2000
YUKON AREA
SUBSISTENCE, PERSONAL USE, AND COMMERCIAL SALMON FISHERIES OUTLOOK AND MANAGEMENT STRATEGIES

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By

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1.0 INTRODUCTION

This document informs fishermen, processors, and other interested individuals about the outlook for the 2000 Yukon Area salmon runs and management strategy for the subsistence, personal use, and commercial salmon fisheries. Chinook, chum, coho, and pink salmon are harvested in Yukon River fisheries. The Yukon River chum salmon return consists of an earlier and more abundant summer chum salmon run and a later fall chum salmon run. No directed commercial fishing occurs for pink salmon within the Yukon River drainage.

The Yukon Area includes all waters of Alaska within the Yukon River drainage and coastal waters from Point Romanof, northeast of Kotlik, to the Naskonat Peninsula. For management purposes, the Yukon Area is divided into seven districts and ten subdistricts (Figure 1). Commercial fishing is allowed along the entire 1,224 miles of the Yukon River in Alaska and along the lower 225 miles of the Tanana River. The Coastal District includes the majority of coastal marine waters within the Yukon Area and is open only to subsistence fishing. The Lower Yukon Area, Districts 1, 2, and 3, includes coastal waters of the delta and that portion of the Yukon River drainage downstream of Old Paradise Village (river mile 301). The Upper Yukon Area, Districts 4, 5, and 6, is the Alaskan portion of the Yukon River drainage upstream of Old Paradise Village. Aboriginal, commercial, domestic, and sport salmon fisheries also occur in Canada, with fishery management activities conducted by the Canadian Department of Fisheries and Oceans (DFO).

2.0 OUTLOOK FOR 2000

2.1 CHINOOK SALMON

Typically the majority of chinook salmon returning to the Yukon River are 6-year-old fish, though 5- and 7-year-old fish usually make up a significant contribution to the run. Spawning ground escapements in 1994, the brood year producing 6-year-old fish returning in 2000, were judged to be above average in magnitude. However, the return of 4- and 5-year-old fish in 1998 and 1999 appeared to be well below average in strength indicating abnormally poor production from the 1994 escapement. Additionally, the apparently low marine survival from age 5 fish returning in 1998, and sibling age 6 fish returning in 1999, continued recent below-average trends in survival. The 7-year-old return is expected to be below average based on the contribution of 5- and 6-year-old siblings from the 1993 parent year. The return of 5-year-old fish in 2000 is expected to be near average based on good spawning ground escapements in 1995 and the number of 4-year-old fish returning in 1999. Overall, the year 2000 chinook salmon run is anticipated to be weak to below average in strength for the third year in a row. The commercial harvest in Alaska is expected to be 25,000 to 65,000 chinook salmon (23,000 to 60,000 fish in the Lower Yukon Area and 2,000 to 5,000 fish in the Upper Yukon Area), representing a range of catch well below all but three others recorded during the previous 30 year period.

2.2 SUMMER CHUM SALMON

Based on above average escapements in 1995 and 1996, an above average return of 4- and 5-year-old summer chum salmon would normally be expected. However, it appears that, similar to many chinook and chum salmon stocks in the Bering Sea region, recent declines in the productivity of summer chum salmon are continuing. Specifically, production of Anvik River chum salmon, which represents the largest spawning stock of Yukon River summer chum salmon, has fallen to well below 1 return per spawner for the 1993, 1994, and apparently 1995, brood years. Causes for the observed drop in productivity are still largely unknown, as are the duration and exact magnitude of current production

levels. However, there is a possibility that both low food productivity and high salmon density in the ocean environment may be contributing factors. It is possible that the extreme winter of 1995-96, characterized by very little snow cover may also have adversely effected the survival of some stocks returning as age-4 fish in 1999, but nearly all stocks continue to exhibit decreased production levels, in some cases bordering production failure. In addition, a relatively small number of age-3 fish from the 1996 brood year were detected in spawning tributary samples collected in 1999, indicating that low production levels may be continuing. Overall, the year 2000 outlook is for a weak to below average summer chum salmon run. The commercial harvest is expected to be 25,000 to 300,000 fish given uncertainties associated with recent declines in productivity and market conditions.

2.3 FALL CHUM SALMON

Drainage-wide, Yukon River fall chum salmon escapements for the period 1974 through 1993 have been estimated by the Alaska Department of Fish and Game (ADF&G) to have ranged from approximately 110,000 (1982) to 1,200,000 (1975), based upon expansion of escapement assessments for selected stocks to approximate overall escapement abundance. Escapements in these years resulted in subsequent returns that ranged in size from approximately 301,000 (1988 production) to 1,400,000 (1975 production) fish, using the same approach to approximating overall escapement. Corresponding return per spawner rates ranged from 1.1 to 4.5, averaging 2.5 for all years combined.

Yukon River fall chum salmon return primarily as age-4 or age-5 fish, although age-3 and age-6 fish also contribute to the run. A Ricker spawner-recruit model was used to predict the returns from the 1994 to 1997 parent years that will contribute to the 2000 run. This process resulted in a projection of 1,137,000 fall chum salmon with the following approximate age composition:

Age-3 fish	15,000 (1997 Brood Year)	1.3 %
Age-4 fish	719,000 (1996 Brood Year)	63.3 %
Age-5 fish	382,000 (1995 Brood Year)	33.6 %
Age-6 fish	21,000 (1994 Brood Year)	1.8 %

However, there is a level of uncertainty associated with the 2000 Yukon River fall chum salmon outlook. Very dramatic declines in salmon returns to Western Alaska occurred in 1997 and 1998. This trend continued for most areas in 1999. While exact reasons for the run failures are unknown, it is widely speculated that poor marine survival related to climatic and ocean conditions in the Bering Sea are primary factors. Weakness in the salmon runs has been attributed to reduced productivity and not the result of low levels of parent year escapements.

The major contributor to the 2000 fall chum salmon run is anticipated to be age-4 fish returning from the 1996 parent year. A very strong fall chum salmon run occurred that year, with excellent escapements observed throughout most of the drainage. All escapement goals were met in 1996 with the exception of the Toklat River. However, should the factor(s) that affected the productivity of fish from the parent years that returned in 1998 and 1999 carry over to fish expected to return in 2000, then a weak return is once again likely to materialize. If so, the return of Yukon River fall chum salmon in 2000 may be 50% or less of the otherwise normal point projection of 1,137,000 fall chum salmon. This results in a range in the projected return for 2000 of approximately 569,000 to 1,137,000 fall chum salmon.

The potential for another weak return is not unreasonable given recent trends. It is also noteworthy that the projection of 1,137,000 chum salmon includes an estimated 719,000 age-4 fish returning from the 1996 brood year. The return of age-4 fish from even-numbered brood years during the most recent decade has averaged only 398,000 chum salmon, ranging from 147,000 for brood year 1988 to a high of 617,000 for brood year 1992. Furthermore, total run size has never reached one million chum salmon for any even-

numbered year on record. The largest was estimated in 1996 at 988,000 fall chum salmon (average is 613,000). It is likely that total run size in 2000 is more likely to materialize toward the lower end of the projected range.

2.4 COHO SALMON

Although comprehensive escapement information on Yukon River drainage coho salmon is lacking, it is known that coho salmon have later and overlapping run timing with fall chum salmon, and primarily return as age-4 fish. Assuming average survival, an average to above average return of coho salmon would be anticipated in 2000, based upon parental escapement levels observed in several spawning streams in 1996. However, should mortality factors that contributed to Western Alaska salmon run failures in recent years also affect marine survival of coho salmon from the 1996 brood year, then a below average run of coho salmon could materialize in 2000.

The Alaska Board of Fisheries (board) recently adopted a Yukon River coho salmon management plan that would allow a directed commercial coho salmon fishery, but only under very unique conditions. Such a directed commercial coho salmon fishery is not likely to occur in 2000, and it is anticipated that any commercial harvest of coho salmon will be dependent upon the abundance of, and incidental to, the harvest of fall chum salmon.

3.0 MANAGEMENT STRATEGY FOR 2000

The department manages the various salmon runs under the policies and regulations established by the Alaska Board of Fisheries. Management of the Yukon Area commercial salmon fishery is complex due to the inability to determine stock specific run size and timing, increased efficiency of the commercial fleet, and allocation issues. Current escapement goals in the Yukon River drainage are based, on historic escapements to key index spawning areas. Escapement goals have been under review, and the results of that review are expected to be available by the December 2000 meeting of the Alaska Board of Fisheries.

3.1 SUBSISTENCE FISHERY

Subsistence fishing occurs throughout most of the Yukon Area and has the highest priority among uses of the resource. In order to enforce commercial fishing regulations, the board has placed some restrictions on the subsistence fishery. For example, subsistence salmon fishing is closed in most areas 24 hours prior to the commercial salmon season to discourage the illegal sale of subsistence caught salmon or salmon roe. However, substantially more fishing time is allowed throughout the fishing season for subsistence than for commercial purposes. If salmon abundance is poor, subsistence fishing time may be altered by emergency order to improve escapement.

