

4K96-35

KODIAK AREA COMMERCIAL SALMON FISHERY
HARVEST STRATEGY, 1996

By:

Dave Prokopowich
Kevin Brennan
and
Dennis Gretsch

Regional Information Report¹ No. 4K96-35

Alaska Department of Fish and Game
Commercial Fisheries Management and Development Division
211 Mission Road
Kodiak, Alaska 99615

May 1996

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INTRODUCTION

The Alaska Department of Fish and Game (ADF&G) will manage the 1996 Kodiak Management Area (KMA) commercial salmon fisheries according to a harvest strategy which emphasizes three criteria:

- (1) **To ensure that the 1996 salmon escapement occurs at the proper magnitude and distribution so that the potential for maximum production of future returns is established.**

The results of ADF&G's 1996 management activities will directly affect the following future returns:

- 1998 pink salmon
 - 1999 - 2000 coho salmon
 - 1999 - 2001 chum salmon
 - 1999 - 2003 sockeye and chinook salmon
- (2) **To provide for orderly fisheries on the highest quality salmon by maximizing harvest opportunities during each fishing period.**

This requires a species oriented management approach.

- For sockeye and coho salmon returning to major systems, management will emphasize the use of inseason weir escapement data to determine fishing time by geographical area.
 - Fishing time on minor sockeye and coho systems without fish weirs will be determined by ADF&G's assessment of run strength for these systems.
 - For pink and chum salmon runs, management will initially use preseason forecasts to determine fishing time, with inseason adjustments in fishing time as the actual run strength becomes more apparent.
- (3) **To adhere to the biological and allocative requirements of all Alaska Board of Fisheries (BOF) Management Plans.**

This harvest strategy is an overview of how ADF&G intends to manage the 1996 salmon fishery. Along with this overview, a basic management chronology (Figure 1) can be used as a guide to clarify when species specific management requirements will dictate inseason adjustments in harvest strategy. Sockeye salmon management requires escapement information from up to nine salmon weirs. This information is used to regulate fishing time and areas open to fishing. Prorating fishing time for sockeye salmon solely on the basis of preseason expectations, other than for the June 9 commercial test fisheries, is generally not an acceptable method of managing KMA sockeye salmon stocks.

Initial fishing periods for pink salmon are based upon preseason expectations and are necessary for prosecuting a successful fishery. This can be done with little chance of adverse effects on future production and is the most acceptable way of managing the return of the KMA's relatively large pink salmon runs.

Chum and coho salmon require a blend of these two management approaches. Both species are initially harvested in directed pink or sockeye salmon fisheries. Specific fisheries targeting on chum and coho

salmon require proper run strength assessment before those fisheries can occur. This requires a combination of weir counts and aerial assessment of escapement. Escapement data along with inseason assessment of harvest rates determines if the chum and coho salmon returns can support additional near terminal area harvests.

Chinook salmon are not targeted in specific fisheries, but are harvested in fisheries directed toward sockeye and pink salmon.

HARVEST PROJECTIONS

Initial projections for the 1996 KMA commercial salmon fishery are for a harvest of approximately 8,457,000 salmon (Table 1). This harvest includes approximately 20,000 chinook, 280,000 coho, 900,000 chum, 3,700,000 pink, and 3,557,000 sockeye salmon.

The Kodiak Regional Aquaculture Associations (KRAA) Kitoi Bay Hatchery is projected to contribute 1,230,000 to 2,300,000 pink salmon to the total 1996 harvest. In addition, enhancement projects conducted by KRAA and ADF&G's Commercial Fisheries Management and Development Division (CFMDD) should contribute coho, sockeye, and chum salmon to the common property fisheries of the KMA. Supplemental production may allow for approximately 201,000 sockeye, 110,000 chum, and 48,000 coho salmon to be harvested (Table 2); all supplemental production numbers are included in the total harvest projections.

A good tool for illustrating the timing and magnitude of salmon harvests is the projected harvest graphs (Appendix A.1 - A.3.). A curve can be calculated, based on the historical cumulative average salmon catch by date, that is scaled to the current pre-season harvest projection. By keeping track of the actual salmon harvest by date, and plotting on the graphs, a comparison of expected and actual returns can be made. These graphs are used for planning purposes to determine if management strategies need to be modified inseason because of unexpected deviations in actual run strength.

FISHING PERIODS

All fishing periods will be established by emergency order (EO) and will generally be based on inseason assessment of actual run strength (Table 3).

Opening Times

All regular fishing periods will begin at 12:00 Noon and end at 9:00 P.M., except:

- The Cape Igvak Fishery will usually open at 12:01 A.M. and close at 12:01 A.M. during the period of June 5 through July 25.

- The Inner Ayakulik Section fisheries will usually begin at approximately low tide. These will be daylight openings, and will be initiated by ADF&G "flare openings"; fishing will start when a "flare" is launched by ADF&G personnel. When such openings occur, the opening time for the Outer Ayakulik Section may be adjusted to coincide with the Inner Ayakulik Section.
- Beginning on August 16, all fishing periods will end at 6:00 P.M. instead of 9:00 P.M.

Advance Notice for Each Fishing Period

- All advance notice times will be based upon the initial announcements being made on SSB frequency 4125 Khz, following the **6:00 P.M.** daily marine weather broadcasts.
- For the **Cape Igvak fishery**, the initial fishing period will have at least a **30 hour advance notice**. All subsequent fishing periods will have at least **18 hours advance notice**, unless it is an extension of an ongoing fishing period.
- For the **June sockeye fisheries** in the Alitak, S.W. Kodiak, and N.W. Kodiak Districts, **the initial fishing periods** will have at least a **42 hour advance notice**; this includes the June 9 fishing period for the Alitak and N.W. Kodiak Districts and the approximate June 14 fishing period for the N.W. Kodiak District.
- **All subsequent fishing periods for the Kodiak Area prior to July 6 will have at least 18 hours advance notice.**
- For the **initial pink/chum salmon fisheries**, at least **42 hours advance notice** will be provided, with the fishery starting at 12:00 noon on **July 6**.
- **All subsequent fishing periods for the Kodiak Area after the July 6 fishing period will have at least 18 hours advance notice.**
- **All extensions in fishing time from a previously announced fishing period will have at least 3 hours advance notice.**

Inperiod Closures

- During the period July 6 through July 25 inperiod closures of "Seaward Zones" designated in the North Shelikof Strait Sockeye Salmon Management Plan may occur. Fishers operating in management units covered by this plan are advised that inperiod closures of "Seaward Zones" are possible. Such closures will be announced on SSB frequency 4125 Khz at 8:00 A.M., 10:00 A.M., 2:00 P.M., or 6:00 P.M. with the effective closure time occurring in as little as three hours following the initial announcement time.

Length of Fishing Periods

Sockeye Salmon

In general, each fishing period targeting early and late sockeye salmon runs to major systems will be dependent upon weir escapement counts. This will also apply to minor systems with weirs that are targeted by the commercial fishery. The exception to this will be the June 9 commercial test fisheries in the Alitak Bay and N.W. Kodiak Districts, and the June 9 fisheries in the Foul Bay and Waterfall Terminal Harvest Areas. The first period will extend from 12:00 Noon Sunday June 9 through 9:00 P.M. Monday June 10, a 33 hour period. A second 33 hour commercial test fishery will occur in the N.W. Kodiak District beginning approximately June 14. The opening date is dependent on coordination with other terminal sockeye fisheries in order to spread the fishing effort. Additional fishing time in the Alitak Bay District will depend on the results of the June 9 commercial test fishery, the ADF&G test fishery, weir escapements and sockeye salmon buildups (see Alitak Bay District Management Plan).

In conjunction with the second commercial test fishing period in the N.W. Kodiak District, there will be a 33 hour fishing period for surplus production from minor sockeye salmon systems (Afognak Lake, Saltery, etc.). Specific management units (sections) opened for this fishery depend on run strength associated with these units. The EO announcement for this opening will specify which sections are to be opened.

Fishing periods in the Cape Igvak Section will be in 24 hour increments running from 12:01 A.M. to 12:01 A.M.. Fishing time will be dependent upon evaluation of the Chignik system sockeye salmon run strength. Chignik sockeye salmon are the dominant contributing stock harvested in this section. A review of the Cape Igvak Management Plan (5 AAC 18.360) should clarify the biological and allocative requirements. For the 1996 season, fishing time will initially be allocated in the Cape Igvak Section based upon the criteria listed in paragraph (c) of the plan.

For most late run sockeye salmon stocks, a portion of the harvestable surplus is taken during targeted pink salmon fishing periods. Consequently, a "blended" management strategy is needed to insure escapements are achieved by species with the upper escapement requirements not being exceeded.

Fishing periods for enhanced sockeye runs in terminal harvest areas (Figures 2-5) may result in continuous 24 hour period openings as long as there is a harvestable surplus.

Chum Salmon

The Duck Bay, Izhut Bay, and Kitoi Bay Sections of the Afognak District may open to fishing as early as June 9. This opening date is based on the forecasted strong return of chum salmon to the Kitoi Bay Hatchery. Between the July 6 to July 25 time period fishing time for much of the Mainland District will not exceed 57 hours per week.

Pink Salmon

Preemergent pink salmon fry sampling of the KMA index streams conducted during March and April of 1995 indicated poor to fair over winter survival of the eggs and sac fry. These fry were from a poor to fair brood year escapement in 1994 with the indexed escapement estimate of 4.0 million pink salmon. Sampling resulted in an unweighted live fry index of 97.70 live fry per square meter of spawning area. This live fry index is the second lowest even year index on record. Early spring conditions in 1995 were poor for outmigration and rearing in the nearshore ocean environment. Ambient air temperatures, as measured in Kodiak, were well below average in March, but well above average in April.

Even year survival rates from 1978-1994 brood years were used to forecast the 1996 Kitoi Bay hatchery pink run. The low range estimate was calculated by using the average survival rate of the two lowest even year returns, and the high range was calculated by using the average survival rate of the two highest even year returns. Due to poor early marine rearing conditions, average condition of fry upon release, and the expected loss due to predation by juvenile pollock, the Kitoi Bay hatchery manager felt that the actual harvest would be near the low estimate of the forecast.

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

The pattern of fishing periods for management units where pink salmon are the targeted species may vary in consideration of the forecasted pink salmon run. Fishing periods are expected to be 2½ 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 reduced to insure that escapement requirements are achieved.

Listed below is a schedule of fishing periods which may 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. This period provides important harvest data to assess early run strength of KMA pink salmon and certain chum salmon stocks. There will be no extensions in fishing time based on pink or chum salmon harvests during this period.

Second Period: 2½ days (57 hours) - 12:00 Noon July 15 through 9:00 P.M. July 17. This second period will assess run strength for both pink and chum salmon and provide harvest data. No extensions in fishing time based on pink or chum salmon harvests would occur during this period.

Third Period: 2½ days (57 hours) - 12:00 Noon July 22 through 9:00 P.M. July 24. The third period will occur following a 4½ day closure. This will allow an influx of pink and chum salmon into terminal areas to enhance the build-up of potential escapement. At this time a combination of harvest and early escapement or build-up information will provide an indication of the actual run strength for major pink salmon stocks. Extensions in fishing time in the Duck Bay and Izhut Bay Sections may occur for pink salmon returning to the Kitoi Bay Hatchery.

Fourth Period: 2½ days (57 hours) - 12:00 Noon July 29 through 9:00 P.M. July 31. This fourth period is critical, as the harvest should increase and a fairly realistic assessment of total run strength should be evident by the end of the period. Extensions in fishing time commonly occur during this period in years when the pink and chum salmon runs are strong. The initial pink salmon opening for the Kitoi Bay Section is expected to occur at the beginning of this fishing period.

Fifth Period: 2½ days (57 hours) - 12:00 Noon August 5 through 9:00 P.M. August 7. This fifth period should yield the peak harvest day and period, provided that normal run timing occurs. The first significant announcement of differential fishing time by management unit may occur as stronger production areas are targeted for extensions, while moderate or lower production areas are not.

Sixth Period: 2½ days (57 hours) - 12:00 Noon August 12 through 9:00 P.M. August 14. This sixth period should be the first postpeak period. Returns to major late production systems should be evident by period's end. There may be increases in closed water sanctuaries to enhance escapement levels. Evaluation of run strength is used to determine if reductions in fishing time are needed for the remaining periods to ensure adequate escapement. A strategy to achieve full escapement in all systems is developed from this period.

Seventh Period: 2½ days (54 hours) - 12:00 Noon August 19 through 6:00 P.M. August 21. During the 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 achieving escapement goals. However, major concern will be directed toward the run strength of late run sockeye and chum salmon.

Eighth Period: 2½ days (54 hours) - 12:00 Noon August 26 through 6:00 P.M. August 28. The eighth period will primarily be a cleanup period for 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. This period also 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.

A change to this schedule of fishing periods should be expected if significant deviations in the actual pink salmon return occurs.

Chum and Coho Salmon

A large portion of the 1996 KMA chum and coho salmon harvest will occur in non-terminal locations during major pink salmon fisheries. System specific chum and coho salmon fisheries, which occur during the pink salmon fishery, will commonly result in some management units having less fishing time than management units targeting primarily pink salmon stocks. This approach emphasizes the use of more terminally located management units for targeted chum and coho salmon fisheries (i.e., Inner Kukak Section, Zachar Bay Section, Kizhuyak Section, etc.)

**INSEASON EMERGENCY ORDER ANNOUNCEMENTS
("GETTING THE WORD")**

Fishing period announcements may not always be predictable because the fishery is managed on data which is compiled and evaluated daily. Data used to make fishery decisions includes (1) escapement reports via weir counts or aerial surveys, (2) harvest trends (total catch and catch per unit effort), and (3) information on fish buildups in closed water sanctuaries.

After enough information has been collected to determine the fishing time needed to harvest surplus fish, an EO and a fishery announcement are issued in the following manner:

- 1) A news release is constructed detailing:
 - a) The date, time, and number of the emergency order announcement.
 - b) The length of the fishing period.
 - c) The opening and closing times and dates of the fishing period.
 - d) The areas open to fishing.
 - e) The areas closed to fishing (those sections not listed as being open).
 - f) The location of "closed water" marker adjustments.
- 2) The news release is posted at the entrance of the Kodiak ADF&G office.
- 3) Copies of the news release are made available at the Kodiak ADF&G office. For after hours availability, copies are stored at the main entrance.
- 4) The news release is recorded on a 24 hour recorded message phone (Number 486-4559).
- 5) The news release is made available to local radio stations (KVOK and KMXT).
- 6) The news release is announced over SSB channel 4125 Khz following the marine weather broadcasts. Commonly, the first reading of a news release occurs after the 6:00 P.M. weather broadcast, but occasionally the initial reading comes after the 8:00 A.M. weather broadcast.
- 7) The news release is distributed to all registered processors either by hand, verbally on the telephone, by tele-fax, or through the ADF&G recorded message phone.
- 8) Information on the most current news release or emergency order can also be obtained by calling the Kodiak ADF&G office during working hours, or by calling Dave Prokopowich (486-6007), Kevin Brennan (486-6475), or Dennis Gretsches (486-3031) after working hours or on weekends.
- 9) Copies of emergency orders are mailed to a current listing of required and interested recipients.
- 10) Many fishers, ADF&G vessels and camps, and Fish and Wildlife Protection vessels use a small tape recorder to document the exact wording of each announcement as it is broadcasted. This is advisable, when considering the detailed nature of each announcement.

REGULATORY SUMMARY

Regulation Book and Statistical Chart

The 1996 Commercial Salmon Fishing Regulation Book and Kodiak Area Salmon Statistical Chart (Ninth Revision) are available at the Kodiak ADF&G Office. **Note: That as of 1996 all longitude and latitude coordinates in the KMA have been converted to decimal minutes and are based on the North American Datum of 1983.**

New Regulations

In November of 1995 the Alaska Board of Fisheries (BOF) addressed proposals to change regulations for the KMA commercial salmon fishery. There were several new regulation changes which were adopted and following is a brief listing of these changes. These new regulations are listed in the 1996 Commercial Salmon Fishing Regulation Book.

Changes in the Descriptions of Districts and Sections 5AAC 18.200

The boundary description between the Inner and Outer Ayakulik Sections has changed from a line of longitude to a line of latitude with the new boundary line at 57°13.15' N. latitude.

The boundary description between the Inner and Outer Kukak Sections has changed to 154°13.70' W. longitude.

Changes in Closed Waters 5AAC 18.350

Closed water areas have been **reduced** in the following locations.

