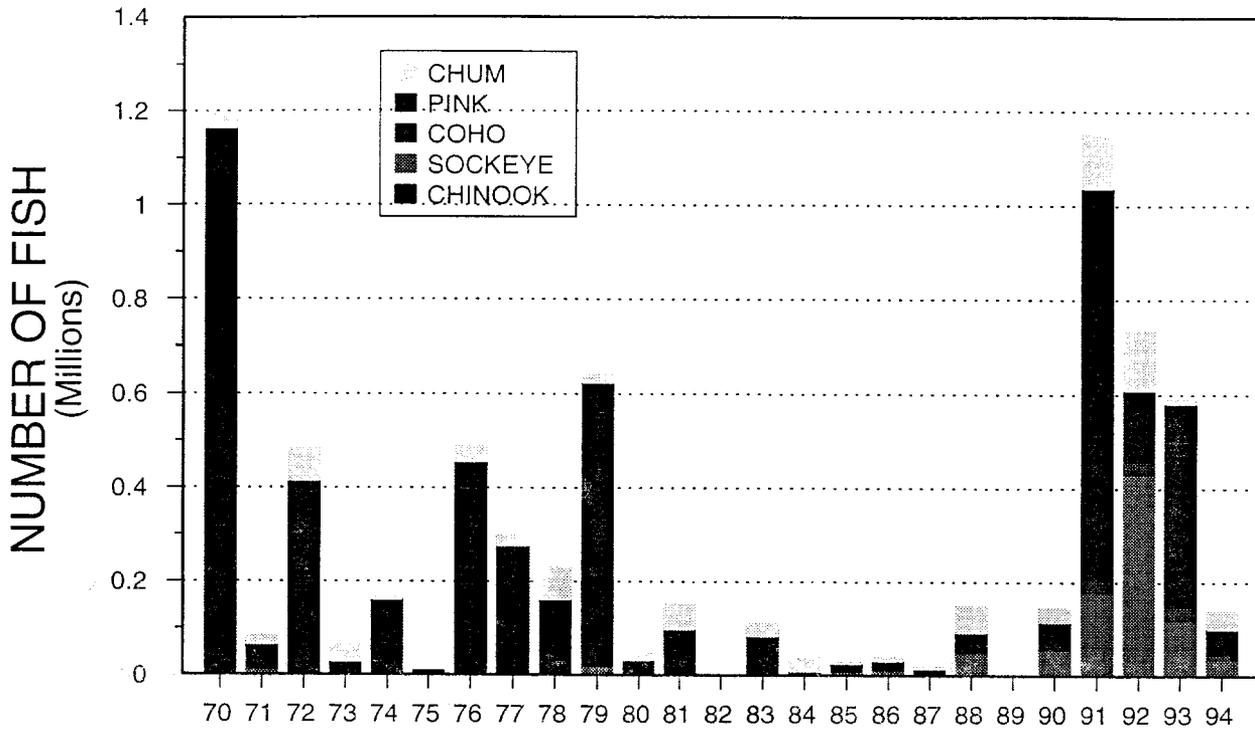
YEAR	LANDINGS	CHINOOK	SOCKEYE	COHO	PINK	CHUM
70	0	0	0	0	0	0
71	0	0	0	0	0	0
72	2	0	0	0	2,429	212
73	3	1	265	0	427	158
74	1	0	301	0	0	0
75	0	0	0	0	0	0
76	0	0	0	0	0	0
77	0	0	0	0	0	0
78	17	1	2,419	0	102	61
79	2	0	1	0	3,671	148
80	0	0	0	0	0	0
81	9	0	354	0	1,900	7,937
82	1	0	806	0	0	0
83	0	0	0	0	0	0
84	18	1	55	0	18,239	24,218
85	4	1	16	4	451	2,311
86	3	18	2,093	40	329	638
87	69	745	15,824	2,423	7,689	4,486
88	53	385	27,936	118	5,417	12,667
89	0	0	0	0	0	0
90	34	106	23,276	3,266	14,071	7,076
91	13	76	1,570	22	1,369	102
92	85	440	98,051	1,676	13,775	8,792
93	36	278	18,291	563	7,945	1,289
94	81	394	37,943	1,182	16,288	10,915



Appendix D.10. Cape Igak/Wide Bay Sections harvest and landings by species, by year July 6-25, 1970-1994.

CAPE IGVAK/WIDE BAY SECTIONS, JULY 6-25.

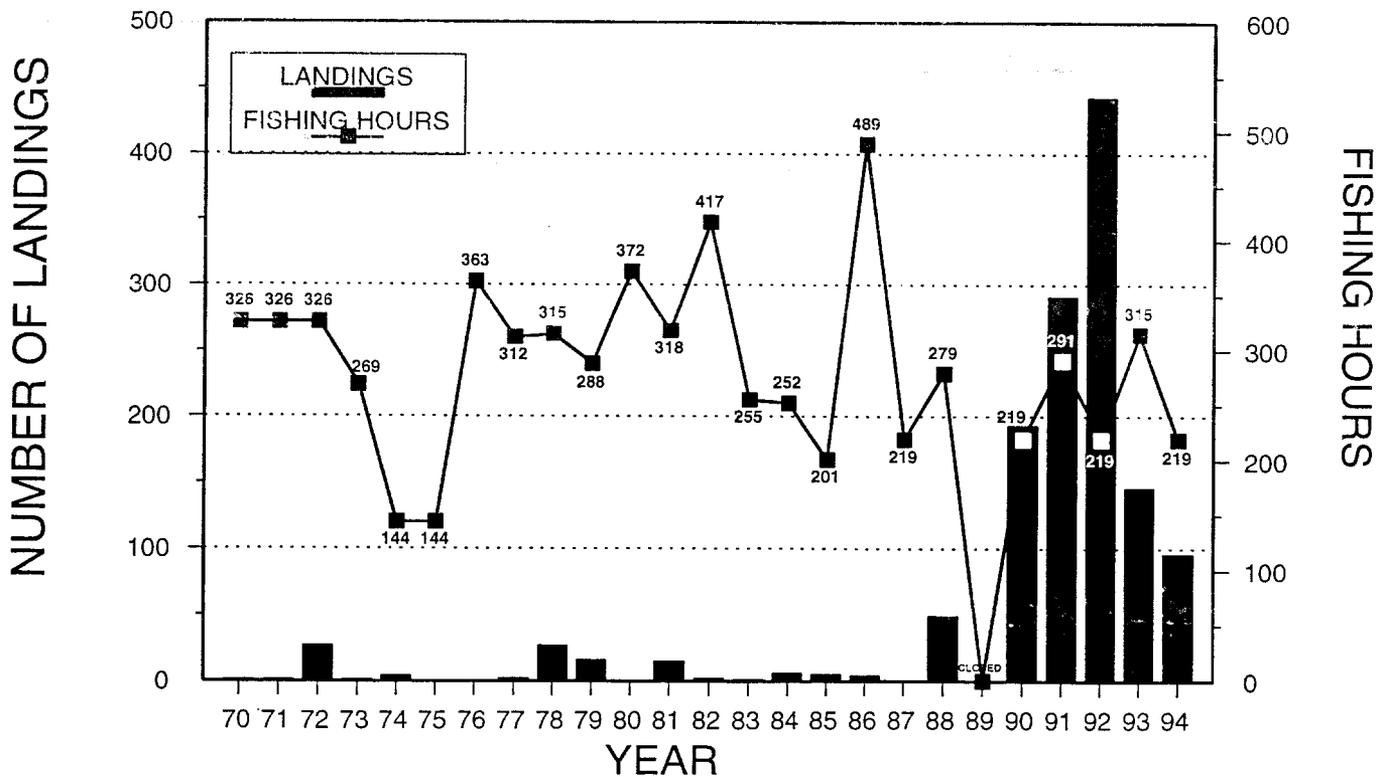
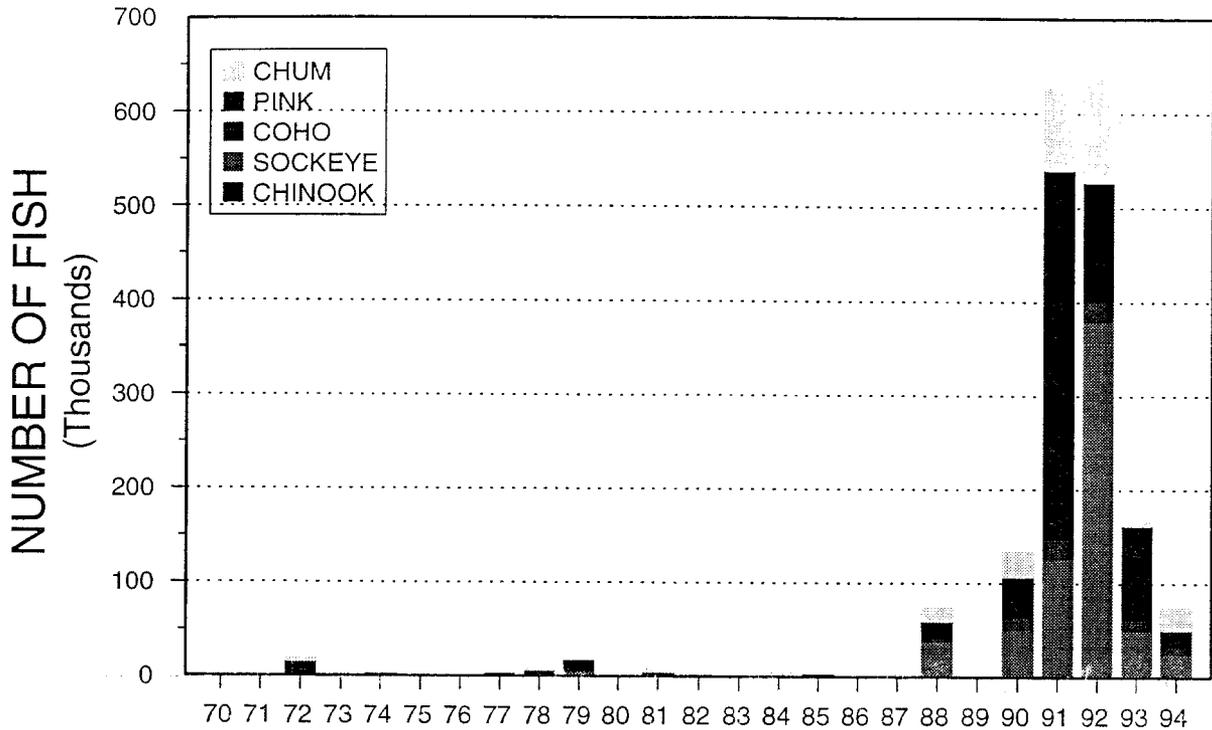
YEAR	LANDINGS	CHINOOK	SOCKEYE	COHO	PINK	CHUM
70	24	0	6,894	0	3,017	940
71	28	22	25,160	12	1,649	4,731
72	84	1	42,230	0	19,201	5,781
73	35	65	7,244	17	3,085	8,225
74	77	15	57,192	318	17,910	9,618
75	99	1	29,544	95	5,835	3,690
76	10	0	10,575	19	4,405	1,911
77	161	25	138,522	5	10,556	4,505
78	199	27	91,782	71	28,309	8,562
79	28	0	7,625	365	8,712	1,156
80	1	0	40	0	6,800	18
81	206	39	68,791	96	45,735	36,841
82	161	44	10,826	24	5,074	8,369
83	585	444	271,188	4,144	28,218	26,758
84	187	78	20,915	1,120	22,121	13,049
85	32	56	2,248	868	2,778	1,020
86	379	190	94,601	3,638	78,862	60,523
87	484	181	95,048	983	15,915	18,453
88	60	215	13,150	3,287	101,997	12,455
89	0	0	0	0	0	0
90	455	2,556	134,452	6,789	56,813	54,547
91	300	861	77,385	7,807	139,228	25,309
92	148	573	70,163	1,654	33,745	17,143
93	291	3,918	189,595	5,613	62,212	15,285
94	173	214	32,755	1,464	39,038	19,516



Appendix E.1. Sitkalidak Section harvest and landings by species, by year July 6-25, 1970-1994.

SITKALIDAK SECTION, JULY 6-25.

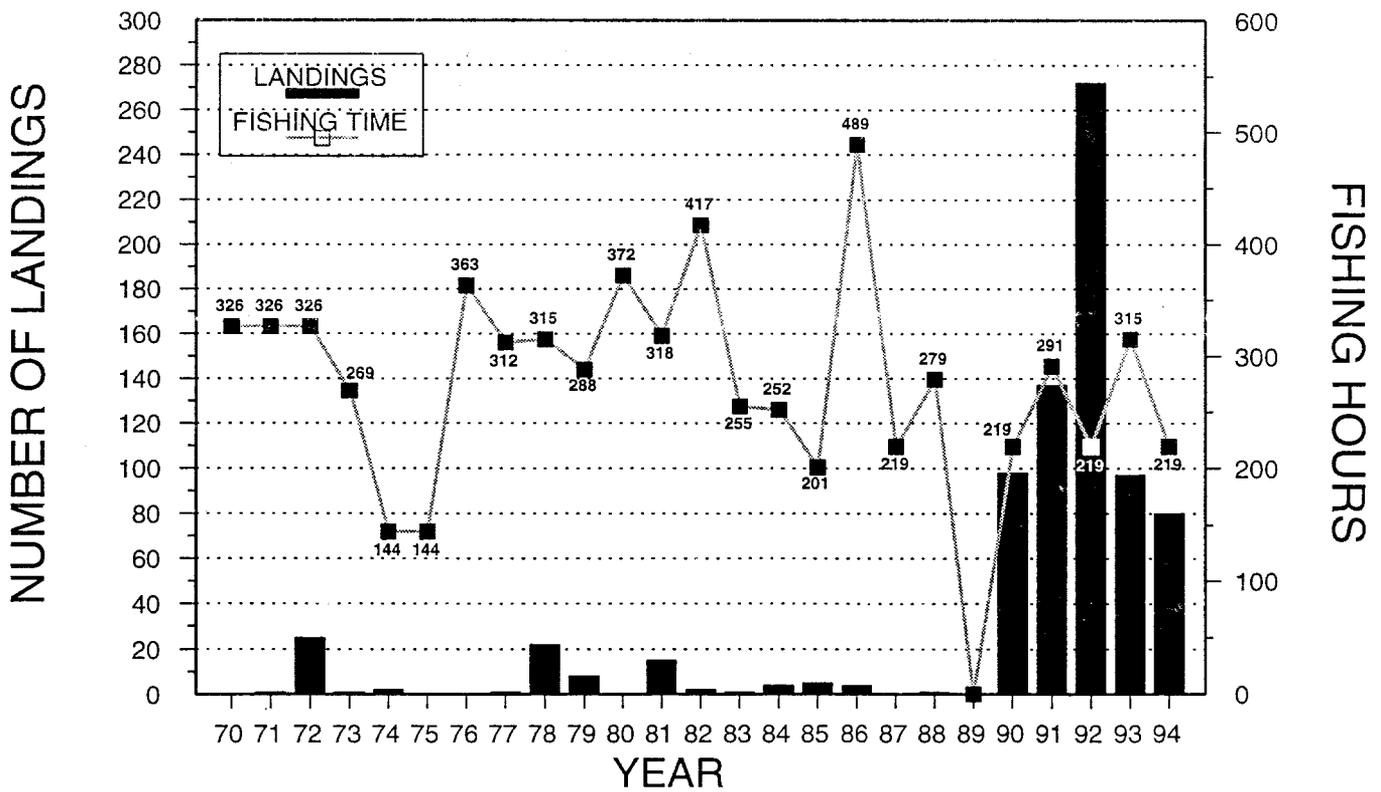
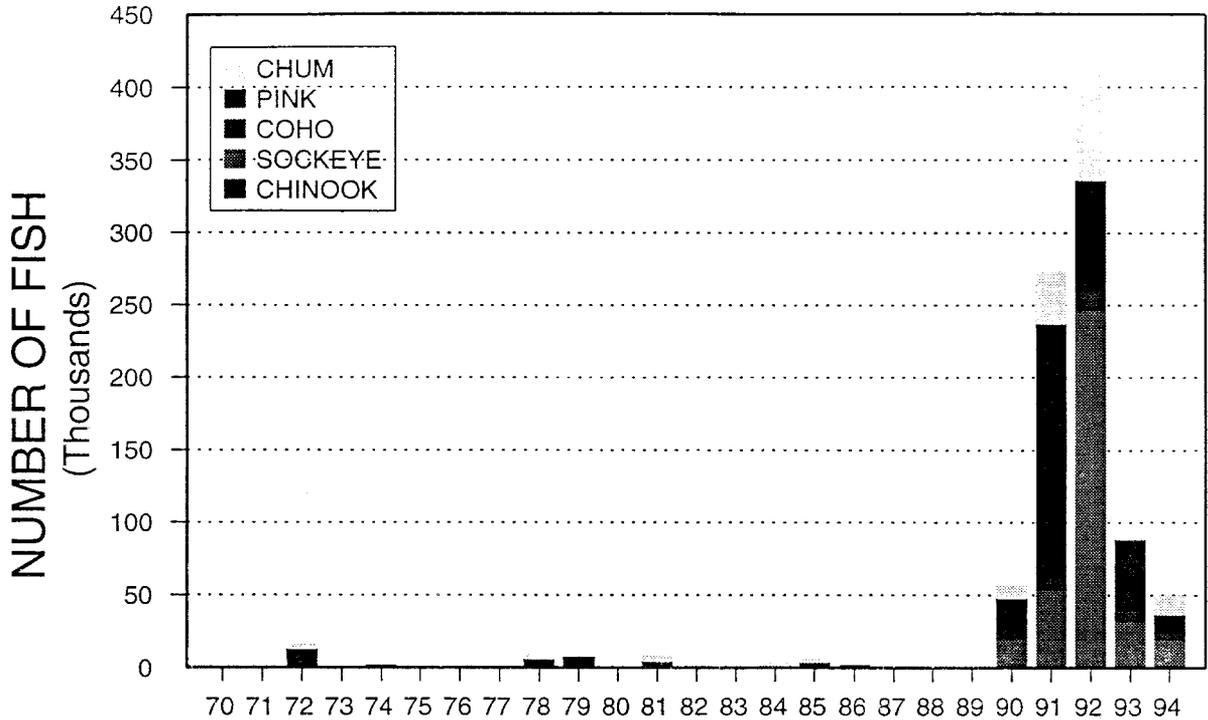
YEAR	LANDINGS	CHINOOK	SOCKEYE	COHO	PINK	CHUM
70	641	31	6,883	404	1,156,913	27,720
71	473	209	11,527	140	54,480	16,231
72	730	99	3,742	660	410,028	67,475
73	326	253	1,415	199	27,312	33,483
74	157	65	1,450	36	160,692	3,208
75	32	1	420	1	9,318	164
76	427	59	6,520	625	448,283	32,140
77	215	8	1,241	74	274,990	21,931
78	398	93	2,853	50	158,882	67,243
79	601	181	19,437	2,689	601,604	17,522
80	44	5	771	10	32,594	11,865
81	195	20	3,460	639	94,353	54,178
82	3	2	718	105	449	1,525
83	254	56	3,618	528	80,420	26,175
84	82	15	1,851	39	7,970	28,641
85	82	43	7,711	256	18,604	4,338
86	65	24	11,643	269	20,969	6,571
87	52	63	5,759	266	9,775	3,212
88	186	196	49,165	5,816	37,811	55,139
89	0	0	0	0	0	0
90	231	1,048	54,871	13,980	45,860	30,015
91	486	2,535	174,666	30,406	830,884	112,466
92	526	812	429,642	27,456	151,741	125,274
93	439	4,149	114,681	29,631	432,587	8,806
94	181	363	36,117	11,656	53,465	36,774



Appendix E.2. Statistical reporting area 25810 & 258-40 combined fishing time, harvest by species and landings, by year July 6-25, 1970-1994.

STAT AREAS 258-10 & 258-40 COMBINED, JULY 6-25.

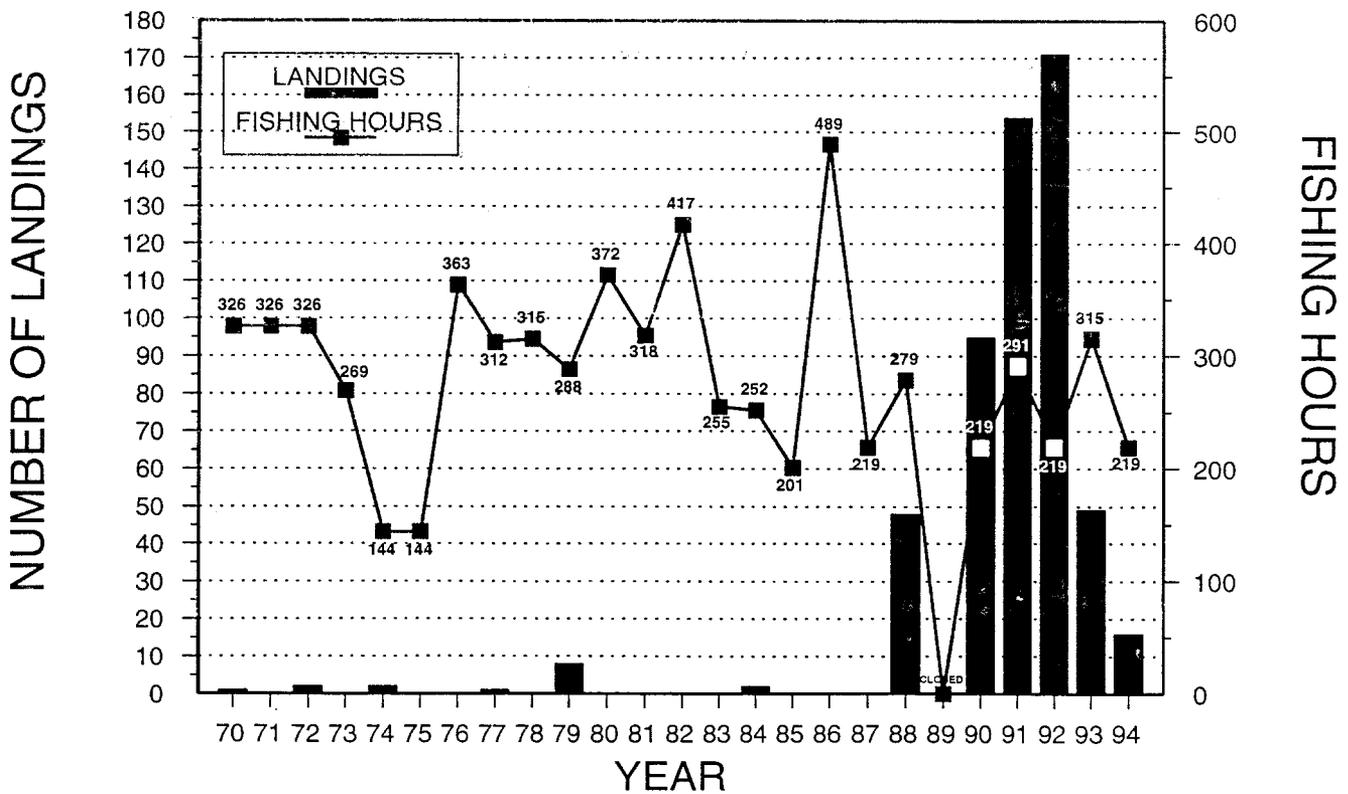
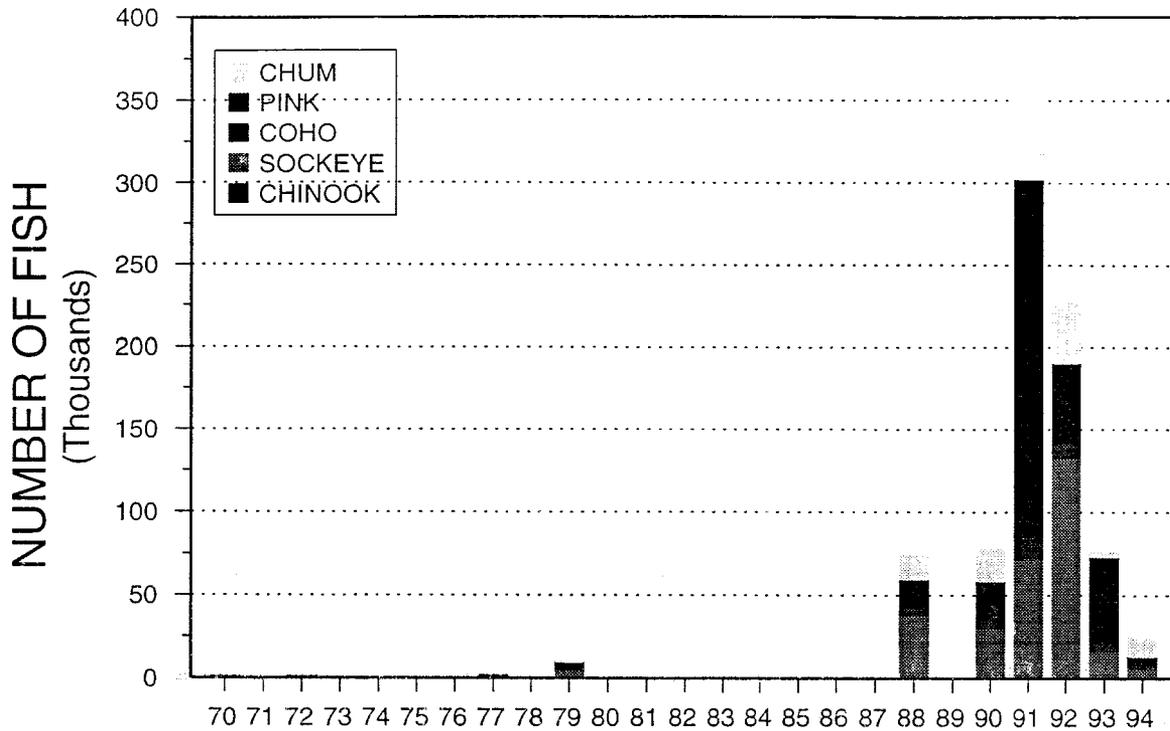
YEAR	LANDINGS	CHINOOK	SOCKEYE	COHO	PINK	CHUM
70	1	0	107	0	783	15
71	1	0	52	0	104	27
72	27	0	30	27	15,412	2,491
73	1	0	1	0	19	12
74	4	0	318	3	1,420	20
75	0	0	0	0	0	0
76	0	0	0	0	0	0
77	2	0	0	0	2,395	47
78	27	7	509	6	5,939	1,990
79	16	3	4,877	46	13,183	325
80	0	0	0	0	0	0
81	15	0	59	630	4,065	3,039
82	2	2	718	8	249	1,435
83	1	1	0	0	172	9
84	6	6	696	0	1,017	2,049
85	5	13	2,402	26	1,678	1,125
86	4	0	160	20	2,518	465
87	0	0	0	0	0	0
88	49	36	37,663	5,151	16,998	14,301
89	0	0	0	0	0	0
90	193	865	49,867	13,253	42,817	27,090
91	291	2,051	123,812	22,092	391,668	85,586
92	443	651	378,920	22,661	125,032	108,889
93	146	2,228	47,103	13,434	99,338	3,398
94	96	254	25,031	8,242	17,033	22,780



Appendix E.3. Statistical reporting area 25810 fishing time, harvest by species and landings, by year July 6-25, 1970-1994.

STAT AREA 258-10, JULY 6-25.