The department encourages fishermen to keep track of their subsistence salmon harvest on household subsistence catch calendars or subsistence fishing permits. Non-permitted fishermen who do not receive a subsistence salmon calendar by mail may contact the department in Emmonak or Fairbanks to have a calendar mailed to them. To encourage fishermen to use and return catch calendars by mail, return postage for the 2000 calendar will be prepaid by the department. Additionally, a $200 lottery will be conducted following the season for all households that have returned properly filled out calendars.

3.1.1 Districts 1, 2, and 3

In Districts 1, 2, and 3, subsistence fishermen may take salmon seven days per week until 24 hours prior to opening of the commercial salmon fishing season. During the commercial season, subsistence fishing is allowed only between commercial periods. During the chinook and summer chum commercial salmon fishing season, subsistence salmon fishing will be closed 18 hours before, during, and 12 hours following a commercial salmon fishing period. During the fall chum season, subsistence salmon fishing will be closed 12 hours before, during, and 12 hours following each District 1, 2 or 3 commercial salmon fishing period.

Fishermen are also reminded that regulations require fishermen to immediately remove the dorsal fin from chinook salmon taken for subsistence purposes in Districts 1, 2, and 3. The sale of salmon that have had the dorsal fin removed is illegal.

3.1.2 Subdistrict 4-A

In Subdistrict 4-A, subsistence fishermen may take salmon seven days per week until 24 hours prior to opening of the commercial salmon fishing season. Regulations also separate subsistence fishing periods with set gillnet, fish wheel, and beach seine gear from commercial fishing periods in Subdistrict 4-A. During the commercial salmon fishing season, subsistence salmon fishing with set gillnet, fish wheel, and beach seine gear will be closed 12 hours before, during, and 12 hours following a Subdistrict 4-A commercial salmon fishing period. However, chinook salmon may be taken with drift gillnet gear only for two 48-hour periods per week during the commercial salmon fishing season from 6:00 p.m. Sunday until 6:00 p.m. Tuesday, and from 6:00 p.m. Wednesday until 6:00 p.m. Friday.

3.1.3 Subdistricts 4-B and 4-C

Regulations allow subsistence salmon fishing seven days per week until 24 hours prior to the opening of Subdistricts 4-B and 4-C commercial salmon fishing season. Once the commercial salmon season opens, managers will attempt to coincide allowable commercial salmon fishing periods with the traditional subsistence salmon fishing schedule. Normally, the subsistence salmon fishing schedule in Subdistricts 4-B and 4-C will be two 48-hour periods per week during the commercial salmon season. Additionally, when the department announces a commercial fishing closure that will last longer than five days during the commercial salmon season, subsistence salmon fishermen may take salmon five days per week from 6:00 p.m. Sunday until 6:00 p.m. Friday.

3.1.4 District 5

In Subdistrict 5-D, subsistence salmon fishermen may take salmon seven days per week throughout the season. In the remainder of District 5, subsistence salmon fishermen may take salmon seven days per week until 24 hours prior to opening of the commercial salmon season. Once the commercial salmon fishing season opens in Subdistricts 5-A, 5-B, and 5-C, subsistence salmon fishing periods will coincide with the commercial salmon fishing schedule. Additionally, subsistence only salmon fishing periods may also be scheduled.

When the department announces a commercial fishing closure that will last longer than five days during the commercial salmon season in Subdistricts 5-A, 5-B and 5-C, subsistence salmon fishermen may take salmon five days per week from 6:00 p.m. Tuesday until 6:00 p.m. Sunday.

In portions of District 5, regulations require subsistence fishermen to obtain subsistence fishing permits. Permit areas include the "Yukon River bridge area" and the Yukon River drainage from Twenty-two Mile Slough, located upstream of Fort Yukon, to the Canadian border. The Yukon River bridge area includes the Yukon River drainage from Hess Creek to the Dall River. Subsistence fishermen may obtain a permit by contacting the department's offices in Fairbanks, Delta Junction and Tok. Permits may be issued in person

or by mail. All permit holders are required to report harvest information on their permits and to return their permits to the department at the end of the fishing season.

3.1.5 District 6

Regulations require subsistence salmon permits in District 6, the Tanana River drainage, except for Subdistrict 6-C, which is managed under personal use regulations (see Section 3.2). Subsistence salmon fishermen can obtain a permit by contacting the department's office in Fairbanks. Subsistence permit holders in that portion of Subdistrict 6-B, from a point three miles upstream of the mouth of Totchaket Slough to the upper boundary of Subdistrict 6-B, are required to report to the department each week the number of salmon taken. Permit holders should report their weekly catch on a message recording at (907) 459-7388. All Tanana River subsistence permit holders are required to record their harvest information on their permit and return expired permits to the department's office in Fairbanks at the end of the fishing season.

Within the majority of Subdistricts 6-A and 6-B, the subsistence salmon fishing schedule is two 42-hour periods per week from 6:00 p.m. Monday until 12 noon Wednesday and from 6:00 p.m. Friday until 12 noon Sunday. One exception is within the Old Minto Area where subsistence salmon fishing is allowed five days a week from 6:00 p.m. Friday until 6:00 p.m. Wednesday. The Old Minto Area includes that portion of the Tanana River drainage from the downstream end of Crescent Island up to a line three miles upstream from the mouth of Totchaket Slough. These subsistence salmon fishing schedules may be altered by emergency order.

3.2 Personal Use Fishery

In 1995, the Joint Board of Fish and Game adopted regulations that created the Fairbanks Nonsubsistence Area (Figure 2). No subsistence fishing is allowed within non-subsistence areas. Subdistrict 6-C falls entirely within the Fairbanks Nonsubsistence Area and thus is managed under personal use regulations. There are fishery harvest limits in Subdistrict 6-C of 750 chinook, 5,000 summer chum, and 5,200 fall chum and coho salmon combined. If a harvest limit is reached inseason, the Subdistrict 6-C personal use fishery will be closed.

Personal use salmon fishing permits are required in Subdistrict 6-C and can be obtained from the department's office in Fairbanks. Personal use applicants must possess a valid State of Alaska resident sport fishing license and report their harvests to the department each week.

3.3 Commercial Fishery and Reporting Requirements

One of the primary tools used in management of the commercial salmon fishery are guideline harvest ranges established by the Board (Table 1). The department attempts to manage the commercial fisheries so that each district's harvest is proportionally similar to their respective guideline harvest range. Emergency orders are used to open and close the commercial fishing seasons, establish fishing periods, and implement gear specifications.

All processors, buyers, and catcher/sellers of salmon are required to register with the department before purchasing salmon in the Yukon Area. Processors, buyers, and catcher/sellers in Districts 1, 2, and 3 must register with the department's office in Emmonak. Processors, buyers, and catcher/sellers in Districts 4, 5, and 6 must register with the department's office in Fairbanks. Registered salmon buyers are required to provide a verbal report of their salmon purchases within 18 hours following the closure of a commercial fishing period. Buyers may verbally report harvest information in the Upper Yukon Area after office hours by calling a 24-hour message recording at (907) 459-7388. Buyers are also required to mail or deliver fish

tickets to the department within 24 hours following closure of a commercial fishing period in the Lower Yukon Area. In the Upper Yukon Area, buyers are required to mail or deliver fish tickets to the department within 36 hours following closure of a commercial fishing period. If there is incomplete reporting, the department may delay commercial fishing until the needed harvest reports are received. In addition, it is very important for buyers to accurately report on each fish ticket the statistical area where salmon were harvested.

Regulations also require commercial fishermen in Subdistrict 6-C to report, on each fish ticket, the number of salmon harvested but not sold during commercial fishing periods. Buyers are requested to ensure this information is reported on fish tickets.

3.4 CHINOOK AND SUMMER CHUM SALMON COMMERCIAL SEASON

The Yukon River chinook salmon run will be managed to achieve escapement goals established for selected streams in the Alaska portion of the drainage. The conservation and stock rebuilding efforts developed between the U.S. and Canada will continue by endeavoring to provide for a minimum 28,000 chinook salmon spawning escapement level in the Canadian mainstem Yukon River. The recent 5-year average subsistence harvest is 51,000 chinook salmon in the Alaska portion of the drainage. Inseason chinook salmon run assessment will be based on lower river test fisheries, subsistence catch reports, age and sex composition, commercial harvest data, and preliminary escapement monitoring information. As in years past, the department will participate in Yukon River Drainage Fisheries Association (YRDFA) teleconferences inseason to gather information from the public and to discuss run status and management actions. Additional coordination will occur this year with federal agencies concerning subsistence fisheries management.