For the Inner Karluk Section: closed waters include that portion of the Inner Karluk Section enclosed by a straight line between the ADF&G regulatory markers located on the northeast end of the Karluk Spit at 57°34.53' N. latitude, 154°26.70' W. longitude and on the rocky bluff east of Tanglefoot Bay at 57°34.35' N. latitude, 154°28.30' W. longitude.

For the Seven Rivers Section: closed waters include all waters west of the stream terminus of Seven Rivers (Stream No. 258-701).

The closed water areas have been **eliminated** in Ruth Bay in the Izhut Bay Section of the Afognak District. There will be 500 yard saltwater closures for the three streams within Ruth Bay.

Closed water areas have been **increased** in only the following location.

For the Inner Uganik Bay Section: closed waters in the East Arm (Mush Bay) include all waters within a line from Packers Spit at 57°43.95' N. latitude, 153°30.00' W. longitude to the opposite shore near

Mink Point at 57°43.10' N. latitude, 153°30.10' W. longitude and including the lagoon behind Packers Spit.

Beach Seine Specifications and Operations

Regulation 5AAC 18.332 (h) Seine Specifications and Operation was amended by the BOF for the 1996 season which allows a ring, strap, purse, or tow line to be attached only to the corkline, ribline, or leadline of a beach seine. Hydraulic power may be used to set or retrieve, or purse a beach seine. A beach seine must be set from, and hauled to, a beach, or a vessel anchored to a beach. One end of a beach seine must remain on a beach above the water surface at all times during the set.

MISCELLANEOUS REGULATORY CLARIFICATIONS

Closed Water Adjustments

There have been conflicting interpretations of Alaska Statute 16.05.785 regarding the failure to remove markers. As a result there will be no inseason adjustments of closed waters unless ADF&G personnel are able to remove old markers and install new markers, or unless inseason adjustments of closed waters are made to a specific stream terminus. All adjustments to closed waters listed in 5AAC 18.350 will be made by emergency order and announced by news release.

Closed Water Sanctuaries

In addition to the closed water areas listed within the 1996 Commercial Salmon Fishing Regulation Book (Regulation 5AAC 18.350), the following two closed water sanctuaries will also be in effect for the 1996 season.

Buskin River Closed Water Sanctuary

The stream mouth of the Buskin River (stream no. 259-211) has moved considerably over the past several years. The previous markers were not providing adequate protection to salmon migrating into the stream. The north shore marker has been moved and an offshore point is designated to aid in triangulation of the closed water area. The offshore point is at the reef directly east of the spit, and may be marked with a buoy (Figure 6). The location of the closed waters will be described in the first salmon EO.

5AAC 18.350 CLOSED WATERS (a)(6) Northeast Kodiak District

(E) Buskin River: all waters inside of a line running from a marker on the bluff north of the mouth of the Buskin River at approximately 57°45.80' N. lat., 152°28.38' W. long. to a point offshore at 57°45.35' N. lat., 152°28.15' W. long. to a marker located onshore south of the river mouth at approximately 57°45.15' N. lat., 152°28.65' W. long. (NOAA Chart 16595)

Ayakulik River No. 256-201 Closed Water Sanctuary

ADF&G regulatory markers will be placed in such a manner as to better define the "stream terminus" of the Ayakulik River. The intent of this closed water sanctuary is to prevent seines from being set which completely block fish access to the river (Figure 7).

Remainder of the Kodiak Area

A straight line closure is in effect in areas where ADF&G has deployed regulatory markers to establish waters closed to fishing, provided that **no portion of that line is less than 500 yards from the seaward extremities of the exposed tideland banks which designates the stream mouth.** Consequently, common closed water configurations will be areas of various shapes, depending upon the nature of each individual stream mouth extending between the two regulatory markers. In areas where ADF&G has deployed regulatory markers to establish waters closed to fishing in bays a straight line closure is in effect.

ADF&G is expanding its stream marker program in the Mainland District. Fishers participating in salmon fisheries located in the Mainland District should be aware that closed water sanctuaries to protect salmon buildups may be larger in some areas due to the placement of markers.

Section Boundaries

The Raspberry Strait Section **is not** part of the Southwest Afognak Section.

Purse Seine Leads

The minimum mesh size which can be used in leads is seven (7) inches. Double panels of web overlapped in the lead of a purse seine are **not** legal.

Set Gillnets - Operation of Gear

Leads

"Seine webbing" used as a lead for set gillnets is not intended to "gill salmon". Set gillnet leads which have similar mesh size and web construction to the actual set gillnet gear are **not** considered legal gear.

Operation of Set Gillnets

Set gillnets must be operated in substantially a straight line, except that no more than 25 fathoms of a **set gillnet** may be used as a **hook**. A **hook** may be used in any configuration. When a **set gillnet** is being operated primarily as a **"hook in any configuration"** it will be considered illegal to **actively** operate that gillnet as a purse or beach seine (such as "round hauling"). Further, if a net gear site

contains more than one length of gillnet, such as a separate net used to configure the "hook", then that permit holder may not operate another net gear site.

FISH TICKETS

All fishers should check the statistical area recorded on each of their fish tickets. It is required that the correct harvest location(s) be shown on each ticket and it is the responsibility of each fisher to ensure that tender operators or cannery personnel record the correct harvest location on each ticket. This information is extremely important in evaluating inseason harvest levels, stock contribution, and effort distribution.

Seiners

Provide estimates of harvest by area to tender operators. For example: "1/3 of my reds were from Cape Alitak (257-20) and the rest were from Red River (256-20). The rest of my fish were 1/2 and 1/2 from each of these areas". Prior to signing your tickets, check to make sure the proper harvest information by **STATISTICAL AREA** has been entered.

Accurate recording of the harvest from the Cape Igvak Section and that portion of the Shelikof Strait regulated by the North Shelikof Strait sockeye salmon management plan is particularly important. In order to provide an accurate accounting of sockeye salmon harvests in these areas, it is imperative that the correct statistical areas be reported on the fish ticket at the time of delivery.

Gillnetters

Because of the fixed nature of this gear, each permit holder's reporting area (statistical area) should be consistent between landings. In the event that gillnet fishers move into a new statistical area, please provide the tender operator with that information. Prior to signing your tickets, ensure that the proper harvest information by **STATISTICAL AREA** has been entered.

MANAGEMENT PLANS

Currently there are nine BOF approved management plans which direct management activities for specific portions of the KMA (Table 4). Two new management plans were adopted by the BOF in November 1995, the Eastside Kodiak and the North Afognak/Shuyak Island Salmon Management Plans. Each management plan affects several management units through part or all of the salmon fishing season. Any plan requires the test of time and a continued review process to determine its effectiveness at accomplishing the desired biological and allocative goals.

Proper implementation of these plans in 1996 will require a major communication effort between ADF&G and the industry. All inquiries, suggestions, and concerns regarding management plans should be directed to ADF&G, Kodiak. A discussion of each plan follows.

Cape Igvak

The Cape Igvak Management Plan covers the time period from June 5 through July 25 for salmon fishing in the Cape Igvak Section of the Mainland District (Table 5). This plan has been in effect since 1978 and allocates as near as possible 15% of the available Chignik sockeye salmon for harvesting to Kodiak permit holders if specific biological and harvest criteria are met in the Chignik Management Area. The 1996 forecast for Chignik sockeye salmon runs indicate that both the early and late production should be above average. Fishing time after July 25 in the Cape Igvak Section will be targeted toward pink, chum, and coho salmon bound to spawning streams in the Cape Igvak and Wide Bay Sections.

Alitak Bay District

This plan covers the entire commercial salmon fishing season, and identifies the primary species by management unit throughout the season (Table 6). The plan affects the sockeye salmon stocks returning to the Frazer, Upper Station, and Akalura systems, and the pink and coho salmon stocks returning to Dog Salmon, Upper Station, Akalura, Humpy Cove, Deadman, Horse Marine, and Silver Salmon systems. This plan has been in effect since 1988.

The management chronology for Olga Bay stocks identifies the targeted stocks by approximate time period. In situations where two or more targeted stocks overlap in run timing a blended management approach will occur. Adequate fishing time will be provided to ensure that the upper escapement goals are not exceeded for the dominant stock(s), while still attempting to ensure that the lower escapement goals for the non-dominant stock(s) are achieved. As outlined in this management plan, fishing time directed on these stocks will occur simultaneously in the traditional management units for harvesting these stocks, the Cape Alitak Section and the Moser-Olga Bay Section. Management for these stocks will emphasize an aggressive strategy to contain the harvest to these traditional harvest units; this strategy also applies to the remainder of the stocks in the Alitak Bay District.

The regulation implementing this management plan (5AAC 18.361) appears in the 1996 Commercial Salmon Fishing Regulation Book. The dates listed in this plan are approximate and may vary with changes in run timing. However, the June 9 commercial test fishery is a firm opening date.

Some specific points to emphasize this year are:

- The approximate June 12 through June 24 period is identified as an aggressive management time for Frazer sockeye salmon run.
- The lower biological escapement goal for Frazer sockeye salmon (140,000) will be targeted.

- The even year biological pink salmon escapement requirement for the Dog Salmon system ranges from 50,000 to 150,000 fish.
- In the event that fishing time is required in the Upper Olga Bay management units, there will be at least 18 hours advanced notice prior to any opening.
- Sockeye returning to Akalura will be managed in the Inner Akalura Section, so that sockeye escapement does not exceed 60,000 fish. The lower biological escapement goal of 40,000 sockeye will be targeted.

Westside Kodiak

The BOF adopted into regulation the Westside Kodiak Management Plan in 1989. This plan identifies a management chronology for the major Westside Kodiak salmon stocks (Table 7).

The goal of this management plan is to achieve escapement and harvest objectives of sockeye salmon returning to the Karluk, Ayakulik, and other Westside minor systems. Further, it details the management of pink, chum, and coho salmon returning to systems in the Southwest Afognak, Central, North Cape, Anton Larsen Bay, Sheratin Bay, Kizhuyak Bay, Terror Bay, Inner Uganik Bay, Spiridon Bay, Zachar Bay, Uyak Bay, Outer and Inner Karluk, Sturgeon Bay, Halibut Bay, and Outer and Inner Ayakulik Sections. The intent of the Board is to insure salmon bound to these systems are harvested to the extent possible by the traditional fisheries located in all 17 sections. The plan directs the department to manage the Northwest Kodiak and the Southwest Kodiak Districts and the Southwest Afognak Section in accordance with the guidelines set out in this plan.

This management plan reflects the realization of long term management goals and identifies current management practices both of which were initially implemented in 1971. The basis for these goals and practices was primarily to rebuild depleted Karluk and depressed Ayakulik sockeye salmon stocks. This plan provides a predictable management framework for these rebuilt stocks, as well as major pink, chum and coho salmon stocks of westside Kodiak. It also helps to stabilize fishing opportunities between the three gear types on the highest quality fish in these districts and sections.

Sockeye returning to Karluk Lake will be managed so that an escapement of 200,000 sockeye salmon is attained for the early run and an escapement of 400,000 sockeye salmon is attained for the late run.

The regulatory wording of this plan appears in the 1996 Commercial Salmon Fishing Regulation Book under 5AAC 18.362.

North Shelikof Strait Sockeye Salmon

The BOF in December 1989 created the North Shelikof Strait Sockeye Salmon Management Plan in response to their concerns that the fishing patterns and quantities of sockeye harvested by Area K

seiners in 1988 represented the onset of an expansion of the interception of Cook Inlet bound sockeye in KMA. This plan was meant to contain this interception by not exceeding estimated historical interception levels while still providing for traditional opportunities to harvest high quality local pink and chum salmon stocks. **The major impact of this plan was to create "sockeye harvest caps" for portions of the North Shelikof which encompasses eight (8) management units (Table 8). After these sockeye harvest caps are met, commercial salmon fishing is restricted in these 8 management units to inshore waters (Figure 8).**

During the January 1993 BOF meeting in Kodiak, a modification of the management plan was made to allow for the traditional near shore seine fisheries to continue in the Southwest Afognak Section, in the event the sockeye harvest cap was reached. After the harvest cap is met, fishing will be restricted in waters inside of a 0.5 mile corridor (Figure 8).

The regulatory wording for this management plan is listed below and under 5AAC 18.363.

From July 6 through July 25 in the Dakavak Bay, Outer Kukak Bay, Inner Kukak Bay, Hallo Bay, and Big River Sections of the Mainland District, and in the Shuyak Island and Northwest Afognak Sections of the Afognak District, the department shall manage the fishery as follows:

- **Management of the fishery must be based on local stocks;**
- **the fishery may remain open during normal fishing periods until the harvest exceeds 15,000 sockeye salmon;**
- **when the harvest exceeds 15,000 sockeye salmon, the department shall restrict the fishery by emergency order to waters of the shoreward zones, as described below:**
 - Dakavak Bay, Outer Kukak Bay, Inner Kukak Bay, Hallo Bay, and Big River Sections west of a line from Cape Douglas at 58°51.10' N. lat, 153°15.10' W. long, to a point at 58°42.90' N. lat, 153°25.95' W. long, to a point east of Swikshak River at 58°37.97' N. lat., 153°35.55' W. long., to Cape Chiniak at 58°30.96' N. lat., 153°54.50' W. long., to Cape Nukshak at 58°23.50' N. lat., 153°58.90' W. long., to Cape Ugyak at 58°16.55' N. lat., 154°06.15' W. long., to Cape Gull at 58°13.04' N. lat, 154°08.60' W. long., to Cape Kuliak at 58°08.10' N. lat., 154°12.30' W. long., to Cape Atushagvik at 58°05.00' N. lat., 154°18.90' W. long., to Cape Ilktugitak at 58°01.17' N. lat., 154°35.00' W. long to the southern entrance of Dakavak Bay at 58°01.00' N. lat., 154°43.60' W. long.
 - Shuyak Island and Northwest Afognak Sections south and east of a line from Point Banks at 58°37.95' N. lat., 152°18.90' W. long., to Dark Island at 58°38.72' N. lat., 152°33.15' W. long., to Gull Island at 58°35.80' N. lat., 152°38.70' W. long., to the northern entrance of Big Bay at 58°33.85' N. lat., 152°40.30' W. long., to the western entrance of Blue Fox Bay at 58°27.68' N. lat., 152°43.65' W. long., to Black Cape at 58°24.50' N. lat., 152°53.30' W. long., to Cape Paramanof at 58°18.33' N. lat., 153°02.65' W. long.

From July 6 through July 25 in the Southwest Afognak Section of the Afognak District, the department shall manage the fishery as follows:

- **management of the fishery must be based on local stocks;**
- **the fishery may remain open during normal fishing periods until the harvest exceeds 50,000 sockeye salmon;**
- **when the harvest exceeds 50,000 sockeye salmon, the department shall restrict the fishery by emergency order to waters of the Southwest Afognak Section Shoreward Zones east of a line from one-half nautical mile west of Cape Paramanof at 58°18.33' N. lat., 153°02.65' W. long., to one-half nautical mile west of Tanaak Cape at 58°15.53' N. lat., 153°06.25' W. long., to one-half nautical mile west of Steep Cape at 58°12.05' N. lat., 153°12.65' W. long., to one-half nautical mile west of a point at 58°08.38' N. lat., 153°19.00' W. long., to one-half nautical mile west of Raspberry Cape at 58°03.58' N. lat., 153°25.20' W., long.**

All fishers and tender operators should familiarize themselves with the boundaries of these "seaward" and "shoreward" zones in each of these eight management units. Also, it will be the responsibility of both the permit holder and the tender operator to make sure fish tickets for fish harvested in the geographical area covered by this plan properly reflect the poundage and quantities of salmon by species. If there are questions on this management plan contact the ADF&G Kodiak staff.

Crescent Lake

The Crescent Lake Management Plan is associated with a relatively small coho enhancement project which could impact the subsistence fishery in the vicinity of Port Lions. This plan clarifies the harvest priorities for coho salmon returning to the Settler Cove area near Port Lions. This plan was slightly modified by the BOF, during the January 1993 meeting in Kodiak. Previously the plan allowed commercial harvest inside the breakwater at Port Lions only after September 16; the date is now September 10. In addition, the time period that this plan is in effect was changed from the entire salmon season to the time period July 15 through October 31. The wording of the regulations guiding this plan are listed in the 1996 Commercial Salmon Fishing Regulation Book under 5AAC 18.364.

Eastside Afognak

The Eastside Afognak Management Plan was adopted into regulation during the January 1993 BOF meeting in Kodiak. The goal of this plan is to achieve broodstock requirements for the hatchery, escapement requirements for local stocks, and specify the requirements for fishing time in the Southeast Afognak, Duck Bay, Izhut Bay, and Kitoi Bay Sections (Table 9). The regulatory wording of this plan is listed in the 1996 Commercial Salmon Fishing Regulation Book.