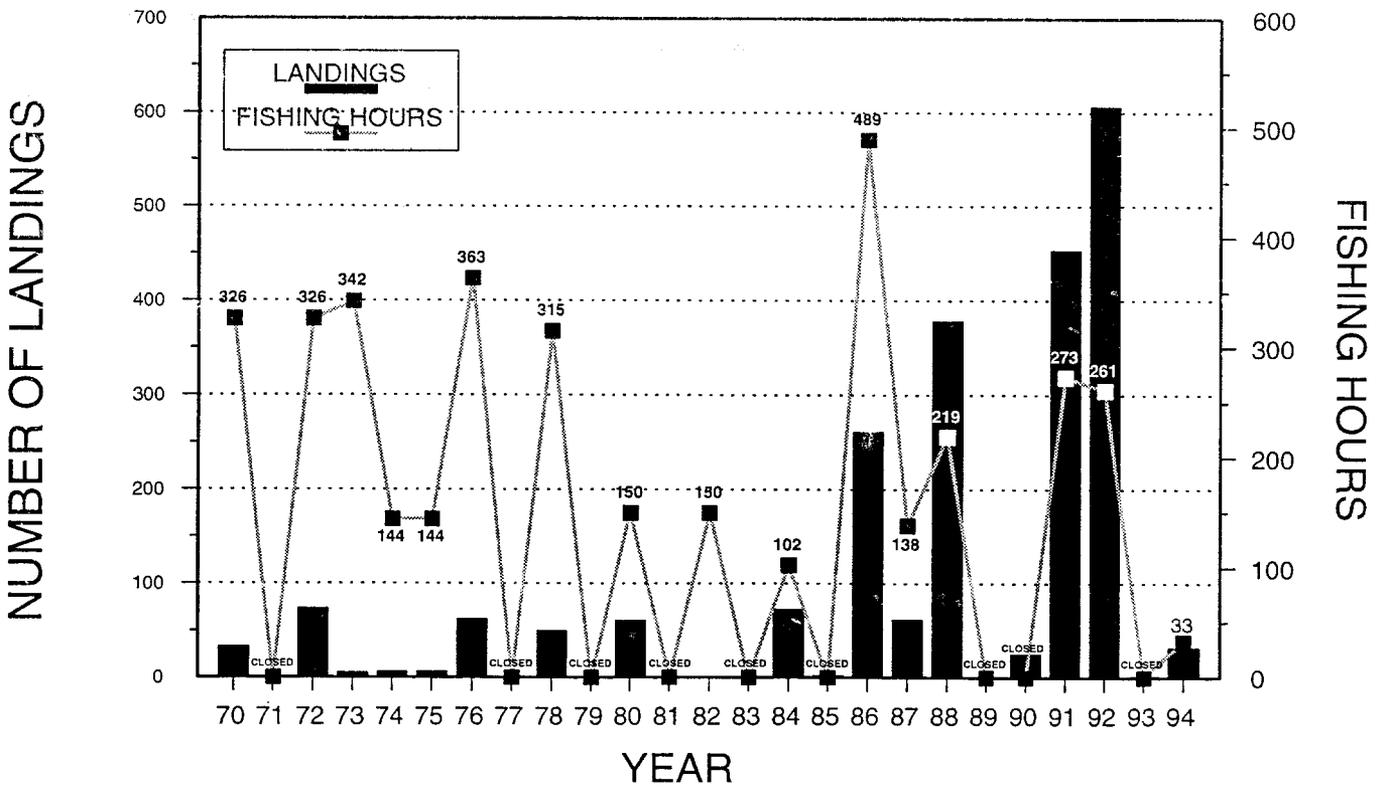
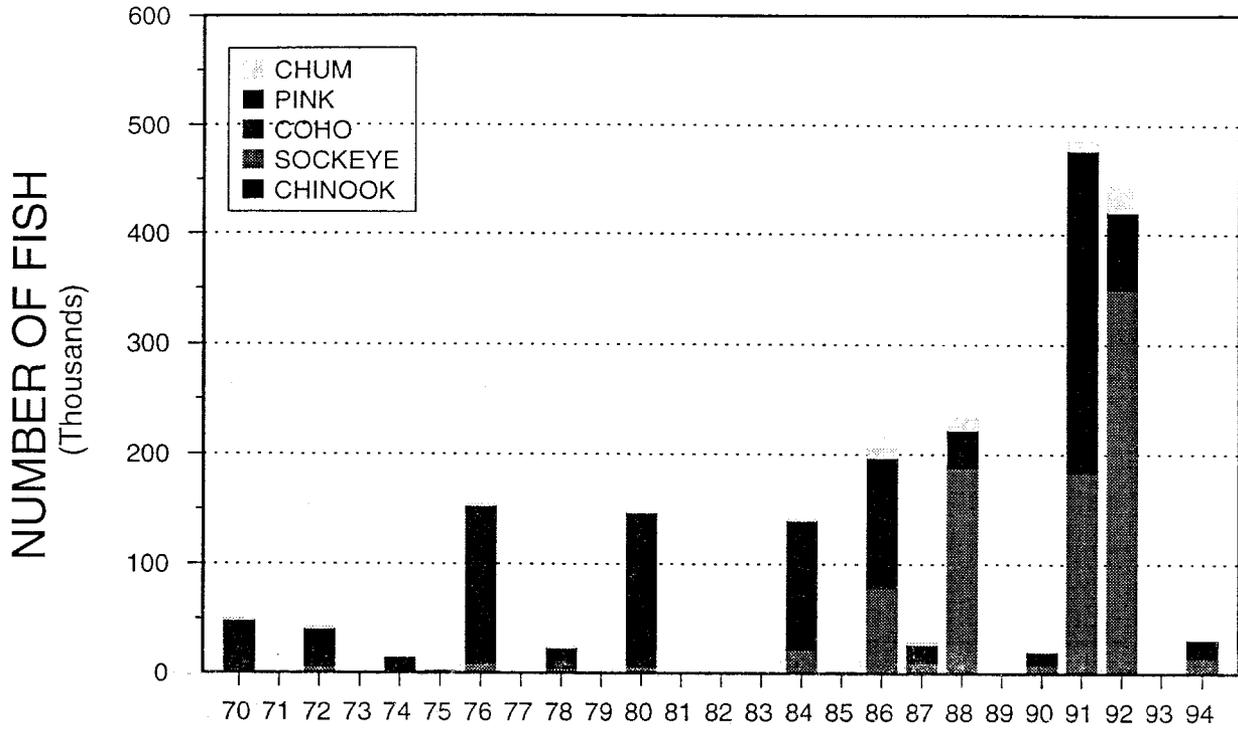
YEAR	LANDINGS	CHINOOK	SOCKEYE	COHO	PINK	CHUM
70	0	0	0	0	0	0
71	1	0	52	0	104	27
72	25	0	30	27	13,238	2,281
73	1	0	1	0	19	12
74	2	0	59	3	1,418	20
75	0	0	0	0	0	0
76	0	0	0	0	0	0
77	1	0	0	0	595	22
78	22	7	509	6	5,939	1,990
79	8	0	153	30	7,960	179
80	0	0	0	0	0	0
81	15	0	59	630	4,065	3,039
82	2	2	718	8	249	1,435
83	1	1	0	0	172	9
84	4	6	203	0	1,013	2,048
85	5	13	2,402	26	1,678	1,125
86	4	0	160	20	2,518	465
87	0	0	0	0	0	0
88	1	0	50	20	45	85
89	0	0	0	0	0	0
90	98	277	20,209	6,446	21,362	8,067
91	137	1,200	52,572	8,259	175,171	35,464
92	272	541	246,220	13,229	76,572	73,137
93	97	1,089	31,356	7,392	48,763	1,354
94	80	124	19,628	5,395	12,040	12,112



Appendix E.4. Statistical reporting area 258-40 fishing time, harvest by species and landings, by year July 6-25, 1970-1994.

STAT AREA 258-40, JULY 6-25.

YEAR	LANDINGS	CHINOOK	SOCKEYE	COHO	PINK	CHUM
70	1	0	107	0	783	15
71	0	0	0	0	0	0
72	2	0	0	0	2,174	210
73	0	0	0	0	0	0
74	2	0	259	0	2	0
75	0	0	0	0	0	0
76	0	0	0	0	0	0
77	1	0	0	0	1,800	25
78	0	0	0	0	0	0
79	8	3	4,724	16	5,223	146
80	0	0	0	0	0	0
81	0	0	0	0	0	0
82	0	0	0	0	0	0
83	0	0	0	0	0	0
84	2	0	493	0	4	1
85	0	0	0	0	0	0
86	0	0	0	0	0	0
87	0	0	0	0	0	0
88	48	36	37,613	5,131	16,953	14,216
89	0	0	0	0	0	0
90	95	588	29,658	6,807	21,455	19,023
91	154	851	71,240	13,833	216,497	50,122
92	171	110	132,700	9,432	48,460	35,752
93	49	1,139	15,747	6,042	50,575	2,044
94	16	130	5,403	2,847	4,993	10,668

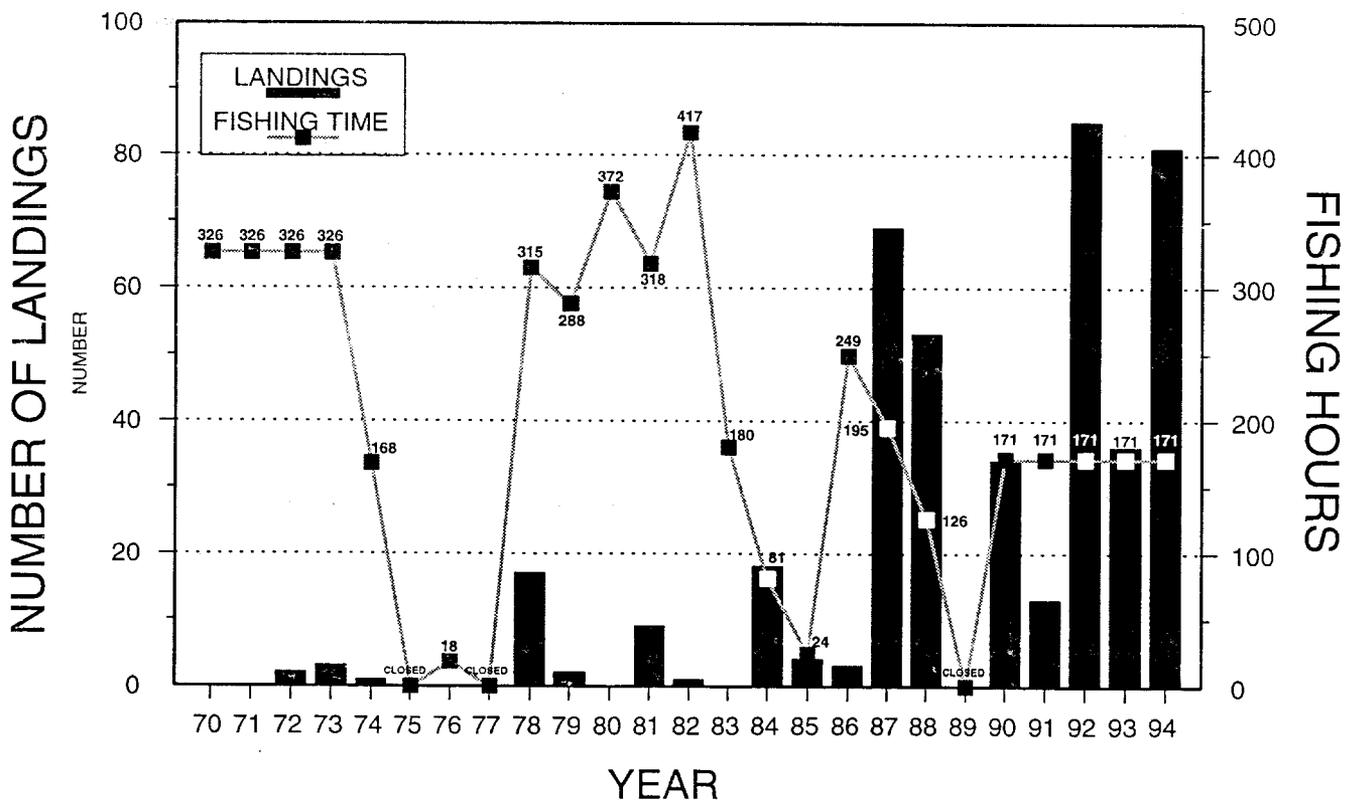
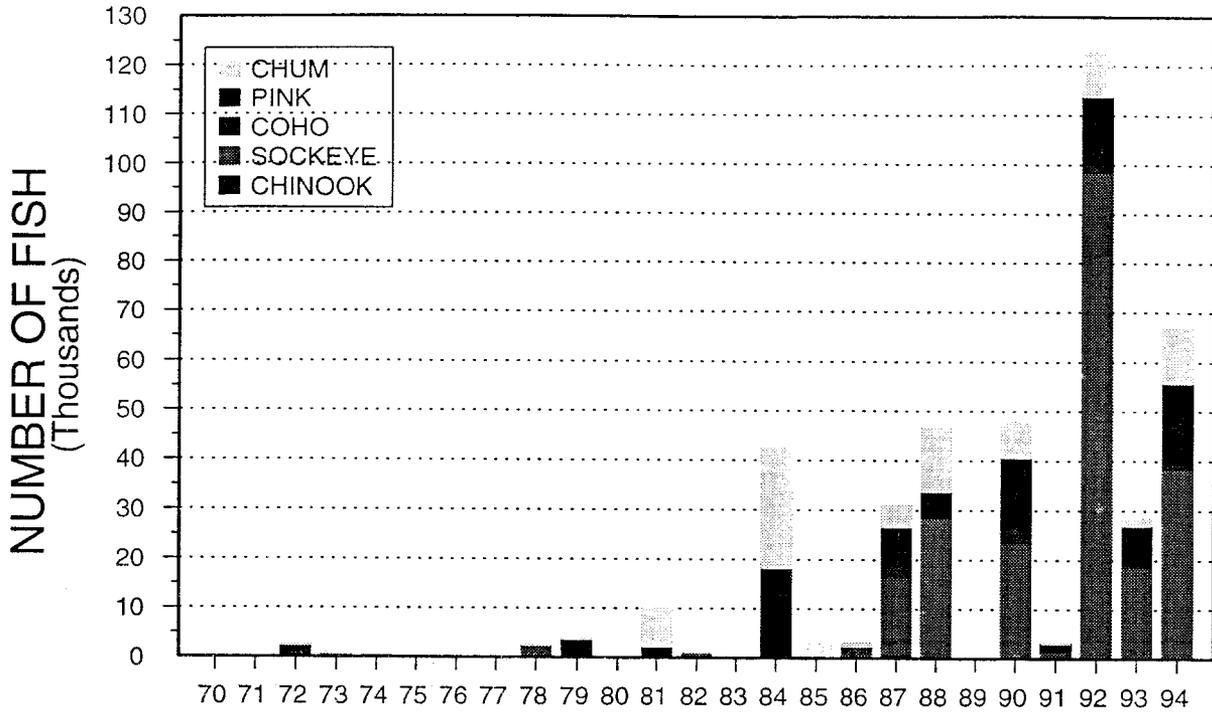


Appendix E.5. Halibut Bay Section fishing time, harvest by species and landings, by year July 6-25, 1970-1994.

K93-70HALIBT
11-30-94

HALIBUT BAY SECTION, JULY 6-25.

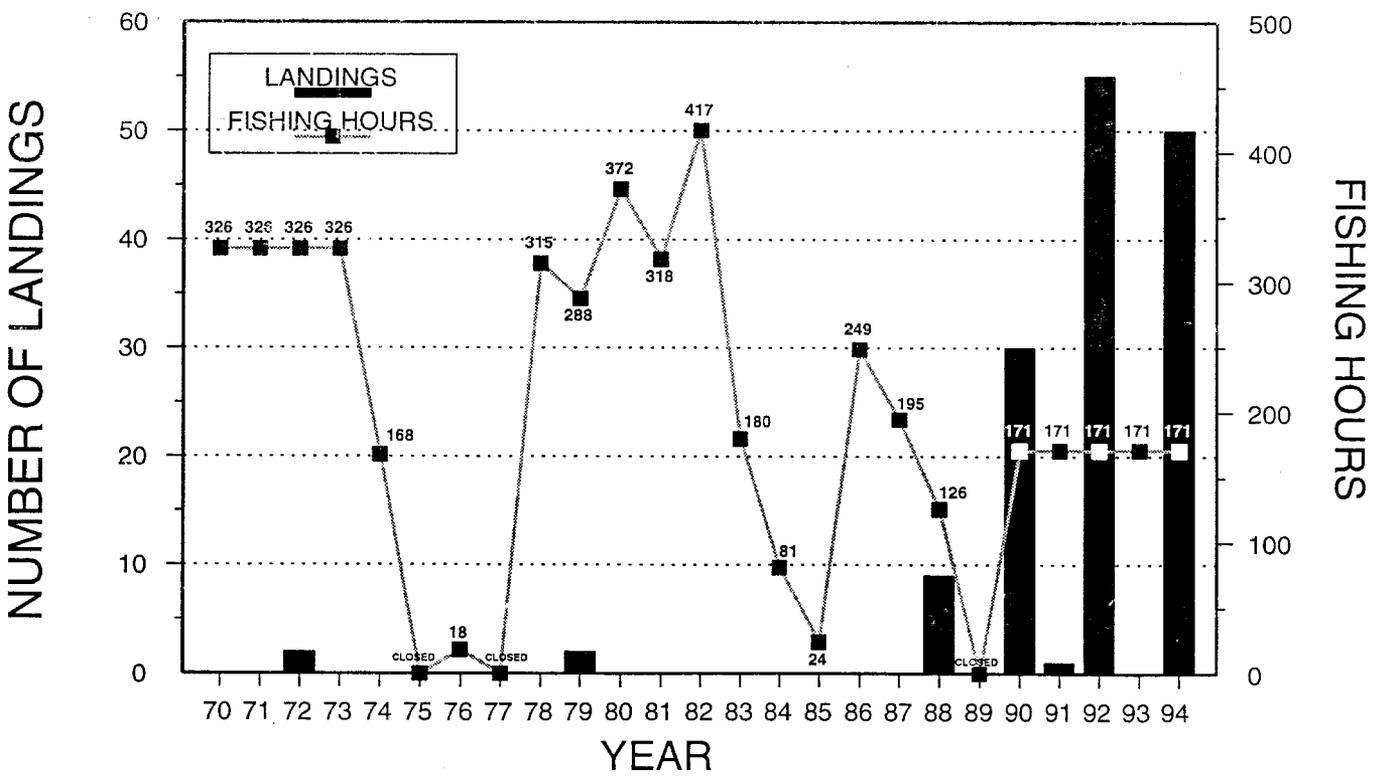
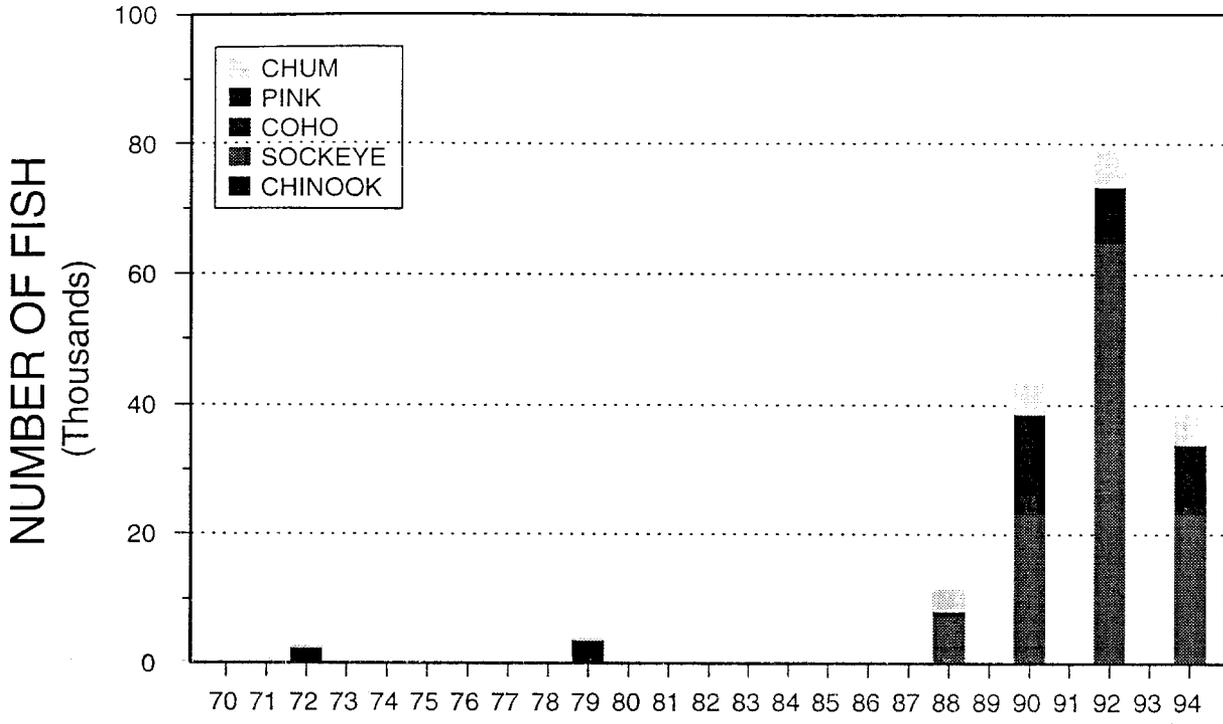
YEAR	LANDINGS	CHINOOK	SOCKEYE	COHO	PINK	CHUM
70	33	1	3,185	256	45,206	704
71	0	0	0	0	0	0
72	73	11	5,812	25	35,053	1,065
73	5	0	240	0	197	37
74	6	0	1,166	0	12,514	23
75	6	1	698	0	1,132	4
76	62	6	8,815	12	144,169	847
77	0	0	0	0	0	0
78	50	34	4,564	26	18,752	452
79	0	0	0	0	0	0
80	60	1	6,098	87	140,806	524
81	0	0	0	0	0	0
82	0	0	0	0	0	0
83	0	0	0	0	0	0
84	72	27	21,889	363	117,697	1,091
85	2	0	820	6	128	2
86	261	92	77,894	2,482	117,205	7,565
87	61	12	10,487	116	16,611	1,394
88	378	355	187,230	265	34,962	9,627
89	0	0	0	0	0	0
90	25	9	7,740	223	12,494	251
91	453	508	182,063	2,726	292,170	7,481
92	606	279	349,691	490	70,406	23,538
93	1	0	11	0	525	6
94	32	26	14,692	110	17,077	310



Appendix E.6. Katmai and Alinchak Bay Sections fishing time, harvest by species and landings, by year July 6-25, 1970-1994.

KATMAI & ALINCHAK SECTIONS, JULY 6-25.

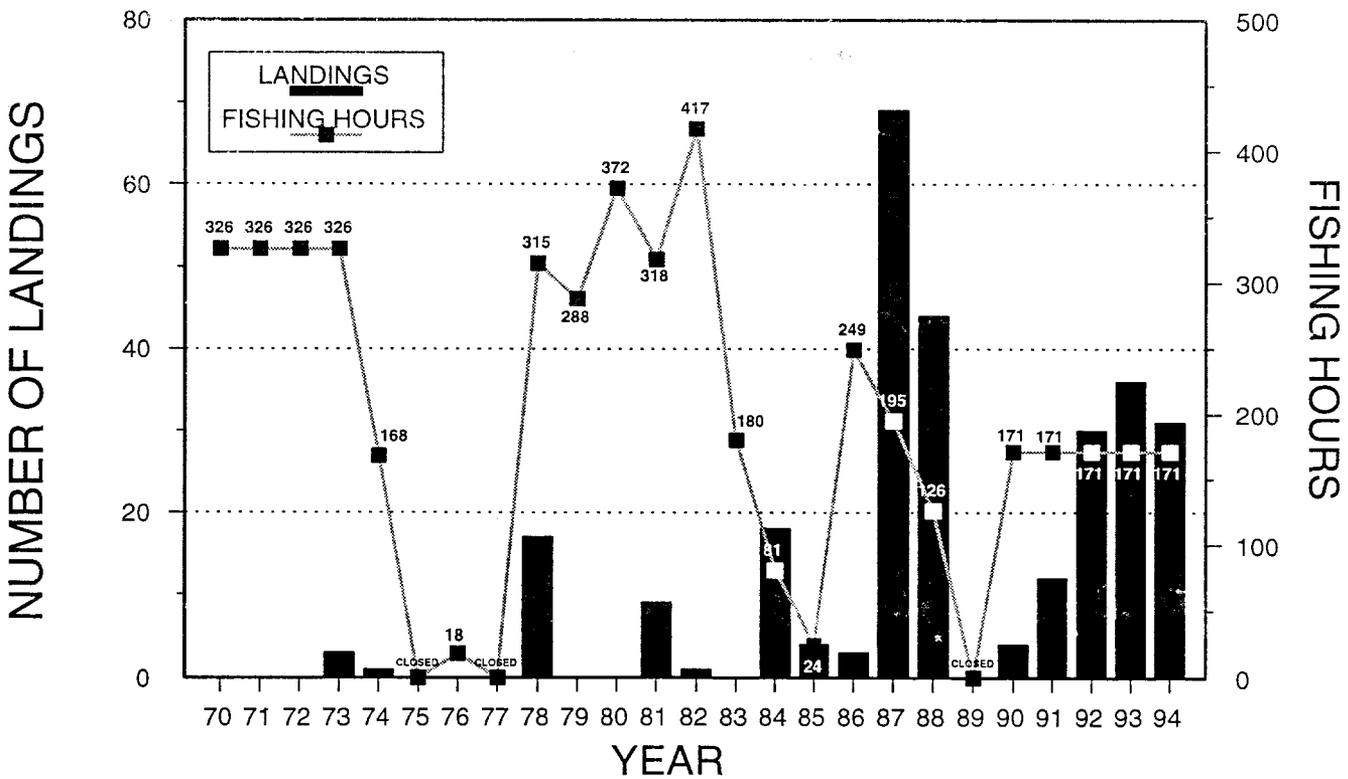
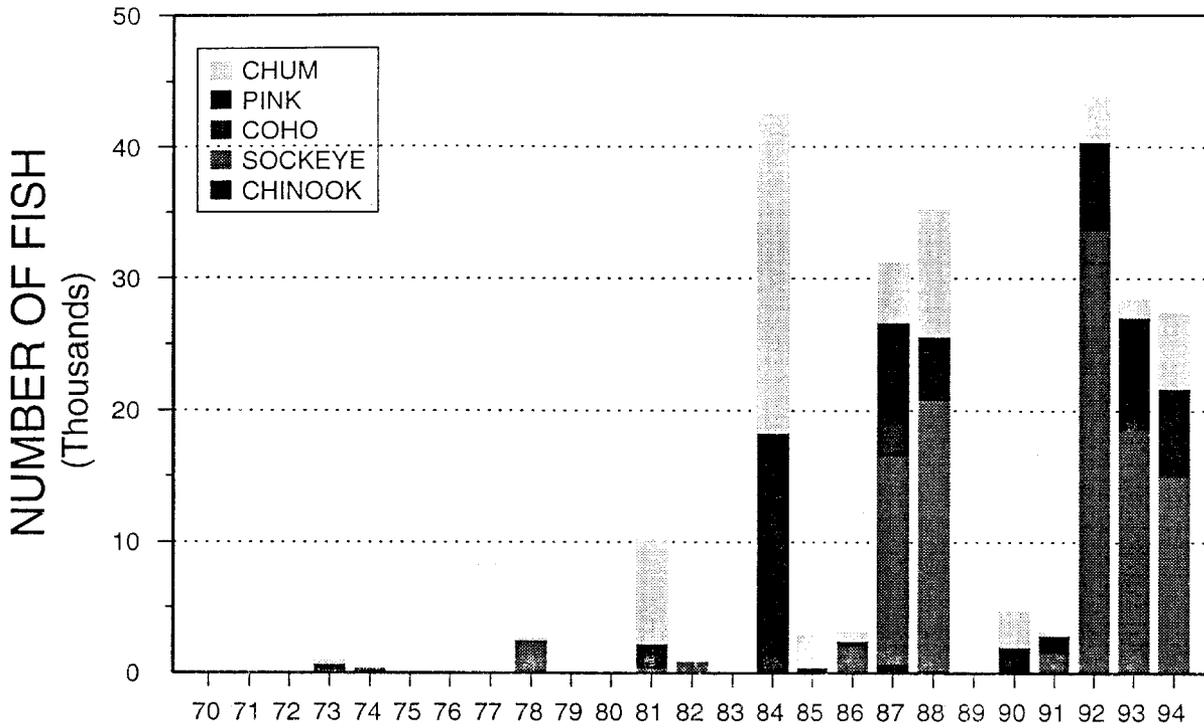
YEAR	LANDINGS	CHINOOK	SOCKEYE	COHO	PINK	CHUM
70	0	0	0	0	0	0
71	0	0	0	0	0	0
72	2	0	0	0	2,429	212
73	3	1	265	0	427	158
74	1	0	301	0	0	0
75	0	0	0	0	0	0
76	0	0	0	0	0	0
77	0	0	0	0	0	0
78	17	1	2,419	0	102	61
79	2	0	1	0	3,671	148
80	0	0	0	0	0	0
81	9	0	354	0	1,900	7,937
82	1	0	806	0	0	0
83	0	0	0	0	0	0
84	18	1	55	0	18,239	24,218
85	4	1	16	4	451	2,311
86	3	18	2,093	40	329	638
87	69	745	15,824	2,423	7,689	4,486
88	53	385	27,936	118	5,417	12,667
89	0	0	0	0	0	0
90	34	106	23,276	3,266	14,071	7,076
91	13	76	1,570	22	1,369	102
92	85	440	98,051	1,676	13,775	8,792
93	36	278	18,291	563	7,945	1,289
94	81	394	37,943	1,182	16,288	10,915



Appendix E.7. Katmai Section fishing time, harvest by species and landings, by year July 6-25, 1970-1994.