The department will initially manage the early portion of the chinook salmon run conservatively, based upon the unexpectedly poor return in 1998 and the low return of 5-year-old fish in 1999. The age composition of the 2000 chinook run will be closely monitored to determine the strength of the 6-year-old return. The commercial harvest outlook is 25,000 to 65,000 chinook salmon for Districts 1-6 combined. This harvest range equates to approximately one third of to slightly below the lower end of each districts guideline harvest range. If the abundance of chinook salmon in 2000 is similar to that in 1998, the commercial harvest will likely be near 25,000 fish.

The Yukon River summer chum salmon run will be managed to achieve escapement goals established for selected streams in the drainage. The recent 5-year average subsistence harvest is 107,000 summer chum salmon in the Yukon River drainage. The department will assess the summer chum salmon run inseason using the main river sonar project near Pilot Station, test fisheries, subsistence catch reports, age and sex composition data, and commercial harvest information. A comparison of the Anvik River sonar escapement estimate and the Pilot Station sonar passage estimate will be used, in conjunction with other escapement monitoring projects, to provide information concerning the run size upstream of the Anvik River. Other escapement monitoring projects include the Kaltag River tower operated by the Alaska Cooperative Extension Service 4-H Fisheries and Bering Sea Fishermen's Association (BSFA); the Nulato River tower funded by BSFA and the department; the East Fork Andreafsky and Gisasa River weirs and Henshaw Creek weir operated by the United States Fish and Wildlife Service (USFWS); and Clear Creek tower operated by the Bureau of Land Management (BLM).

The department will initially manage the early portion of the summer chum salmon run conservatively, based upon the assumption that poor marine productivity will continue in 2000. The commercial harvest outlook is 25,000 to 300,000 summer chum salmon for Districts 1-6 combined. This range of harvest would equate to a harvest of only fish caught incidental to chinook salmon directed fisheries to a harvest near the lower end of the total river guideline harvest range. The department will work closely with buyers and

fishermen to manage the chinook and summer chum salmon fisheries by timing harvests for fish quality and market demands to the extent feasible within biological constraints.

3.4.1 Districts 1, 2, and 3

It is anticipated the chinook salmon directed commercial fishery will open on a staggered basis, beginning with District 1, when increasing subsistence and/or test net catches of chinook salmon have occurred over a seven- to ten-day period. This management strategy provides for passage of a portion of the early run segment through the lower river districts before commercial fishing starts. Lower Yukon River set net test fishing catch per unit effort (CPUE) data will be used for relative timing and abundance information. The median cumulative test fishing CPUE on the date of the first commercial opening is 6.46 from 1989 through 1999, with a range from 2.36 to 15.80. Typically, the first opening occurs just after the first quarter point of the run. Historically, a lower cumulative test fishing CPUE occurs during a highly compressed run with late timing. The opening of the fishing season is normally announced 48 hours in advance to provide fishermen and buyers adequate time to prepare.

Initially, directed chinook salmon commercial fishing periods with unrestricted mesh size gillnets are anticipated to be 6 hours in duration, but may be as short as 4 hours. In general, fishing periods are expected to begin at 6:00 p.m. Monday and Thursday in District 1, and at 6:00 p.m. Wednesday and Sunday in District 2. However, fishing periods may be delayed depending on run assessment and run timing. Since Districts 1 and 2 have a combined guideline harvest range, the overall harvest level will determine when the directed chinook salmon fishery and the commercial salmon summer season will end. It may not be possible to allow an equal amount of fishing time for each district.

Large mesh size gillnets utilized during unrestricted mesh size openings target older, larger chinook salmon, which includes a much larger proportion of females than small mesh size periods. Fishing periods restricted to six inch or smaller mesh size gillnets result in much higher catches of smaller, predominantly male chinook salmon. The management concern is for the quality of escapements, that is, not only escapement abundance, but the proportion of female salmon in the escapements. Therefore, the amount of harvest taken with the larger mesh chinook salmon gear and smaller mesh gear will be carefully considered.

Six-inch maximum mesh size directed summer chum salmon fishing periods are anticipated to be 4 to 12 hours in duration. Shorter, summer chum salmon directed fishing periods may be scheduled based on run assessment and market considerations. In addition, short periods targeting summer chum salmon will be easier to establish between unrestricted mesh size periods and will reduce the harvest of chinook salmon during such periods. Because of market considerations, an effort will be made to schedule summer chum salmon directed periods as early in June as possible. The actual summer chum salmon harvest will be dependent on inseason run assessment and market conditions.

An attempt will be made to establish commercial fishing periods in District 3 based on input from buyers and fishermen. Regulations allow a permit holder registered in District 3 to transfer to District 1 or 2 following a 72-hour waiting period. Only one district transfer is allowed in the Lower Yukon Area prior to July 15.

The USFWS will be operating a weir on the East Fork Andreafsky River in 2000. Historical escapement timing information will be used to assess the 2000 summer chum salmon spawning escapement inseason. The department will use the assessment of spawning escapement in the East Fork Andreafsky River to regulate the size of the area closed to commercial fishing near the mouth of the Andreafsky River.

Regulations require identification of any vessel used by commercial salmon fishermen in Districts 1, 2, and 3. A vessel must display either the ADF&G vessel license number or the fisherman's 5-digit Commercial

Fisheries Entry Commission (CFEC) permit serial number and the letter that follows. Symbols must be at least 12 inches high and 1 inch wide and displayed on both sides of the hull or cabin.

Gillnet depth regulations for commercial fishing in Districts 1, 2, and 3 require that gillnets with greater than 6-inch mesh size may not be more than 45 meshes in depth and gillnets with mesh size of 6 inches or less may not be more than 50 meshes in depth.

3.4.2 District 4

In years with average returns and run timing, the first District 4 commercial fishing period usually occurs between June 18 and June 25. Commercial fishing periods in Subdistrict 4-A are anticipated to begin at 6:00 p.m. Sunday and 6:00 p.m. Wednesday and be no longer than 18 hours in duration. However, the frequency and duration of Subdistrict 4-A fishing periods will be based on summer chum salmon run abundance. Management will be based, in part, on summer chum salmon spawning escapements and sex ratios monitored in the Anvik, Kaltag, Nulato, and Gisasa Rivers and Clear Creek.

It is anticipated Subdistricts 4-B and 4-C will initially be placed on a schedule of one or two 48-hour periods per week beginning at 6:00 p.m. Sunday and/or 6:00 p.m. Wednesday. Subdistricts 4-B and 4-C may open earlier than Subdistrict 4-A to allow harvest of earlier migrating chinook salmon. If subsistence salmon fishing opportunities in District 4 are not sufficient to meet subsistence needs due to the commercial fishing schedule, additional subsistence-only fishing time will be allowed.

3.4.3 Anvik River Management Area

The Anvik River may be opened to summer chum salmon commercial fishing if a surplus greater than the escapement goal minimum of 500,000 fish is available. If possible, the department intends to schedule the Anvik River commercial fishing periods to coincide with those of Subdistrict 4-A. Additional fishing periods may be allowed in the Anvik River based upon size of the surplus available for commercial harvest. The intent is to allow a harvest of Anvik River summer chum salmon that is in excess of the spawning escapement goal and to decrease harvest pressure on non-Anvik River summer chum salmon stocks. Fish harvested in the Anvik River fishery do not count against the Subdistrict 4-A summer chum salmon guideline harvest range. Permit holders are reminded that all chinook salmon caught during Anvik River commercial fishing periods must be released alive.

3.4.4 District 5

The District 5 commercial salmon fishing season will open by emergency order once the chinook salmon run is distributed throughout the area. Assessment of run abundance and timing from downstream districts, along with subsistence catch reports, will be used to determine the season opening. By regulation, no commercial fishing will be allowed in Subdistrict 5-A during the chinook and summer chum salmon fishing season.

It is anticipated Subdistricts 5-B and 5-C fishing periods during the early season will initially be 18- to 24-hours in duration. For Subdistrict 5-D, 24- or 36-hour commercial fishing periods are anticipated. This will allow the department to better monitor and maintain the harvest within guideline harvest ranges. In years with average returns and run timing, the first commercial fishing period usually occurs between June 25 and July 5 in Subdistricts 5-B and 5-C, and between July 1 and July 10 in Subdistrict 5-D.

Few summer chum salmon are present or harvested in Subdistricts 5-B, 5-C, and 5-D. The commercial harvest of summer chum salmon will largely be a function of management actions taken for chinook salmon.

3.4.5 District 6

Inseason salmon run strength and timing indicators in the Tanana River drainage include test fish wheel catches near the village of Nenana, aerial surveys, and performance of commercial, personal use, and subsistence fisheries. In addition, chinook and summer chum salmon escapement information collected by tower counting projects on the Chena and Salcha Rivers will be used for inseason run assessment. The department can exceed the upper end of the guideline harvest ranges only in years it determines that additional commercial fishing will not jeopardize achieving escapement goals and subsistence needs will be met. Due to the limited management tools available, the department will be conservative in management of District 6.