Spiridon Bay Sockeye Salmon

The KRAA in conjunction with ADF&G, has developed a supplemental run of sockeye salmon in Spiridon Bay. Sockeye fry are stocked in Spiridon Lake to rear and then migrate into Spiridon Bay. Because of the steep topography of the creek leading to the lake the returning sockeye can not ascend to naturally spawn. All returning sockeye are intended for common property fisheries. ADF&G, KRAA, and the U.S. Fish and Wildlife Service have developed a management plan which attempts to fully utilize these salmon while protecting local stocks. The Spiridon Bay Sockeye Salmon Management Plan was adopted into regulation by the BOF at the January 1993 meeting in Kodiak.

5AAC 18.366. Spiridon Lake Sockeye Salmon Management Plan.

- (a) The department shall manage the commercial, sport, and subsistence fisheries in Spiridon Bay to provide for full use of the enhanced stock of sockeye salmon returning to Spiridon Lake.
- (b) The purpose of the Spiridon Bay harvest strategy is to allow for the orderly harvest of sockeye salmon returning to Telrod Cove from the Spiridon Lake enhancement project while providing adequate protection for local natural salmon stocks returning to other streams of the bay. The intent of the enhancement project is for the harvest of returning enhanced salmon to occur in traditional commercial fishing areas of the Northwest Kodiak District during openings directed at harvesting Karluk sockeye and westside pink and chum salmon stocks.
- (c) Terminal harvests will occur in the Spiridon Bay Special Harvest Area (Figure 2).
- (d) Only purse seine and beach seines may be operated in the Spiridon Bay Special Harvest Area.
- (e) If a harvestable surplus of enhanced sockeye salmon is in the special harvest area, fishing periods will run 24 hours per day. When possible, openings will be coordinated to occur at the beginning of openings in the Northwest Kodiak District.

Eastside Kodiak

The Eastside Kodiak Salmon Management Plan shows which species effect fishing time in management units located in the Northeast and Eastside Kodiak Districts throughout the season (Table 10). This plan was adopted into regulation by the BOF in November 1995 and was based upon historical management activity which has been implemented annually since 1978. The goal of this plan is to achieve escapement and harvest objectives for sockeye, pink, chum, and coho salmon returning to natural spawning systems located in the Northeast and Eastside Kodiak Districts.

North Afognak and Shuyak Island

The North Afognak and Shuyak Island Salmon Management Plan shows which species effect fishing time in the Northeast Afognak, Perenosa Bay, Shuyak Island, and Northwest Afognak Sections of the Afognak District (Table 11). This plan was adopted into regulation by the BOF in November 1995 and was based upon historical management activity which has been implemented annually since 1986. The goal of this plan is to achieve escapement and harvest objectives of sockeye, pink, and coho salmon returning to spawning systems and sockeye and coho salmon returning to enhancement projects located in the northern portion of the Afognak District.

SOCKEYE SALMON ESCAPEMENTS GOALS FOR KMA MAJOR SOCKEYE SALMON SYSTEMS

The amount of fishing time for targeted sockeye salmon fisheries on systems having fish weirs is dependent on actual escapements. These include the Karluk, Ayakulik, Upper Station, and Frazer systems (major systems) and for the Akalura, Saltery, Buskin, Litnik, Pauls, and Thorsheim systems (minor systems). For sockeye salmon systems without weirs, fishing time is generally conservative and occurs at the discretion of ADF&G, in proportion to the perceived system specific run strength.

Upper and lower biological escapement requirements have been identified for each river's sockeye salmon stocks (Table 12). A basic management function is to achieve at least the lower escapement goal for stocks exploited by targeted fisheries, even if it means that directed fishing time on those stocks does not occur. When the possibility exists that the upper escapement goals may be exceeded and significant deviations from optimum production could occur because of that excess; maximum directed fishing time on these stocks would be allowed, even if it requires continuous stream terminus fishing to contain the escapement at or near the upper levels. This is the extreme case occasionally needed to manage the KMA sockeye salmon runs. More common is a moderate amount of directed fishing time required to harvest sockeye salmon surplus and provide escapement approaching desired levels.

Escapement graphs by stream are a good tool for illustrating escapements, similar to preseason harvest projections (Appendix B.1. - B.5.). These curves are calculated based on historical average cumulative escapement by day, scaled to the upper and lower biological escapement goal for each particular system. Actual escapements can be plotted on these graphs to compare with the projected cumulative count. Since fishing time is strongly tied to escapement levels, these graphs can be valuable aids in understanding current ADF&G management actions, and in planning for future fisheries. Actual inseason escapement counts can be heard daily at 8:15 A.M. on SSB channel 3230 Khz.

Table 1. Commercial salmon harvest in 1995 vs. 1995 harvest projections for the Kodiak Management Area and the projected harvests by species for 1996.

	CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL
1995 Projected Harvest	25,000	2,400,000	310,000	18,235,000	800,000	21,770,000
1995 Actual Harvest	18,700	4,485,000	308,000	42,832,000	1,523,000	49,166,700
1996 Projected Harvest	20,000	3,557,000	280,000	3,700,000	900,000	8,457,000

FISHERY	1995 HARVEST ^a		1996 HARVEST ^a
	Projection	Actual ^b	Projection
<u>Projection as of</u>			
Early Run Sockeye Salmon Fisheries (6/9-7/15)			
Cape Igvak	280,000	191,000	251,000
Karluk	200,000	724,000	208,000
Ayakulik	45,000	500,000	253,000
Frazer	420,000	1,005,000	1,024,000
Upper Station	50,000	80,000	94,000
Minor Systems	50,000	86,000	95,000
Minor Enhancement	90,000	66,000	70,000
Other	70,000	215,000	70,000
SubTotal	1,205,000	2,867,000	2,065,000
Late Run Sockeye Salmon Fisheries (7/16-9/15)			
Afognak (Hatchery)	30,000	11,000	35,000
Cape Igvak	120,000	21,000	126,000
Karluk	350,000	454,000	466,000
Ayakulik	30,000	228,000	169,000
Frazer	105,000	251,000	256,000
Upper Station	300,000	335,000	251,000
Minor Systems	75,000	19,000	55,000
Spiridon	160,000	150,000	109,000
Other	25,000	149,000	25,000
SubTotal	1,195,000	1,618,000	1,492,000
TOTAL SOCKEYE	2,400,000	4,485,000	3,557,000
Coho Salmon Fisheries (8/1-10/1)			
Afognak (Hatchery)	15,000	40,000	25,000
Afognak (Natural)	35,000	37,000	35,000
Westside	135,000	120,000	125,000
Alitak	25,000	19,000	20,000
Eastside/Northend Kodiak	60,000	72,000	50,000
Mainland	40,000	20,000	25,000
SubTotal	310,000	308,000	280,000

-Continued-

Table 1. (page 2 of 2)

FISHERY	1995 HARVEST ^a		1996 HARVEST ^a
	Projection	Actual ^b	Projection
Pink Salmon Fisheries (7/6-9/5)			
Afognak (Hatchery)	7,965,000	4,500,000	1,230,000
Afognak (Natural)	1,150,000	3,744,000	250,000
Westside Kodiak	4,650,000	18,211,000	520,000
Alitak	2,365,000	7,060,000	830,000
Eastside/Northend Kodiak	1,750,000	8,621,000	630,000
Mainland	<u>355,000</u>	<u>696,000</u>	<u>240,000</u>
SubTotal	18,235,000	42,832,000	3,700,000
Chum Salmon Fisheries (6/6-9/5)			
Afognak (Hatchery)	150,000	215,000	110,000
Afognak (Natural)	31,000	75,000	40,000
Westside Kodiak	213,000	625,000	420,000
Alitak	38,000	105,000	80,000
Eastside/Northend Kodiak	148,000	402,000	150,000
Mainland	<u>220,000</u>	<u>101,000</u>	<u>100,000</u>
SubTotal	800,000	1,523,000	900,000
GRAND TOTAL	21,770,000^c	49,166,700^d	8,457,000^e

^a Numbers of fish.

^b Actual harvest estimates by fishery as of 2/6/96.

^c Includes 25,000 chinook - projected harvest.

^d Includes 18,700 chinook - actual harvest.

^e Includes 20,000 chinook - projected harvest.

Table 2. Expected harvest from supplemental salmon production, by system and species, for the Kodiak Management Area, 1996.

System	Sockeye ^a	Pink ^b	Coho ^c	Chum ^d
Kitoy Bay Hatchery Complex	35,000	1.2 to 2.3 Million	37,000	110,000
Spiridon Lake (Telrod Cove)	109,000	0	0	0
Hidden Lake (Foul Bay)	26,000	0	0	0
Waterfall Lake	17,000	0	0	0
Crescent Lake (Port Lions)	14,000	0	4,000	0
Katmai Lake (Ouzunkie)	0	0	2,000	0
Kodiak Road System Lakes	0	0	5,000	0
Total ^e	201,000	1.2 to 2.3 Million	48,000	110,000

a Approximate timing of the Kitoy Bay and Spiridon Lake sockeye salmon return is late July to late August; timing of all other supplemental sockeye salmon production is early June to mid July.

b Approximate timing of the Kitoy Bay pink salmon return is late July to late August.

c Approximate timing of supplemental coho salmon returns is mid August to mid September.

d Approximate timing of supplemental chum salmon returns is early June to mid July.

e Harvest estimates are from Kitoy Bay Hatchery and Kodiak Regional Aquaculture Association staff.

Table 3. Commercial salmon season opening times and dates, by species and fishery, for the Kodiak Management Area, 1996.

FISHERY	<u>EARLIEST POTENTIAL OPENING TIME/DATE</u>	
	Firm Time/Date	Approximate Time/Date
<u>Early Run Sockeye Salmon Fisheries</u>		
Cape Igvak Section ^a	-	12:01 A.M. June 5-9
N.W. Kodiak District ^b	12:00 Noon June 9	-
Inner Ayakulik and Outer Ayakulik Sections ^c	-	Low tide June 7-9
Alitak District ^b	12:00 Noon June 9	-
Minor Systems ^d		
Uganik	-	12:00 Noon June 14
Paramanof	-	12:00 Noon June 14
Pauls/Perenosa	-	12:00 Noon June 14
Litnik	-	12:00 Noon June 9-14
Saltery	-	12:00 Noon June 14
Kafliia/Swikshak	-	12:00 Noon June 14
<u>Pink/Chum Salmon Fisheries ^e</u>		
Mainland District	12:00 Noon July 6	-
Afognak District	12:00 Noon July 6	-
N.W. Kodiak District	12:00 Noon July 6	-
S.W. Kodiak District	12:00 Noon July 6	-
Alitak District	12:00 Noon July 6	-
Eastside Kodiak District	12:00 Noon July 6	-
N.E. Kodiak District	12:00 Noon July 6	-
<u>Late Run Sockeye Salmon Fishery</u>		
Cape Igvak Section ^f	-	12:01 A.M. July (?)
All remaining late run sockeye fisheries ^g	-	12:00 Noon July 15
<u>System Specific Coho Salmon Fisheries ^h</u>		
Mainland District	-	12:00 Noon Sept. 1
Afognak District	-	12:00 Noon Aug. 15
N.W. Kodiak District	-	12:00 Noon Sept. 1
S.W. Kodiak District	-	12:00 Noon Sept. 1
Alitak District	-	12:00 Noon Sept. 1
Eastside Kodiak District	-	12:00 Noon Sept. 5
N.E. Kodiak District	-	12:00 Noon Sept. 5

-Continued-

Table 3. (page 2 of 2)

- ^a Actual opening date will be determined by sockeye escapement levels into the Chignik River system. Fishing time will be in 24 hour increments.
- ^b Actual opening time/date is as shown. This opening is considered a commercial test fishery; fishing time for this initial period will be 33 hours (12:00 noon 6/9 through 9:00 P.M. 6/10).
- ^c Actual opening date will be determined by the sockeye escapement level into Ayakulik River and opening time by low tide timing during daylight hours.
- ^d Actual opening time will be determined by sockeye escapement levels into minor systems. Fishing time for this period will be 33 hours (12:00 noon through 9:00 P.M.)
- ^e Actual opening time/date is as shown. Fishing time for this initial period will be 57 hours (12:00 noon 7/6 through 9:00 P.M. 7/8). See section on Fishing Periods for additional information.
- ^f Actual opening date will be determined by sockeye escapement levels into the Chignik River System. Fishing time will be in 24 hour increments.
- ^g Actual opening date for system specific fishing time will be determined by sockeye escapement levels into major systems. All fishing periods will begin at 12:00 noon and end at 9:00 P.M. prior to 8/16 and end at 6:00 P.M. from 8/16 to season's end.
- ^h Actual opening date for system specific fishing time will be determined by overall coho run strength evaluation and by escapement levels into major systems and minor systems with reliable escapement data.

Table 4. Board of Fisheries approved fishery management plans for the Kodiak Management Area, 1996.

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 Section Dakavak Section	7/6 - 7/25
Eastside Afognak Management Plan	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
Eastside Kodiak Salmon Management Plan	1995	N.E. Kodiak District Eastside Kodiak District	6/14 - 10/1
North Afognak / Shuyak Salmon Management Plan	1995	N.E. Afognak Section Perenosa Bay Section Shuyak Island Section N.W. Afognak Section	6/9 - 10/1

Table 5. Biological and allocative criteria and the management chronology of the Cape Igvak Management Plan for the Kodiak Management Area, 1996.

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 ACHEIVE 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

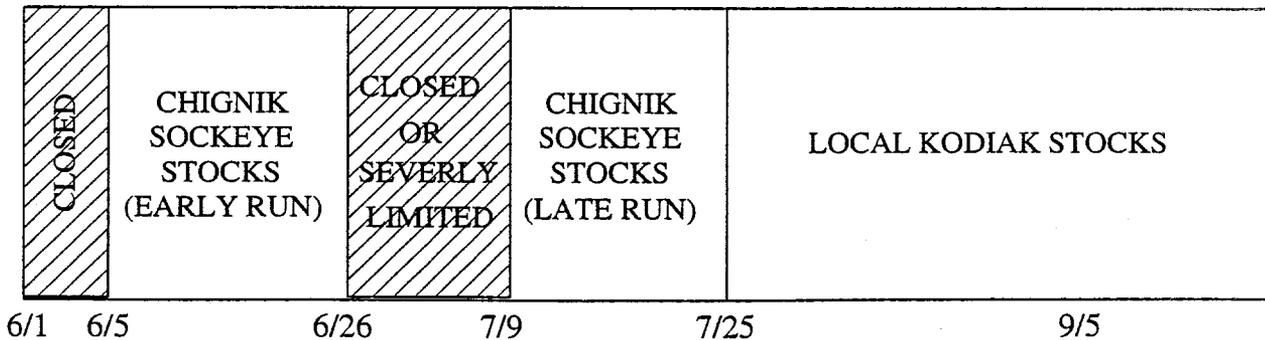


Table 6. Primary management species and fishery chronology of the Alitak Bay District Salmon Management Plan for the Kodiak Management Area, 1996.

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

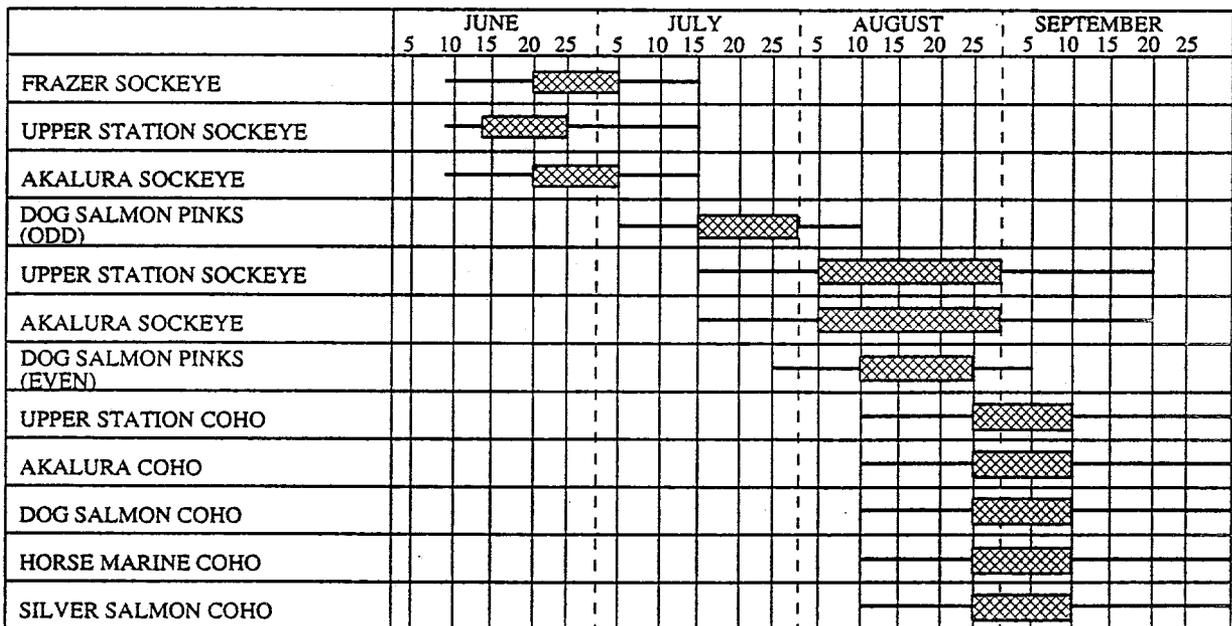


Table 7. Primary management species and fishery chronology of the Westside Kodiak Management Plan for the Kodiak Management Area, 1996.