KATMAI SECTION, JULY 6-25.

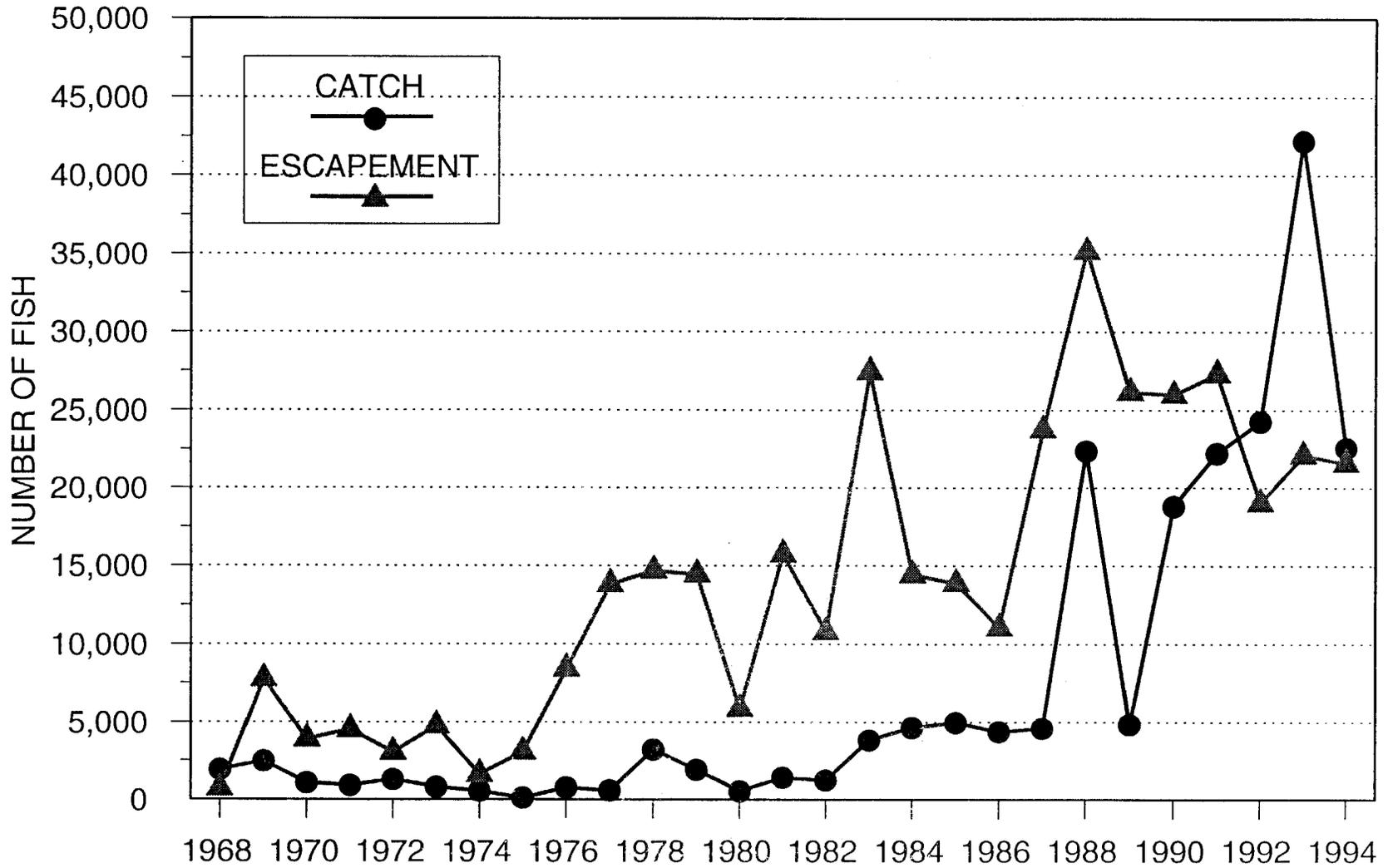
YEAR	LANDINGS	CHINOOK	SOCKEYE	COHO	PINK	CHUM
70	0	0	0	0	0	0
71	0	0	0	0	0	0
72	2	0	0	0	2,429	212
73	0	0	0	0	0	0
74	0	0	0	0	0	0
75	0	0	0	0	0	0
76	0	0	0	0	0	0
77	0	0	0	0	0	0
78	0	0	0	0	0	0
79	2	0	1	0	3,671	148
80	0	0	0	0	0	0
81	0	0	0	0	0	0
82	0	0	0	0	0	0
83	0	0	0	0	0	0
84	0	0	0	0	0	0
85	0	0	0	0	0	0
86	0	0	0	0	0	0
87	0	0	0	0	0	0
88	9	115	7,395	19	731	3,120
89	0	0	0	0	0	0
90	30	106	23,096	3,266	12,234	4,472
91	1	34	46	0	34	1
92	55	401	64,401	1,457	7,272	5,416
93	0	0	0	0	0	0
94	50	228	23,107	1,090	9,608	5,367



Appendix E.8. Alinchak Section fishing time, harvest by species and landings, by year July 6-25, 1970-1994.

ALINCHAK SECTION, JULY 6-25.

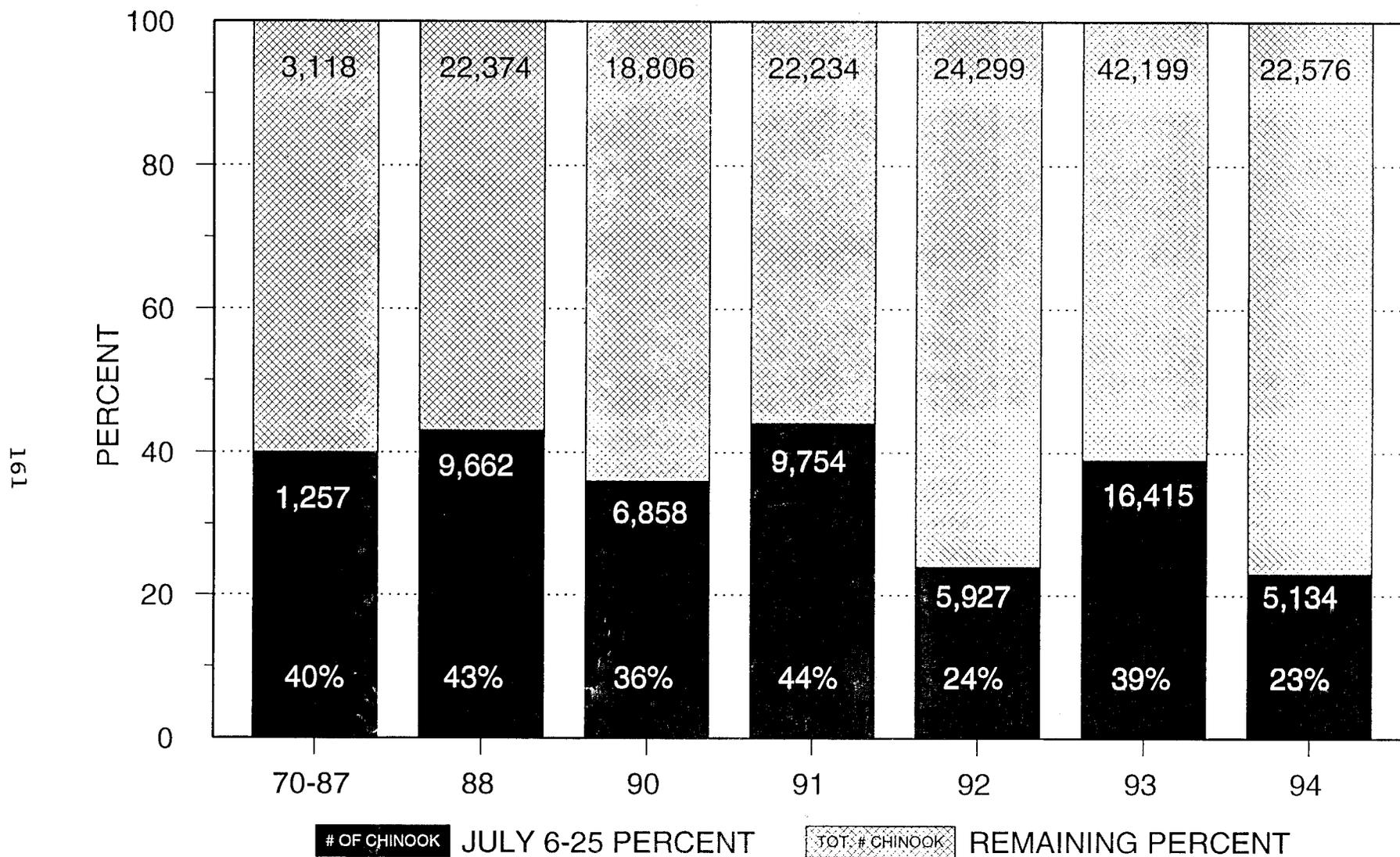
YEAR	LANDINGS	CHINOOK	SOCKEYE	COHO	PINK	CHUM
70	0	0	0	0	0	0
71	0	0	0	0	0	0
72	0	0	0	0	0	0
73	3	1	265	0	427	158
74	1	0	301	0	0	0
75	0	0	0	0	0	0
76	0	0	0	0	0	0
77	0	0	0	0	0	0
78	17	1	2,419	0	102	61
79	0	0	0	0	0	0
80	0	0	0	0	0	0
81	9	0	354	0	1,900	7,937
82	1	0	806	0	0	0
83	0	0	0	0	0	0
84	18	1	55	0	18,239	24,218
85	4	1	16	4	451	2,311
86	3	18	2,093	40	329	638
87	69	745	15,824	2,423	7,689	4,486
88	44	270	20,541	99	4,686	9,547
89	0	0	0	0	0	0
90	4	0	180	0	1,837	2,604
91	12	42	1,524	22	1,335	101
92	30	39	33,650	219	6,503	3,376
93	36	278	18,291	563	7,945	1,289
94	31	166	14,836	92	6,680	5,548



Appendix F.1. Kodiak Management Area Chinook Salmon catch & escapement, 1968-1994.

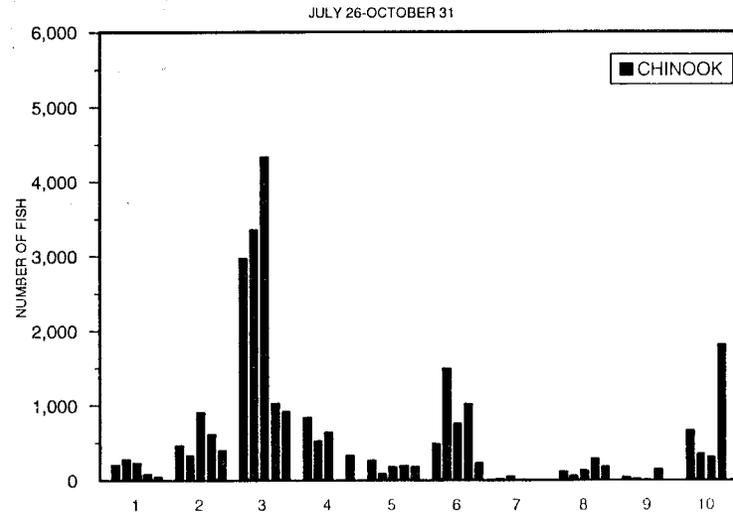
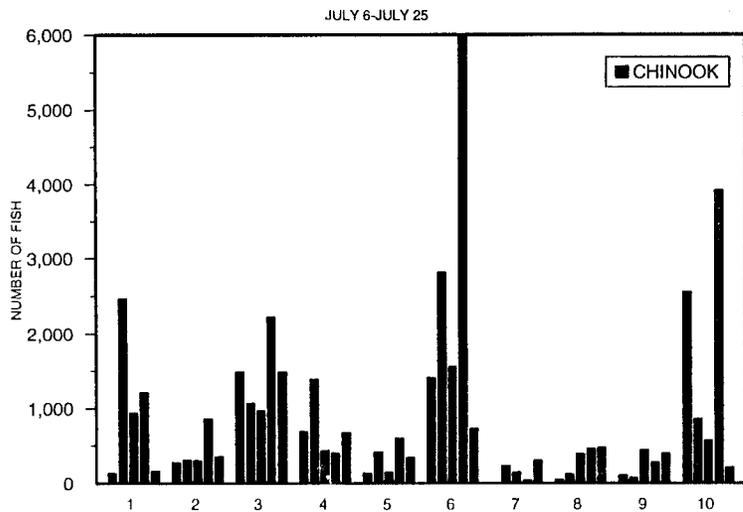
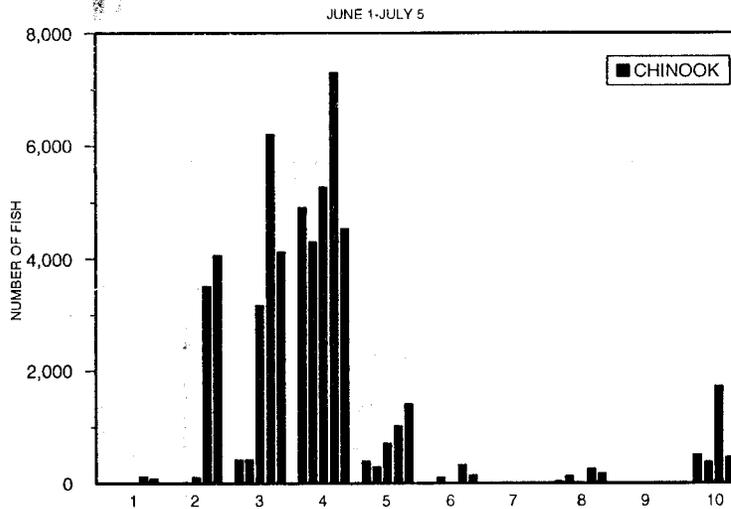
KODIAK MANAGEMENT AREA
CHINOOK SALMON CATCH & ESCAPEMENT
1968 - 1994

	CATCH	ESCAPEMENT
1968	1,936	703
1969	2,469	7,752
1970	1,089	3,900
1971	920	4,524
1972	1,300	3,049
1973	800	4,762
1974	545	1,622
1975	101	3,059
1976	766	8,411
1977	585	13,824
1978	3,228	14,677
1979	1,905	14,441
1980	529	5,850
1981	1,418	15,720
1982	1,238	10,773
1983	3,839	27,445
1984	4,657	14,429
1985	4,970	13,876
1986	4,381	11,046
1987	4,612	23,744
1988	22,374	35,152
1989	4,851	26,131
1990	18,806	25,972
1991	22,233	27,306
1992	24,299	19,013
1993	42,199	22,113
1994	22,575	21,591



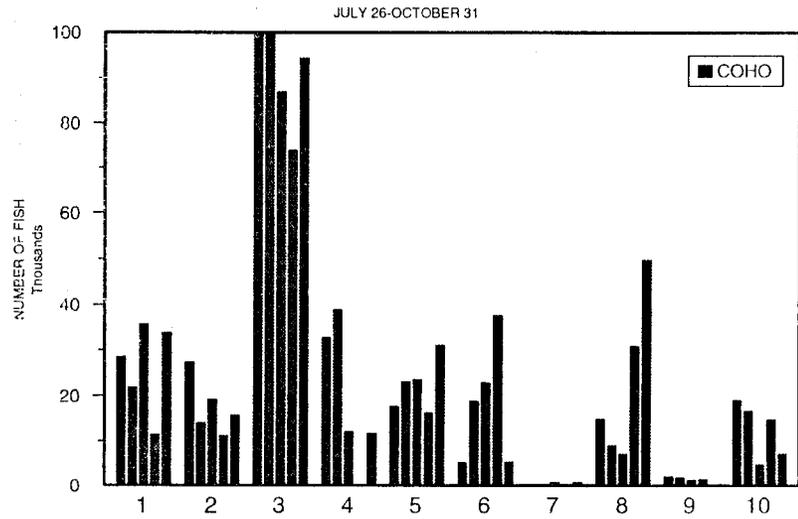
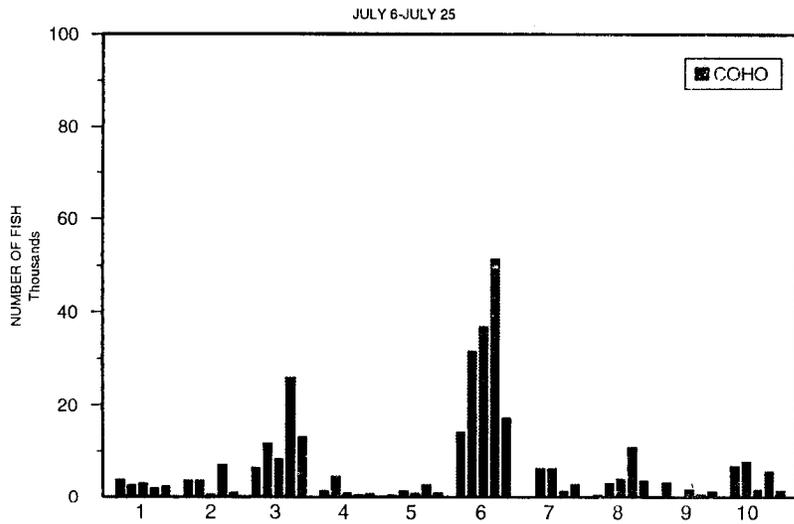
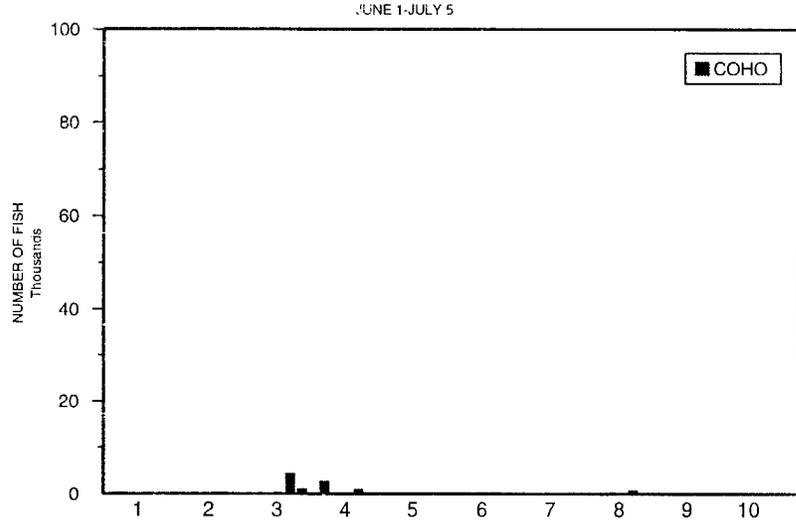
Appendix F.2. Percent of annual chinook salmon harvest which occurs - July 6 through July 25, 1970-1994.

AREA 1 .. N. SHELIKOF SECTIONS
 AREA 2 .. S.W. AFOGNAK SECT.
 AREA 3 .. N.W. KODIAK DIST.
 AREA 4 .. S.W. KODIAK DIST.
 AREA 5 .. ALITAK DISTRICT
 AREA 6 .. EASTSIDE KODIAK DIST.
 AREA 7 .. N.E. KODIAK DIST.
 AREA 8 .. REMAINING AFOG. DIST.
 AREA 9 .. KATMAI/ALINCHAK DIST.
 AREA 10 .. IGVAK/WIDE B. DIST.



Appendix F.3. Chinook and coho salmon harvest by major harvest locations, by selected time periods, 1990 - 1994.

AREA 1 .. N. SHELIKOF SECTIONS
 AREA 2 .. S.W. AFOGNAK SECT.
 AREA 3 .. N.W. KODIAK DIST.
 AREA 4 .. S.W. KODIAK DIST.
 AREA 5 .. ALITAK DISTRICT
 AREA 6 .. EASTSIDE KODIAK DIST.
 AREA 7 .. N.E. KODIAK DIST.
 AREA 8 .. REMAINING AFOG. DIST.
 AREA 9 .. KATMAI/ALINCHAK DIST.
 AREA 10 .. IGVAK/WIDE B. DIST.

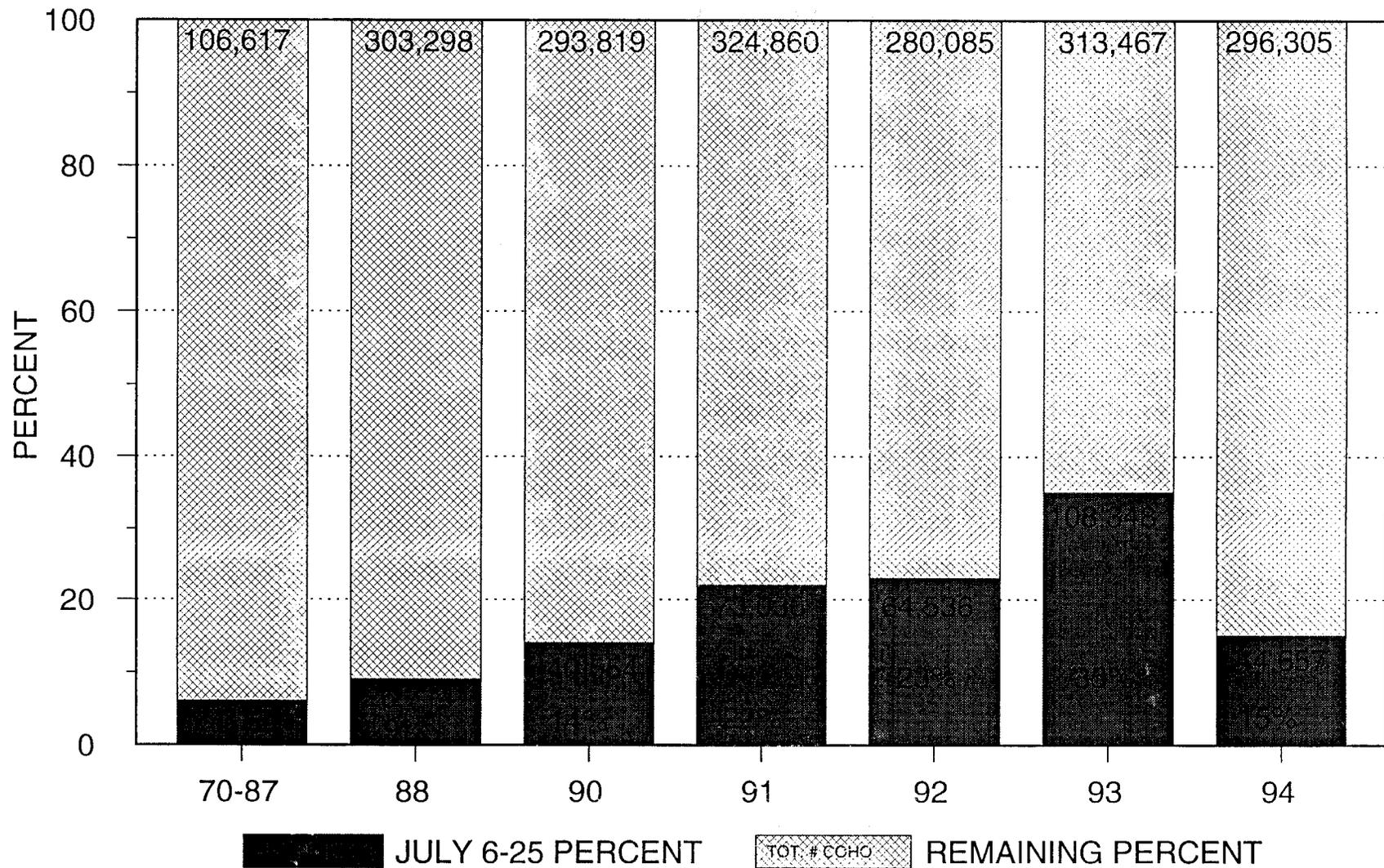


Appendix F.3. (page 2 of 3)

KODIAK MANAGEMENT AREA
1990-94 COMMERCIAL CHINOOK & COHO HARVEST

AREA		CHINOOK			COHO		
		6/1-7/5	7/6-7/25	7/26-10/31	6/1-7/5	7/6-7/25	7/26-10/31
N.SHELIKOF SECTIONS	90	13	139	213	365	3,911	28,620
	91	0	2,467	283	0	2,707	21,923
	92	6	945	237	0	3,065	35,632
	93	127	1,216	90	0	1,954	11,505
	94	88	164	60	0	2,368	33,918
S.W.AFOGNAK SECTION	90	5	277	468	0	3,605	27,490
	91	24	309	340	0	3,586	14,085
	92	117	304	917	40	605	19,211
	93	3,523	858	621	280	7,100	11,208
	94	4,069	355	405	103	1,002	15,617
N.W.KODIAK DISTRICT	90	427	1,490	2,978	12	6,472	101,904
	91	435	1,068	3,361	18	11,707	106,930
	92	3,175	975	4,341	308	8,415	86,996
	93	6,204	2,224	1,036	4,462	25,967	73,985
	94	4,134	1,491	927	1,120	13,145	94,421
S.W.KODIAK DISTRICT	90	4,913	687	843	2,717	1,414	32,861
	91	4,315	1,392	535	30	4,588	38,908
	92	5,277	433	645	56	905	12,200
	93	7,312	404	7	946	518	31
	94	4,542	675	332	30	750	11,753
ALITAK BAY DISTRICT	90	402	137	268	50	426	17,700
	91	311	414	96	24	1,435	23,142
	92	720	152	184	20	845	23,683
	93	1,032	596	200	90	2,791	16,390
	94	1,418	343	184	66	981	31,177
EASTSIDE KODIAK DISTRICT	90	20	1,414	496	0	14,212	5,390
	91	109	2,817	1,502	0	31,700	18,829
	92	22	1,565	773	3	36,919	23,016
	93	342	6,429	1,024	252	51,505	37,682
	94	158	732	240	8	17,290	5,453
N.E.KODIAK DISTRICT	90	0	3	24	0	0	100
	91	0	228	55	0	6,332	175
	92	0	149	10	0	6,325	790
	93	0	37	8	0	1,414	219
	94	8	296	4	0	2,835	789
REMAINING AFOGNAK DISTRICT	90	37	49	123	0	459	14,871
	91	136	121	69	7	3,152	9,046
	92	25	391	139	0	4,126	7,227
	93	266	455	289	741	10,923	30,920
	94	182	470	193	66	3,640	49,764
KATMAVALINCHAK SECTIONS	90	0	106	47	0	3,266	2,088
	91	5	76	27	0	22	1,933
	92	0	440	10	0	1,676	1,305
	93	0	278	155	0	563	1,519
	94	0	394	0	0	1,182	0
IGVAK/WIDE BAY SECTIONS	90	0	2,556	671	0	6,789	19,097
	91	516	861	361	77	7,807	16,697
	92	401	573	319	5	1,654	4,957
	93	1,731	3,918	1,817	59	5,613	14,830
	94	481	214	16	11	1,464	7,226

164



Appendix F.4. Percent of annual coho salmon harvest which occurs - July 6 through July 25, 1970 - 1994.