It is anticipated that the District 6 commercial fishing season will open in early to mid-July. During the early season, there may be up to two 42-hour commercial fishing periods per week, from 6:00 p.m. Friday until 12 noon Sunday and from 6:00 p.m. Monday until 12 noon Wednesday. The directed chinook salmon commercial fishery is expected to close once the chinook salmon guideline harvest range of 600 to 800 chinook salmon is reached. Additional commercial fishing directed at chinook salmon may be allowed if it appears chinook salmon escapement goals and subsistence needs are being met. Directed summer chum salmon commercial fishing periods will occur later in July and into August and will depend on inseason run assessment.

3.5 Fall Chum and Coho Salmon Commercial Season

In managing the 2000 Yukon River fall chum salmon run, the department will follow guidelines provided by the Board in 5 AAC 01.249. *Yukon River Drainage Fall Chum Salmon Management Plan.* The management plan contains a "sunset" clause, which will allow this regulation to be reviewed at the next scheduled A-Y-K Board of Fisheries meeting in Bethel, December 5-12, 2000.

The management plan stipulates that directed fall chum salmon commercial fisheries be allowed only when the run size projection is greater than 675,000 fall chum salmon (Table 2). Additionally, only the harvestable surplus above 625,000 fall chum salmon may be targeted in the Alaska commercial fisheries.

The lower portion of the 2000 preseason projection is below that level needed to provide for an Alaskan commercial fishery. If the fall chum salmon return is near the midpoint of the preseason projection, an Alaskan commercial harvest approaching the third quartile of each district's guideline harvest range could be expected. If the 2000 fall chum salmon return is near the upper end of the preseason projection, a record commercial harvest could be expected.

As a result of the wide range in the preseason projection, the department will rely more on inseason run assessment tools to determine the 2000 fall chum salmon run size. As in past years, the department will participate in inseason YRDFA teleconferences to gather information from the public and to discuss the status of the run and possible management actions. Additional coordination will occur this year with federal agencies concerning subsistence fisheries management. In accordance with the management plan, inseason indicators should project that the 2000 run will be greater than 675,000 fall chum salmon prior to allowing commercial fishing activities. However, given the recent run failures, fishermen and processors should be prepared for a 2000 fall chum salmon run towards the lower end of the preseason projection.

3.5.1 Canadian Mainstem Considerations

At the date of this writing, no formal agreement exists between the United States and Canada concerning the passage of fall chum salmon into the Canadian mainstem of the Yukon River. In 2000, the department will endeavor to manage the Alaska fisheries consistent with the stock rebuilding and conservation objectives that had been jointly developed. Given parent year escapement levels, this would mean a spawning escapement objective of greater than 80,000 fall chum salmon.

3.5.2 Coho Salmon

The Board of Fisheries adopted 5 AAC 05.369. *Yukon River Drainage Coho Salmon Management Plan* during their meeting in Homer in November 1998 (Appendix C). The coho salmon management plan was essentially developed and recommended to the Board by YRDFA. The Yukon River coho salmon management plan, as approved by the Department of Law, will be in effect through the year 2000 fishing season. This management plan will be reviewed during the next scheduled A-Y-K Board of Fisheries meeting in Bethel, December 2000.

Yukon River coho salmon have a slightly later, but overlapping, run timing with that of the fall chum salmon run. The coho salmon management plan allows a directed coho salmon commercial fishery only under very special and unique situations. However, fall chum salmon will continue to be the primary species of management concern during the fall season.

Based on the coho salmon management plan, if the Yukon River experiences a below average fall chum salmon run of less than 625,000 fish, no directed coho salmon commercial fisheries will be allowed. Based on the fall chum salmon management plan, a run size of 675,000 fall chum salmon or greater is needed prior to consideration of a directed fall chum salmon commercial fishery. No directed coho salmon commercial fishing will be allowed in years when directed fall chum salmon commercial fisheries have occurred. Only when the fall chum salmon run is assessed to be between 625,000 and 675,000 fish will a directed coho salmon commercial fishery be considered, and then only if the coho salmon run is assessed to be above average. When the conditions of the coho salmon management plan are applied to past years, directed coho salmon commercial fisheries would have been allowed in only one of the past 19 years.

In most years, the commercial harvest of coho salmon will continue to be based upon the timing, frequency, and duration of periods established for the more numerous fall chum salmon. It is very unlikely that the conditions outlined in the coho salmon management plan will occur in 2000. Any commercial harvest of coho salmon in 2000 will most likely be dependent upon the abundance of fall chum salmon and accompanying management strategies used to harvest fall chum salmon.

3.5.3 Districts 1, 2, and 3

The guideline harvest range for Districts 1, 2, and 3 is 60,000 to 220,000 fall chum salmon. The department will monitor the run inseason by using the lower Yukon River set gillnet test fishery, Mountain Village drift gillnet test fishery (operated by Asacarsarmiut Traditional Council), Pilot Station sonar passage estimates, subsistence catch reports, and, if available, commercial catch statistics. This information, in combination with the preseason projection, will be the basis for initial management decisions for Districts 1, 2 and 3 commercial fisheries.

If the 2000 fall chum salmon run is near the midpoint of the preseason projection, a combined Districts 1, 2 and 3 commercial fall chum salmon harvest of up to 180,000 fall chum salmon can be expected. However, if poor marine survival conditions affect the 2000 fall chum salmon similarly to the effects on the 1998 and 1999 returns, a run size closer to the lower bound of the preseason projection could be expected in 2000. The lower bounds of the preseason fall chum salmon projection do not allow commercial fishing activities.

Because of the wide range in the preseason projection, the department will rely more on inseason run assessment tools to determine the 2000 fall chum salmon run size. The department will monitor the returns of earlier running summer chum salmon in the Yukon River, along with the returns of salmon in Norton Sound and the Kuskokwim River. If the returns of these other runs in 2000 indicate that poor marine survival conditions are continuing, a fall chum salmon return towards the lower end of the preseason projection will become more likely. However, if the returns of these other runs are closer to the levels expected, assuming average survival, the department will be more optimistic for the return of Yukon River fall chum salmon. Fall chum salmon begin to enter the Yukon River in mid-July. The first projection based on Yukon River fall chum salmon inseason indicators will not be made until late July or early August.

As a reminder to fishermen, regulations require District 1 commercial fishermen to register for the coastal Set Net Only Area prior to opening of the fall commercial season. Registration "sign-in" sheets will be available at Lower Yukon Area village post offices and at the department's field office in Emmonak. A regulation adopted prior to the 1998 season allows fishermen to transfer into and out of the Set Net Only Area. After initial registration for the Set Net Only Area, a permit holder may not commercially fish for salmon in the remainder of District 1, or in another district, until 72 hours after re-registration with a Department of Fish and Game employee. After the first fall season commercial fishing period, a permit holder not registered for the Set Net Only Area may transfer to the Set Net Only Area after re-registration with a department employee. The re-registration and 72-hour waiting period begins at the time the notification is received and documented by a department employee.

3.5.4 Subdistrict 4-A

Current regulations do not provide for a directed fall chum salmon commercial fishery in Subdistrict 4-A. However, Subdistrict 4-A is included in the Yukon River coho salmon management plan (Appendix C). In the unlikely event a directed coho salmon commercial fishery is allowed, a commercial fishing period in Subdistrict 4-A may only occur on or after August 20. By regulation, the Subdistrict 4-A commercial fishing season shall close by September 15. No more than 32 hours of commercial fishing time may be allowed per week.

3.5.5 Subdistricts 4-B and 4-C

Within District 4, directed fall chum salmon commercial fishing activities are allowed only in Subdistricts 4-B and 4-C. In managing the Subdistricts 4-B and 4-C commercial fishery, the department will initially use the assessment of the overall Yukon River fall chum salmon run size and timing. Subdistricts 4-B and 4-C guideline harvest range is 5,000 to 40,000 fall chum salmon. In years with average run timing and a commercially harvestable surplus, the first fall season commercial fishing period normally occurs in early to mid-August.

3.5.6 Subdistrict 5-A

The Board of Fisheries amended 5 AAC 05.367. *Tanana River Salmon Management Plan* to include Subdistrict 5-A during its meeting in Homer in November 1998 (Appendix C). The amended Tanana River management plan directs the department to manage Subdistrict 5-A based on the stock status and timing of salmon bound for the Tanana River. It is believed the majority of fall chum and coho salmon harvested in Subdistrict 5-A are bound for the Tanana River. The allocative elements of the amendments to the Tanana River management plan adopted by the Board were originally developed by Subdistrict 5-A and District 6 fishermen and supported by the Yukon River Drainage Fisheries Association. The plan will be in effect through the year 2000 fishing season. During the next scheduled A-Y-K Board of Fisheries meeting in

Bethel, December 5-12, 2000, the Subdistrict 5-A subsection of the Tanana River management plan will be reviewed and either amended and readopted or removed from regulation.