		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	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	CLOSED	CLOSED	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		EVEN-YEAR CYCLE: L.R. KARLUK SOCKEYE/PINK		L.R. KARLUK SOCKEYE	KARLUK COHO			
				ODD-YEAR CYCLE: L.R. KARLUK SOCKEYE		EVEN-YEAR CYCLE: L.R. KARLUK SOCKEYE/PINK		L.R. KARLUK SOCKEYE	KARLUK COHO			
	STURGEON	CLOSED	E.R.KARLUK & AYAKULIK SOCKEYE & STURGEON CHUM		ODD-YEAR CYCLE: L.R. KARLUK SOCKEYE		L.R. KARLUK SOCKEYE	LOCAL COHO				
	HALIBUT	CLOSED	E.R.KARLUK AND AYAKULIK SOCKEYE	ODD-YEAR CYCLE: L.R. AYAKULIK SOCKEYE		EVEN-YEAR CYCLE: L.R. L.R. KARLUK SOCKEYE & AYAKULIK PINK		L.R. KARLUK SOCKEYE	LOCAL COHO			
				ODD-YEAR CYCLE: L.R. AYAKULIK SOCKEYE		EVEN-YEAR CYCLE: L.R. AYAKULIK SOCKEYE/PINK		L.R. KARLUK SOCKEYE	LOCAL COHO			
	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		EVEN-YEAR CYCLE: L.R. AYAKULIK SOCKEYE/PINK		AYAKULIK COHO					
			ODD-YEAR CYCLE: L.R. AYAKULIK SOCKEYE		EVEN-YEAR CYCLE: L.R. AYAKULIK SOCKEYE/PINK		AYAKULIK COHO					



COMMERCIAL TEST FISHERIES

E.R. = EARLY RUN STOCKS

L.R. = LATE RUN STOCKS

Table 8. 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, 1996.

27	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	Pink Salmon					
	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	COHO			
	6/9	6/14	7/6	7/25	8/15		9/5		

Table 9. Primary management species and fishery chronology of the Eastside Afognak Management Plan for the Kodiak Management Area, 1996.

TARGETED SPECIES BY SYSTEM AND TIME FOR SPECIFIC MANAGEMENT UNITS ^{1/}											
SOUTHEAST AFOGNAK SECTION (Seine)	LITNIK SOCKEYE	X	X	LITNIK SOCKEYE	X	X	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	Broodstock					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

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

- 1 Included in this management plan are the harvest strategies for current natural and hatchery production as well as future hatchery production.
- 2 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.
 - a Hatchery pink salmon broodstock captured.
 - b Hatchery pink salmon cost recovery fishery when necessary.
 - c Hatchery pink salmon common property fishery.
 - d Hatchery chum and/or early sockeye salmon broodstock captured.
 - e Hatchery chum and/or early sockeye salmon common property fishery.
 - f Hatchery coho and late sockeye salmon broodstock captured.
 - g Hatchery coho and late sockeye salmon common property fishery.

Table 10. Primary management species and fishery chronology of the Eastside Kodiak Management Plan for the Kodiak Management Area, 1996.

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		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		LOCAL PINK COHO	LOCAL COHO
	Two Headed	CLOSED		CLOSED	CLOSED	LOCAL AND MIXED PINK		LOCAL PINK COHO	LOCAL COHO
	Sitkalidak	CLOSED		CLOSED	CLOSED	LOCAL AND MIXED PINK		LOCAL PINK CHUM, COHO	LOCAL COHO
	Outer Ugak Bay	CLOSED		CLOSED	PASAGSHAK SOCKEYE	LOCAL AND MIXED PINK		LOCAL PINK CHUM, COHO	LATE CHUM COHO
	Inner Ugak Bay	CLOSED		CLOSED	SALTERY SOCKEYE	LOCAL PINK & CHUM SALTERY SOCKEYE	LOCAL PINK AND CHUM	LOCAL PINK COHO	COHO

 Local and mixed sockeye 33 hour fishing period.

Table 11. Primary management species and fishery chronology for the North Afognak / Shuyak Island Salmon Management Plan for the Kodiak Management Area, 1996.

DATE	6/9	7/6	7/21	8/21	8/25	9/6	10/31
MANAGEMENT UNIT							
NORTHEAST AFOGNAK SECTION	CLOSED	LOCAL AND MIXED KODIAK PINK SALMON			LOCAL PINK AND COHO	LOCAL COHO	
PERENOSA BAY SECTION ^{a)}	SOCKEYE BOUND TO PAULS BAY AND PORTAGE LAKE	LOCAL AND MIXED PINK SALMON AND SOCKEYE BOUND TO PAULS & PORTAGE	LOCAL & MIXED PINK SALMON	LOCAL PINK AND COHO		LOCAL COHO	
SHUYAK ISLAND SECTION ^{b)}	CLOSED	LOCAL & MIXED KODIAK PINK SALMON			LOCAL COHO		
NORTHWEST AFOGNAK SECTION ^{c)}	SOCKEYE BOUND TO THORSHEIM & LONG LAGOON	LOCAL & MIXED KODIAK PINK SALMON			LOCAL COHO		

a) Additional fishing time to harvest enhanced sockeye bound to Waterfall Lake will only occur in the Waterfall Lake Terminal Harvest Area.

b) From July 6 to 25 this section must also be managed in accordance with the North Shelikof Strait Sockeye Salmon Management Plan.

c) Additional fishing time to harvest enhanced sockeye bound to Hidden Lake will only occur in the Foul Bay Terminal Harvest Area. From July 6 to 25 this section must also be managed in accordance with the North Shelikof Strait Sockeye Salmon Management Plan.

Table 12. Sockeye salmon escapement goals for major and minor systems in millions of fish, for the Kodiak Management Area, 1996.

	<u>Early Run (Before 7/15)</u>		<u>Late Run (After 7/15)</u>		<u>Total</u>	
	Minimum	Desired	Minimum	Desired	Min.	Des.
Major Systems ^a						
Karluk ^b	.150	.250	.400	.550	.550	.800
Ayakulik	.160	.220	.040	.080	.200	.300
Upper Station ^b	.050	.075	.150	.200	.200	.275
Frazer ^c	.140	.200	-	-	.140	.200
Subtotal	.500	.745	.590	.830	1.090	1.575
Minor Systems ^a						
Akalura ^b	.010	.015	.030	.045	.040	.060
Saltery ^c	.020	.040	-	-	.020	.030
Buskin ^c	.010	.015	-	-	.010	.015
Litnik ^c	.040	.060	-	-	.040	.060
Pauls ^c	.020	.040	-	-	.020	.040
Thorsheim ^c	.005	.010	-	-	.005	.010
Subtotal	.015	.180	.030	.045	.120	.205
GRAND TOTAL	.605	.925	.620	.875	1.225	1.790

^a This listing of systems identifies only those systems whose escapement is monitored by fish weir total escapement counts. The escapement into these systems represents approximately 85% of the Kodiak Area's total sockeye escapement.

^b Sockeye escapement into these systems characterized by two distinct stocks as identified by bimodal escapement pattern, i.e. an early stock where the cumulative escapement occurs through July 15 and a late stock where the cumulative escapement occurs primarily from July 16 through season's end.

^c Sockeye escapement into these systems characterized by one distinct escapement pattern and where escapement is essentially completed by approximately July 25. Escapement goals for Pauls Bay are currently being reevaluated.

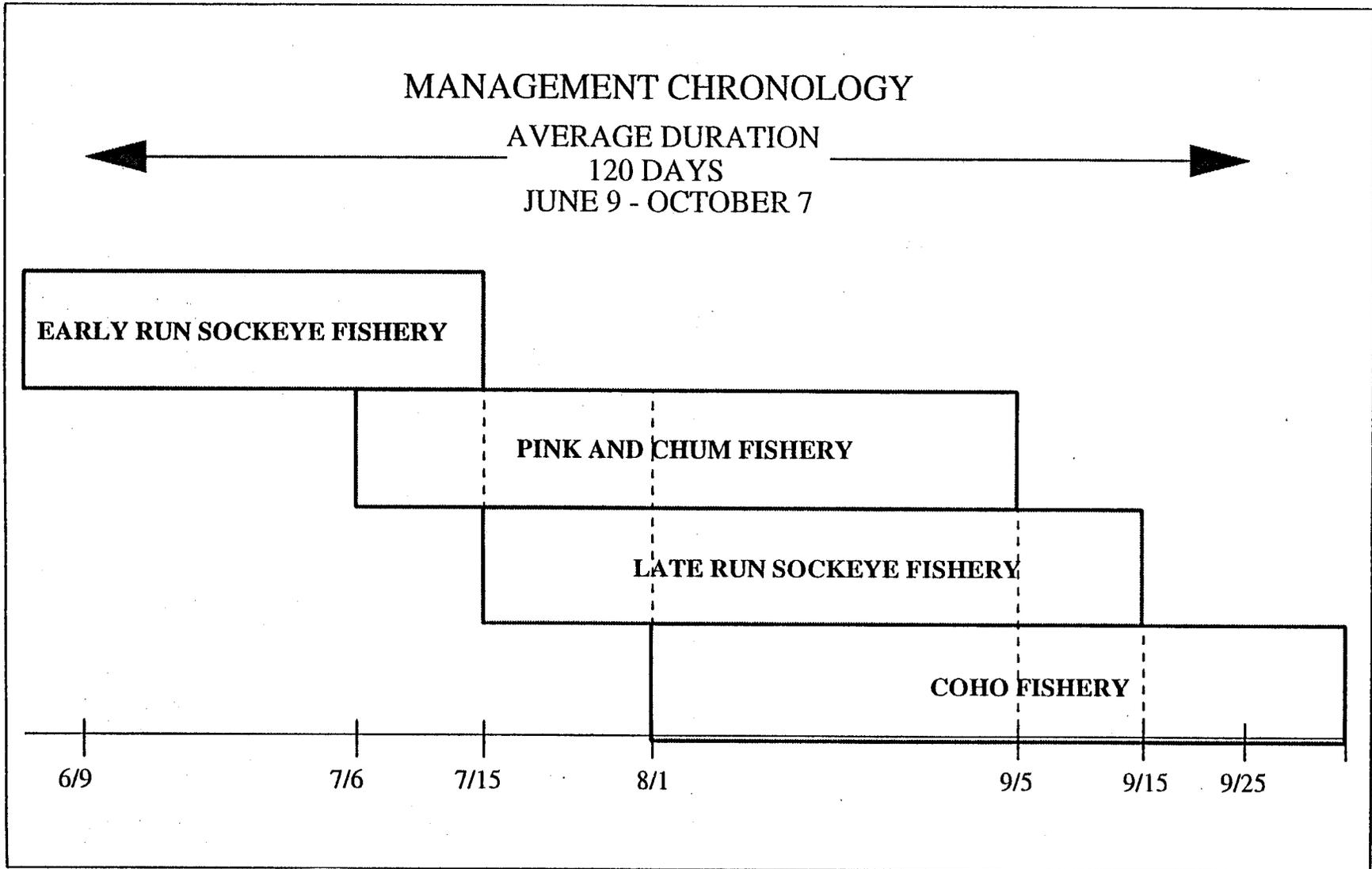


Figure 1. Commercial salmon fishery chronology, by species, in the Kodiak Management Area.

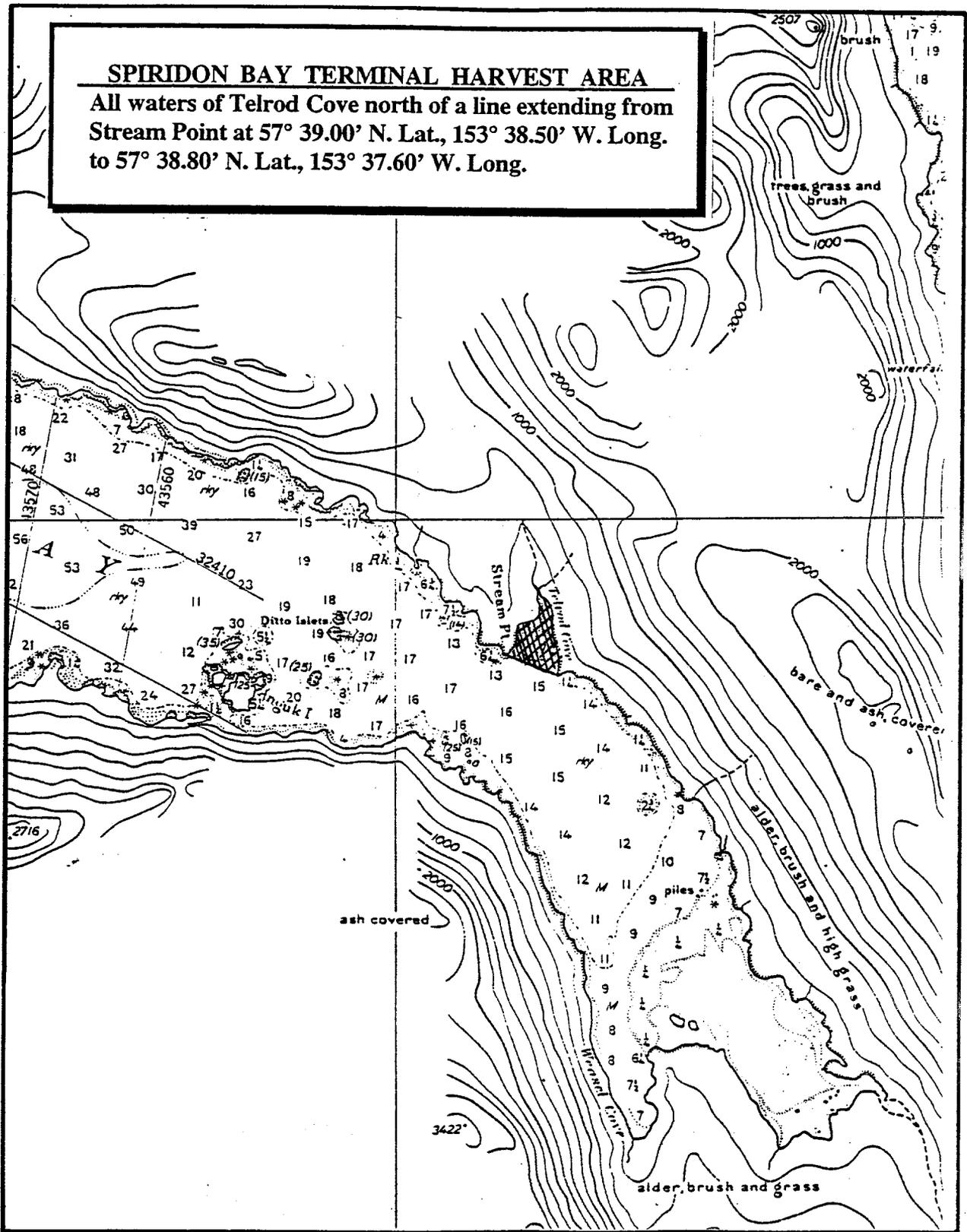


Figure 2. Boundaries of the Spiridon Bay Terminal Harvest Area (Telrod Cove) in the Kodiak Management Area.