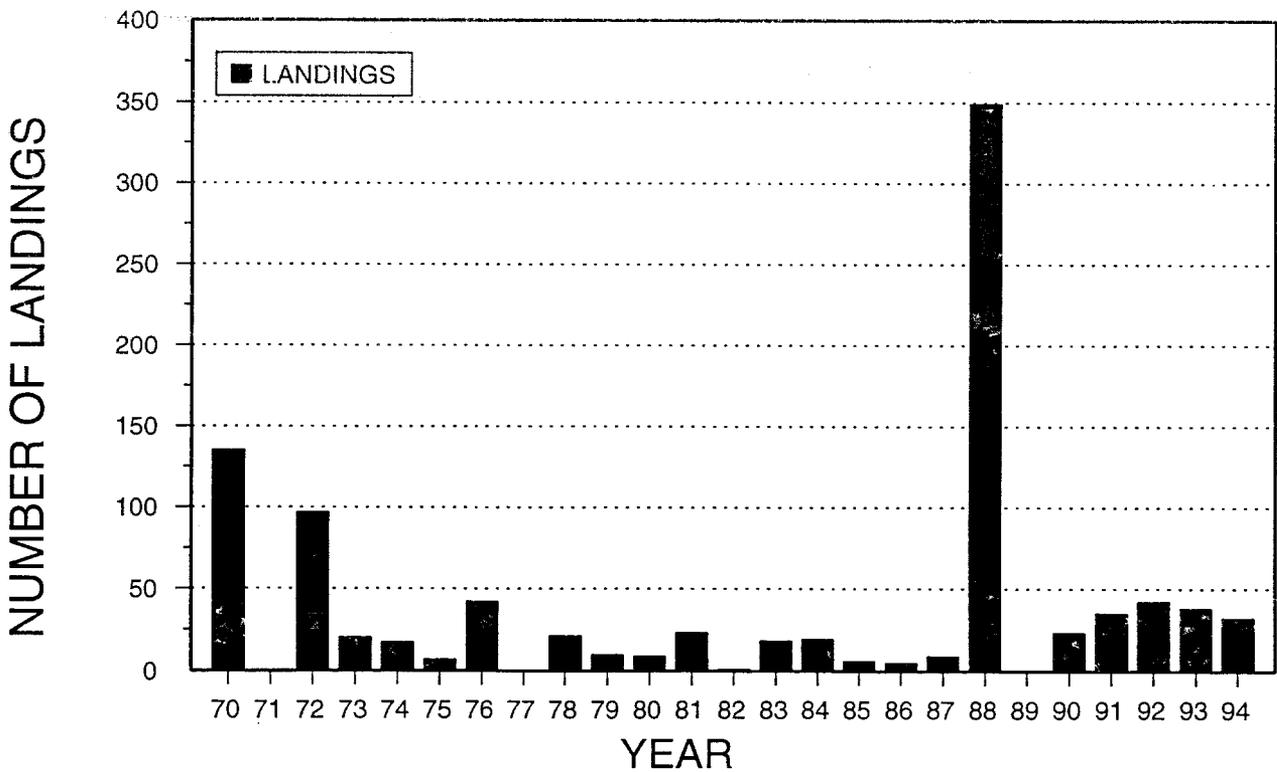
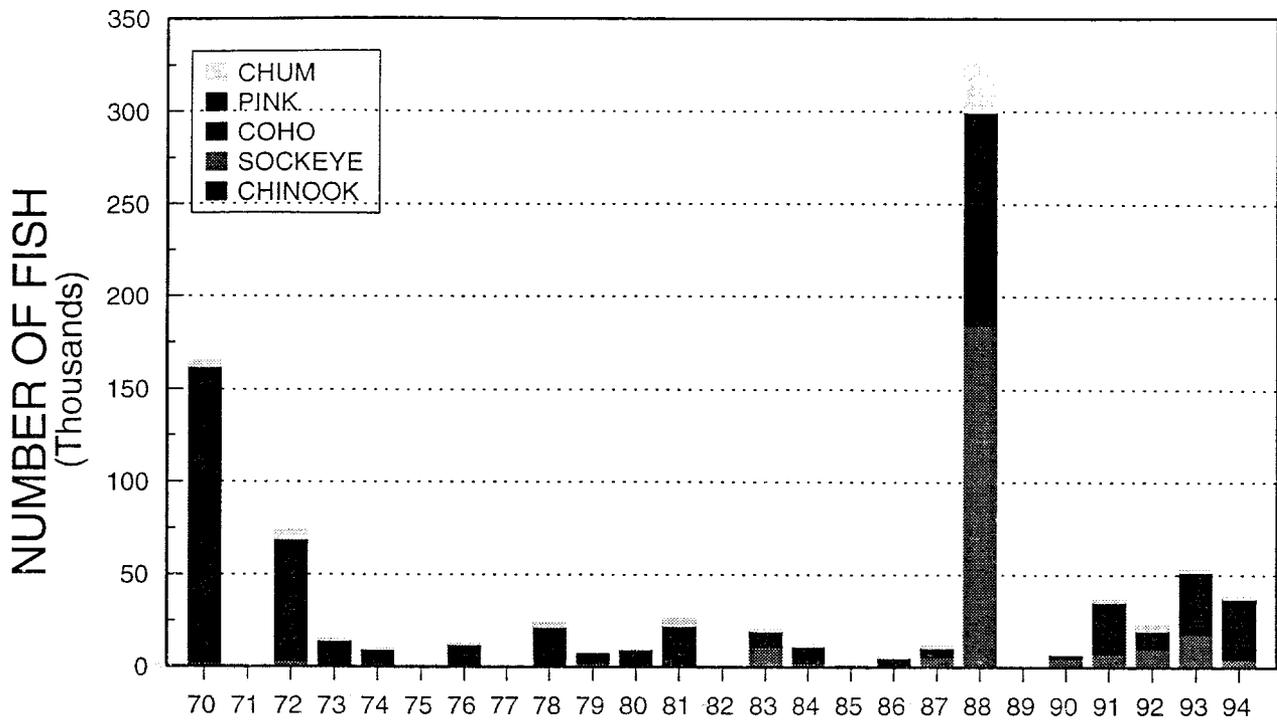
North Shelikof Units (15,000 Sockeye Harvest Cap) ^{a/}											
YEAR	Total Number of Days Open to Fishing / Number of Days Seaward Zone Closed		Date and Time of Zone Closure	Sockeye Salmon Harvest at Time of Zone Closure	Number of Vessels	Total Harvest By Species July 6 through July 25					Upper Cook Inlet Sockeye Harvest
	MAINLAND	N. AFOGNAK				CHINOOK	SOCKEYE	COHO	PINK	CHUM	
1990	7.1 / 2.4	9.1 / 4.4	7/15 9 PM	36,800	69	140	57,700	3,900	18,600	19,400	3.6 MILLION
1991	7.1 / 0	13.1 / 0	No Zone Closure	N/A	42	2,500	18,800	2,700	44,800	3,800	2.2 MILLION
1992	7.1 / 5.1	9.1 / 7.1	7/8 1 PM	13,500	77	900	128,400	3,100	24,300	12,000	8.9 MILLION
1993	7.1 / 4.7	13.8 / 8.9	7/10 5 PM	15,220	89	1,200	78,400	2,000	75,600	4,200	4.7 MILLION
1994	7.1 / 2.8	9.1 / 4.8	7/14 11 AM	22,830	58	165	38,800	2,400	52,000	10,500	3.5 MILLION

a/ In 1988, from 7/6 - 7/25, with 6.9 days open to fishing 392,000 sockeye were harvested in the "North Shelikof Units". In Upper Cook Inlet 6,800,000 sockeye were harvested.

Southwest Afognak Section (50,000 Sockeye Harvest Cap) ^{b/}											
YEAR	Total Number of Days Open to Fishing / Number of Days Seaward Zone Closed		Date and Time of Zone Closure	Sockeye Salmon Harvest at Time of Zone Closure	Number of Vessels	Total Harvest By Species July 6 through July 25					Upper Cook Inlet Sockeye Harvest
	MAINLAND	N. AFOGNAK				CHINOOK	SOCKEYE	COHO	PINK	CHUM	
1990	9.1 / 0		No Zone Closure	N/A	64	300	22,900	3,600	53,800	6,000	3.6 MILLION
1991	13.1 / 0		No Zone Closure	N/A	55	300	34,200	3,600	100,700	4,000	2.2 MILLION
1992	9.1 / 4.7		7/14 1 PM	48,200	84	300	50,600	600	30,000	6,800	8.9 MILLION
1993	13.1 / 7.7		7/14 1 PM	45,900	87	860	74,000	7,100	243,000	7,400	4.7 MILLION
1994	9.1 / 0		No Zone Closure	N/A	45	360	13,600	1,000	64,300	3,100	3.5 MILLION

b/ In 1988, from 7/6 - 7/25, with 11.1 days open to fishing 86,000 sockeye were harvested in the "Southwest Afognak Unit". In Upper Cook Inlet 6,800,000 sockeye were harvested.

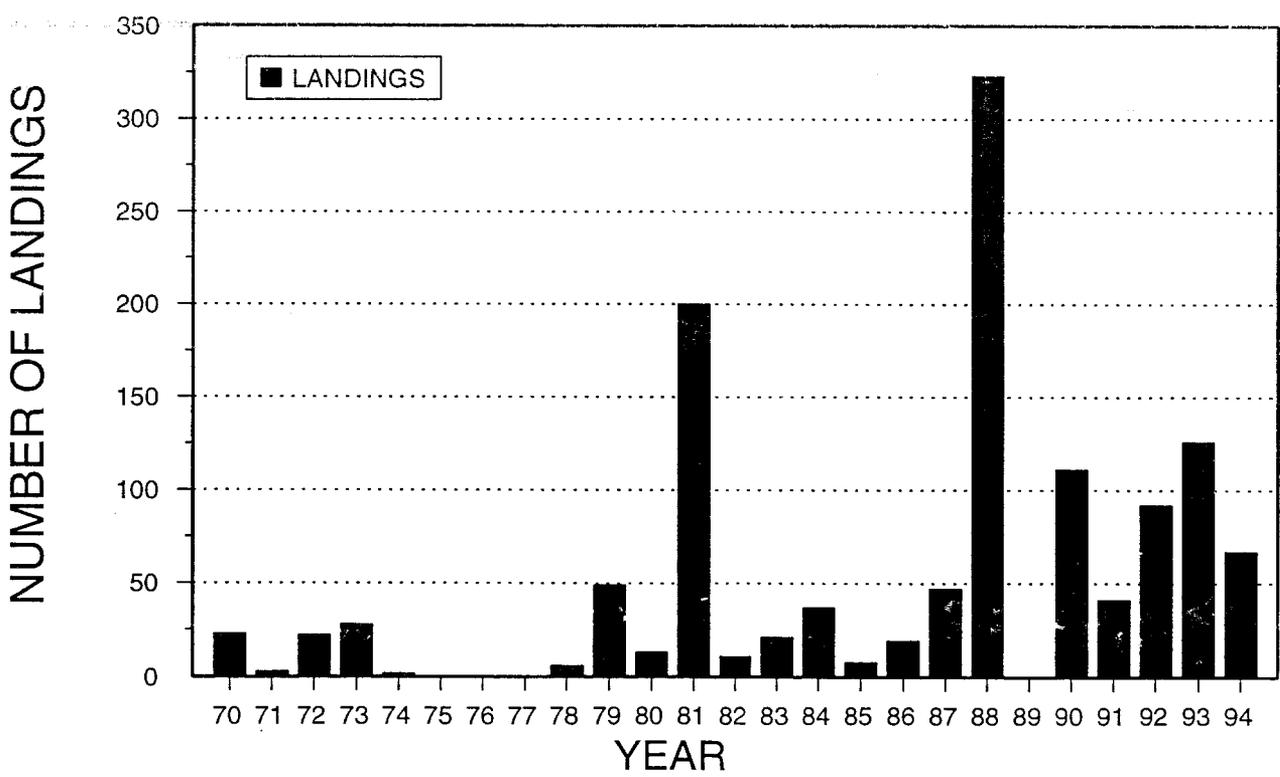
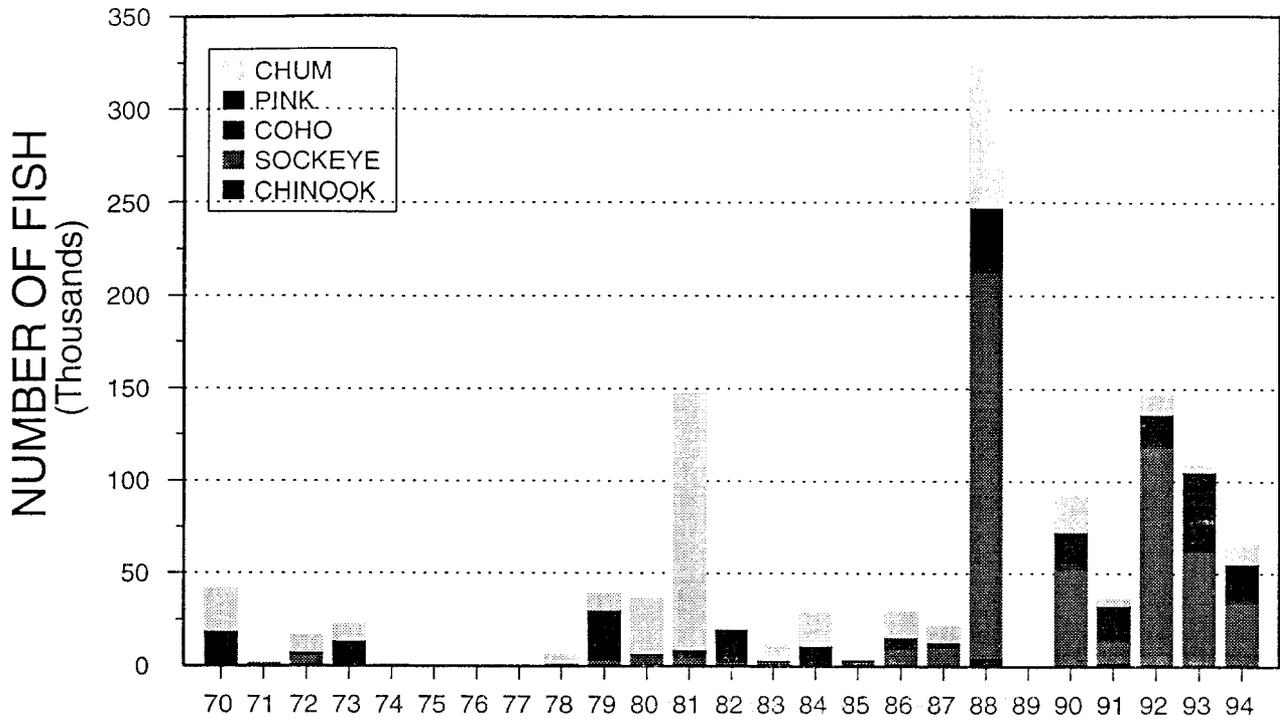
Appendix F.5. Summary of fishing time, zone closures, effort, and harvest by species, for management units affected by the North Shelikof Sockeye Salmon Management Plan for the Kodiak Management Area, 1990 - 1994.



Appendix F.6. Northwest Afognak and Shuyak Island Sections harvest and landings by species, by year July 6-25, 1970-1994.

N.W.AFOGNAK & SHUYAK SECTIONS COMBINED, JULY 6-25.

YEAR	LANDINGS	CHINOOK	SOCKEYE	COHO	PINK	CHUM
70	135	8	1,745	889	159,367	3,112
71	0	0	0	0	0	0
72	97	59	2,987	237	65,925	4,692
73	20	11	679	19	13,703	421
74	17	0	1,742	36	7,657	338
75	7	0	264	1	1,046	230
76	42	11	894	39	11,399	261
77	0	0	0	0	0	0
78	21	2	1,415	2	20,452	2,137
79	10	1	1,940	18	5,134	43
80	9	2	152	4	9,540	256
81	23	0	1,179	64	21,103	3,886
82	1	0	370	2	55	28
83	18	18	10,719	53	8,806	972
84	19	8	2,204	24	9,196	1,257
85	6	0	1,116	13	429	143
86	5	0	113	4	5,110	145
87	9	1	5,344	280	5,222	841
88	349	344	184,031	3,454	112,002	25,917
89	0	0	0	0	0	0
90	23	10	5,157	47	2,153	238
91	35	88	7,203	1,115	27,133	1,156
92	42	21	10,193	188	9,679	2,602
93	38	35	17,874	265	33,596	1,089
94	32	21	4,335	259	32,897	1,136

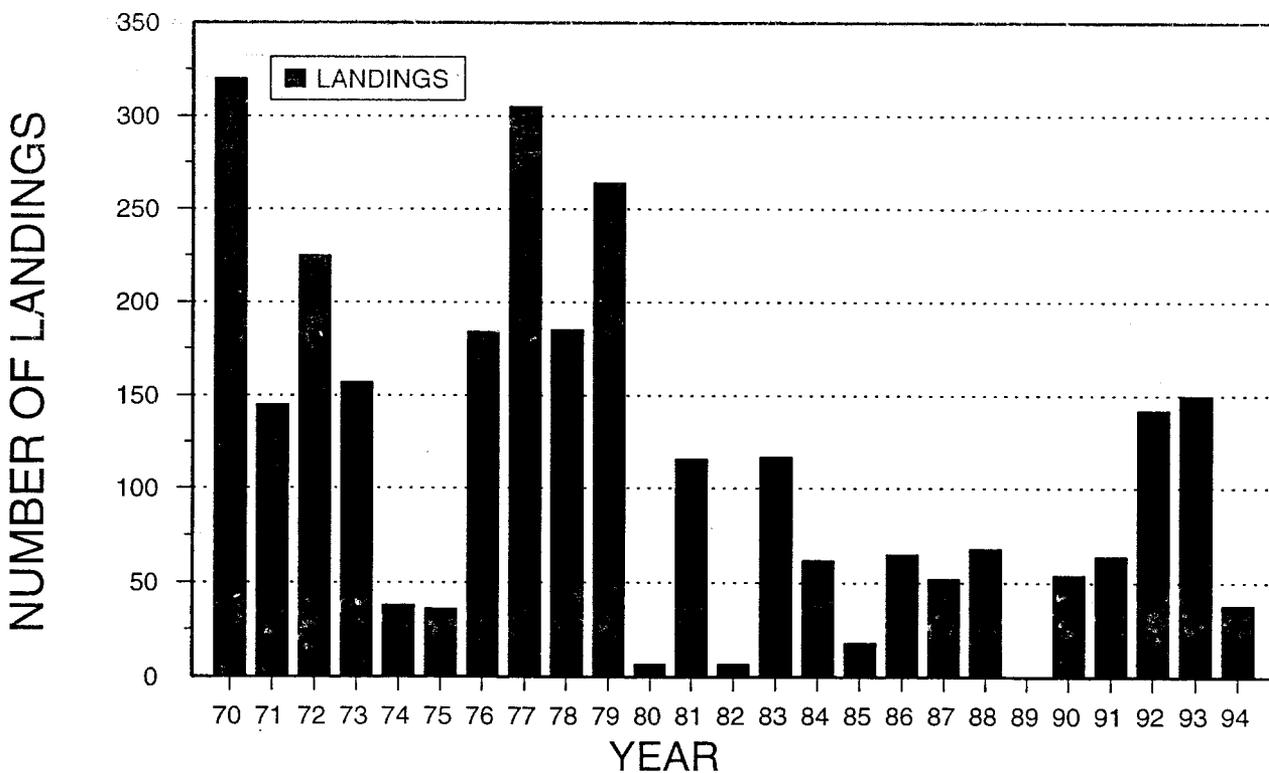
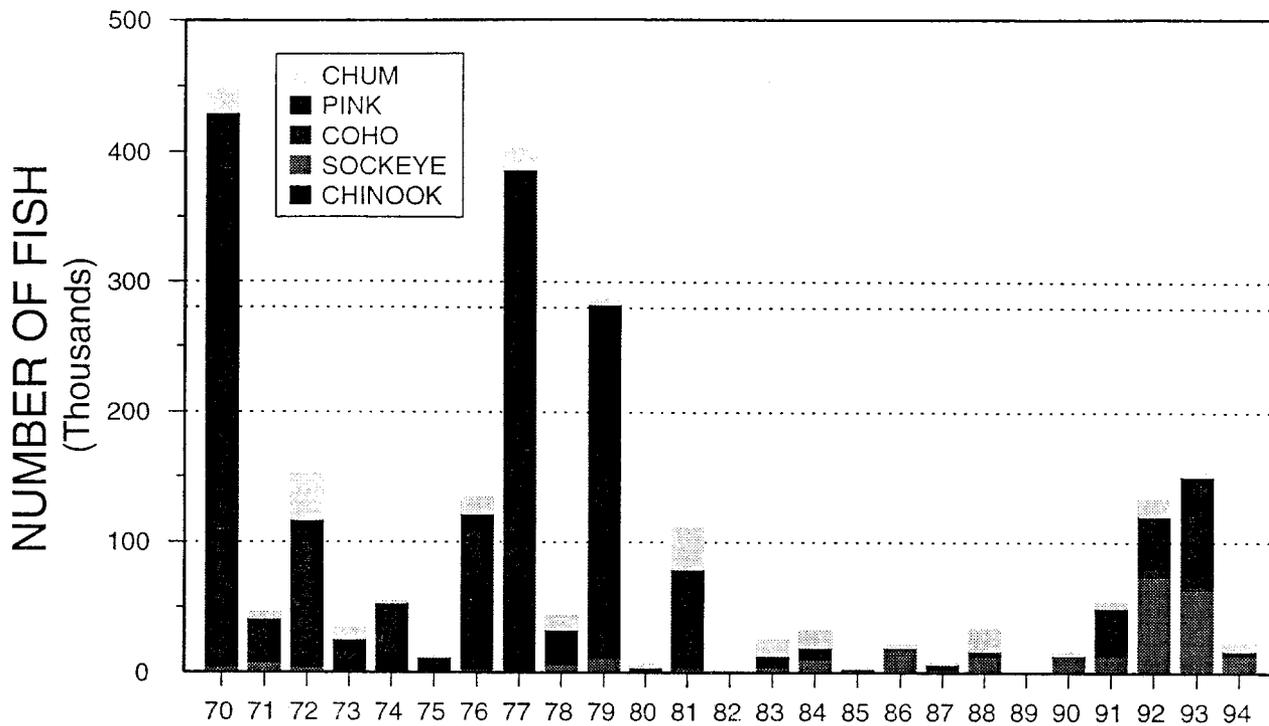


Appendix F.7. Dakavak, Inner and Outer Kukak, Hallo Bay, and Big River Sections combined harvest and landings by species, by year July 6-25, 1970-1994.

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12-01-94

DAKAVAK, IN.& OUT. KUKAK, HALLO BAY, BIG RIVER SECTIONS COMBINED,
JULY 6-25.

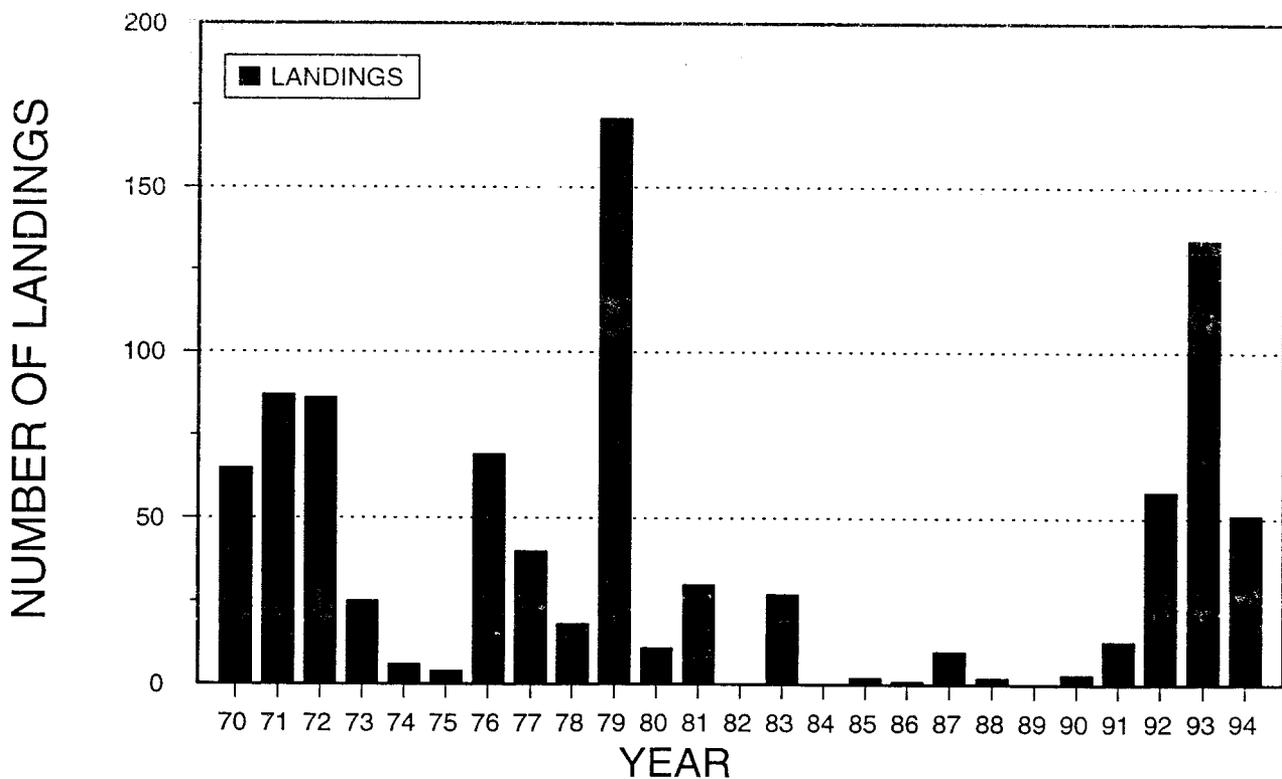
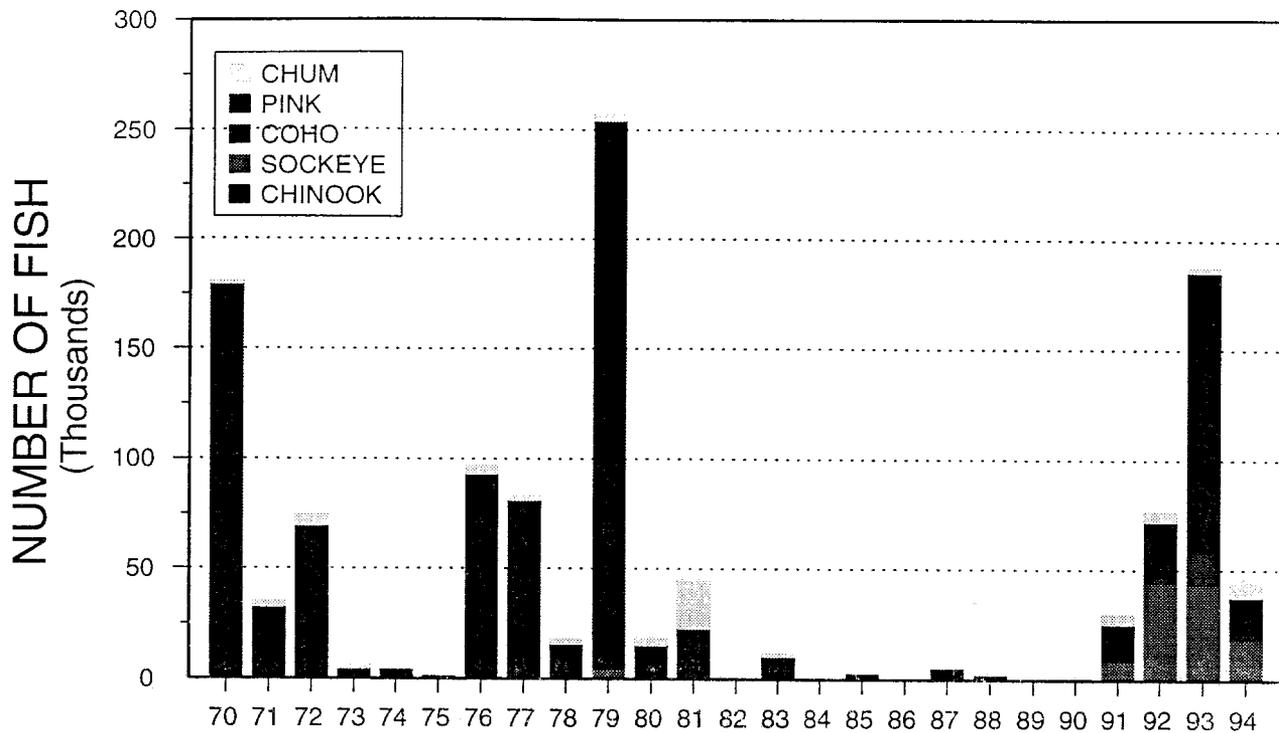
YEAR	LANDINGS	CHINOOK	SOCKEYE	COHO	PINK	CHUM
70	23	0	1,172	3	17,893	22,242
71	3	0	1,449	1	54	2
72	22	0	5,798	142	1,924	8,054
73	28	0	230	1	13,716	8,054
74	2	0	615	0	0	0
75	0	0	0	0	0	0
76	0	0	0	0	0	0
77	0	0	0	0	0	0
78	6	1	165	1	1,707	4,487
79	49	15	3,298	4	27,094	8,591
80	13	0	5,970	0	1,085	29,405
81	200	7	4,908	16	4,370	137,686
82	11	1	2,050	0	18,438	1,137
83	21	4	2,815	6	738	7,781
84	37	13	1,397	35	9,795	17,317
85	8	4	2,818	29	1,031	908
86	19	48	9,139	265	6,769	13,260
87	47	280	10,219	96	2,656	7,998
88	323	4,854	207,888	2,468	32,371	75,371
89	0	0	0	0	0	0
90	111	129	52,557	3,864	16,454	19,174
91	41	2,379	11,604	1,592	17,702	2,636
92	92	924	118,175	2,877	14,626	9,407
93	126	1,181	60,541	1,689	42,039	3,158
94	67	143	34,505	2,109	19,072	9,333



Appendix F.8. Inner and Outer Ugak Sections harvest and landings by species, by year July 6-25, 1970-1994.