The amendments to the Tanana River management plan adopted by the Board allow Subdistrict 5-A commercial activities only during the fall season. Additionally, commercial fishing will only be allowed in years when it is assessed that a harvestable surplus of fall chum salmon is available. In most years, the Subdistrict 5-A commercial fishery will be managed for a guideline harvest range of 0 to 4,000 pounds of fall chum salmon roe. No waste of carcasses will be permitted. In adopting this regulation, the Board recognized that the carcasses produced by this commercial roe fishery should be easily absorbed by the relatively large subsistence needs of households in the village of Tanana.

The department will initially manage the fall season in Subdistrict 5-A based on the run strength and timing of the overall Yukon River fall chum salmon return. However, depending on inseason Tanana River fall chum salmon run strength and timing indicators, the department does have the authority to manage Subdistrict 5-A for a different harvest level within the guideline harvest range or to exceed the guideline harvest range. Due to the limited inseason run assessment tools currently available, the department will be conservative in management of Subdistrict 5-A fisheries.

In years with average run timing and a commercially harvestable surplus, the first fall season commercial salmon fishing period normally occurs in early to mid-September.

3.5.7 Subdistricts 5-B and 5-C

In managing the Subdistricts 5-B and 5-C commercial fishery, the department will initially use the assessment of the overall Yukon River fall chum salmon run size and timing. Subdistricts 5-B and 5-C have a combined commercial guideline harvest range of 4,000 to 36,000 fall chum salmon. The USFWS "Rapids/Rampart" mark and recapture project, along with upper Yukon River drainage escapement monitoring projects, will be reviewed when determining the targeted Subdistricts 5-B and 5-C commercial harvest level. In years with average run timing and a commercially harvestable surplus, the first fall season commercial fishing period normally occurs in mid-August.

3.5.8 Subdistrict 5-D

For Subdistrict 5-D, the established guideline harvest range is 1,000 to 4,000 fall chum salmon. In years with average run timing, the first fall season commercial fishing period in Subdistrict 5-D normally occurs in late August or early September.

3.5.9 District 6

Tanana River inseason run strength indicators include test fish catches from a Subdistrict 5-A fish wheel located on the south (left) bank of the Yukon River near the village of Tanana, and from Tanana River test fish wheels located near the mouth of the Kantishna River and near the village of Nenana. The performance of subsistence, personal use, and commercial fisheries will also be taken into consideration.

Additionally, for the sixth consecutive year, the department will conduct a Tanana River drainage fall chum salmon tagging study, which expanded in scope in 1999. Prior to 1999, the project provided not only a post-season abundance estimate of fall chum salmon bound for the upper Tanana River drainage, upstream of the confluence of the Kantishna River, but also provided periodic inseason abundance estimates which were used in managing this stock. During the 1995 - 1998 period, the tagging fish wheels were located only on the Tanana River above the confluence of the Kantishna River. However, the project in 1999 was expanded to include estimating the number of fall chum salmon bound for the Kantishna River. The expanded scope

of the Tanana River tagging project in 1999 required relocation of one tagging fish wheel to a site on the Kantishna River. The project plan for 2000 includes the addition of a recovery wheel in the upper Kantishna River, as well as continuation of two recovery wheels in the Toklat River.

The department will initially manage the fall season in District 6 based on fall chum salmon guideline harvest ranges and the run strength and timing of the overall Yukon River fall chum salmon return. However, depending on inseason Tanana River fall chum salmon run strength and timing indicators, the department does have the authority to manage District 6 for a different level within the guideline harvest range or to exceed the guideline harvest range. Due to the limited inseason run assessment tools currently available, the department will be conservative in management of District 6 fisheries.

District 6 has a guideline harvest range of 2,750 to 20,500 fall chum salmon. In years with average run timing and a commercially harvestable surplus, the first fall season commercial salmon fishing period normally occurs in early to mid-September.

4.0 U.S./CANADA YUKON RIVER SALMON PANEL AND NEGOTIATIONS

Negotiations were initiated in 1985 between the U.S. and Canada regarding a Yukon River salmon treaty. The purpose of these negotiations is to develop between the U.S. and Canada the coordinated conservation and management of salmon stocks that spawn in the Yukon River drainage in Canada.

In the mid-1990s, there was realization that, while reaching a comprehensive long term agreement remained a formidable challenge given some of the key unresolved issues, there would be benefits that could be realized by more formally implementing the areas of agreement to date. In February 1995, an interim Yukon River Salmon Agreement (Agreement) went into effect. A U.S./Canada Yukon River Panel (Panel) was formed to implement the Agreement. The focus of the Panel was on the salmon stocks that spawn in the Canadian portion of the Yukon River drainage. The Panel made recommendations to the management agencies in Alaska and Canada. The Panel also administered a Yukon River Salmon Restoration and Enhancement Fund (Fund).

In April 1996, the Panel agreed to the first six years of a rebuilding plan for Canadian mainstem chinook salmon stocks. Recognizing the desirability of rebuilding stocks, the Panel agreed to an interim, minimum spawning escapement objective for Canadian mainstem Yukon River chinook salmon of 28,000 fish for six years beginning in 1996. The U.S. contribution to this effort was to endeavor to deliver 44,800 to 47,800 chinook salmon to the Canadian mainstem Yukon River. The Canadian contribution to this effort was to endeavor to manage the harvest of chinook salmon in the mainstem Yukon River drainage in Canada by all user groups combined within a guideline harvest range of 16,800 to 19,800 chinook salmon.

For Canadian Yukon River mainstem fall chum salmon, a 12-year rebuilding plan was agreed upon during the negotiation process beginning with the 1990 season. The objective of this plan is to rebuild the stock by achieving a spawning escapement of 80,000 or more fall chum salmon for all brood years in the four-year cycle by the year 2001. The U.S. contribution to this effort was to endeavor to deliver to the Canadian border on the mainstem Yukon River an agreed to number of fall chum salmon, which varies by year based upon the rebuilding schedule. The Canadian contribution to this effort was to endeavor to manage the harvest of fall chum salmon in the mainstem Yukon River drainage in Canada by all user groups combined within a guideline harvest range of 23,600 to 32,600 fall chum salmon.

A key component of the Agreement was administration of the Fund by the Panel to address the restoration and enhancement of Canadian spawned salmon stocks. The U.S. contributed $400,000 per year into the Fund. At its April 1996, March 1997 and March 1998 meetings, the Panel allocated monies from this special fund to restore and increase salmon production on the river. Applicants included regional organizations, Native groups, private consultants and others, primarily in Canada. In 1999, the monies from the Fund were allocated to projects in the Alaska portion of the drainage.

Initially the Agreement was in place through 1997, with an option to extend if both sides agreed. Negotiations resumed in October 1997 to reach a long-term agreement on the remaining issues and to incorporate the relevant elements of the Agreement. At the October negotiations, the Agreement was extended through March 31, 1998.

Although the U.S. side supported extending the Agreement, the Canadian side allowed the Agreement to expire at the March 1998 negotiations meeting. Since March 1998, the department has continued to endeavor to manage the salmon fisheries on the Yukon River consistent with the stock rebuilding and conservation plans for chinook and fall chum salmon that were contained in the interim agreement.