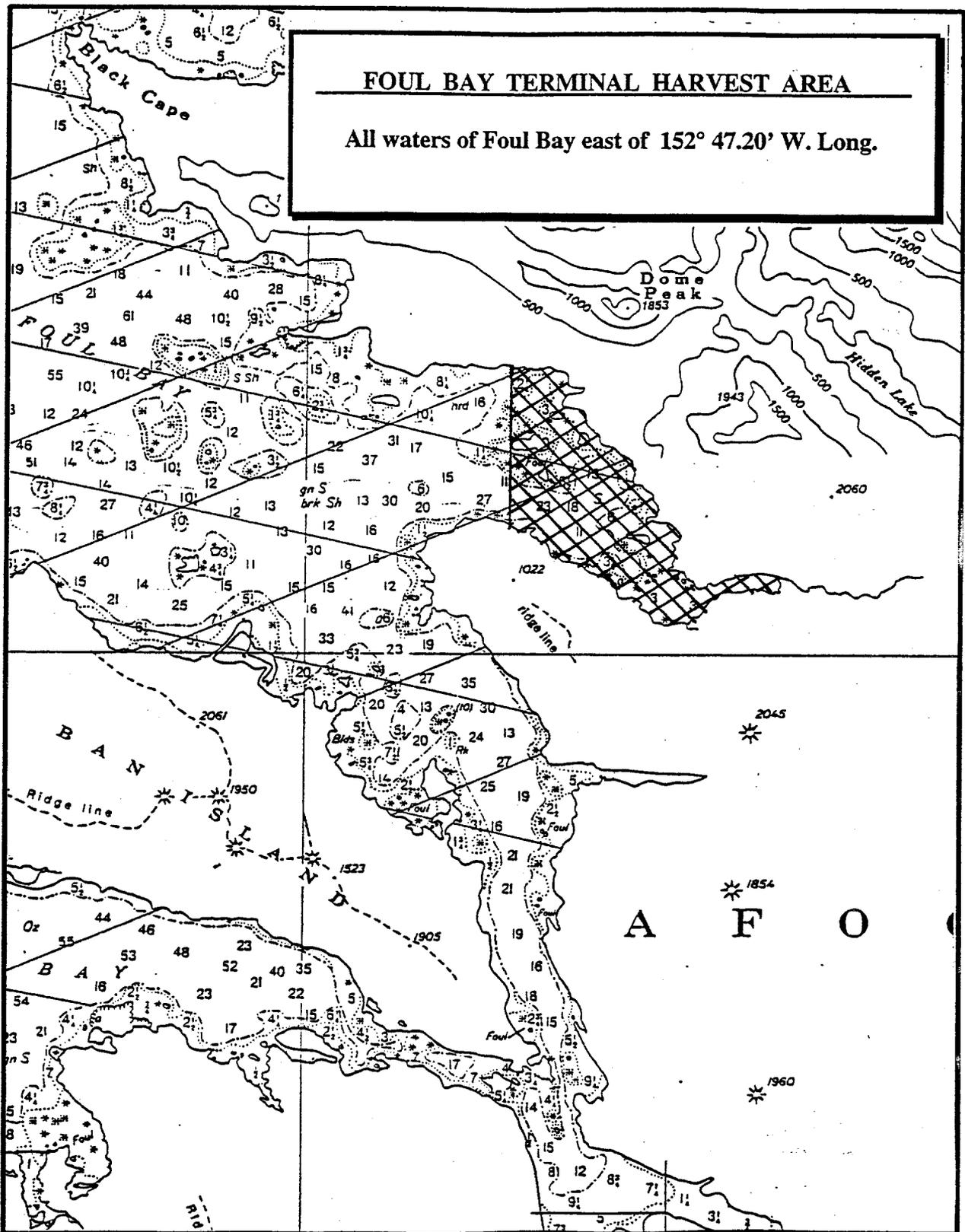


Figure 3. Boundaries of the Foul Bay Terminal Harvest Area in the Kodiak Management Area.

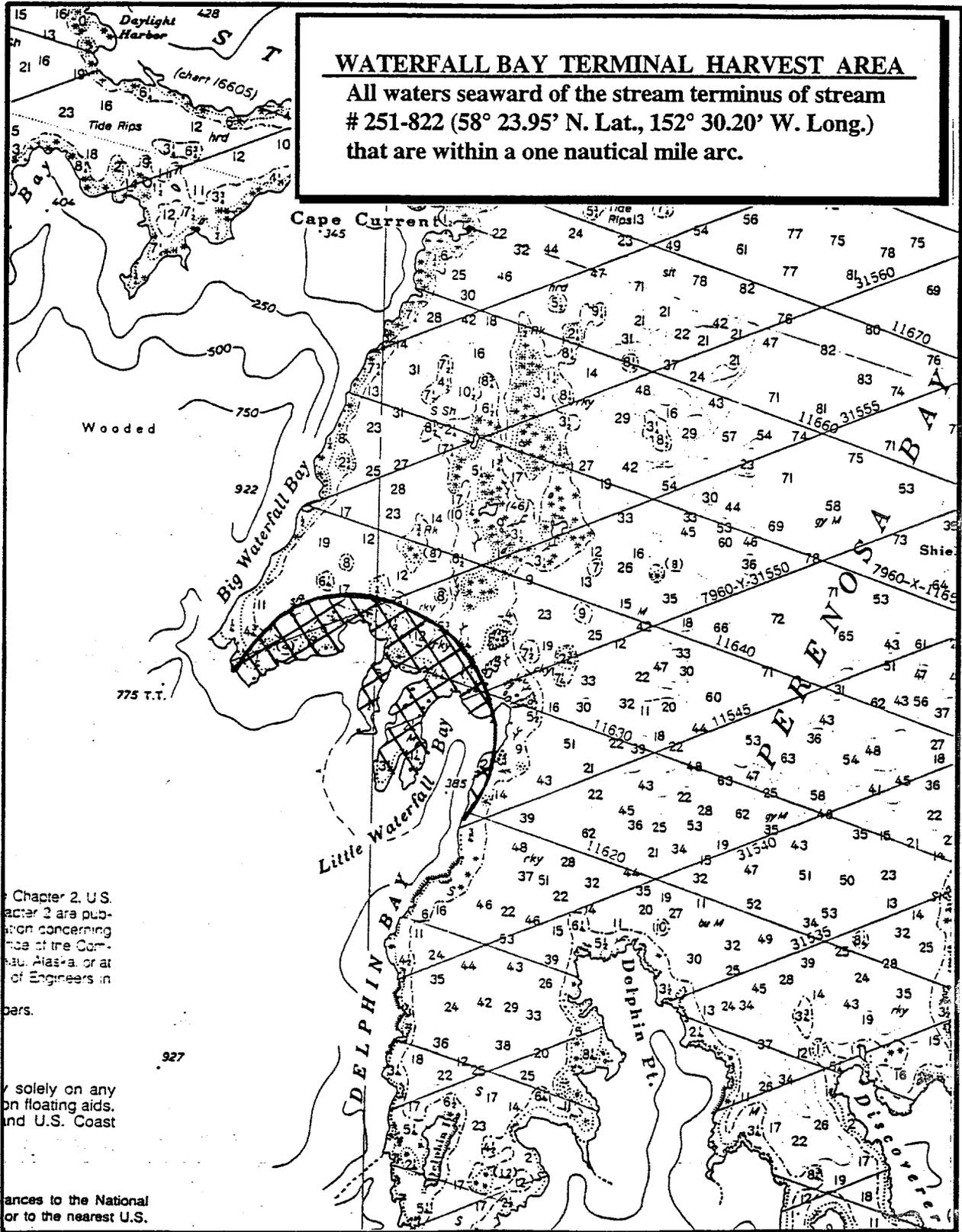


Figure 4. Boundaries of the Waterfall Bay Terminal Harvest Area in the Kodiak Management Area.

BUSKIN RIVER CLOSED WATER SANCTUARY

Waters closed to commercial and subsistence salmon fishing.

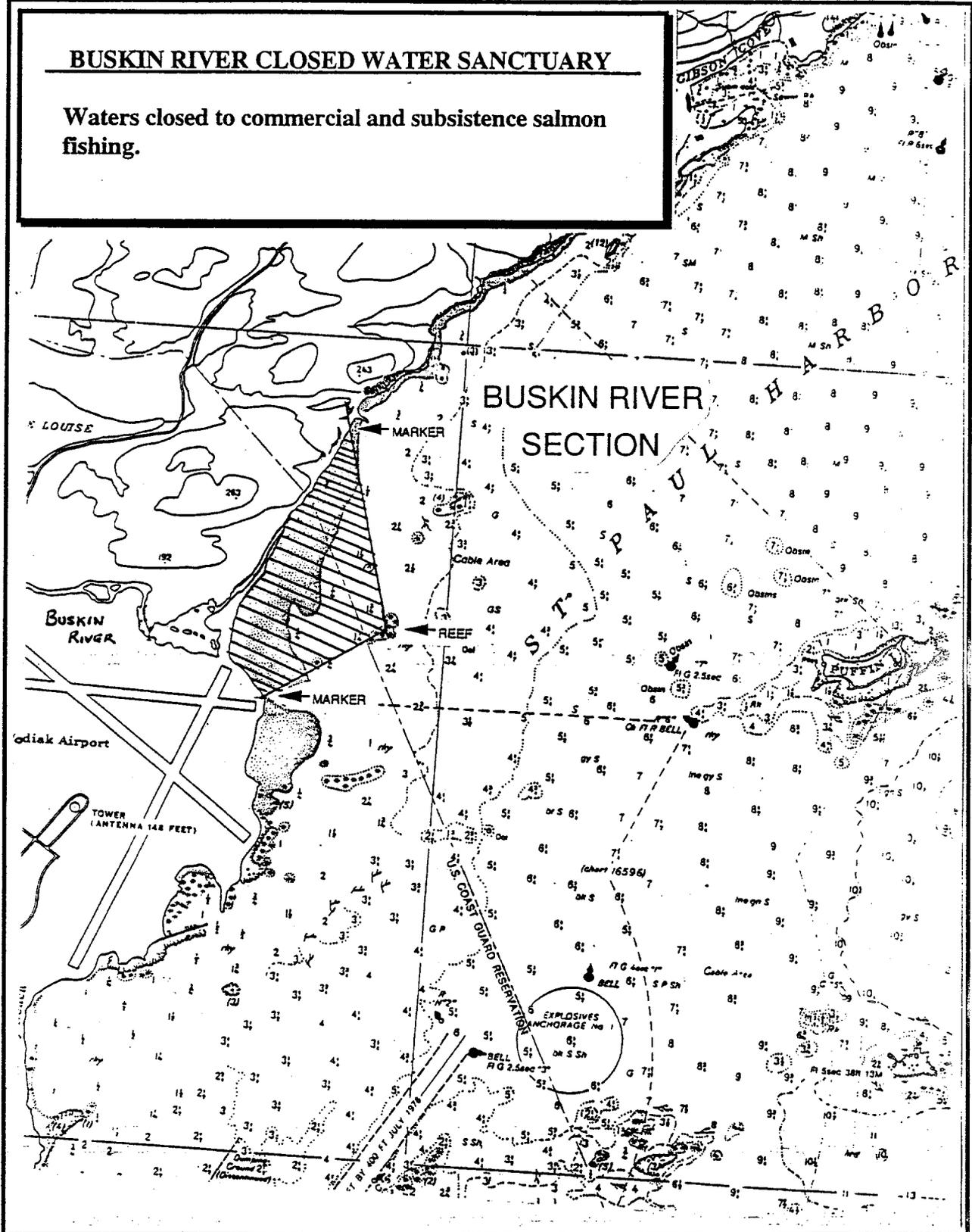


Figure 6. Buskin River closed water sanctuary in the Kodiak Management Area.

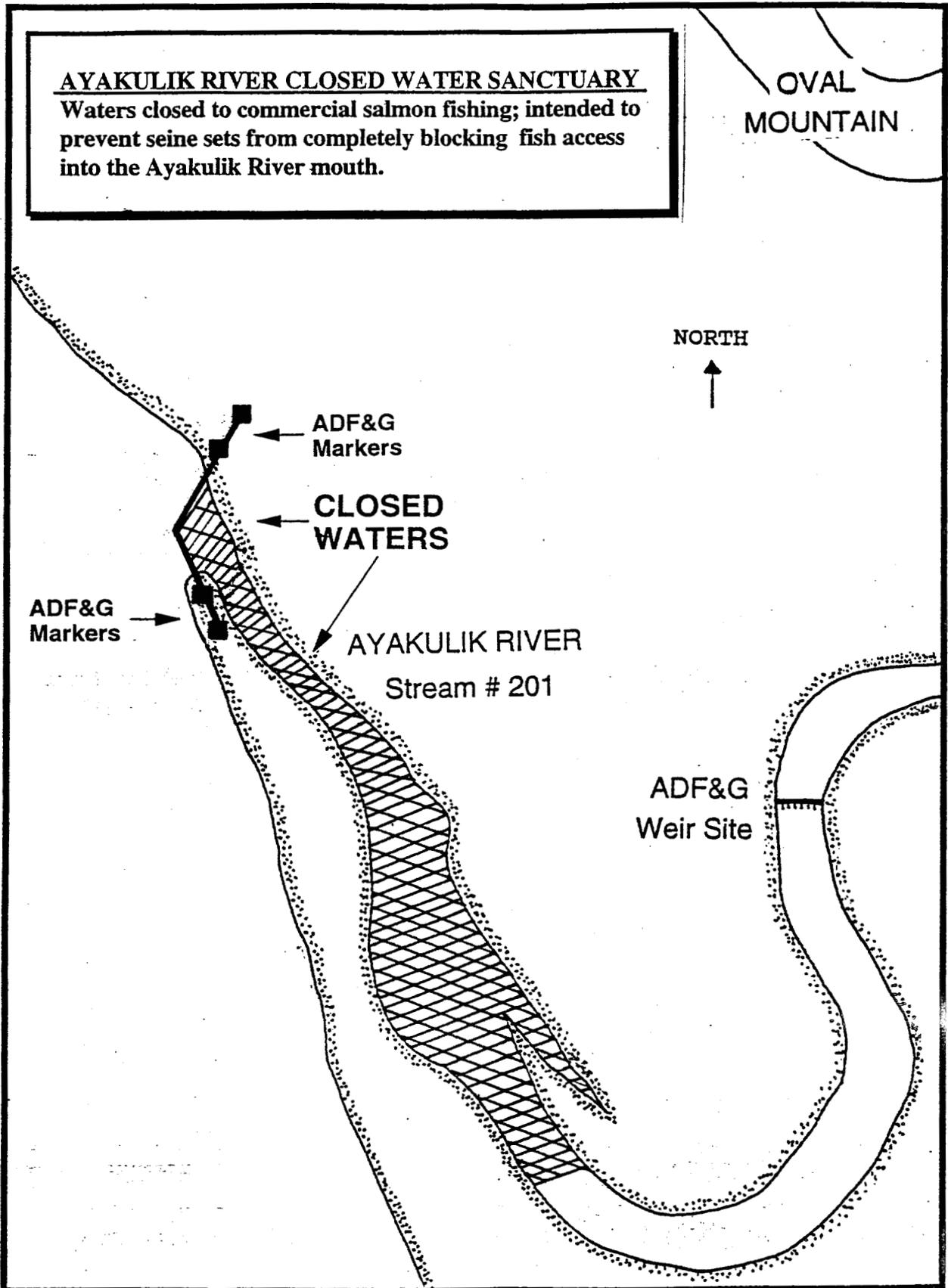


Figure 7. Ayakulik River closed water sanctuary in the Kodiak Management Area.