INNER & OUTER UGAK SECTIONS, JULY 6-25.

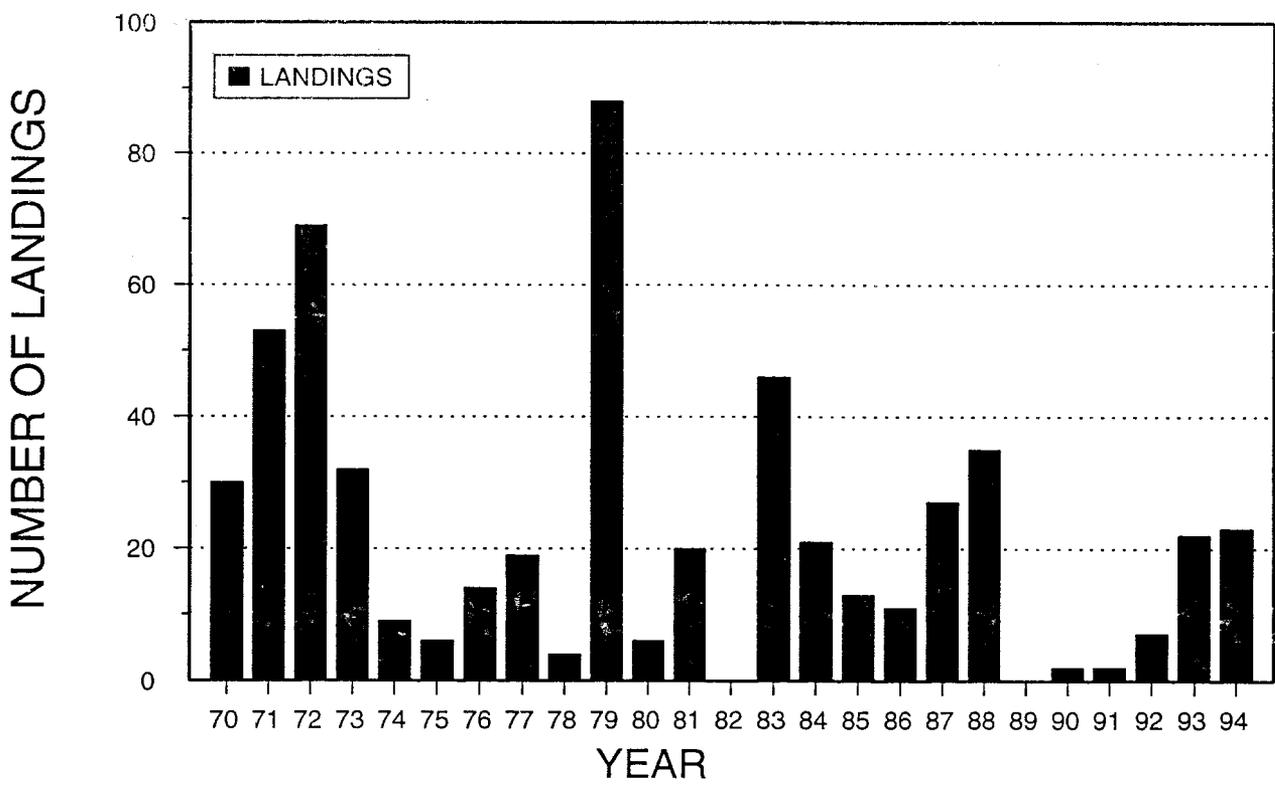
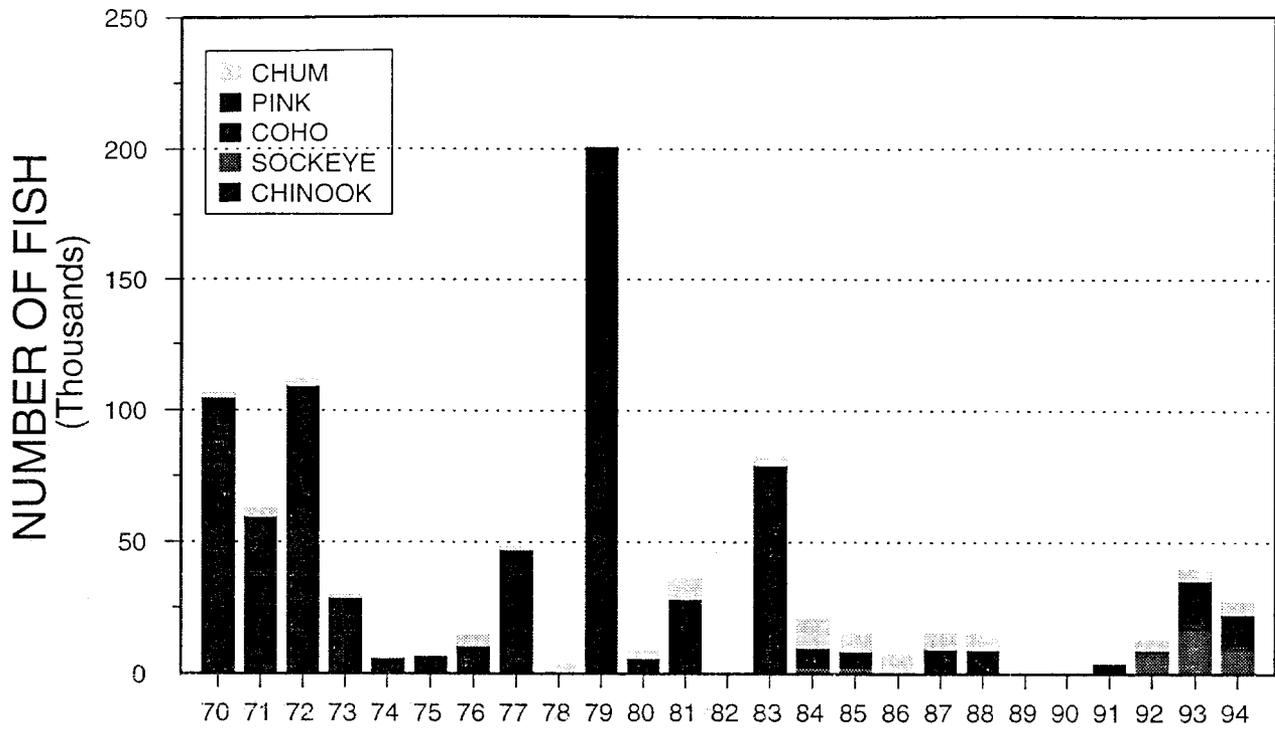
YEAR	LANDINGS	CHINOOK	SOCKEYE	COHO	PINK	CHUM
70	320	36	4,165	78	425,872	17,095
71	145	17	7,305	19	33,951	4,423
72	225	48	4,373	191	112,440	35,490
73	157	209	1,254	27	24,176	8,544
74	38	1	1,478	0	51,855	1,090
75	36	1	291	1	11,697	536
76	184	34	2,690	19	118,944	12,688
77	305	6	2,109	40	383,887	15,556
78	185	21	6,095	0	26,724	10,888
79	264	24	10,978	263	271,776	3,397
80	7	0	130	0	4,270	1,889
81	116	7	3,548	741	75,020	31,558
82	7	5	596	0	27	1,515
83	117	129	4,137	23	9,027	12,111
84	62	181	10,395	107	9,091	12,573
85	18	28	1,378	18	2,152	504
86	65	154	18,321	9	1,430	1,876
87	52	192	3,338	3	3,506	754
88	68	1,215	12,147	8	3,740	16,443
89	0	0	0	0	0	0
90	54	365	12,535	0	1,113	1,902
91	64	236	13,022	384	36,797	3,415
92	142	562	73,044	6,366	40,461	12,360
93	150	909	63,029	3,443	83,638	2,233
94	38	141	13,137	824	3,578	4,474



Appendix F.9. Two Headed Sections harvest and landings by species, by year July 6-25, 1970-1994.

TWO-HEADED SECTION, JULY 6-25.

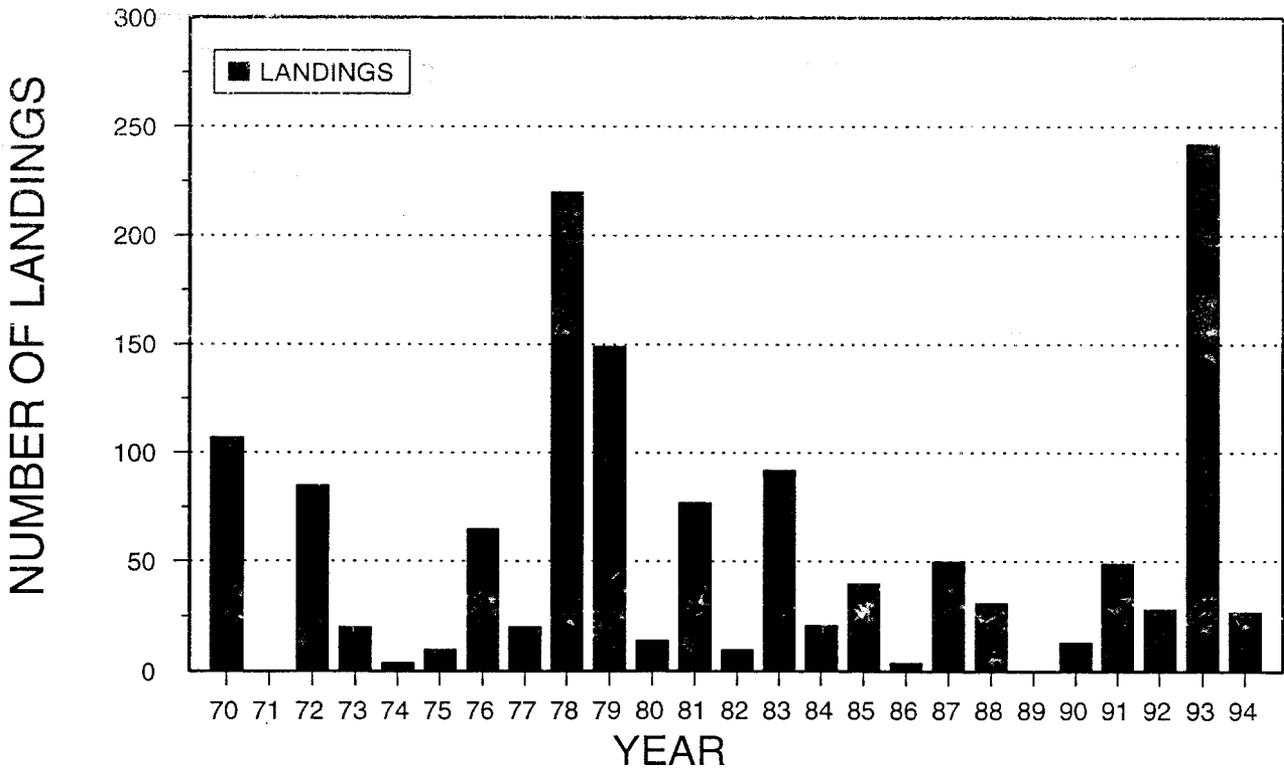
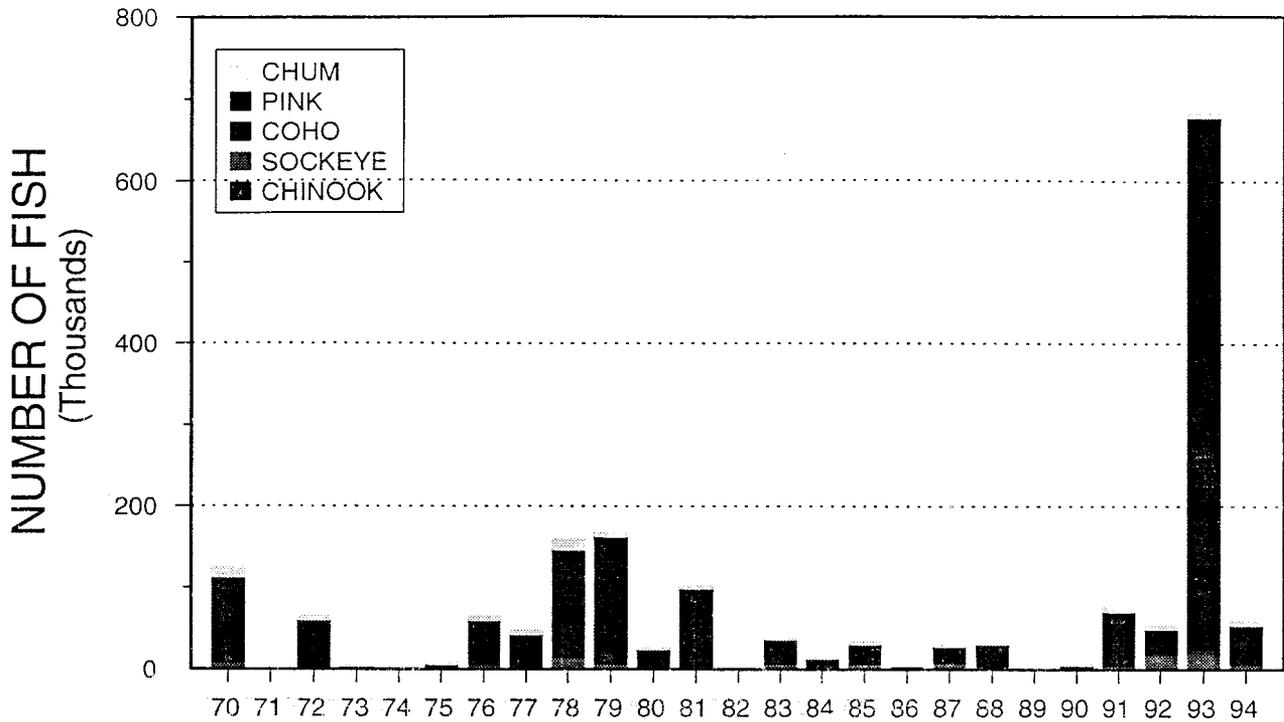
YEAR	LANDINGS	CHINOOK	SOCKEYE	COHO	PINK	CHUM
70	65	6	194	43	179,264	1,042
71	87	51	1,379	65	31,306	2,051
72	86	21	190	30	69,459	4,280
73	25	4	235	9	4,387	1,191
74	6	2	52	4	3,900	45
75	4	0	4	0	1,058	0
76	69	26	928	46	92,062	3,412
77	40	2	694	87	80,585	1,522
78	18	1	119	1	15,852	1,877
79	171	471	4,046	483	249,229	2,706
80	11	0	295	10	15,122	3,124
81	30	14	398	1	22,755	21,667
82	0	0	0	0	0	0
83	27	22	1,113	14	9,274	1,012
84	0	0	0	0	0	0
85	2	0	429	0	1,929	44
86	1	0	21	0	44	33
87	10	47	1,267	92	4,019	576
88	2	2	596	22	1,824	347
89	0	0	0	0	0	0
90	3	1	316	232	335	379
91	13	46	8,655	910	15,938	4,175
92	58	179	44,178	2,866	24,876	4,597
93	134	1,209	42,330	15,266	126,999	1,639
94	51	114	18,393	2,812	16,586	8,136



Appendix F.10. Seven Rivers Section harvest and landings by species, by year July 6-25, 1970-1994.

SEVEN RIVER SECTION, JULY 6-25.

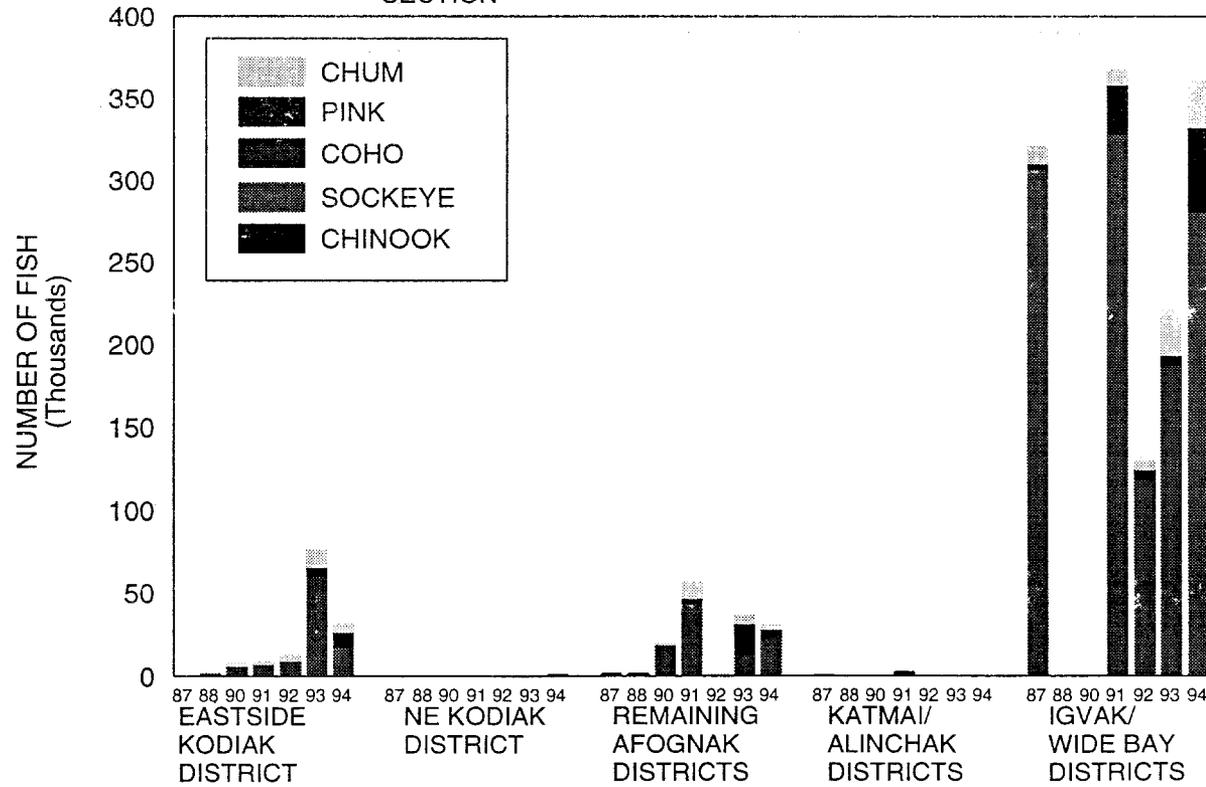
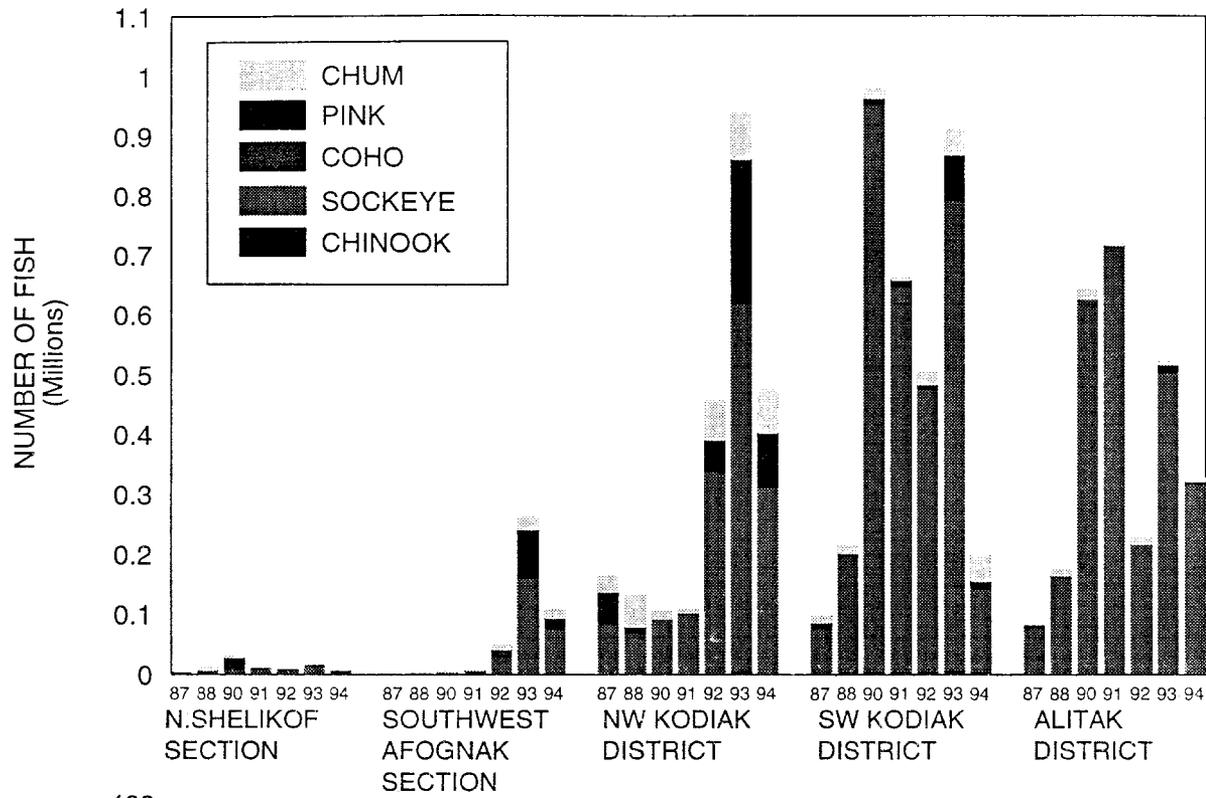
YEAR	LANDINGS	CHINOOK	SOCKEYE	COHO	PINK	CHUM
70	30	0	202	12	104,826	1,482
71	53	0	385	3	59,389	2,888
72	69	1	506	6	109,035	2,535
73	32	0	278	4	28,678	1,083
74	9	0	550	0	5,654	63
75	6	0	614	0	5,811	5
76	14	1	70	1	10,654	3,832
77	19	0	48	1	47,129	1,082
78	4	0	248	0	176	2,921
79	88	0	1,266	16	199,859	677
80	6	0	2	0	6,124	2,352
81	20	2	340	1	28,264	7,140
82	0	0	0	0	0	0
83	46	3	1,179	12	78,072	3,166
84	21	0	2,441	0	7,800	10,236
85	13	0	2,619	1	6,237	6,028
86	11	0	199	0	765	6,028
87	27	0	834	0	8,875	5,280
88	35	0	717	10	8,521	5,672
89	0	0	0	0	0	0
90	2	0	971	0	0	211
91	2	0	574	0	3,170	0
92	7	12	8,376	231	713	3,281
93	22	162	16,538	3,165	15,804	3,738
94	23	114	9,206	1,998	11,597	4,275



Appendix F.11. Duck Bay, Izhut Bay, and Kitoi Bay Sections harvest and landings by species, by year July 6-25, 1970-1994.

DUCK BAY, IZHUT BAY, & KITOI BAY SECTIONS COMBINED,
JULY 6-25.

YEAR	LANDINGS	CHINOOK	SOCKEYE	COHO	PINK	CHUM
70	107	11	7,133	2,399	103,095	10,934
71	0	0	0	0	0	0
72	85	33	2,755	380	57,483	3,774
73	20	1	457	47	3,240	673
74	4	0	258	8	631	15
75	10	6	1,223	255	4,715	1,074
76	65	40	5,154	720	53,783	4,765
77	20	0	1,343	128	41,106	4,183
78	220	132	13,484	1,488	131,008	12,412
79	149	5	5,081	2,030	155,721	4,138
80	14	3	223	225	24,071	611
81	77	5	2,988	819	95,123	3,971
82	10	21	495	46	339	94
83	92	58	6,201	384	29,670	1,268
84	21	2	1,587	325	11,613	484
85	40	14	5,919	1,452	23,776	1,828
86	4	0	237	3	2,157	61
87	50	3	7,092	1,665	19,095	1,724
88	31	5	3,288	544	26,968	1,299
89	0	0	0	0	0	0
90	13	16	978	184	3,933	958
91	49	16	3,504	1,578	65,909	4,755
92	28	169	17,814	1,922	29,481	3,742
93	242	167	18,708	6,262	652,591	4,043
94	27	253	4,593	2,375	47,162	4,255



Appendix F.12. Kodiak Area harvest by species, by 10 major harvest locations, June 1 - July 5, 1987-1994.