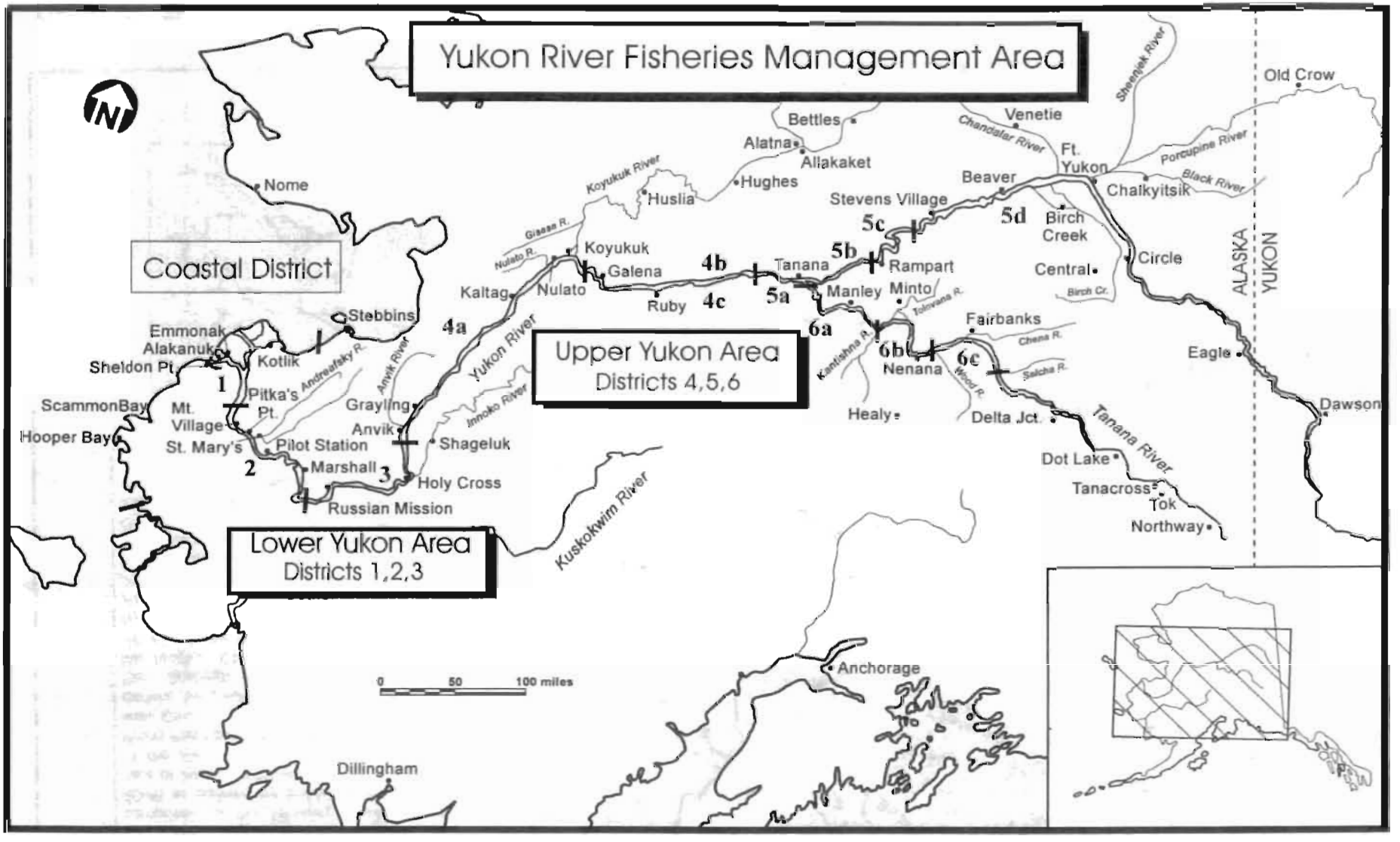
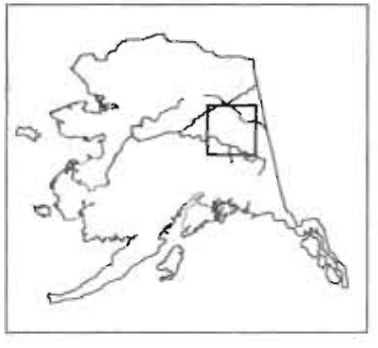


Figure 1. Alaska portion of the Yukon River drainage showing communities and fishing districts.

5 AAC 99.015 JOINT BOARD NONSUBSISTENCE AREAS. (4) The Fairbanks Nonsubsistence Area is comprised of the following: within Unit 20(A) as defined by 5 AAC 92.450(20)(A) east of the Wood River drainage and south of the Rex Trail but including the upper Wood River drainage south of its confluence with Chicken Creek, within Unit 20(B) as defined by 5 AAC 92.450(20)(B) the North Star Borough and that portion of the Washington Creek drainage east of the Elliot Highway, within Unit 20(D) as defined by 5 AAC 92.450(20)(D) west of the Tanana River between its confluence's with the Johnson and Delta Rivers, west of the west bank of the Johnson River, and north and west of the Volkmar drainage, including the Goodpaster River drainage, and within Unit 25(C) as defined by 5 AAC 92.450(25)(C) the Preacher and Beaver Creek drainages.



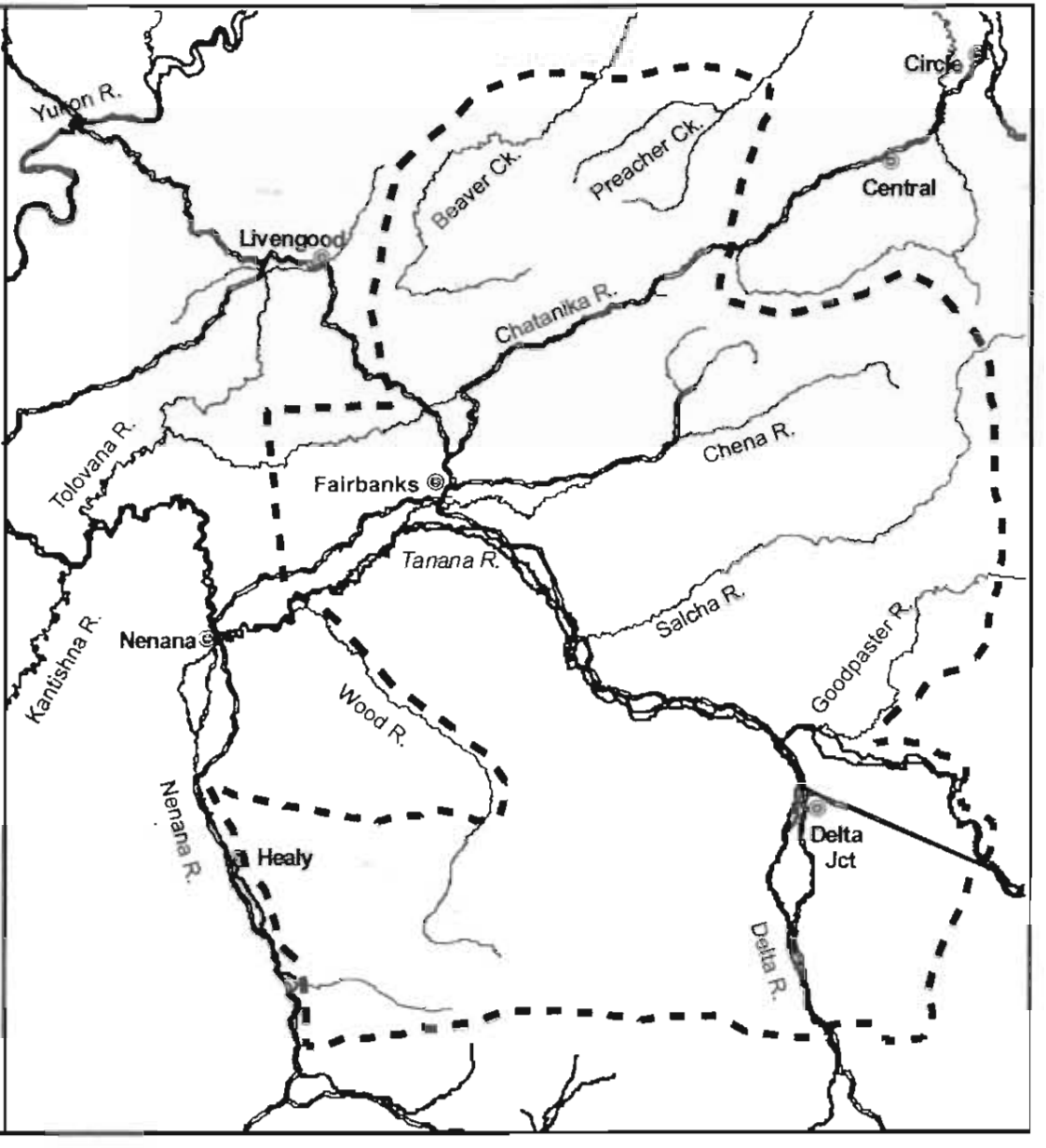


Figure 2. The Fairbanks Nonsubsistence Area.

Table 1. Guideline harvest ranges and mid-points for commercial harvest of Yukon River chinook, summer chum and fall chum salmon in Alaska, 2000.