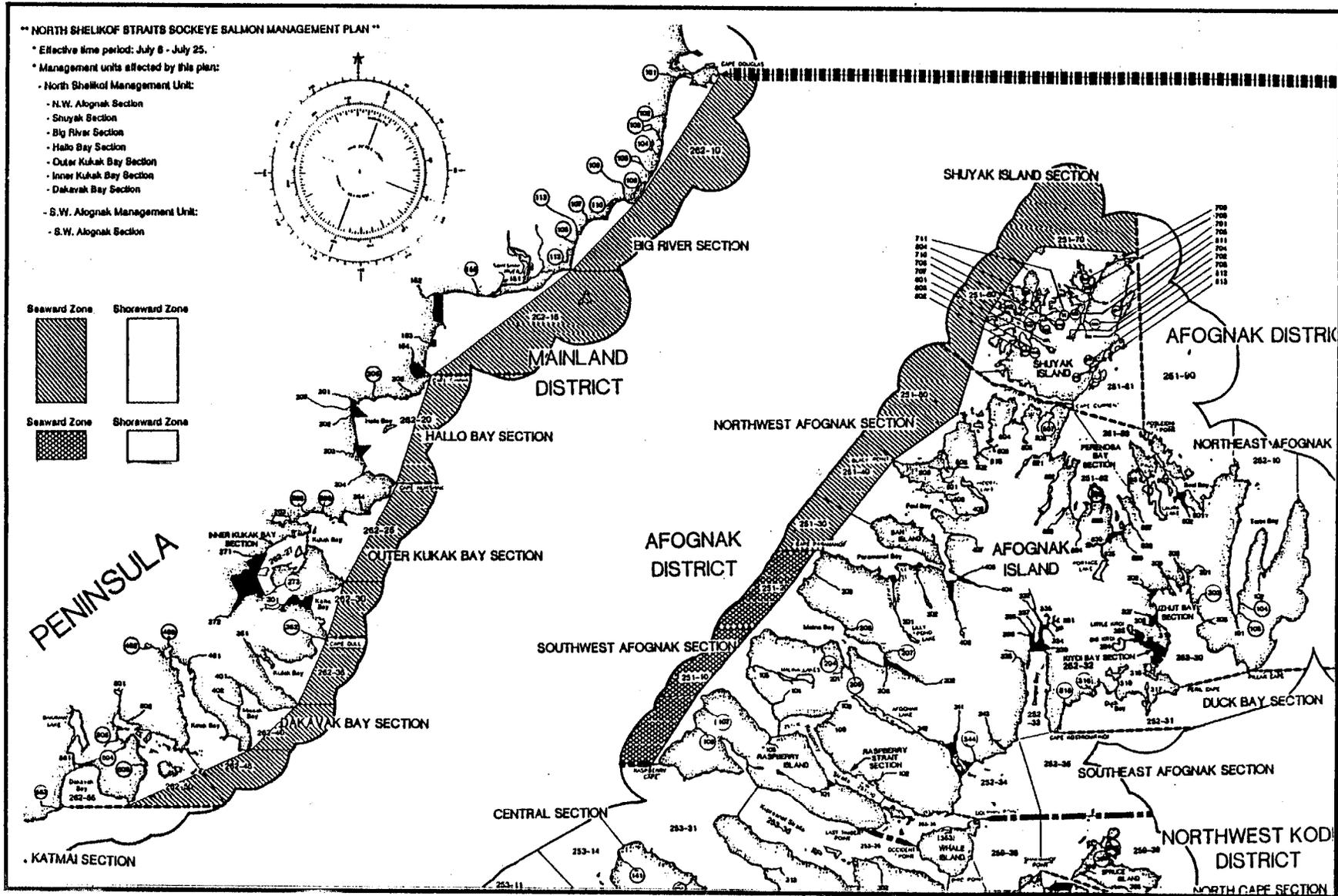
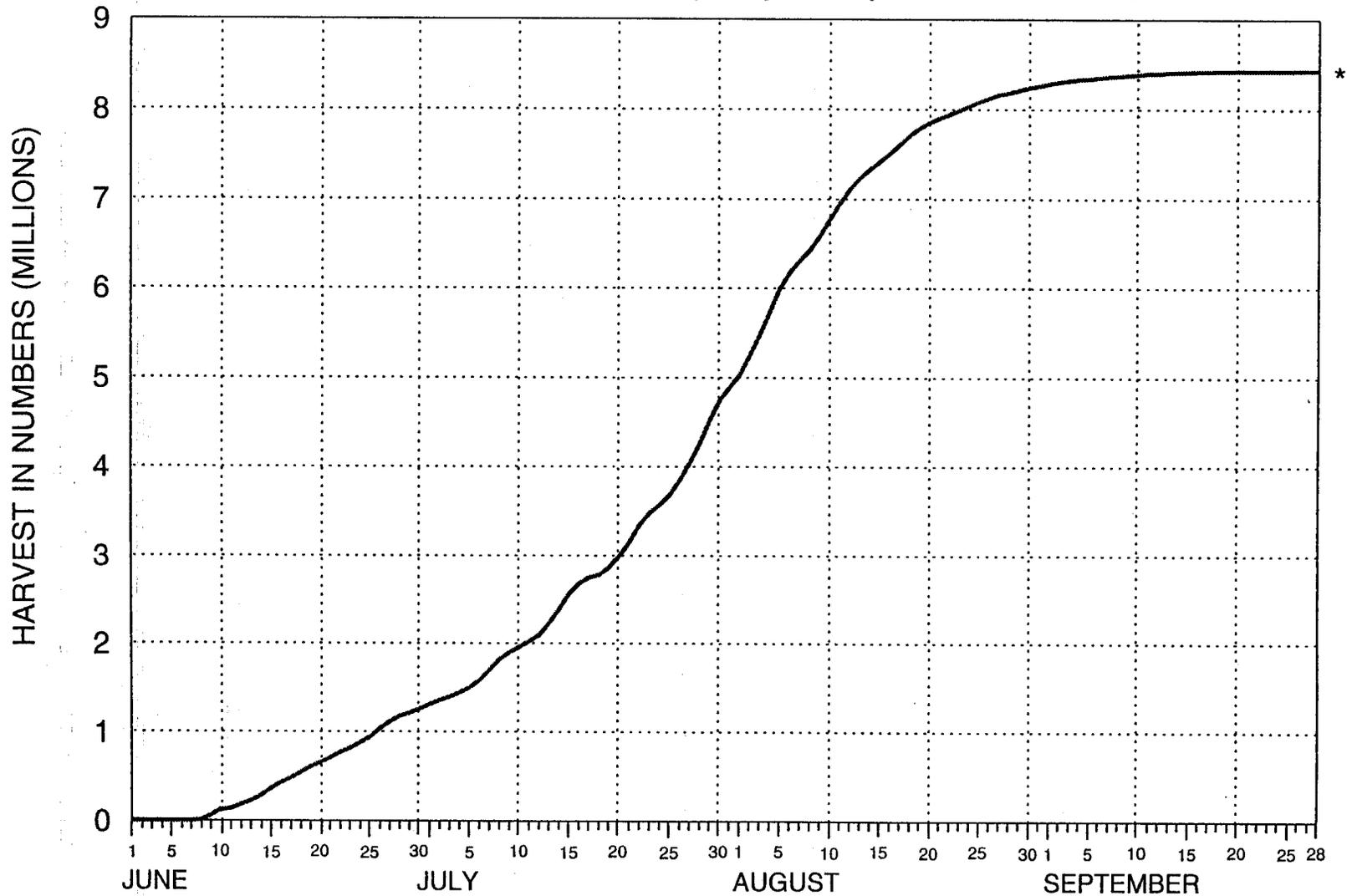


Figure 8. Map of the “North Shelkof Seaward Zone” and the “Southwest Alognak Seaward Zone” of the North Shelkof Strait Sockeye Salmon Management Plan for the Kodiak Management Area.

APPENDIX

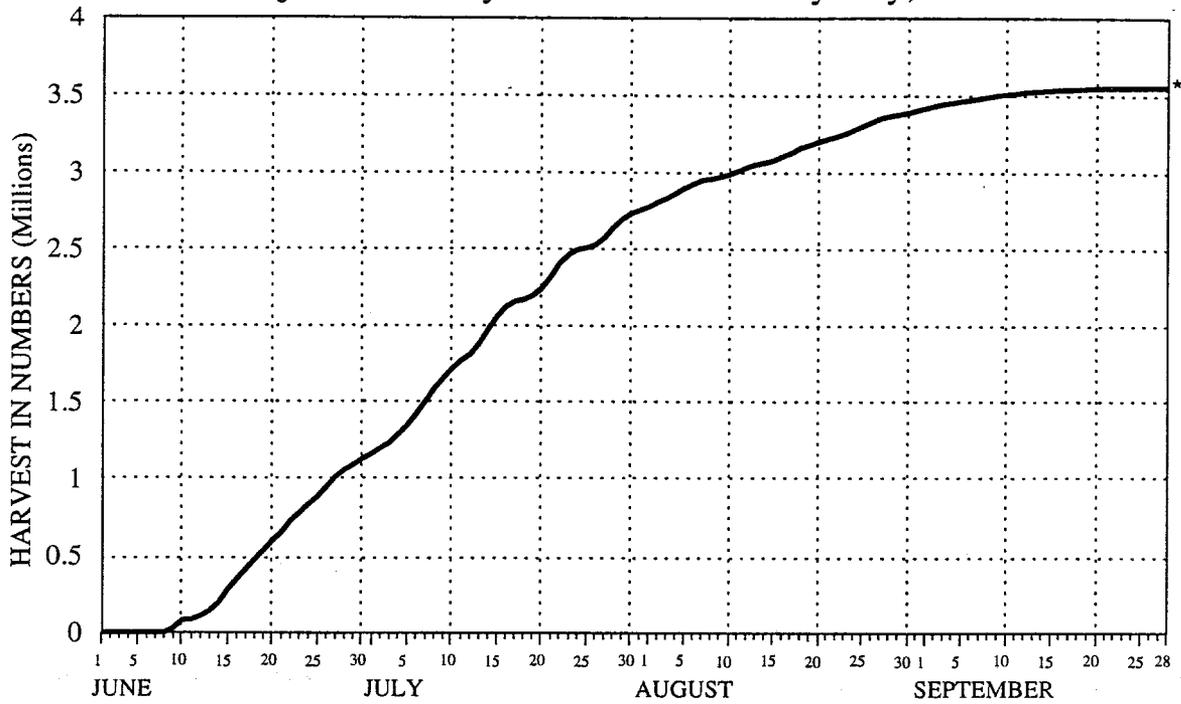
Projected Salmon Harvest by Day, All Species Combined, 1996



* 1996 ALL SALMON SPECIES PROJECTED HARVERST TOTAL = 8,457,000

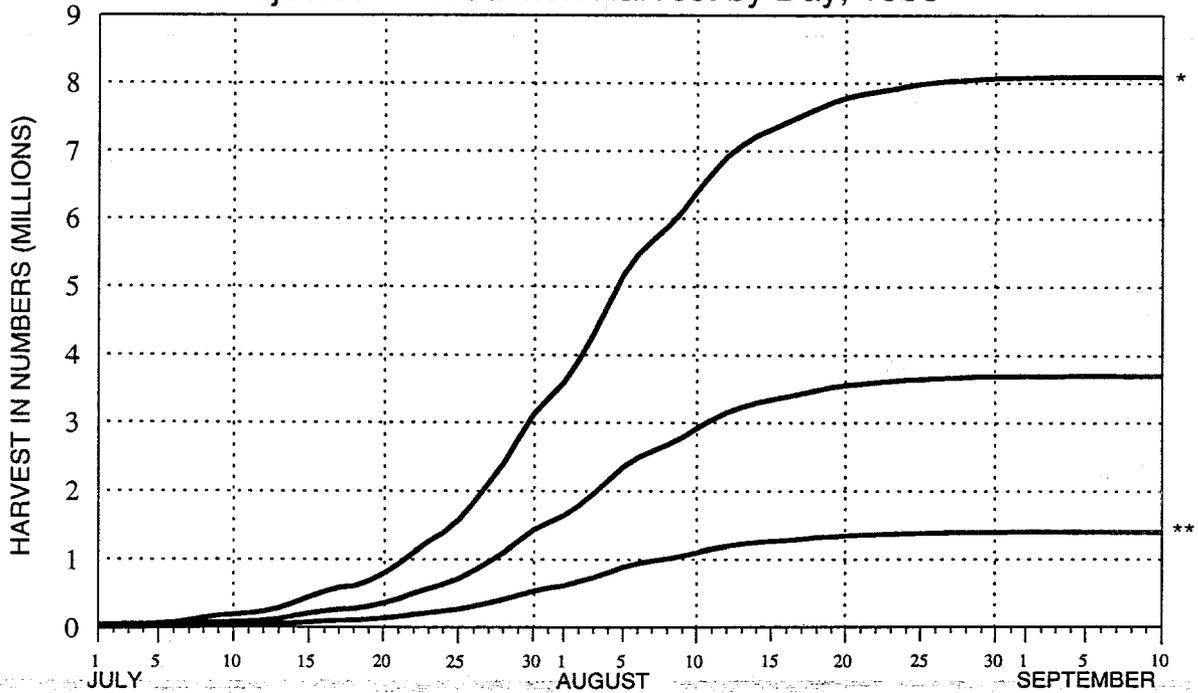
Appendix A.1. Projected salmon harvest curve, all species combined, for the Kodiak Management Area, 1996.

Projected Sockeye Salmon Harvest by Day, 1996



* 1996 SOCKEYE SALMON PROJECTED HARVEST TOTAL = 3,557,000

Projected Pink Salmon Harvest by Day, 1996



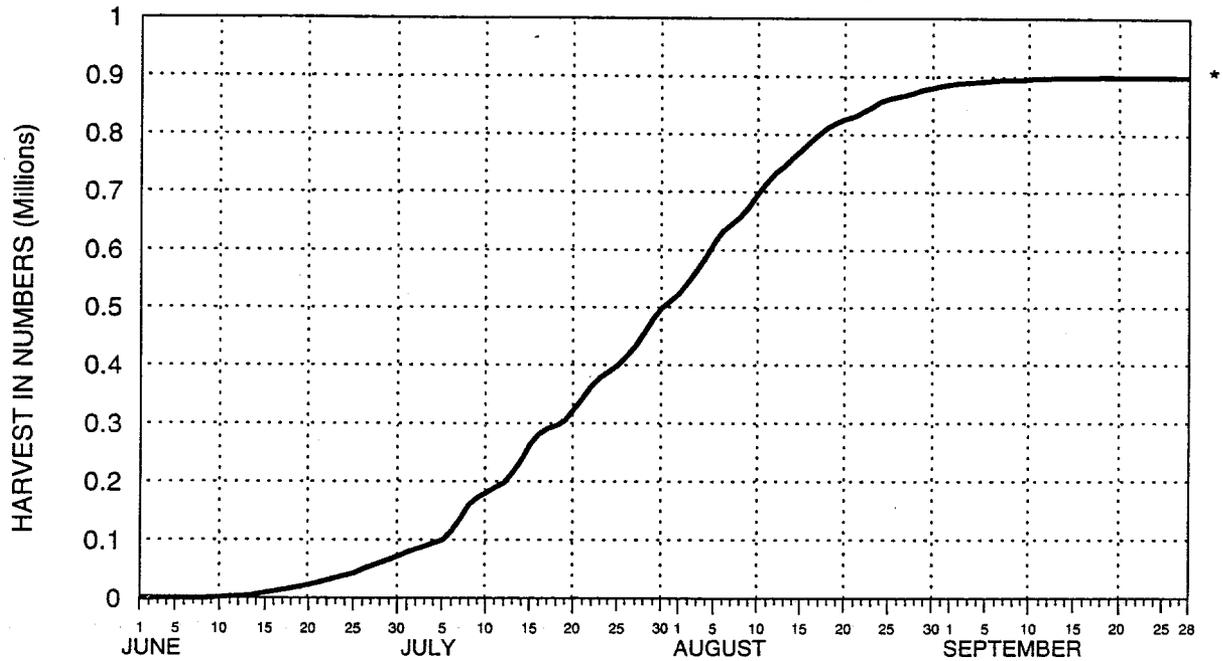
1996 PINK SALMON HARVEST MID POINT PROJECTION = 3,700,000

* PROJECTED HIGH = 8,100,000

** PROJECTED LOW = 1,400,000

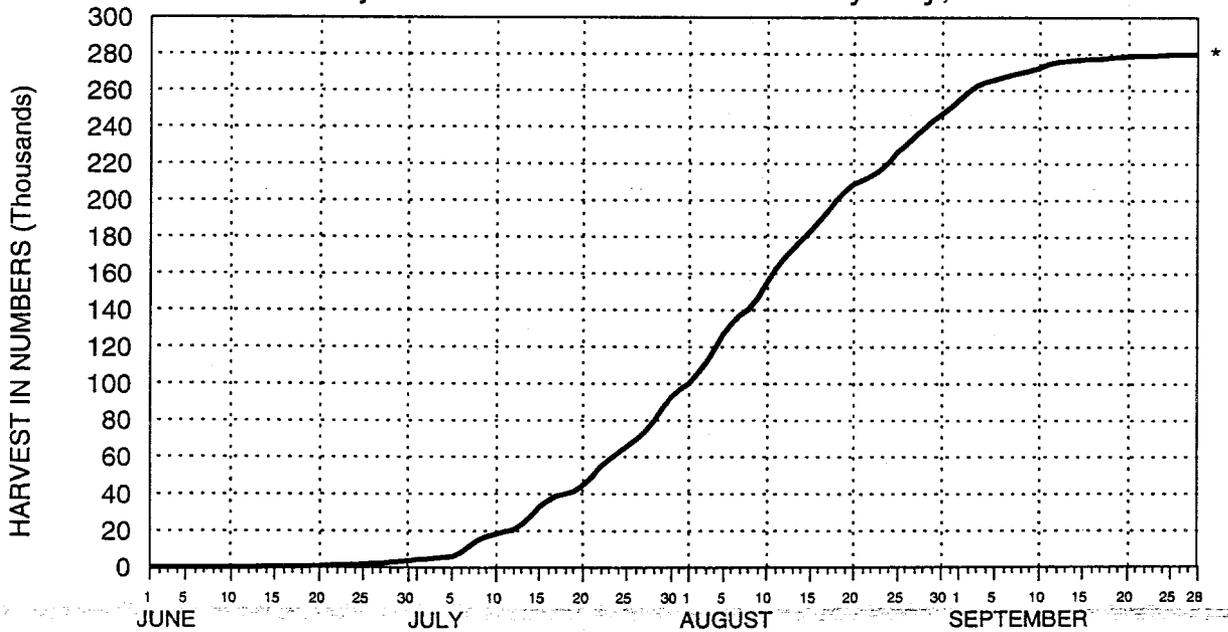
Appendix A.2. Projected sockeye and pink salmon harvest curves for the Kodiak Management Area, 1996.