Appendix F.12. (page 2 of 3)

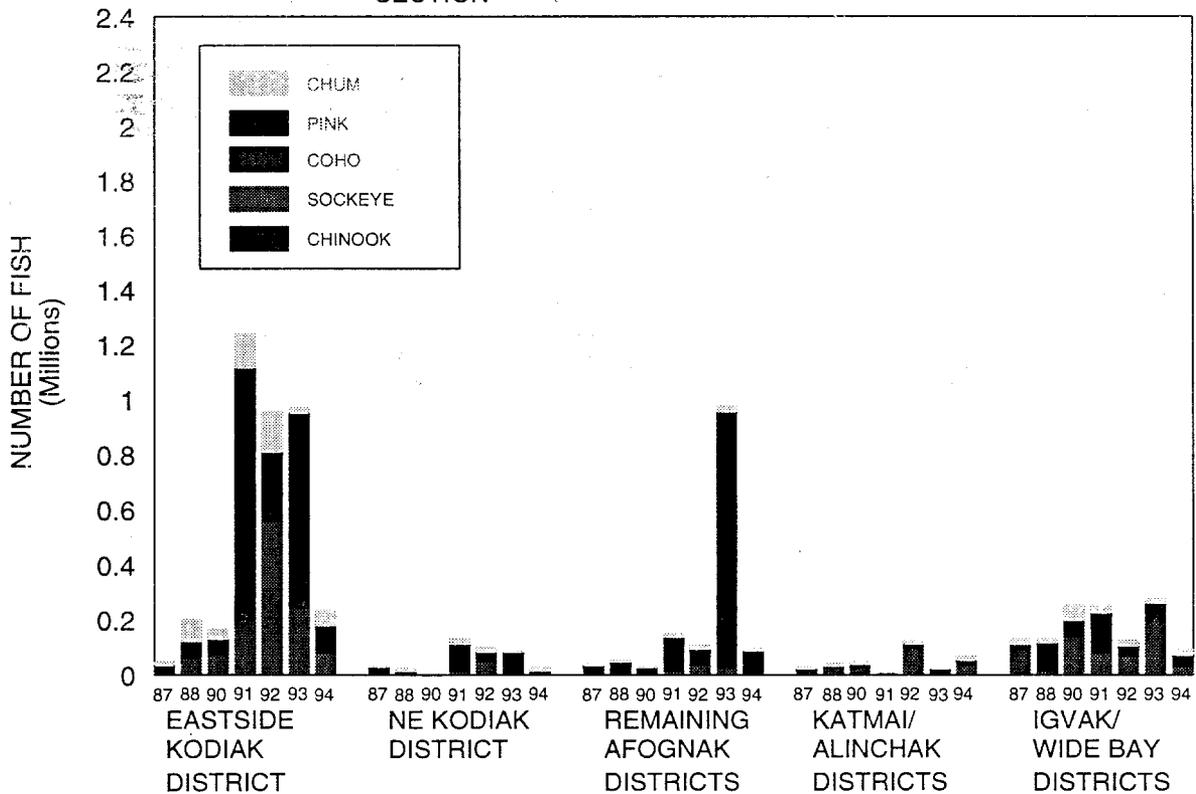
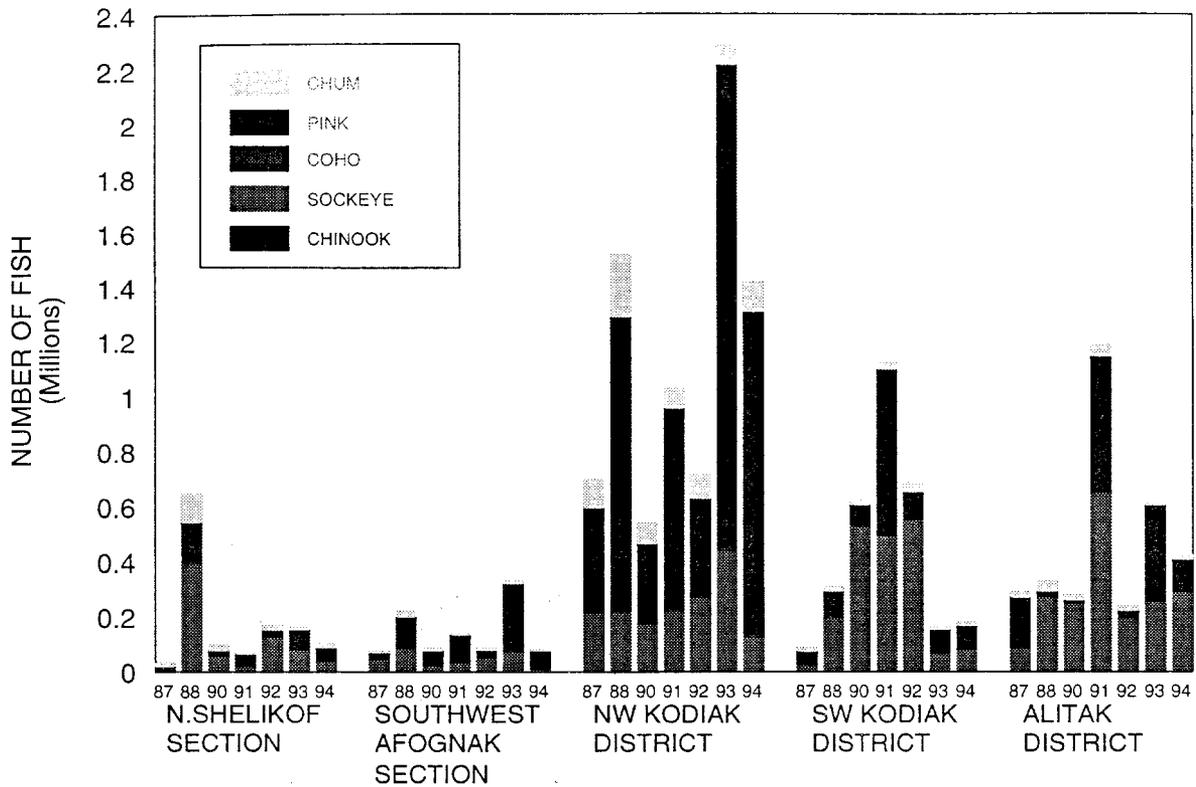
KODIAK MANAGEMENT AREA
1987-1993 COMMERCIAL HARVEST BY SPECIES
JUNE 1-JULY 5

		CHINOOK	SOCKEYE	COHO	PINK	CHUM
N.SHELIKOF	87	1	1,480	0	0	4
	88	196	8,385	3	71	1,747
	90	13	8,649	365	19,551	388
	91	0	8,306	0	514	61
	92	6	7,189	0	3	75
	93	127	12,931	0	971	369
	94	88	4512	0	420	404
S.W.AFOGNAK	87	0	105	0	0	7
	88	201	286	0	30	238
	90	5	5,533	0	239	686
	91	24	8,411	0	270	312
	92	1,171	29,523	40	11,888	4,587
	93	3,523	156,503	280	82,449	19,890
	94	4069	71929	103	18070	12244
N.W.KODIAK	87	398	84,162	77	52,928	26,242
	88	1,650	66,604	115	11,789	51,304
	90	427	91,536	12	1,210	10,648
	91	435	100,797	18	1,214	4,048
	92	3,175	335,539	308	53,332	63,651
	93	6,204	612,492	4,462	238,890	74,875
	94	4134	308193	1120	90705	71343
S.W.KODIAK	87	942	76,261	23	9,118	10,319
	88	3,344	194,510	12	4,432	11,786
	90	4,913	946,431	2,717	8,846	14,410
	91	4,315	643,987	30	10,929	3,569
	92	5,277	472,154	56	6,812	20,403
	93	7,312	784,408	946	77,313	41,543
	94	4542	138235	30	12558	42545
ALITAK	87	13	80,208	2	199	185
	88	320	165,404	27	127	7,841
	90	402	627,580	50	313	14,301
	91	311	715,284	24	2,979	3,165
	92	720	215,896	20	788	11,167
	93	1,032	504,732	90	12,538	4,893
	94	1418	317403	66	4448	5085
EASTSIDE KOD	87	0	23	0	0	3
	88	43	1,942	5	40	215
	90	20	5,532	0	555	1,076
	91	109	7,112	0	390	606
	92	22	8,658	3	653	2,924

Appendix F.12. (page 3 of 3)

KODIAK MANAGEMENT AREA
 1987-1993 COMMERCIAL HARVEST BY SPECIES
 JUNE 1-JULY 5

		CHINOOK	SOCKEYE	COHO	PINK	CHUM
	93	342	59,972	252	5,212	10,098
	94	158	17792	8	8790	4386
N. E. KODIAK	87	0	0	0	0	0
	88	1	0	0	13	191
	90	0	0	0	0	0
	91	0	0	0	0	0
	92	0	0	0	0	0
	93	0	0	0	0	0
	94	8	500	0	120	31
REM AFOGNAK	87	20	1,479	0	0	1
	88	7	1,222	0	67	171
	90	37	19,153	0	86	336
	91	136	43,485	7	3,017	9,649
	92	25	1,157	0	101	87
	93	266	12,364	741	17,900	4,618
	94	182	22762	66	5451	1262
KATMAI/ALIN	87	0	229	0	0	0
	88	0	0	0	0	0
	90	0	0	0	0	0
	91	5	1,993	0	43	12
	92	0	0	0	0	0
	93	0	0	0	0	0
	94	0	0	0	0	0
IGVAK/W.BAY	87	276	306,906	29	3,015	10,406
	88	0	0	0	0	0
	90	0	0	0	0	0
	91	516	327,859	77	30,111	8,811
	92	401	117,880	5	6,235	4,850
	93	1,731	185,474	59	6,150	26,924
	94	481	280,032	11	51,908	28,111



Appendix F.13. Kodiak Area harvest by species, by 10 major harvest locations, July 6-25, 1987-1994.

Appendix F.13. (page 2 of 3)

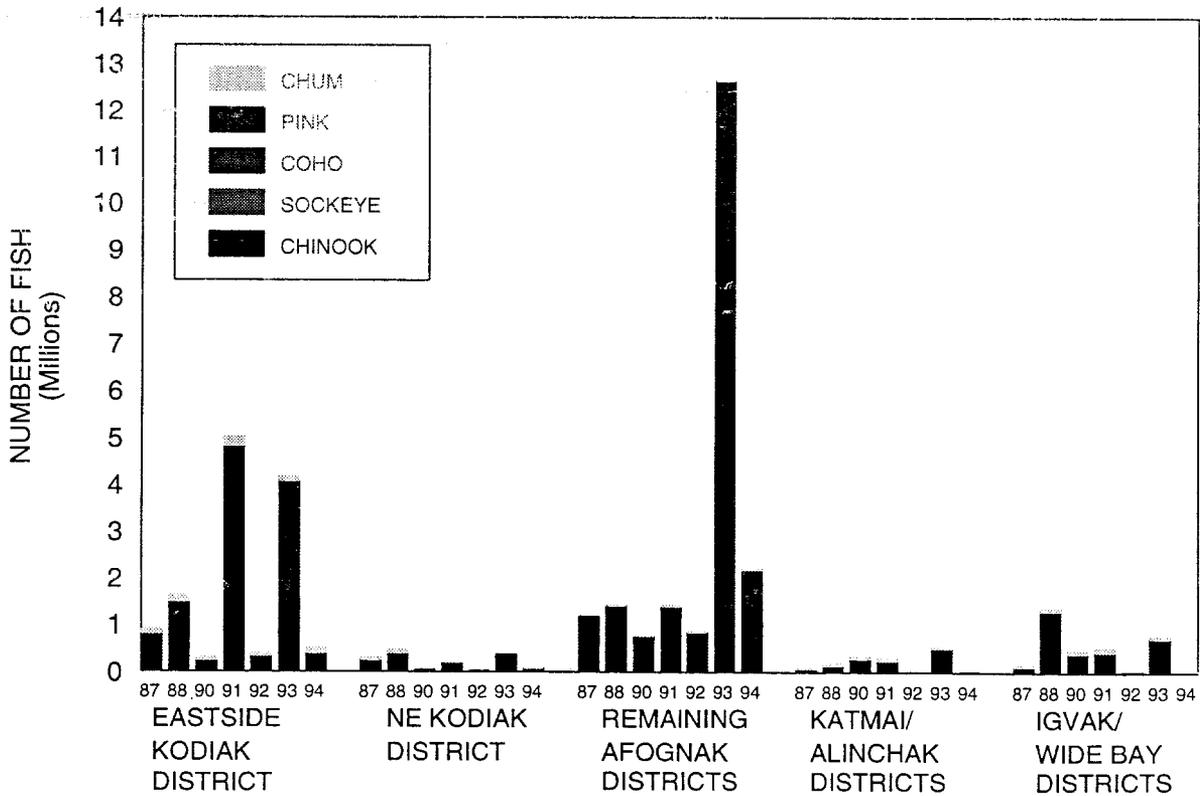
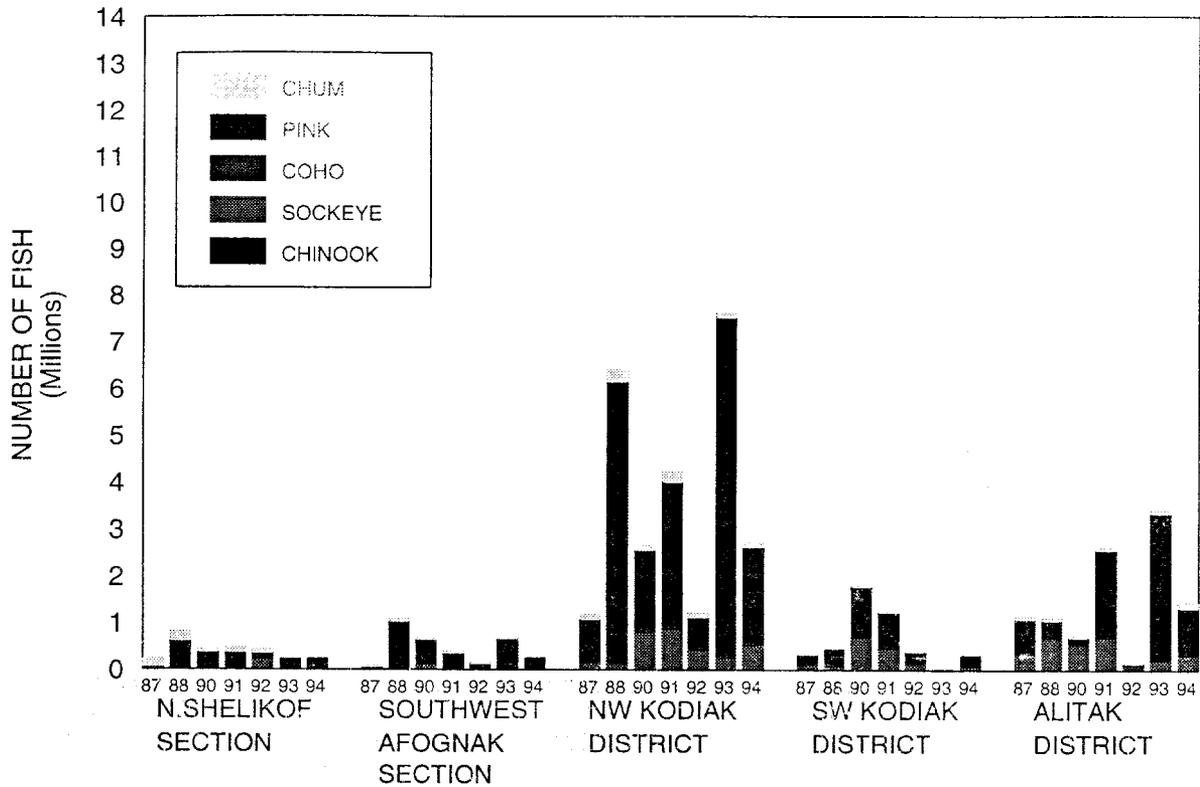
KODIAK MANAGEMENT AREA
 1987-1993 COMMERCIAL HARVEST BY SPECIES
 JULY 6-JULY 25

		CHINOOK	SOCKEYE	COHO	PINK	CHUM
N.SHELIKOF	87	281	15,563	376	7,878	8,839
	88	5,198	391,919	5,922	144,373	101,288
	90	139	57,714	3,911	18,607	19,412
	91	2,467	18,807	2,707	44,835	3,792
	92	945	128,368	3,065	24,305	12,009
	93	1,216	78,415	1,954	75,635	4,247
	94	164	38840	2368	51969	10469
S.W.AFOGNAK	87	12	45,869	427	25,972	3,973
	88	338	87,209	1,350	114,980	15,929
	90	277	22,944	3,605	53,752	6,036
	91	309	34,183	3,586	100,680	4,043
	92	304	50,576	605	30,018	6,826
	93	858	74,005	7,100	242,923	7,419
	94	355	13560	1002	64321	3090
N.W.KODIAK	87	251	213,973	4,206	382,018	99,731
	88	1,542	216,579	8,667	1,070,377	228,796
	90	1,492	173,052	6,472	288,422	75,102
	91	1,069	222,657	11,707	727,246	72,323
	92	975	271,344	8,416	352,549	82,419
	93	2,224	438,423	25,967	1,753,763	64,072
	94	1491	126116	13145	1176929	107011
S.W.KODIAK	87	212	26,036	247	50,974	10,646
	88	390	200,189	302	96,648	12,550
	90	687	533,566	1,414	74,739	11,712
	91	1,392	493,918	4,588	604,424	19,985
	92	433	556,365	905	99,888	34,580
	93	404	66,566	518	90,208	5,033
	94	675	80925	750	88390	12065
ALITAK	87	39	90,752	313	183,140	15,981
	88	122	274,237	330	21,059	37,394
	90	137	252,162	426	10,049	19,353
	91	414	652,681	1,435	499,521	38,944
	92	152	196,514	845	28,344	15,106
	93	596	255,881	2,791	348,596	7,713
	94	343	289577	981	121069	14325
EASTSIDE KOD	87	302	11,198	361	26,175	9,822
	88	1,413	62,625	5,856	51,896	77,601
	90	1,414	68,693	14,212	47,308	32,507
	91	2,817	196,917	31,700	886,789	120,056
	92	1,565	555,240	36,919	217,791	145,512

Appendix F.13. (page 3 of 3)

KODIAK MANAGEMENT AREA
 1987-1993 COMMERCIAL HARVEST BY SPECIES
 JULY 6-JULY 25

	CHINOOK	SOCKEYE	COHO	PINK	CHUM
93	6,429	236,578	51,505	659,028	16,416
94	732	76853	17290	85226	53659
N.E.KODIAK					
87	13	2,596	309	29,272	1,090
88	48	263	29	15,094	12,566
90	3	5	0	892	642
91	228	14,273	6,332	93,066	15,023
92	149	49,835	6,325	27,622	15,910
93	37	6,636	1,414	76,646	1,721
94	296	3301	2835	10890	12799
REM AFOGNAK					
87	14	10,812	2,250	25,023	2,440
88	11	5,373	853	43,917	3,613
90	49	5,933	459	22,880	2,968
91	121	12,203	3,152	122,479	12,104
92	391	36,816	4,126	53,153	14,586
93	455	29,291	10,923	917,197	20,739
94	470	7026	3640	77700	7681
KATMAI/ALIN					
87	745	15,824	2,423	7,689	4,486
88	385	27,936	118	5,417	12,667
90	106	23,276	3,266	14,071	7,076
91	76	1,570	22	1,369	102
92	440	98,051	1,676	13,775	8,792
93	278	18,291	563	7,945	1,289
94	394	37943	1182	16288	10915
IGVAK/W.BAY					
87	181	95,048	983	15,915	18,453
88	215	13,150	3,287	101,997	12,455
90	2,556	134,452	6,789	56,813	54,547
91	861	77,385	7,807	139,228	25,309
92	573	70,163	1,654	33,745	17,143
93	3,918	189,595	5,613	62,212	15,285
94	214	32,755	1,464	39,038	19,516



Appendix F.14. Kodiak Area harvest by species, by 10 major harvest locations, July 26 - October 31, 1987-1994.

Appendix F.14. (page 2 of 3)

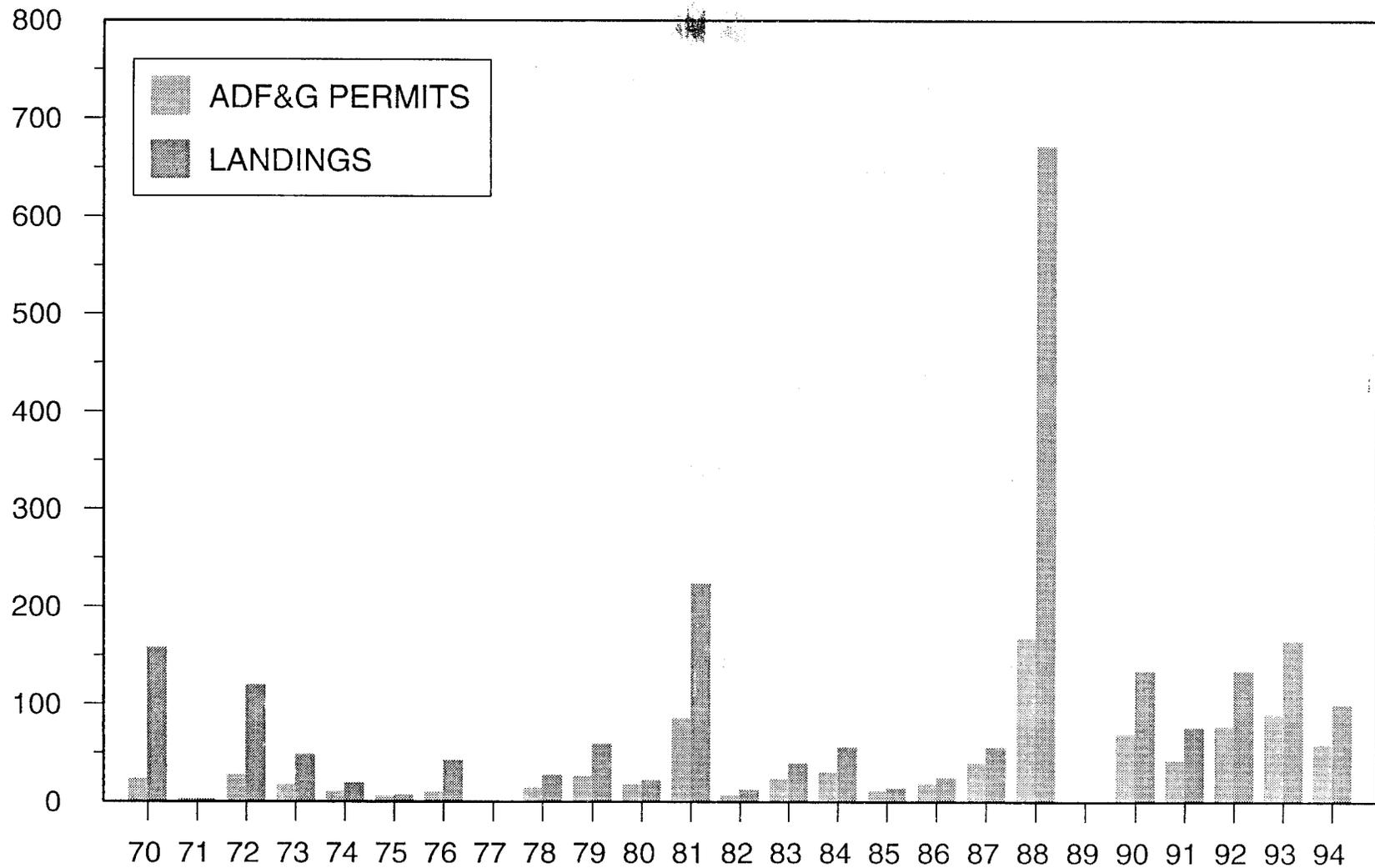
KODIAK MANAGEMENT AREA
1987-1993 COMMERCIAL HARVEST BY SPECIES
JULY 26 - OCTOBER 31

		CHINOOK	SOCKEYE	COHO	PINK	CHUM
N.SHELIKOF	87	12	18,127	23,923	34,203	143,293
	88	1,161	23,825	17,852	583,093	188,929
	90	213	38,354	28,620	321,662	41,142
	91	283	7,935	21,923	346,086	76,871
	92	237	218,363	35,632	116,122	48,368
	93	90	13,360	11,505	197,599	3,779
	94	60	23,337	33,948	171,328	6,614
S.W.AFOGNAK	87	62	29,272	2,407	46,064	3,527
	88	1,182	9,064	25,491	1,009,853	28,580
	90	468	117,666	27,490	508,870	12,033
	91	340	29,883	14,085	324,547	24,493
	92	917	34,413	19,211	95,120	5,801
	93	621	28,666	11,208	641,007	7,363
	94	405	14,989	13,027	216,127	5,231
N.W.KODIAK	87	117	157,287	40,928	894,382	102,810
	88	3,020	134,951	86,218	5,947,934	256,354
	90	2,978	802,894	101,904	1,660,996	82,023
	91	3,361	854,064	106,930	3,059,187	207,211
	92	4,341	413,247	86,996	637,490	79,903
	93	1,036	264,036	73,985	7,210,277	80,056
	94	927	524,635	97,025	2,033,196	72,584
S.W.KODIAK	87	274	121,980	36,751	181,862	4,356
	88	181	89,503	18,960	318,435	4,409
	90	843	689,729	32,861	1,077,204	6,233
	91	535	454,902	38,908	760,485	10,209
	92	645	143,630	12,200	251,208	4,609
	93	7	271	31	7,250	320
	94	332	86,629	11,753	203,615	3,465
ALITAK	87	53	344,524	17,645	733,544	43,561
	88	182	684,805	29,644	364,549	48,166
	90	268	556,550	17,700	134,565	16,652
	91	96	696,099	23,142	1,871,021	40,908
	92	184	113,857	23,683	30,141	8,326
	93	200	239,501	16,390	3,104,369	41,033
	94	184	324,946	31,177	995,315	92,727
EASTSIDE KOD	87	116	6,804	18,196	791,672	80,781
	88	187	11,003	14,633	1,473,851	138,277
	90	496	20,836	5,390	222,351	53,160
	91	1,502	51,635	18,829	4,763,248	186,195
	92	773	20,229	23,016	305,134	35,914

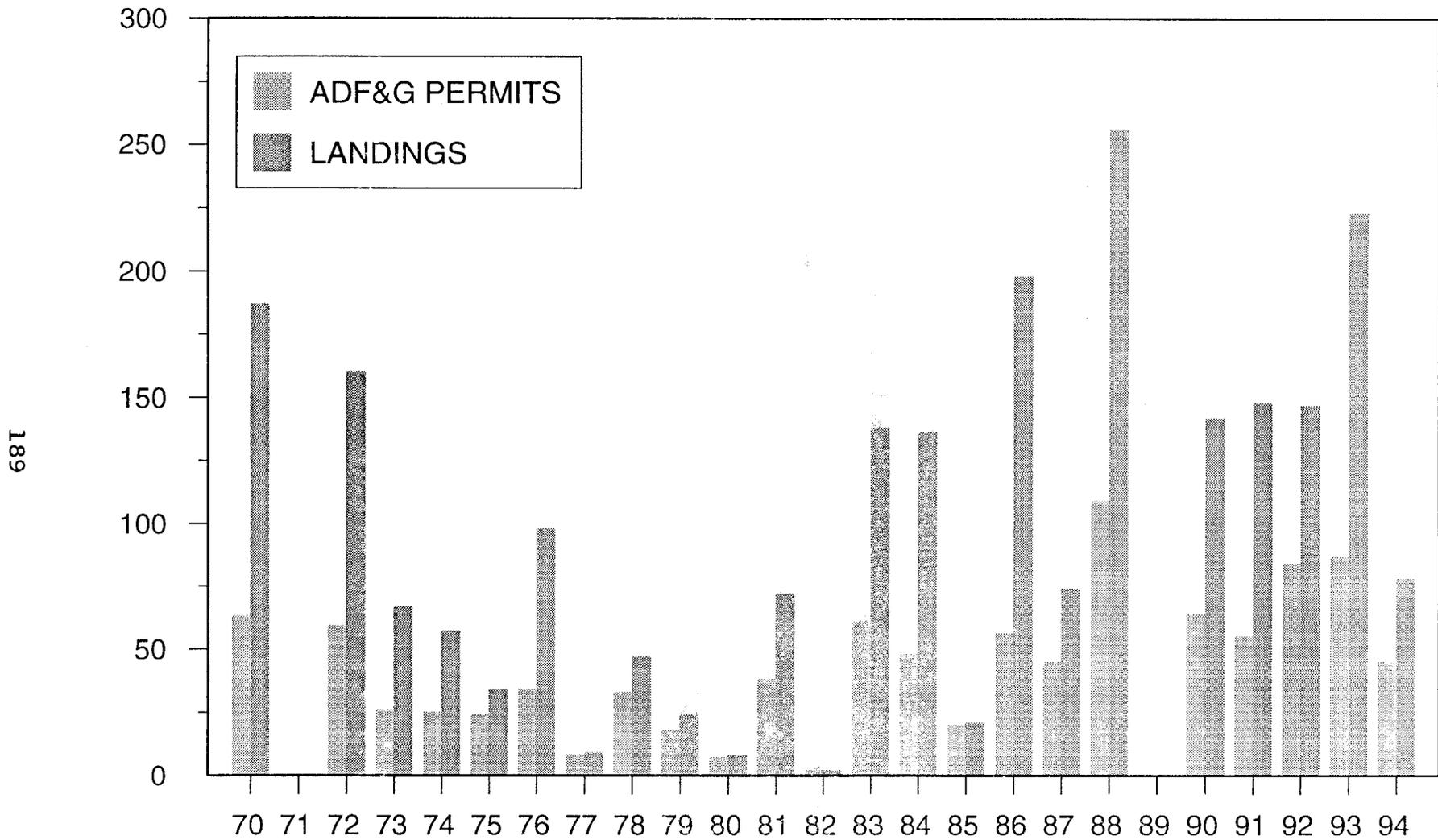
Appendix F.14. (page 3 of 3)