Chinook Salmon

District or Subdistrict	Guideline Harvest Range a					
	Lower		Mid-Point		Upper	
	Numbers	Percent	Numbers	Percent	Numbers	Percent
1 and 2	60,000	89.1	90,000	91.6	120,000	92.9
3	1,800	2.7	2,000	2.0	2,200	1.7
4	2,250	3.3	2,550	2.6	2,850	2.2
5B and C	2,400	3.6	2,600	2.6	2,800	2.2
5D	300	0.4	400	0.4	500	0.4
6	600	0.9	700	0.7	800	0.6
Total	67,350	100.0	98,250	100.0	129,150	100.0

Summer Chum Salmon

District or Subdistrict	Guideline Harvest Range b					
	Lower		Mid-Point		Upper	
	Numbers	Percent	Numbers	Percent	Numbers	Percent
1 and 2	251,000	62.8	503,000	62.9	755,000	62.9
3	6,000	1.5	12,500	1.6	19,000	1.6
4A c	113,000	28.3	225,500	28.2	338,000	28.2
4B, C	16,000	4.0	31,500	3.9	47,000	3.9
5B, C, D	1,000	0.3	2,000	0.3	3,000	0.3
6	13,000	3.3	25,500	3.2	38,000	3.2
Total	400,000	100.0	800,000	100.0	1,200,000	100.0

Anvik River Management Area roe cap of 100,000 pounds d

Fall Chum Salmon

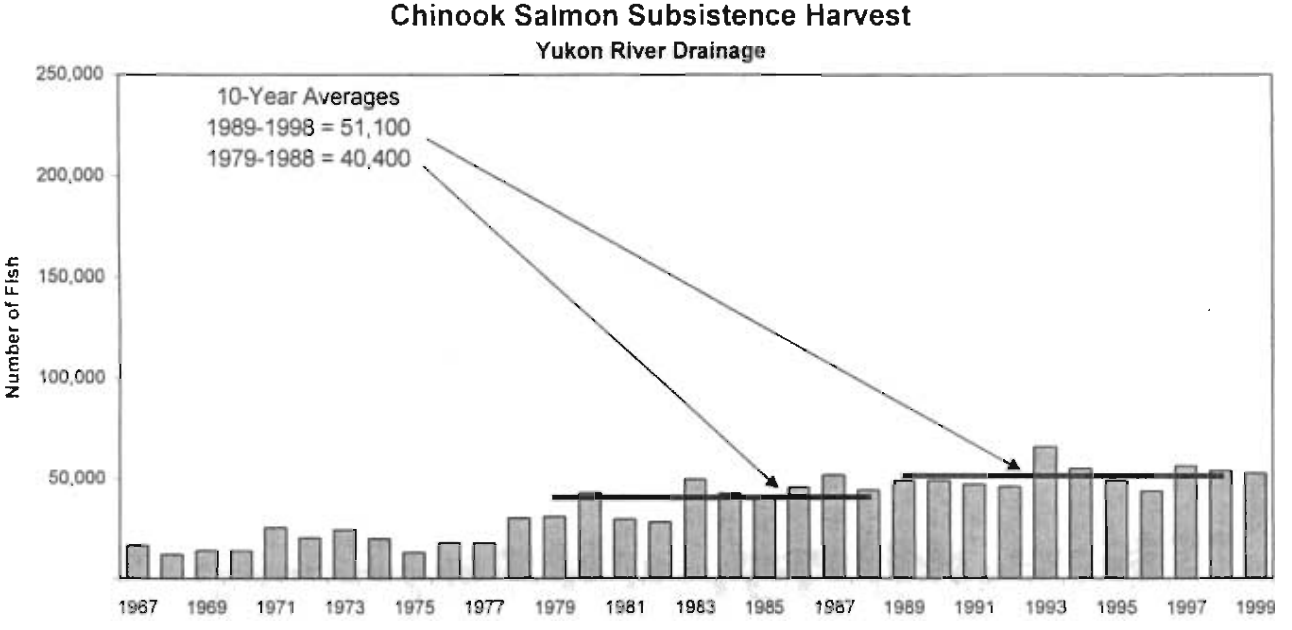
District or Subdistrict	Guideline Harvest Range e					
	Lower		Mid-Point		Upper	
	Numbers	Percent	Numbers	Percent	Numbers	Percent
1, 2, and 3	60,000	82.5	140,000	71.2	220,000	68.6
4B, C	5,000	6.9	22,500	11.4	40,000	12.5
5B and C	4,000	5.5	20,000	10.2	36,000	11.2
5D	1,000	1.4	2,500	1.3	4,000	1.2
6	2,750	3.8	11,625	5.9	20,500	6.4
Total	72,750	100.0	196,625	100.0	320,500	100.0

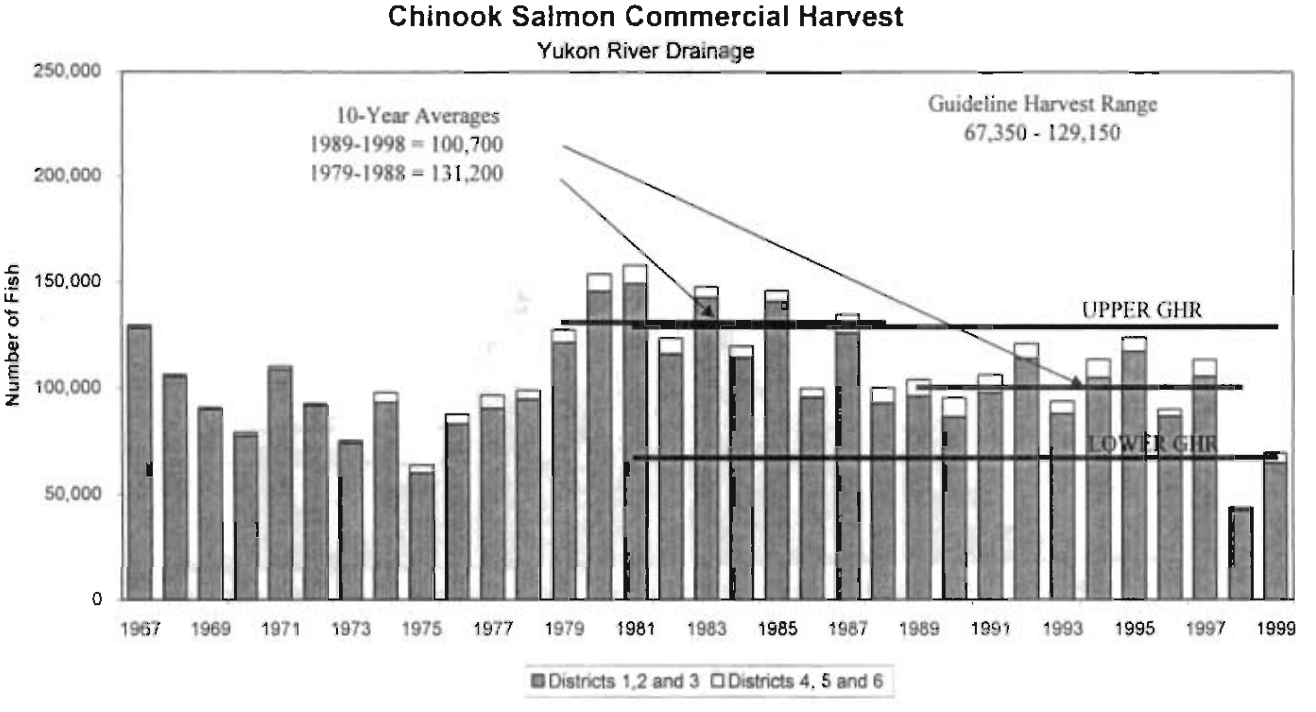
Subdistrict 5A range of 0 to 4,000 pounds of roe f

a The chinook salmon guideline harvest ranges have been in effect since 1981.
b Summer chum salmon guideline harvest ranges were established in February 1990 based on the average harvest shares from 1975-1989.
c Or the equivalent roe poundage of 61,000 to 183,000 pounds or some combination of fish and pounds of roe.
d The current Anvik River Management Area roe cap was established in March 1996.
e The current fall chum salmon guideline harvest ranges were established in 1990.
f Subdistrict 5A was removed from the guideline harvest ranges for chinook and summer chum and a separate guideline harvest range of 0-4,000 pounds of fall chum salmon roe was established in November 1998.