Projected Chum Salmon Harvest by Day, 1996



* 1996 CHUM SALMON PROJECTED HARVEST TOTAL = 900,000

Projected Coho Salmon Harvest by Day, 1996

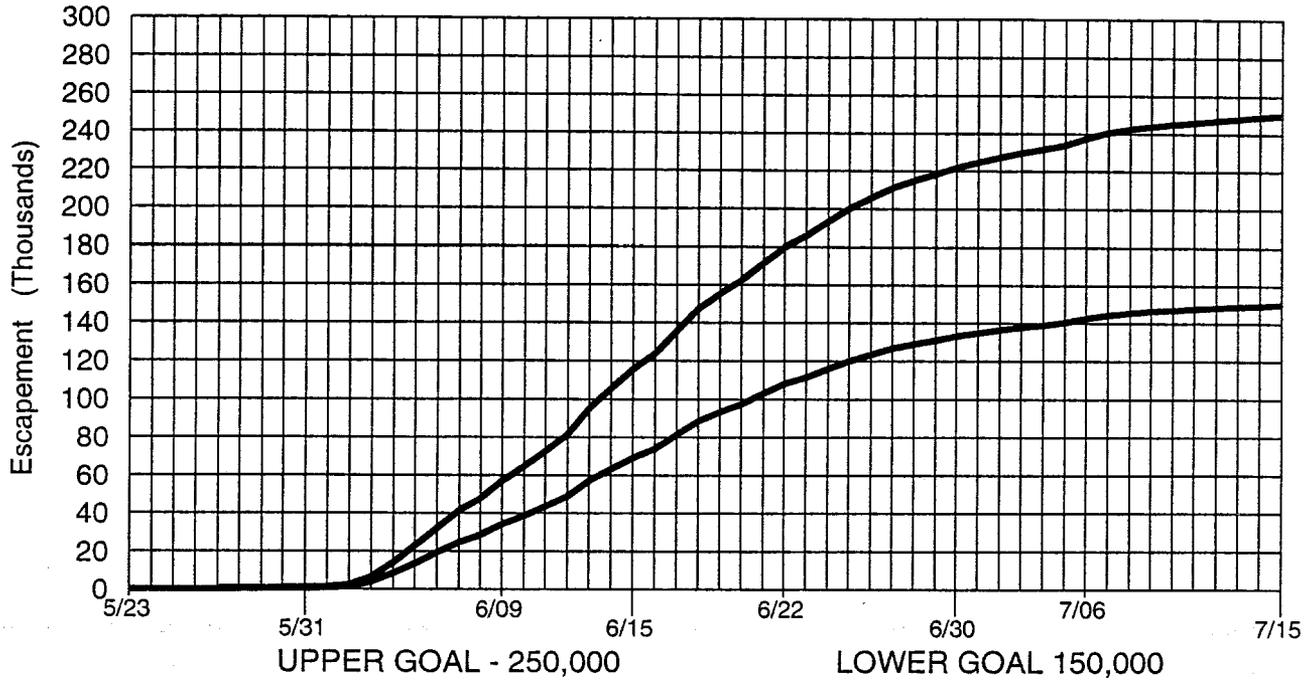


* 1996 COHO SALMON PROJECTED HARVEST TOTAL = 280,000

Appendix A.3. Projected chum and coho salmon harvest curves for the Kodiak Management Area, 1996.

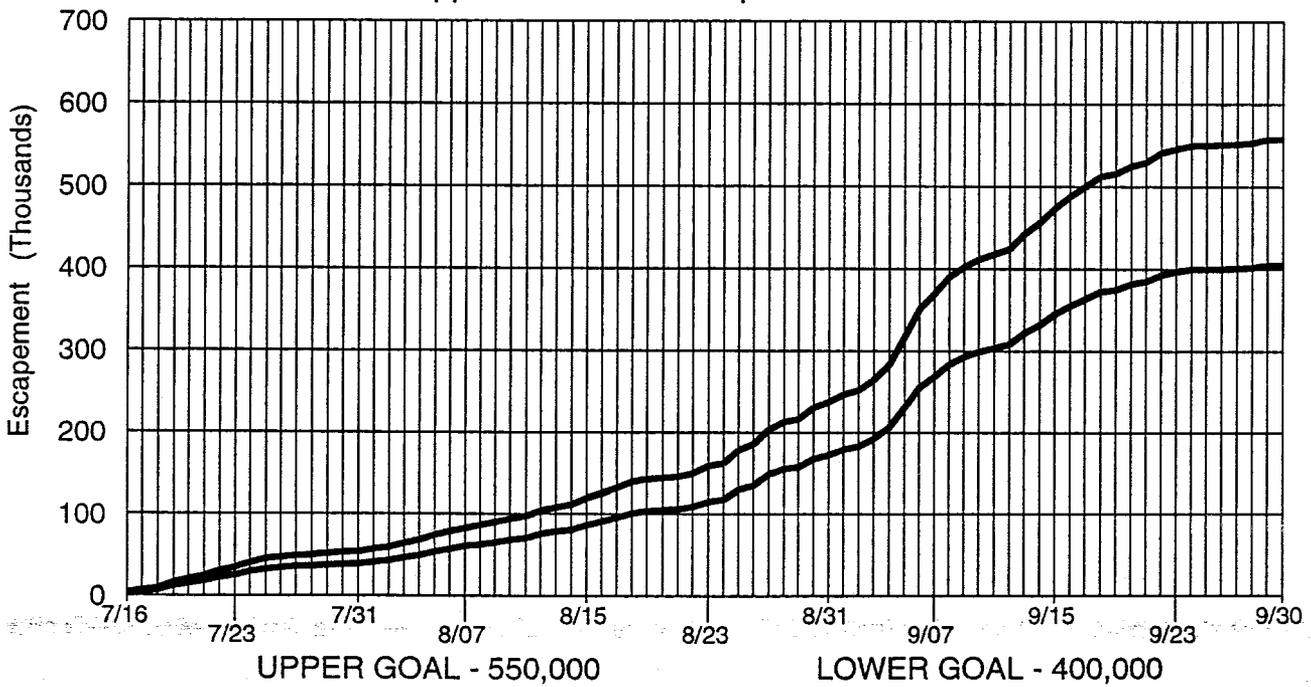
KARLUK SOCKEYE SALMON, EARLY RUN

Upper and Lower Escapement Goals



KARLUK SOCKEYE SALMON, LATE RUN

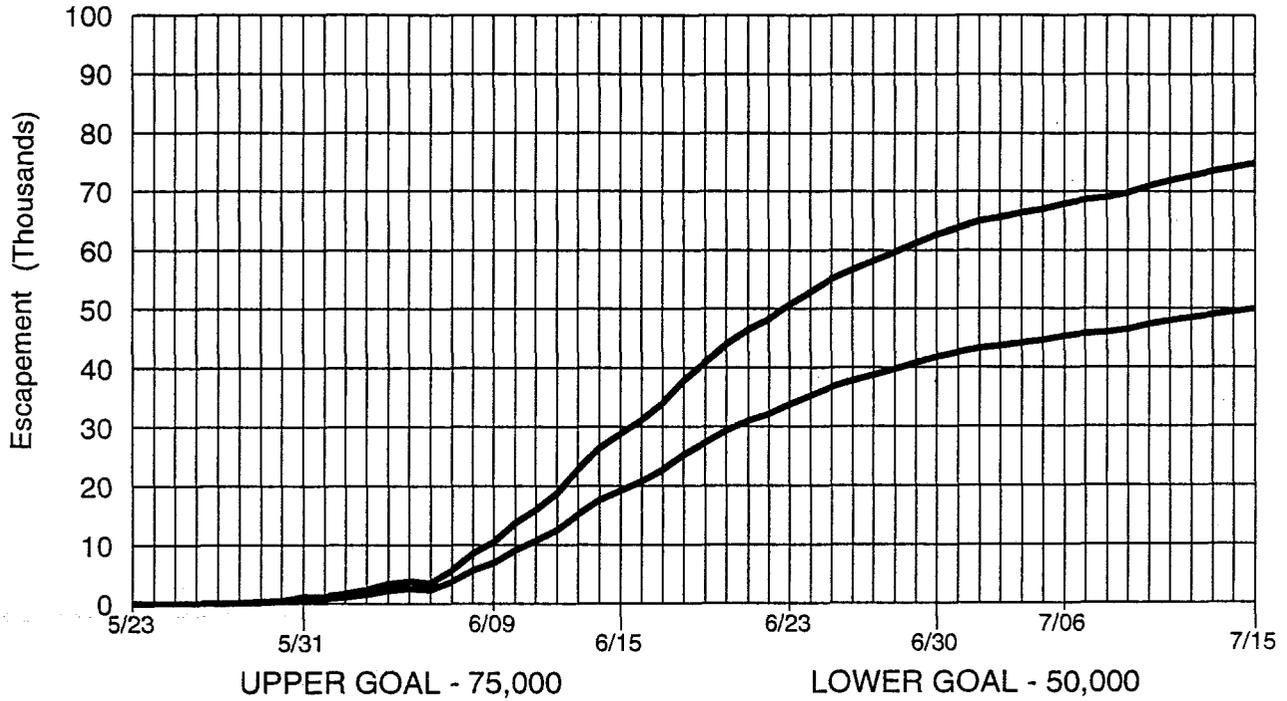
Upper and Lower Escapement Goals



Appendix B.1. Upper and lower escapement goal curves for the early and late runs of Karluk sockeye salmon in the Kodiak Management Area, 1996.