KODIAK MANAGEMENT AREA
 1987-1993 COMMERCIAL HARVEST BY SPECIES
 JULY 26 - OCTOBER 31

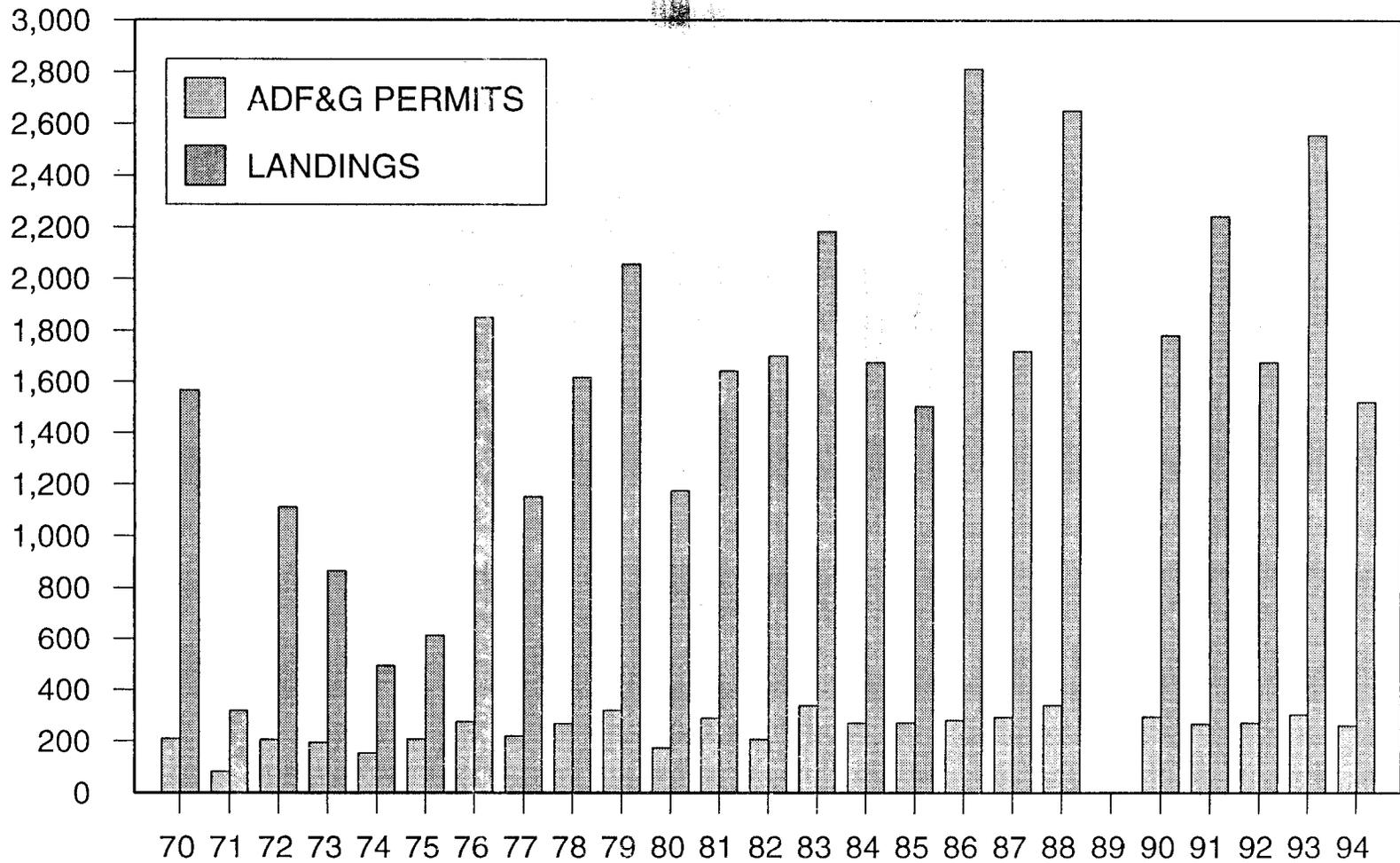
		CHINOOK	SOCKEYE	COHO	PINK	CHUM
	93	1,024	52,291	37,682	4,002,253	81,386
	94	240	15,716	5,453	382,015	110,083
N.E.KODIAK	87	6	1,158	13,276	247,385	28,323
	88	86	468	4,100	404,138	58,923
	90	24	509	100	30,548	5,041
	91	55	132	175	203,372	12,194
	92	10	3,472	790	8,165	1,316
	93	8	200	219	372,236	1,273
	94	4	87	789	80,777	5,801
REM AFOGNAK	87	38	8,638	15,053	1,154,151	5,326
	88	93	5,459	39,649	1,380,844	7,875
	90	123	10,757	14,871	757,209	7,723
	91	69	4,871	9,046	1,393,343	19,960
	92	139	7,617	7,227	850,986	6,694
	93	289	14,919	30,920	12,608,054	10,657
	94	193	9,384	49,764	2,139,363	7,826
KATMAI/ALIN	87	1	197	2,737	76,763	17,253
	88	17	652	822	148,723	37,521
	90	47	3,705	2,088	292,999	24,036
	91	27	932	1,933	242,571	34,272
	92	10	6,826	1,405	7,777	9,717
	93	155	4,798	1,519	510,173	10,326
	94	0	2	0	5,955	765
IGVAK/W.BAY	87	234	28,262	9,598	95,759	30,165
	88	841	21,451	39,053	1,245,291	69,024
	90	671	31,189	19,097	359,075	58,507
	91	361	21,819	16,697	409,877	74,844
	92	319	4,949	4,957	47,499	18,284
	93	1,817	37,117	14,830	690,626	24,994
	94	16	9,497	7,226	10,583	16,760



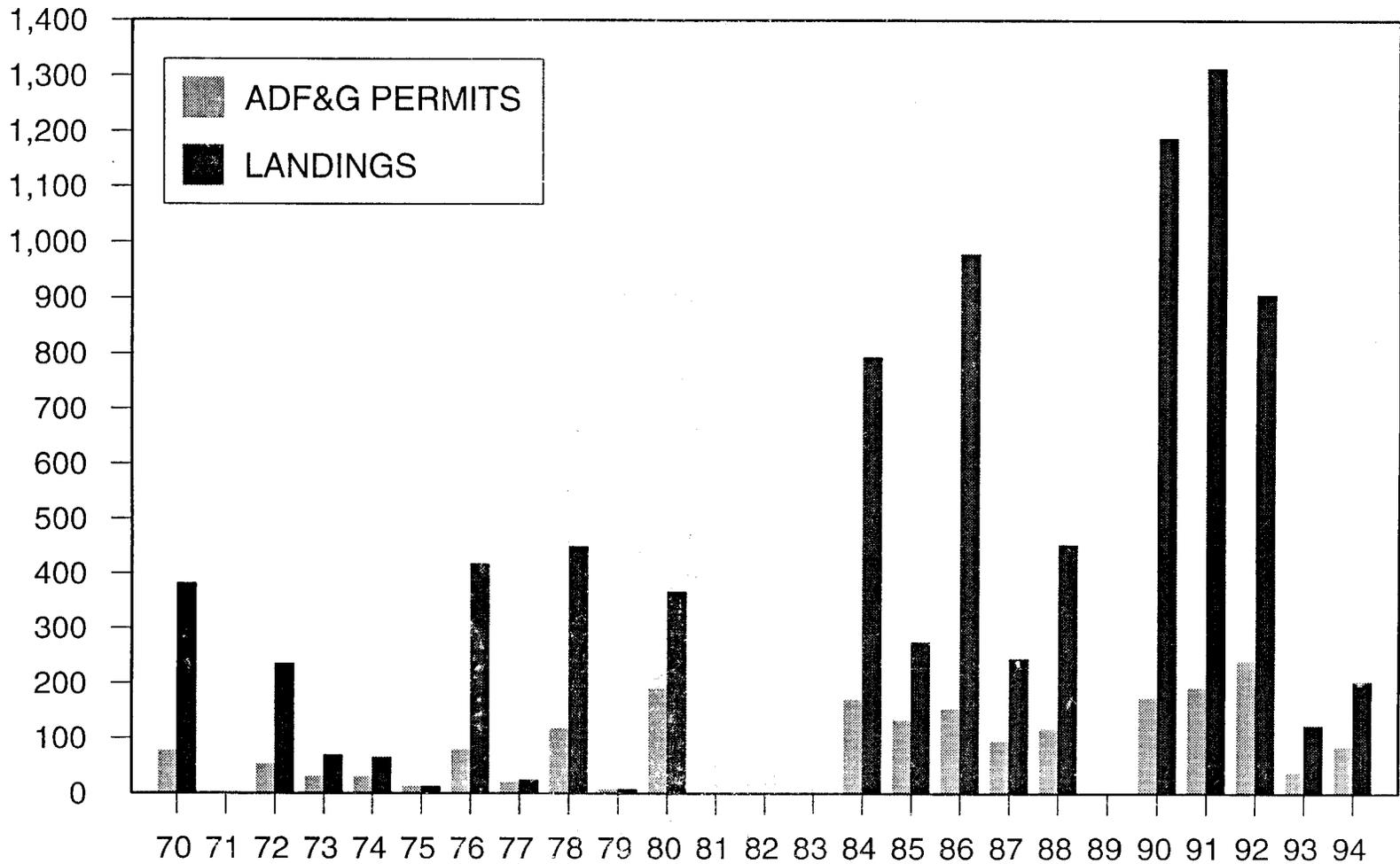
Appendix G.1. North Shelikof Sections permits and landings by year July 6-25, 1970-1994.



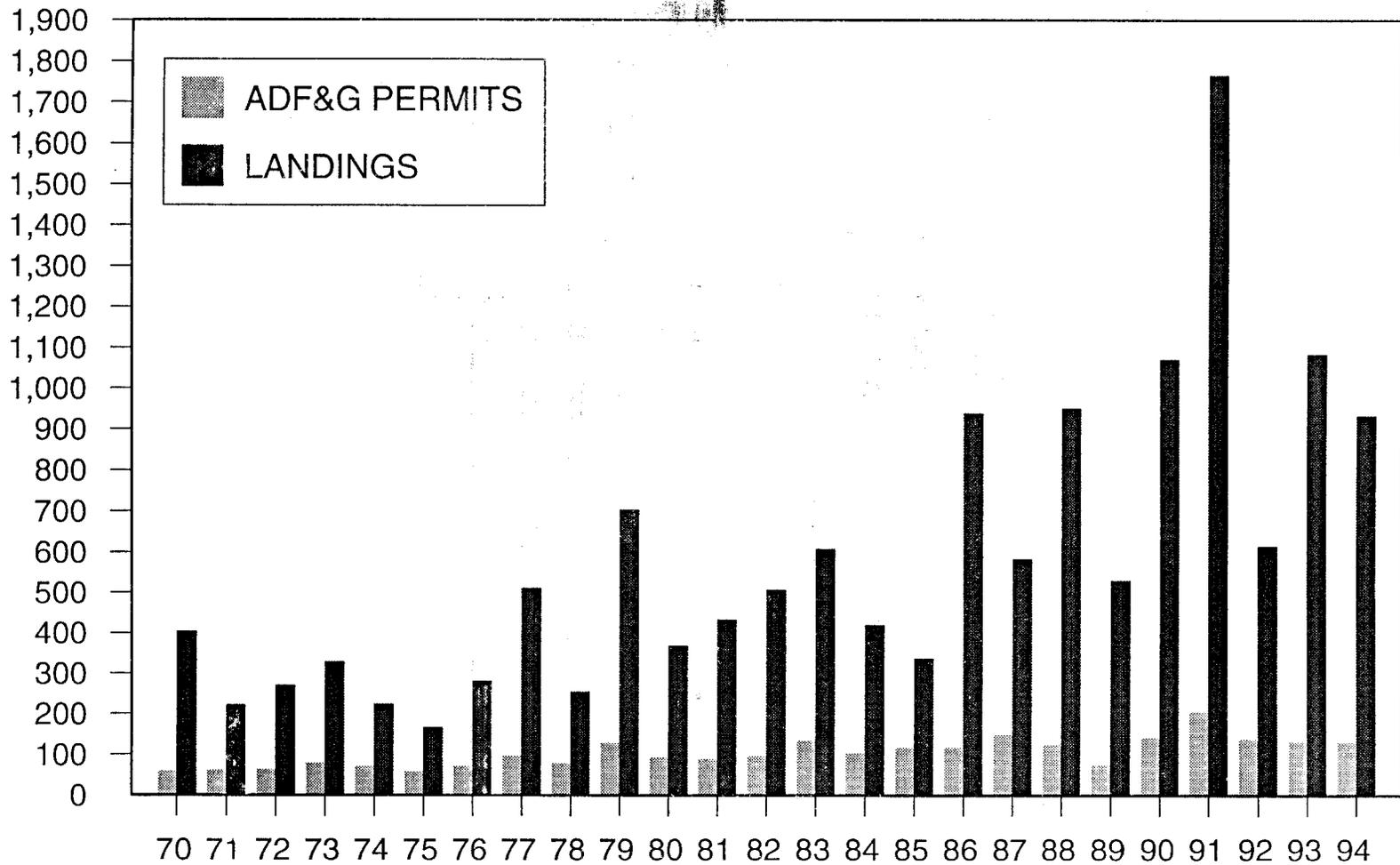
Appendix G.2. Southwest Afognak Section permits and landings by year July 6-25, 1970-1994.



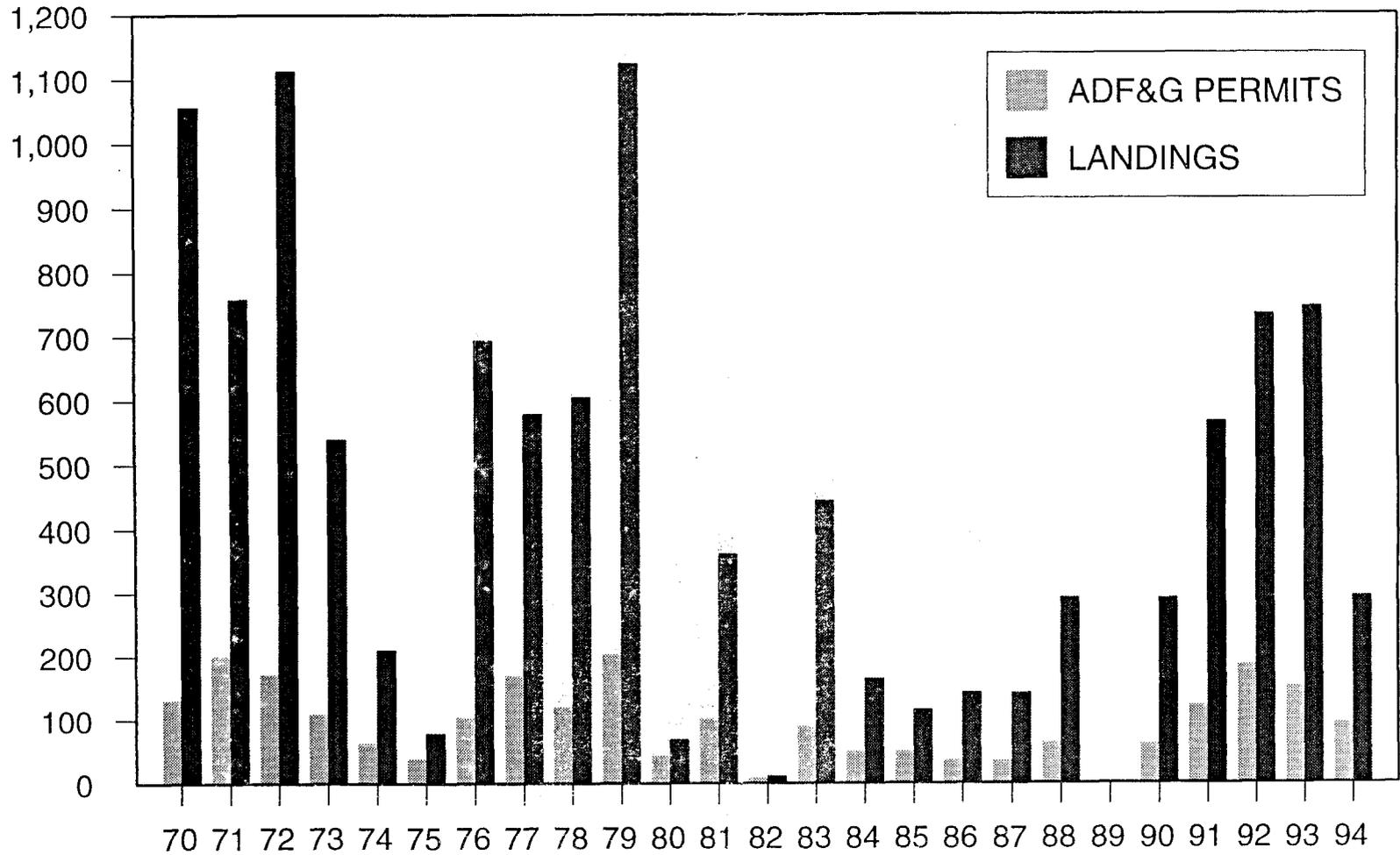
Appendix G.3. Northwest Kodiak District permits and landings by year July 6-25, 1970-1994.



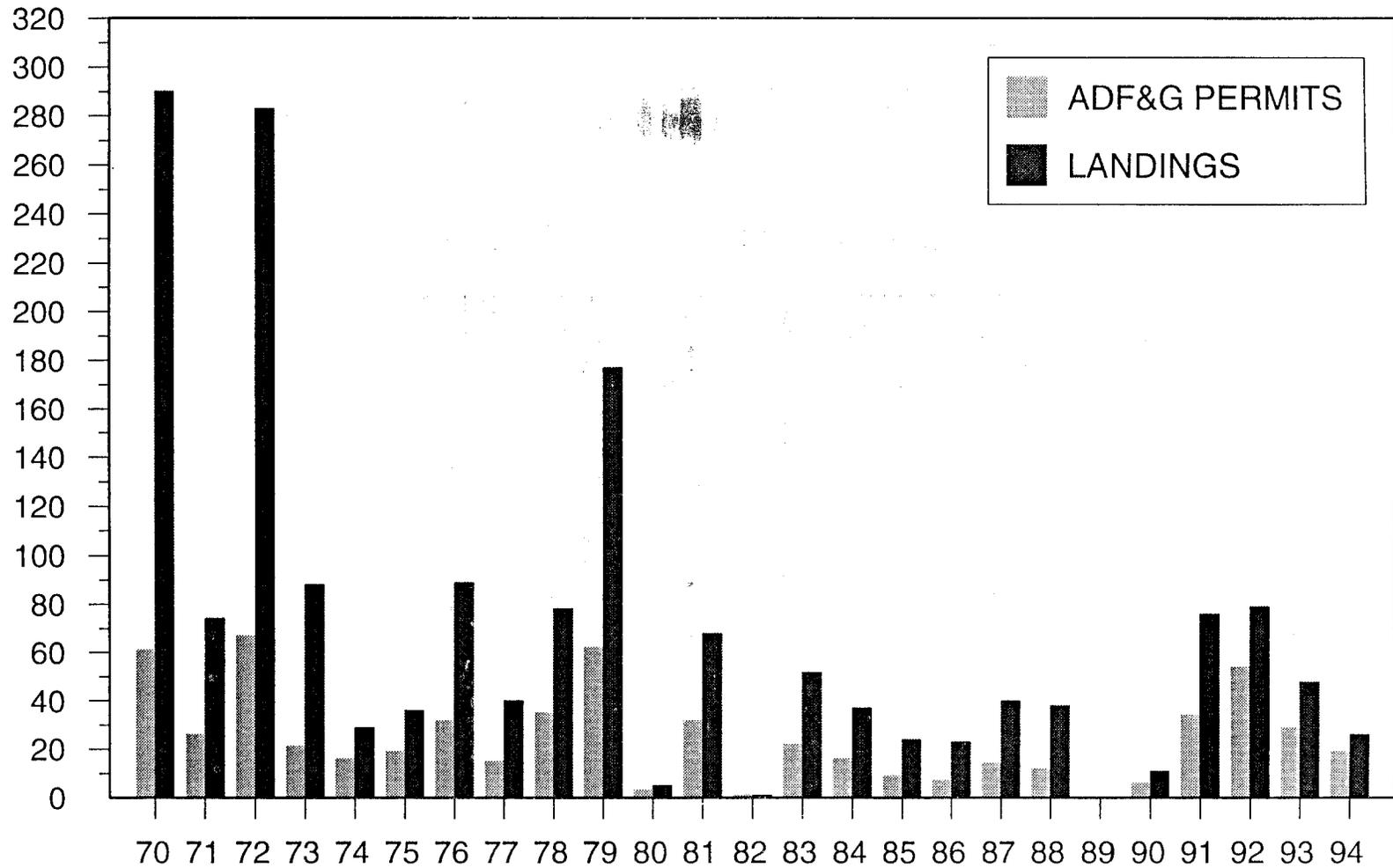
Appendix G.4. Southwest Kodiak District permits and landings by year July 6-25, 1970-1994.



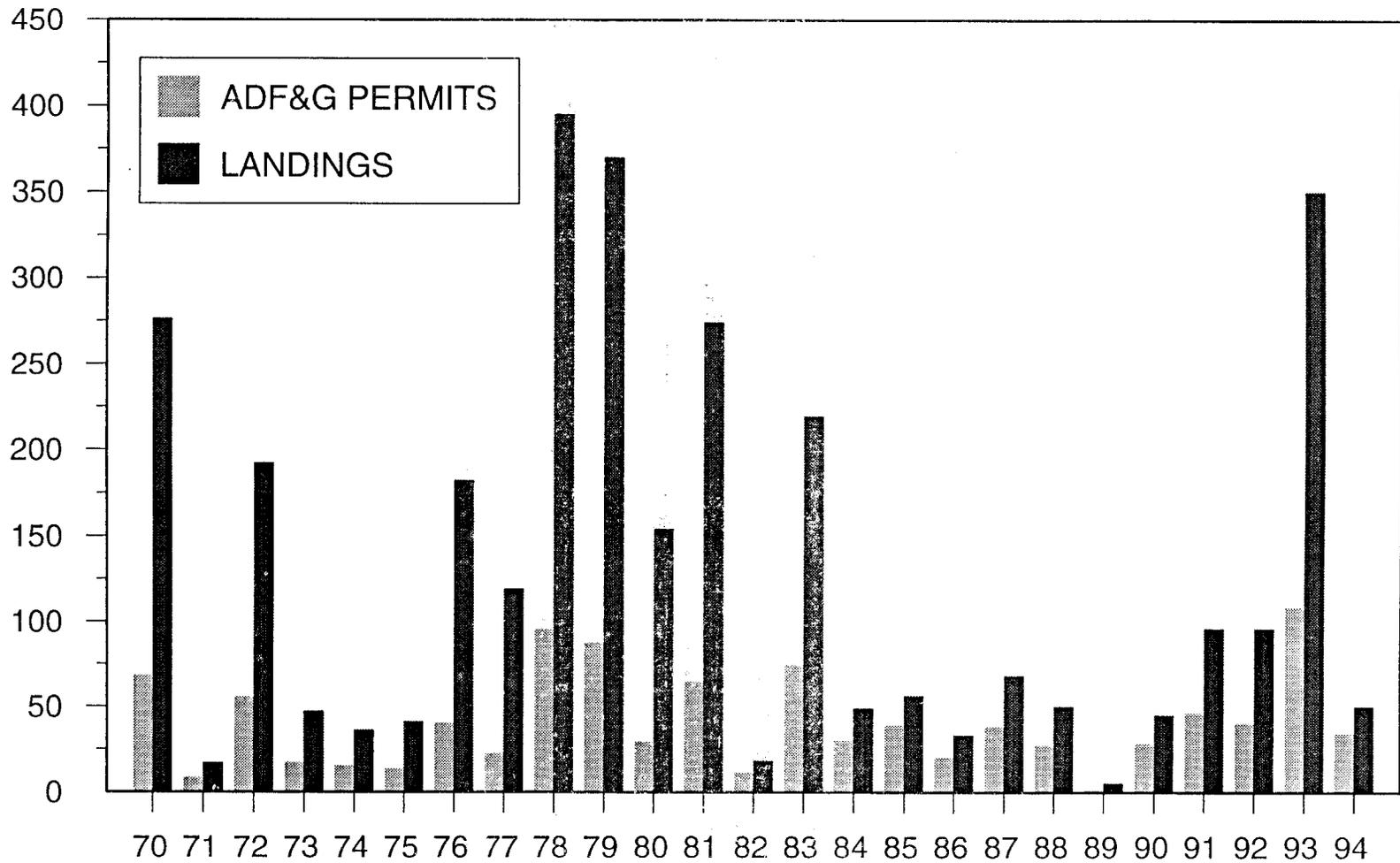
Appendix G.5. Alitak Bay District permits and landings by year July 6-25, 1970-1994.



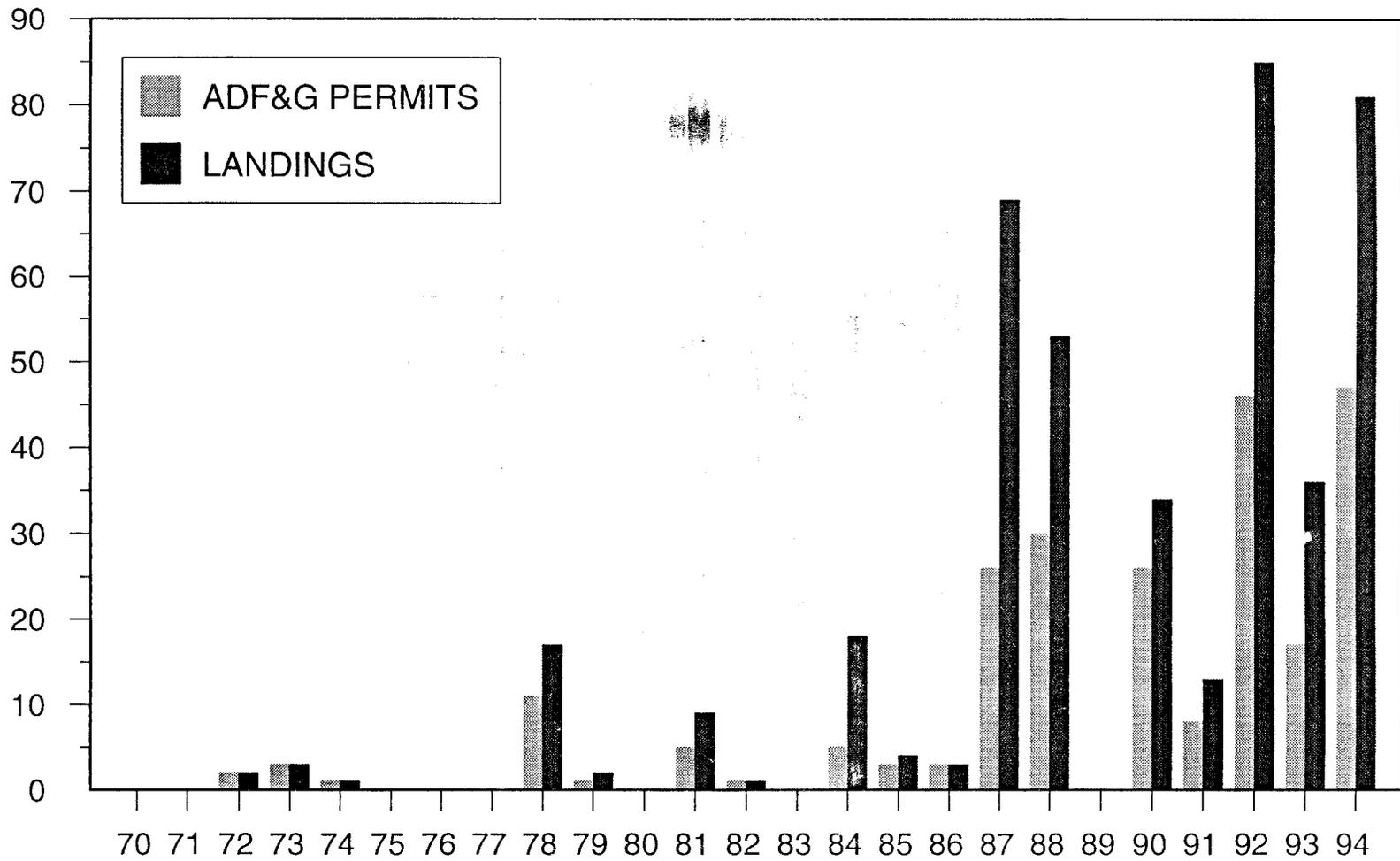
Appendix G.6. Eastside Kodiak District permits and landings by year July 6-25, 1970-1994.



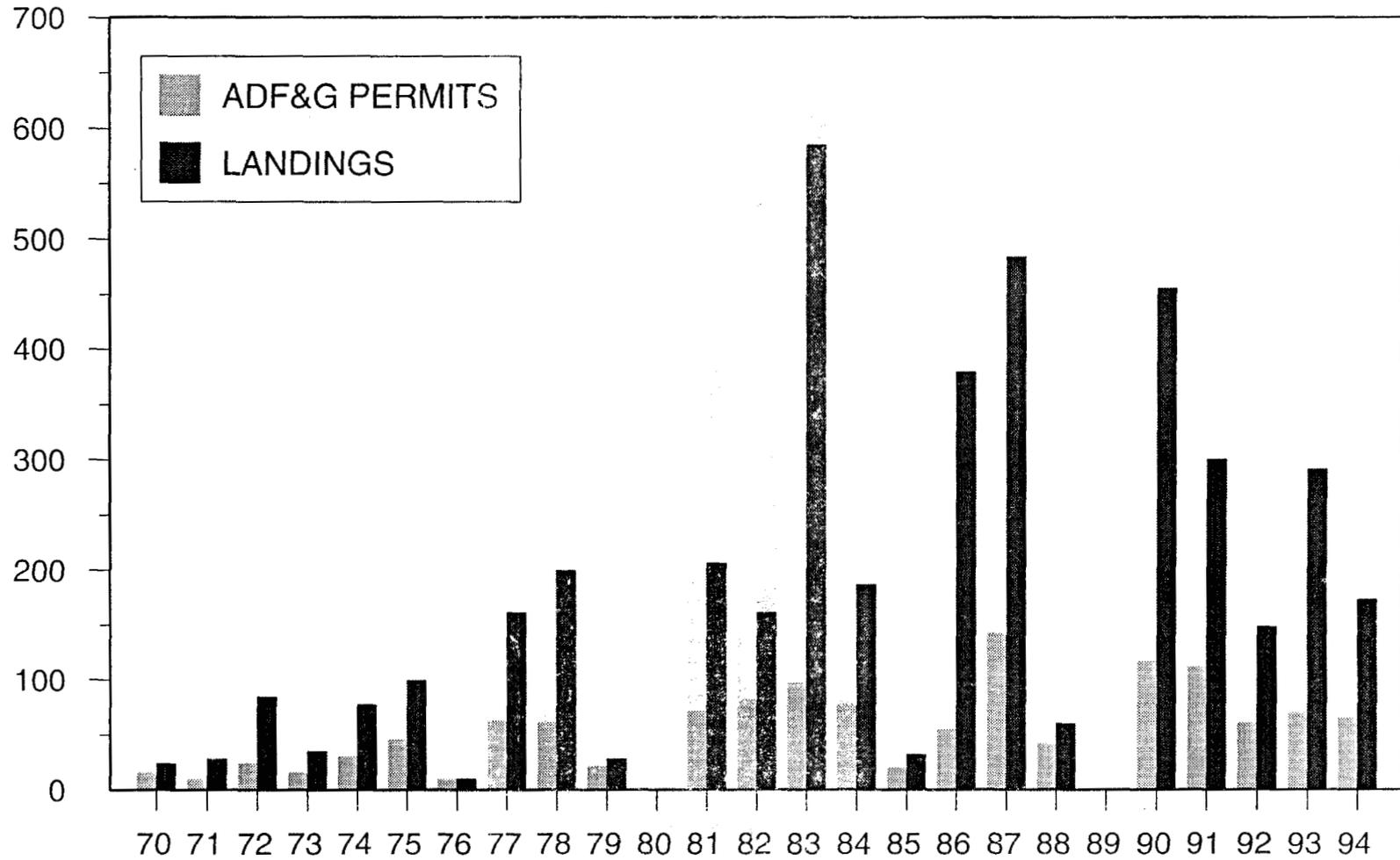
Appendix G.7. Northeast Kodiak District permits and landings by year July 6-25, 1970-1994.



Appendix G.8. Remaining Afognak Sections permits and landings by year July 6-25, 1970-1994.



Appendix G.9. Katmai and Alinchak Sections permits and landings by year
July 6-25, 1970-1994.



Appendix G.10. Cape Igvak and Wide Bay Sections permits and landings by year July 6-25, 1970-1994.

Appendix H.1. Board of Fisheries approved fishery management plans for the Kodiak Management Area, 1994.

MANAGEMENT PLAN	YEAR INITIATED	MGMT. UNITS AFFECTED	DATES IN EFFECT
Cape Igvak Salmon Management Plan	1978	Cape Igvak Section Wide Bay Section	6/5 - 7/25
Alitak Bay District Salmon Management Plan	1987	Alitak Bay District	6/9 - 10/1
Westside Kodiak Management Plan	1990	N.W. Kodiak District S.W. Kodiak District S.W. Afognak Section	6/9 - 10/1
Crescent Lake Coho Salmon Management Plan	1990	Portion of the Central Section in Vicinity of Port Lions	8/1 - 9/15
North Shelikof Strait Sockeye Salmon Management Plan	1990	S.W. Afognak Section N.W. Afognak Section Shuyak Section Big River Section Hallo Bay Section Inner and Outer Kukak Sect. Dakavak Section	7/6 - 7/25
Eastside Afognak Management Plan ^a	1993	Kitoy Bay Section Izhut Bay Section Duck Bay Section	6/9 - 10/1
Spiridon Bay Sockeye Salmon Management Plan	1993	Special Harvest Area in Spiridon Bay Section	6/9 - 10/1

^a This management plan has basically been in use since 1981, but was titled the Kitoy Bay Hatchery management plan. In 1993, it was adopted into regulation by the Alaska Board of Fisheries.

Appendix H.2. Primary management species and fishery chronology of the Westside Kodiak Management Plan for the Kodiak Management Area, 1994.

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		6/1	6/9	6/16	6/23	7/6	7/16	8/1	8/16	8/25	9/6	10/31
AFOG. DIST.	S.W.AFOGNAK	CLOSED			E.R.KARLUK SOCKEYE	LOCAL AND MIXED PINK			L.R.KARLUK SOCKEYE/ LOCAL & MIXED PINK	L.R.KARLUK SOCKEYE	LOCAL COHO	
	NORTH CAPE: CENTRAL	CLOSED			E.R.KARLUK SOCKEYE	LOCAL AND MIXED PINK			L.R.KARLUK SOCKEYE/ LOCAL & MIXED PINK	L.R.KARLUK SOCKEYE	LOCAL COHO	
	NORTHWEST KODIAK DISTRICT	ANTON LARSEN				LOCAL SOCKEYE AND E.R. CHUM	LOCAL SOCKEYE, E.R. CHUM & PINK	LOCAL PINK & L.R. CHUM	LOCAL PINK/ L.R. CHUM/ COHO	LOCAL COHO		
		SHERATIN										
		KIZHUYAK										
		TERROR										
		IN. UGANIK										
		SPIRIDON										
		ZACHAR										
UYAK												
SOUTHWEST KODIAK DISTRICT	OUT.KARLUK	CLOSED		E.R. KARLUK SOCKEYE			ODD-YEAR CYCLE: L.R. KARLUK SOCKEYE	L.R. KARLUK SOCKEYE	KARLUK COHO			
	IN.KARLUK	CLOSED		E.R. KARLUK SOCKEYE			ODD-YEAR CYCLE: L.R. KARLUK SOCKEYE	L.R. KARLUK SOCKEYE	KARLUK COHO			
							EVEN-YEAR CYCLE: L.R. KARLUK SOCKEYE/PINK					
	STURGEON	CLOSED		E.R.KARLUK & AYAKULIK SOCKEYE & STURGEON CHUM			ODD-YEAR CYCLE: L.R. KARLUK SOCKEYE	L.R. KARLUK SOCKEYE	LOCAL COHO			
							EVEN-YEAR CYCLE: L.R. KARLUK SOCKEYE/PINK					
	HALIBUT	CLOSED		E.R.KARLUK AND AYAKULIK SOCKEYE			ODD-YEAR CYCLE: L.R. AYAKULIK SOCKEYE	L.R. KARLUK SOCKEYE	LOCAL COHO			
							EVEN-YEAR CYCLE: L.R. L.R. KARLUK SOCKEYE AYAKULIK RED&PINK & AYAKULIK PINK					
OUT.AYAKULIK	CLOSED		E.R. AYAKULIK SOCKEYE			ODD-YEAR CYCLE: L.R. AYAKULIK SOCKEYE	AYAKULIK COHO					
IN.AYAKULIK	CLOSED		E.R. AYAKULIK SOCKEYE			ODD-YEAR CYCLE: L.R. AYAKULIK SOCKEYE				AYAKULIK COHO		
						EVEN-YEAR CYCLE: L.R. AYAKULIK SOCKEYE/PINK						



COMMERCIAL TEST FISHERIES

E.R. = EARLY RUN STOCKS

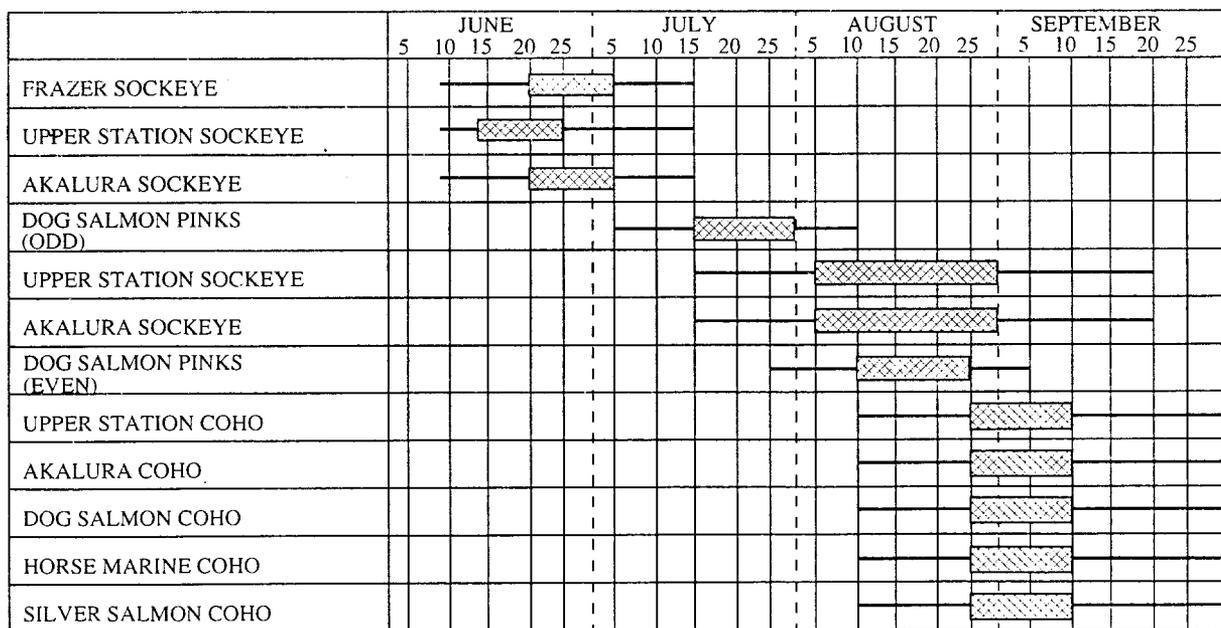
L.R. = LATE RUN STOCKS

Appendix H.3. Primary management species and fishery chronology of the Alitak Bay District Salmon Management Plan for the Kodiak Management Area, 1994.

ALITAK BAY DISTRICT MANAGEMENT PLAN

CAPE ALITAK SECTION (SEINE)	CLOSED	XXXXXX	FRAZER SOCKEYE (AGGRESSIVE MANAGEMENT STRATEGY)	FRAZER SOCKEYE (CONSERVATIVE MANAGEMENT STRATEGY)	ODD YEAR CYCLE FRAZER PINK SALMON	ODD YEAR CYCLE UP.STATION SOCKEYE	ALL ALITAK DISTRICT COHO SYSTEMS		
					EVEN YEAR CYCLE UP.STATION SOCKEYE (LATE RUN)	EVEN YEAR CYCLE UP.STATION SOCKEYE & FRAZER PINK SALMON			
MOSER/OLGA BAY SECTION (GILLNET) (TRADITIONAL)	CLOSED	XXXXXX	FRAZER SOCKEYE (AGGRESSIVE MANAGEMENT STRATEGY)	FRAZER SOCKEYE (CONSERVATIVE MANAGEMENT STRATEGY)	ODD YEAR CYCLE FRAZER PINK SALMON	ODD YEAR CYCLE UP.STATION SOCKEYE	ALL OLGA BAY COHO SYSTEMS		
					EVEN YEAR CYCLE UP.STATION SOCKEYE (LATE RUN)	EVEN YEAR CYCLE UP.STATION SOCKEYE & FRAZER PINK SALMON			
OUTER UPPER & INNER UPPER STATION (GILLNET) (NON-TRADITIONAL)	CLOSED	CLOSED	UPPER STATION SOCKEYE (EARLY RUN)		UPPER STATION SOCKEYE (LATE RUN)	UP. STATION SOCK & COHO	UPPER STATION COHO		
OUTER AKALURA & IN. AKALURA SECTIONS (GILLNET) (NON-TRADITIONAL)	CLOSED	CLOSED	AKALURA SOCKEYE (EARLY RUN)		AKALURA SOCKEYE (LATE RUN)	AKALURA SOCK & COHO	AKALURA COHO		
DOG SALMON FLATS SECTION (GILLNET) (NON-TRADITIONAL)	CLOSED	CLOSED	FRAZER SOCKEYE (MOP UP FISHERY)		FRAZER PINK SALMON	FRAZER AND HORSE MARINE COHO			
HUMPY/DEADMAN SECTION (SEINE)	CLOSED	XXXXXX	FRAZER SOCKEYE (AGGRESSIVE MANAGEMENT STRATEGY)	FRAZER SOCKEYE (CONSERVATIVE MANAGEMENT STRATEGY)	ALITAK BAY PINK, CHUM. AND COHO				
	6/1	6/9-10	6/24	7/9	7/15	8/9	8/20	8/26	9/25

ALITAK BAY DISTRICT - PRIMARY MANAGEMENT SPECIES BY STREAM BY TIME

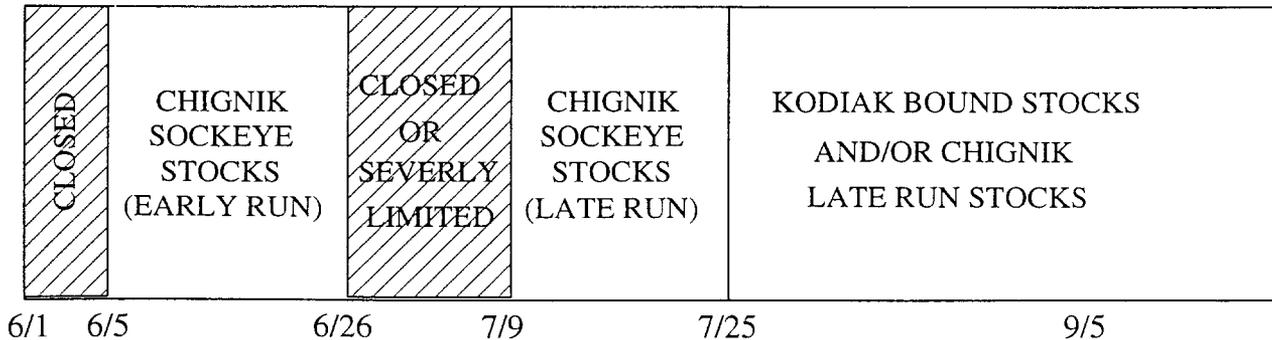


Appendix H.4. Biological and allocative criteria, and the management chronology, of the Cape Igvak Management Plan for the Kodiak Management Area, 1994.

BIOLOGICAL AND ALLOCATIVE CRITERIA FOR MANAGING THE CAPE IGVAK FISHERY ON CHIGNIK BOUND SOCKEYE

BIOLOGICAL REQUIREMENTS			ALLOCATIVE REQUIREMENTS		
REGULATION 5AAC 18.360	ESCAPEMENT NEEDS		REGULATION 5AAC 18.360	CHIGNIK MINIMUM HARVEST	IGVAK %
	CHIGNIK (EARLY RUN)	CHIGNIK (LATE RUN)			
(a) (b) (c)	THROUGH 6/30 350,000-400,000	-	(a)	EXPECTATIONS OF LESS THAN 600,000	CLOSED
-	-	-	(b)	EXPECTATIONS OF 600,000 ARE IN DOUBT	CLOSED
(a) (b) (c)	-	THROUGH 7/30 195,000-200,000	(c)	EXPECTATIONS OF 600,000 OCCUR	OPEN TO ACHIEVE 15%
-	-	-	(d)	CHIGNIK SALMON % INTERCEPTION CALCULATIONS	80% OF CATCH AT IGVAK ARE CHIGNIK SOCKEYE
-	-	-	(e)	ALLOCATION PERIOD 600,000	6/5 - 7/25 % NOT APPLICABLE
(f)	FROM JUNE 26 - JULY 9 CAPE IGVAK SECTION CLOSED OR SEVERLY LIMITED UNTIL CHIGNIK LAKE RUN EVALUATED		-	-	-
-	-	-	(g)	-	ONE DAY ADVANCE NOTICE
	400,000	250,000		600,000 MINIMUM	15 %

MANAGEMENT CHRONOLOGY FOR CHIGNIK BOUND SOCKEYE AND KODIAK SALMON



Appendix H.5. Primary management species and fishery chronology of the Eastside Afognak Management Plan for the Kodiak Management Area, 1994.

TARGETED SPECIES BY SYSTEM AND TIME FOR SPECIFIC MANAGEMENT UNITS ^{1/}

S.E. AFOGNAK SECTION (Seine)	LITNIK SOCKEYE	LITNIK SOCKEYE	LITNIK SOCKEYE	LOCAL PINK	LOCAL COHO										
DUCK BAY SECTION (Seine)	EARLY HATCHERY CHUM AND/OR SOCKEYE			HATCHERY & LOCAL PINK	LOCAL COHO										
IZHUT BAY SECTION (Seine)	EARLY HATCHERY CHUMS AND/OR SOCKEYE			CLOSED UNTIL COST RECOVERY ASSURED	HATCHERY & LOCAL PINK LOCAL COHO & HATCHERY SOCKEYE										
KITOI BAY SECTION ^{2/} (Seine) Broodstock				a											
PINK: Cost Recovery				b											
Common Property				c											
CHUM & OR EARLY SOCKEYE	d														
Common Property	e														
COHO & SOCKEYE: Broodstock					f										
Common Property					g										
	6/9	6/14	6/20	7/1	7/3	7/6	7/18	7/20	7/25	8/1	8/8	8/15	8/20	8/24	9/1

⊗ - fishing time dependant upon sockeye escapement into Litnik system.

- Included in this management plan are the harvest strategies for current natural and hatchery production as well as future hatchery production.
- The management plan required for the Kitoi Bay Section is rather complicated in order to achieve broodstock, cost recovery, and common harvest requirements. This is further complicated by the multispecies production currently occurring at Kitoi Bay hatchery. The diagram shown attempts to approximate dates for when specific management strategies should be implemented to insure achievement of hatchery goals and an orderly harvest of quality common property fish.
 - Hatchery pink salmon broodstock captured.
 - Hatchery pink salmon cost recovery fishery when necessary.
 - Hatchery pink salmon common property fishery.
 - Hatchery chum and/or early sockeye salmon broodstock captured.
 - Hatchery chum and/or early sockeye salmon common property fishery.
 - Hatchery coho and late sockeye salmon broodstock captured.
 - Hatchery coho and late sockeye salmon common property fishery.

Appendix H.6. Primary management species and general fishery chronology in management units affected by the North Shelikof Strait Sockeye Salmon Management Plan for the Kodiak Management Area, 1994.

MAINLAND DISTRICT	Big River Section	CLOSED	Early Run Sockeye Minor Systems	NORTH SHELIKOF MGMT UNITS (5AAC 18.363.(b)(3)(A) & (B))	MANAGEMENT BASED ON LOCAL PINK AND CHUM SALMON STOCKS EXCEPT: IF SOCKEYE HARVEST EXCEEDS 15,000 THEN THE "SEAWARD ZONES" ARE <u>CLOSED</u> , AND ONLY THE "SHOREWARD ZONES" MAY REMAIN OPEN. (5AAC 18.363.(b))	Pink And Chum Salmon		COHO
	Hallo Bay Section	CLOSED	CLOSED			Pink And Chum Salmon		
	Inner Kukak Section	CLOSED	CLOSED			Pink And Chum Salmon		
	Outer Kukak Section	CLOSED	Early Run Sockeye Minor Systems			Pink And Chum Salmon		
	Dakavak Section	CLOSED	CLOSED			Pink And Chum Salmon		
AFOGNAK DISTRICT	Shuyak Is. Section	CLOSED	Early Run Sockeye Minor Systems	SW. AFOGNAK (5AAC 18.363.(c)(3))	MANAGEMENT BASED ON PINK AND CHUM SALMON STOCKS EXCEPT: IF THE SOCKEYE HARVEST EXCEEDS 50,000 THEN THE "SEAWARD ZONE" <u>CLOSES</u> , AND ONLY THE "SHOREWARD ZONE" MAY REMAIN OPEN. (5AAC 18.363.(c))	Pink Salmon		COHO
	NW Afognak Section	CLOSED	Early Run Sockeye Minor Systems			Pink Salmon		
	Southwest Afognak Section	CLOSED	Early Run Karluk Sockeye			Pink Salmon	Pink Salmon And Late Run Karluk Sockeye	
		6/9	6/14	7/6		7/25	8/15	9/5

Appendix H.7. July management chronology by major salmon harvest area.

NORTH SHELIKOF SECTIONS	LOCAL SOCKEYE	LOCAL AND MIXED PINK AND CHUM.		
		NORTH SHELIKOF STRAIT SOCKEYE SALMON MGT. PLAN.		
S.W.AFOGNAK SECTION	E.R.KARLUK SOCKEYE	LOCAL AND MIXED PINK.		
		NORTH SHELIKOF STRAIT SOCKEYE SALMON MGT. PLAN.		
N.W.KODIAK DISTRICT	E.R.KARLUK SOCKEYE, LOCAL SOCKEYE,	PINK & CHUM	LOCAL SOCKEYE	
S.W.KODIAK DISTRICT	AYAKULIK SOCKEYE, KARLUK SOCKEYE	STURGEON CHUM	AYAKULIK SOCKEYE, L.R.KARLUK SOCKEYE	EVEN YEAR AYAKULIK & KARLUK PINK
ALITAK BAY DISTRICT	FRAZER SOCKEYE		PINK & CHUM & UPPER STATION SOCKEYE	
EASTSIDE KODIAK DISTRICT	LOCAL SOCKEYE	LOCAL AND MIXED PINK AND CHUM.		
N.E. KODIAK DISTRICT	CLOSED	LOCAL AND MIXED PINK AND CHUM.		
REMAINDER OF AFOGNAK	LOCAL SOCKEYE	LOCAL AND MIXED PINK AND CHUM.		
KATMAI/ALINCHAK SECTIONS	CLOSED	LOCAL AND MIXED PINK AND CHUM.		
IGVAK/WIDE BAY SECTIONS	CHIGNIK BOUND SOCKEYE			LOCAL & MIXED PINK & CHUM

7/1

7/6

7/15

7/25

7/30

Appendix H.8. Number of limited entry permits fished, and the average exvessel value, by gear type, in commercial salmon fisheries, Kodiak Management Area, 1975 - 1994.

YEAR	ACTIVE PERMITS ^a				AVERAGE EXVESSEL VALUE ^a		
	PURSE	BEACH	SET	TOTAL	PURSE	BEACH	SET
	SEINE	SEINE	GILLNET		SEINE	SEINE	GILLNET
1975	280	8	116	404	13,300	5,600	3,849
1976	325	17	140	482	43,017	11,035	14,481
1977	336	24	147	507	46,942	12,107	19,117
1978	372	29	160	561	70,685	14,772	22,711
1979	362	28	164	554	51,263	20,348	23,363
1980	370	33	168	571	62,363	23,385	21,215
1981	325	30	169	524	79,877	26,946	34,785
1982	345	30	170	545	39,309	11,038	28,889
1983	342	27	174	543	30,239	5,918	16,689
1984	296	25	168	489	71,550	12,341	26,552
1985	270	21	169	460	57,782	8,405	27,517
1986	287	14	174	475	92,696	11,885	68,700
1987	297	18	173	488	79,814	15,664	41,163
1988	323	21	179	523	252,403	47,017	119,013
1989 ^b	4	1	87	92	146,502	28,288	72,955
1990	354	21	184	559	113,326	10,424	66,715
1991	348	17	185	550	77,509	5,257	53,817
1992	336	12	178	526	98,086	5,436	41,984
1993	324	9	176	509	94,901	8,230	43,886
1994 ^c	286	5	169	460	61,769	8,847	44,563
19 Year Average (1975-94) ^d							
	325	20	166	512	75,623	13,929	37,843
Recent 5 Year Average (1990-94) ^d							
	330	13	178	521	89,118	7,639	50,193

^a 1977 - 1993 data from Commercial Fisheries Entry Commission records, 11/12/1992. "Active Permits" are the actual number of permits that participated in the fishery each year, and "Average Exvessel Value" is the total dollar value of the fishery deliveries by gear type divided by the number of permits of that gear type that participated each year.

^b In 1989 extensive fishery closures were caused by the presence of oil from the Exxon Valdez spill. The 1989 exvessel value was estimated by multiplying price information from the limited actual wild harvest (from CFEC records) by the projected total harvest had there been no oil spill. The 1989 exvessel value by gear type is estimated by using 1988 gear levels and proportion of harvest, as if a normal fishery had occurred on a normal distribution of fish.

^c Preliminary information from ADF&G fish ticket summaries.

^d 1989 data not included in averages due to extensive fishery closures caused by presence of oil in area from Exxon Valdez spill.

Appendix H.9. Estimated salmon harvest and value by gear type in the Kodiak Management Area, 1970-1994.

Year	Total Catch ^a	Total Value ^b	Average Exvessel Value		
			Purse Seine	Beach Seine	Set Net
1970	13,949,206	\$21,658,000	\$41,880	\$10,470	\$21,083
1971	6,378,179	4,973,000	13,397	2,919	3,015
1972	3,883,197	3,909,000	9,233	647	1,451
1973	1,001,343	2,094,000	5,075	251	852
1974	3,329,427	4,808,000	15,993	4,406	4,828
1975	3,187,410	3,831,000	13,300	5,600	3,849
1976	12,484,451	16,976,000	43,017	11,035	14,481
1977	7,976,691	18,873,142	46,942	12,107	19,117
1978	16,942,215	30,357,179	70,685	14,772	22,711
1979	12,420,260	22,958,317	51,263	20,348	23,363
1980	19,157,249	27,410,296	62,363	23,385	21,215
1981	13,094,099	32,647,230	79,877	26,946	34,785
1982	10,891,952	18,803,822	39,309	11,038	28,889
1983	7,081,976	13,405,578	30,239	5,918	16,689
1984	13,678,005	25,948,012	71,550	12,341	26,552
1985	9,897,903	20,428,111	57,782	8,405	27,517
1986	16,304,165	38,723,877	92,696	11,885	68,700
1987	7,746,980	31,107,864	79,814	15,664	41,163
1988	19,009,757	103,816,936	252,403	47,017	119,013
1989 ^c	26,455,944	61,046,024	146,502	28,288	72,955
1990	12,122,389	52,611,853	113,326	10,424	66,715
1991	23,723,008	37,018,734	77,509	5,257	53,817
1992	8,462,464	40,495,222	98,086	5,436	41,984
1993	39,341,025	38,546,098	94,901	8,230	43,886
1994 ^d	12,097,629	25,248,126	61,769	8,847	44,563
Average 1970-1994 ^e :					
	12,256,708	\$26,527,049	\$63,434	\$11,803	\$31,260
Average 1970-1979:					
	8,155,238	\$13,043,764	\$31,079	\$8,256	\$11,475
Average 1980-1988 ^e :					
	12,984,676	\$34,699,081	\$85,115	\$18,067	\$42,725
Average 1990-1994:					
	19,149,303	\$38,783,961	\$89,118	\$7,639	\$50,193
Average 1984-1994 ^e :					
	16,238,333	\$41,394,460	\$99,984	\$13,351	\$53,391

^a Includes total commercial harvest, test fisheries, and Kitoi Hatchery cost recovery fishery harvests. These figures are in number of fish.

^b 1970-1976 and 1994 values are exvessel values based upon inseason prices. They may not include additional value associated with dock deliveries or postseason settlements. 1977-1988 and 1990-1993 values are from Commercial Fisheries Entry Commission reports.

^c Actual harvest was limited in 1989 due to fishery closures caused by the presence of oil from the Exxon Valdez spill. Harvest figures for 1989 include actual and projected harvests on wild stocks, and actual harvest of hatchery stocks from a supplemental cost recovery fishery. The 1989 total value is estimated by multiplying price information from the limited actual wild harvest (from CFEC records) by the projected total harvest had there been no oil spill. The 1989 exvessel value by gear type is estimated by using the 1988 gear levels and proportional harvest by gear type, as if a normal fishery had occurred on a normal distribution of fish.

^d 1994 data are preliminary, from ADF&G fish ticket summaries.

^e 1989 data are not included in averages.

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