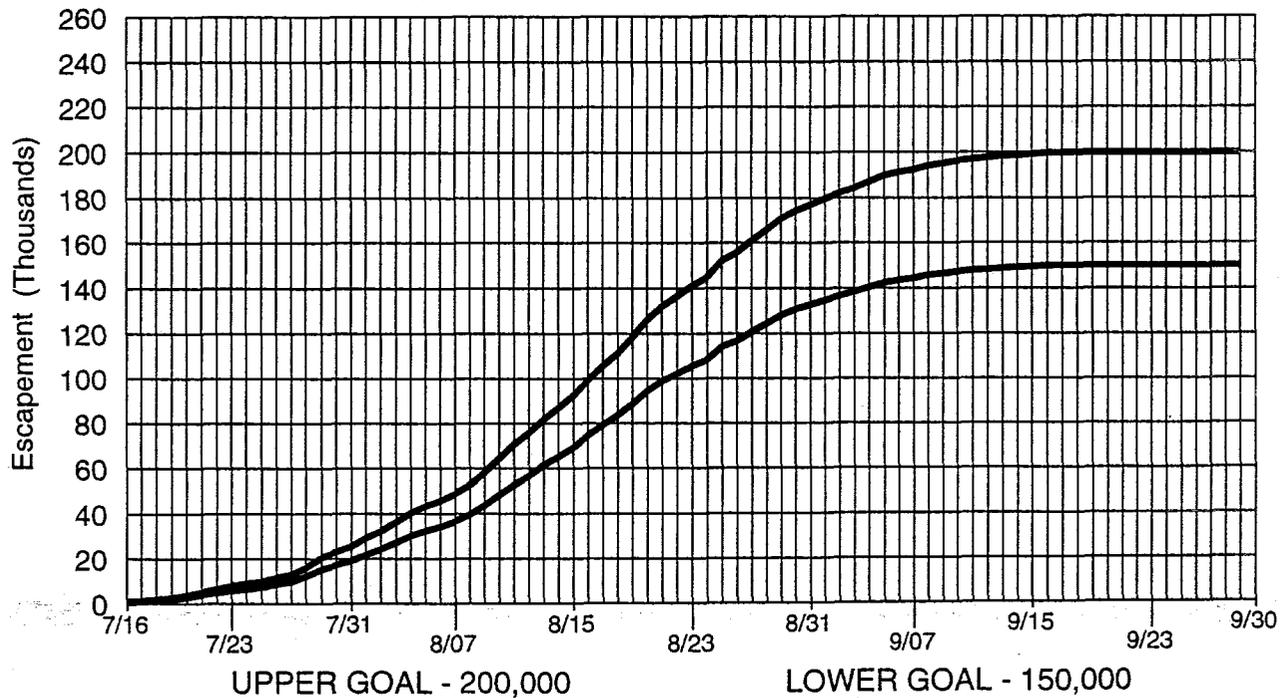
UPPER STATION SOCKEYE SALMON, EARLY RUN

Upper and Lower Escapement Goals



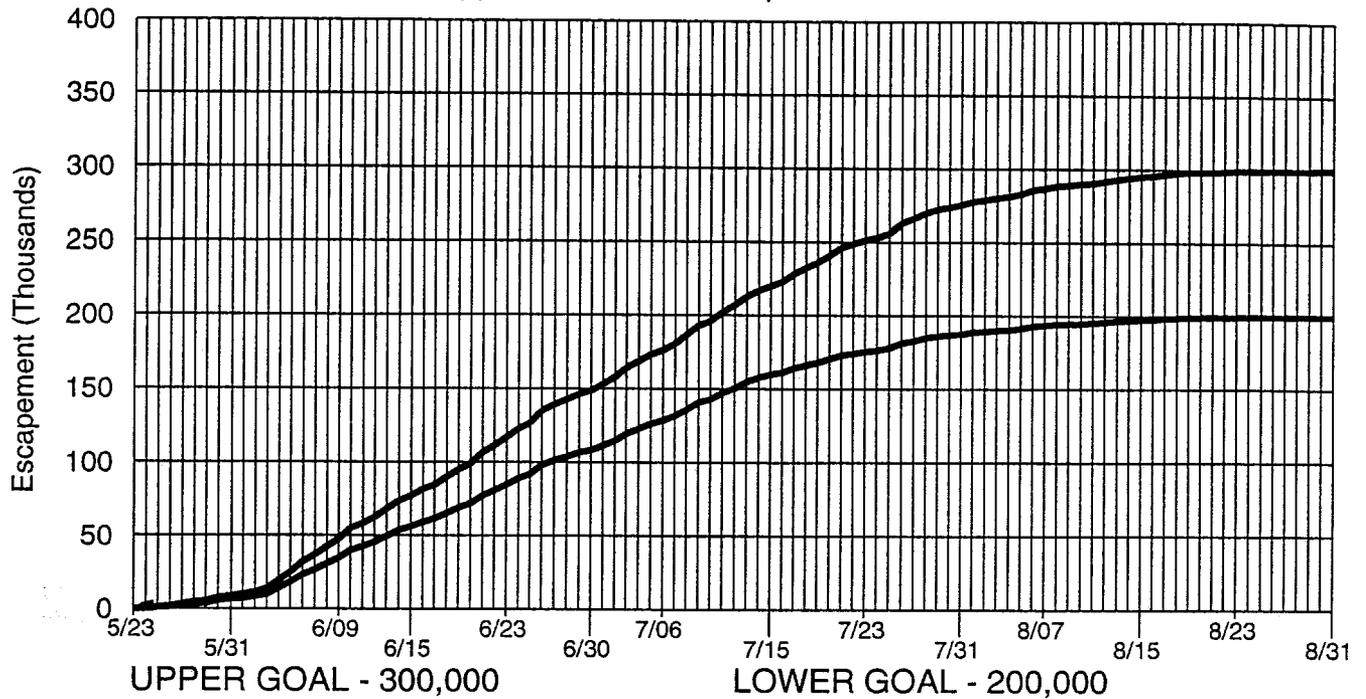
UPPER STATION SOCKEYE SALMON, LATE RUN

Upper and Lower Escapement Goals

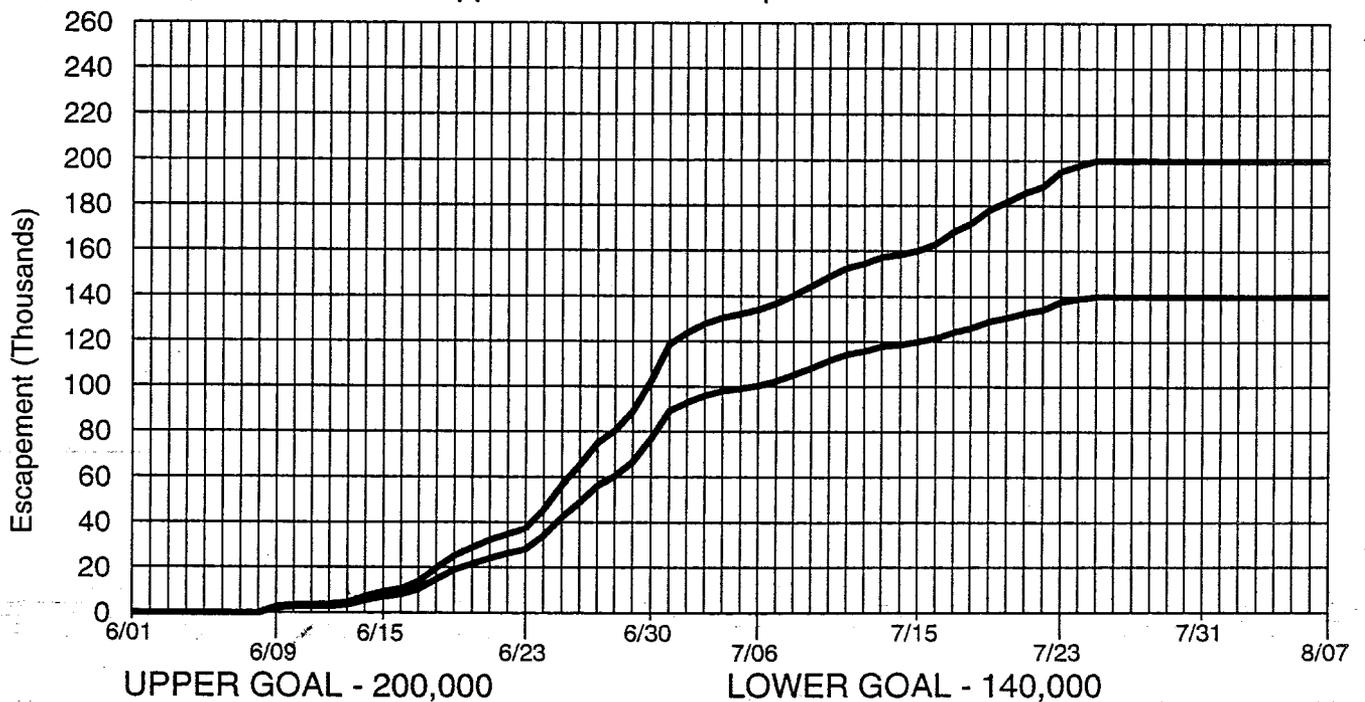


Appendix B.2. Upper and lower escapement curves for the early and late runs of Upper Station sockeye salmon in the Kodiak Management Area, 1996.

AYAKULIK SOCKEYE SALMON
Upper and Lower Escapement Goals

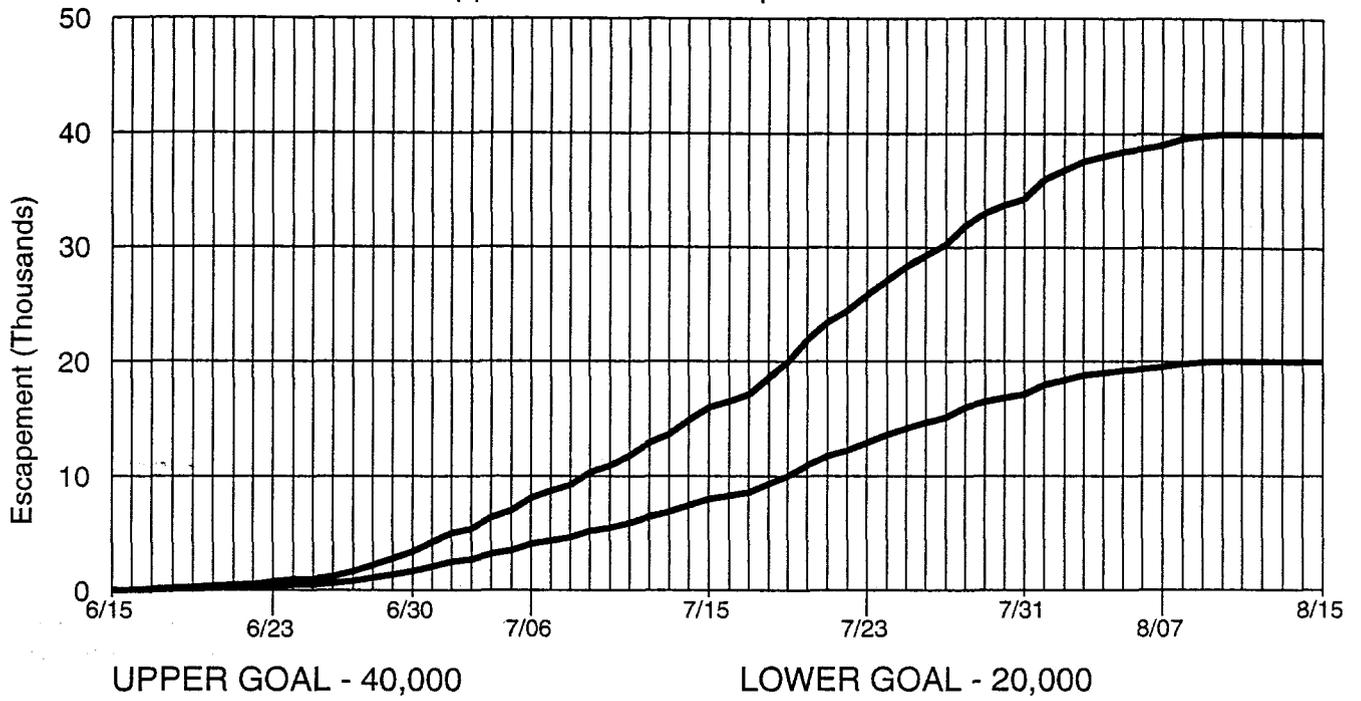


DOG SALMON RIVER SOCKEYE SALMON
Upper and Lower Escapement Goals

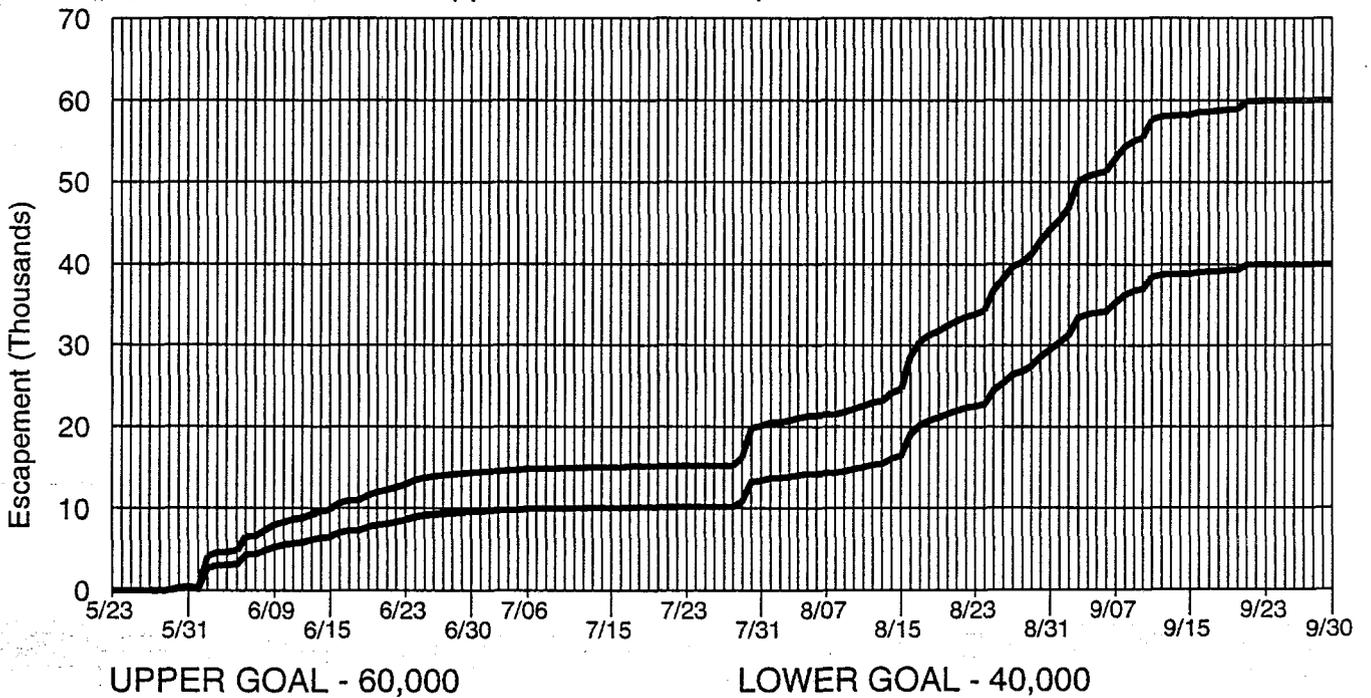


Appendix B.3. Upper and lower escapement curves for the Ayakulik and Dog Salmon Rivers sockeye salmon in the Kodiak Management Area, 1996.

SALTERY SOCKEYE SALMON
Upper and Lower Escapement Goals

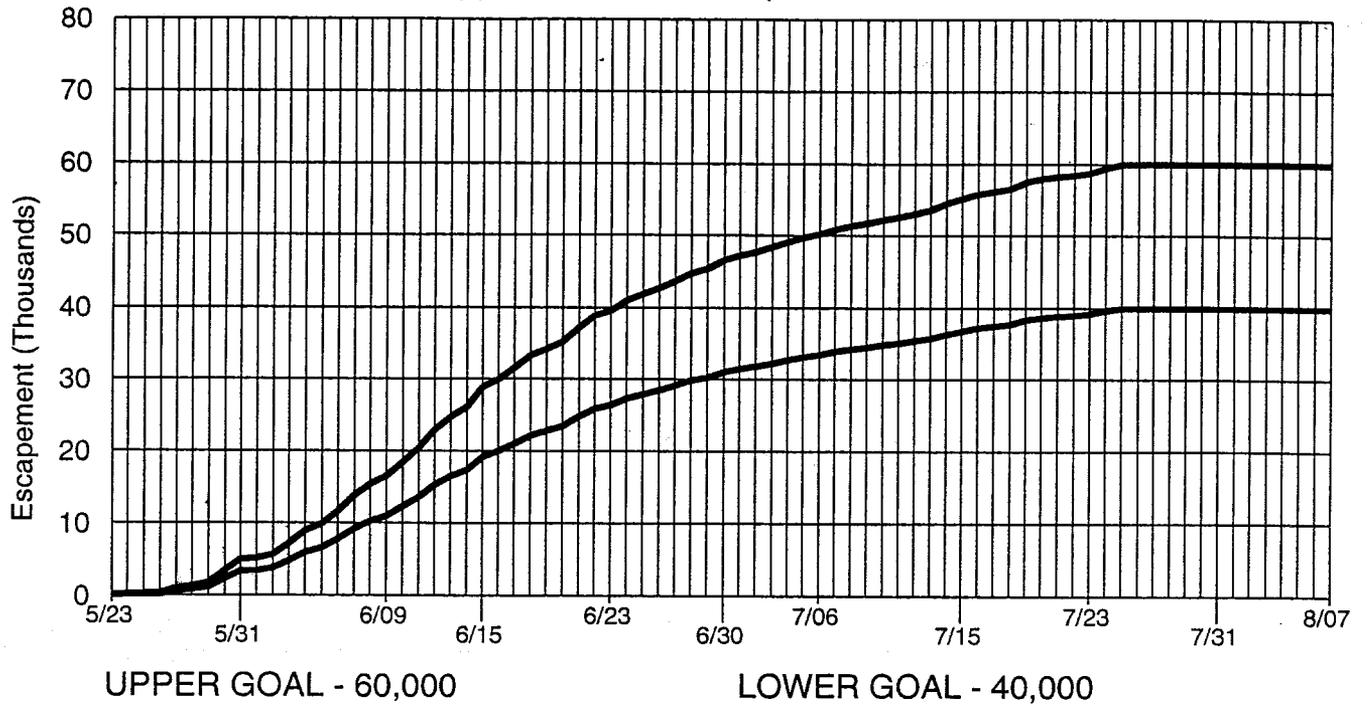


AKALURA SOCKEYE SALMON
Upper and Lower Escapement Goals

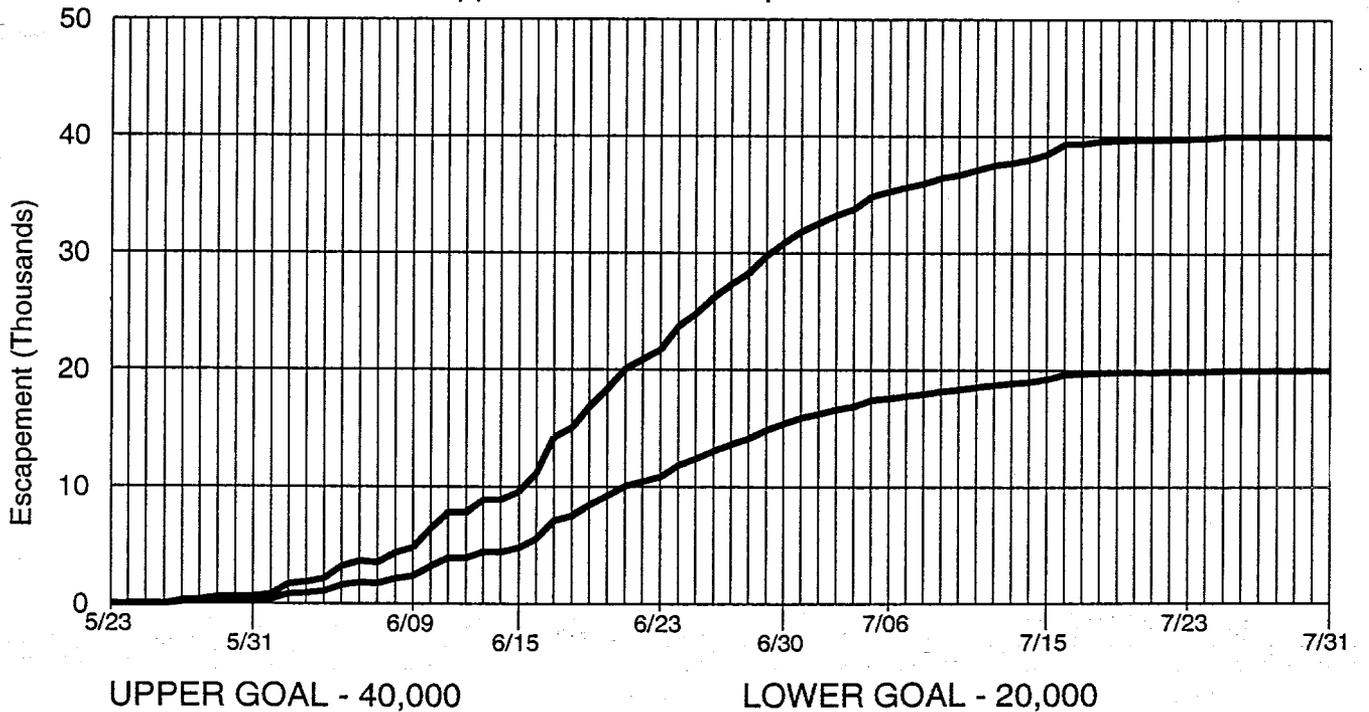


Appendix B.4. Upper and lower escapement curves for the SALTERY and AKALURA Rivers sockeye salmon in the Kodiak Management Area, 1996.

LITNIK SOCKEYE SALMON
Upper and Lower Escapement Goals



PAULS BAY SOCKEYE SALMON
Upper and Lower Escapement Goals



Appendix B.5. Upper and lower escapement curves for th Litnik and Pauls Bay sockeye salmon in the Kodiak Management Area, 1996.

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