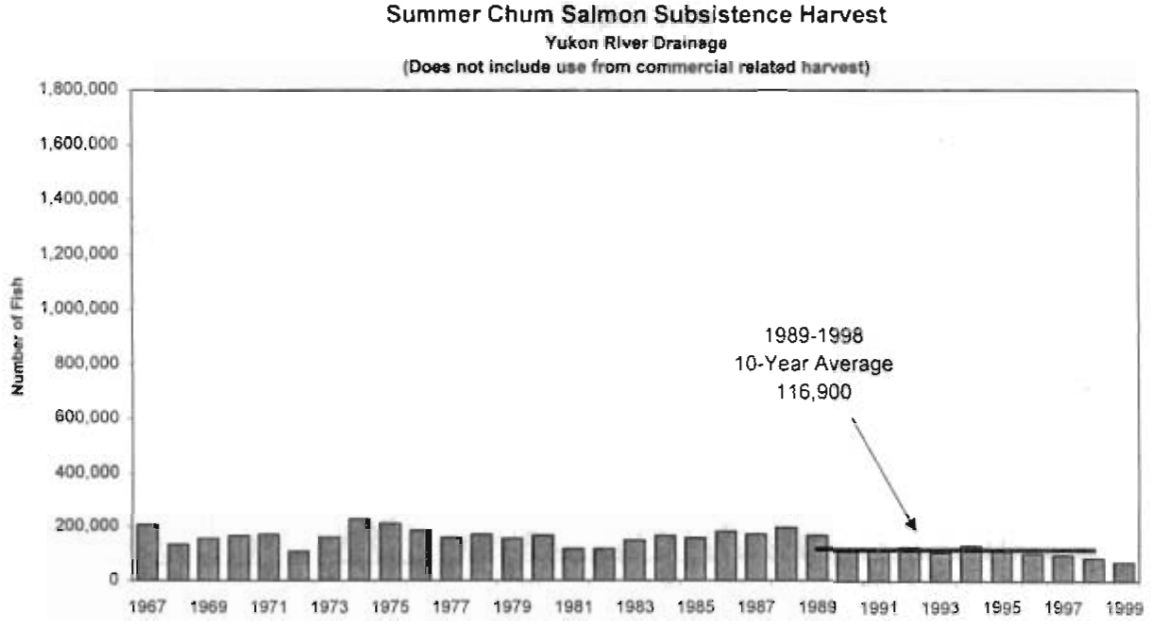
Appendix A

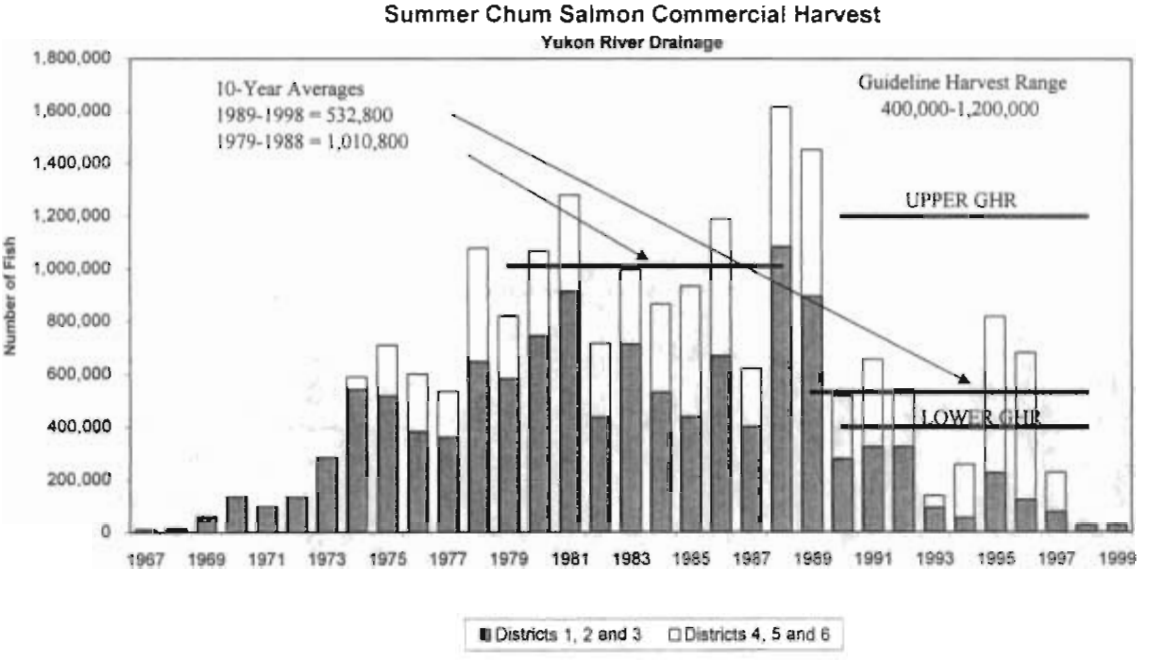
Historical Chinook and Summer Chum Salmon Harvest and Escapement Information





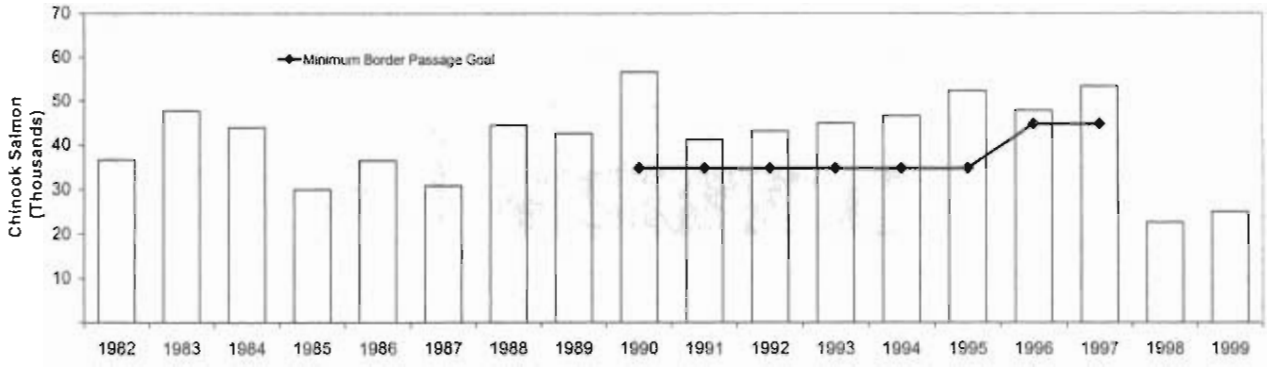
Appendix A.1. Subsistence and commercial harvest of chinook salmon, Yukon Area, 1967-1999.



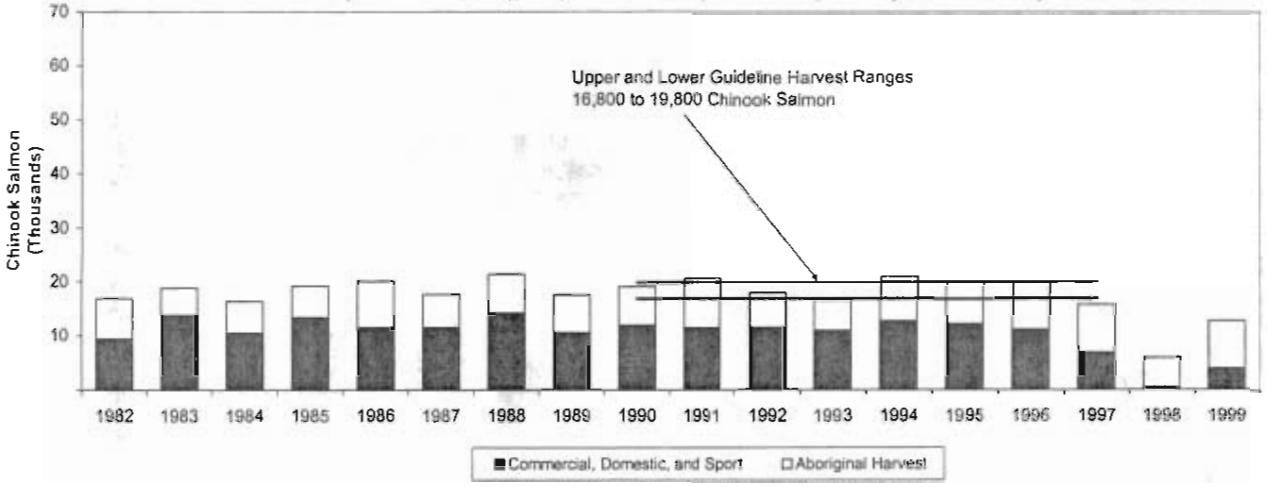


Appendix A.2. Subsistence and commercial harvest of summer chum salmon, Yukon River Drainage, 1967-1999.

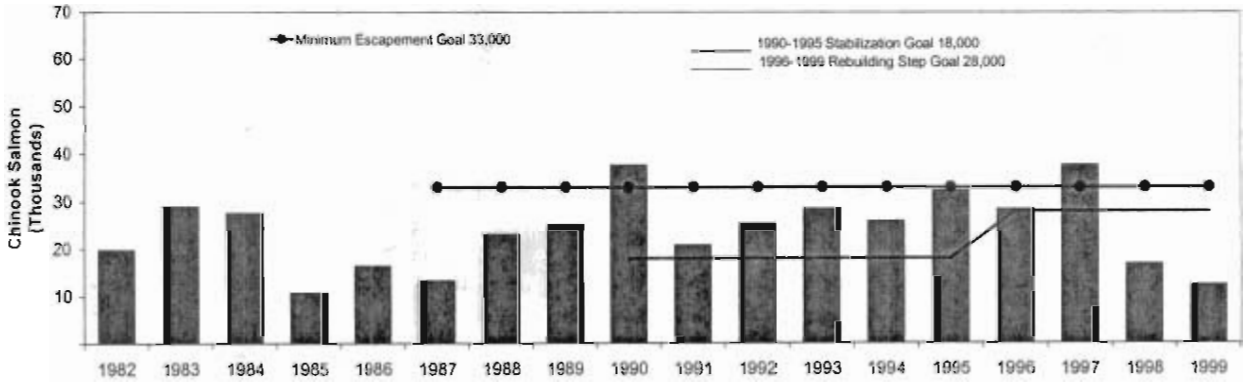
CANADIAN MAINSTEM YUKON RIVER
Chinook Salmon Border Passage



Canadian Chinook Salmon Harvest
(Includes Aboriginal, Commercial, Domestic, and Sport Harvests)

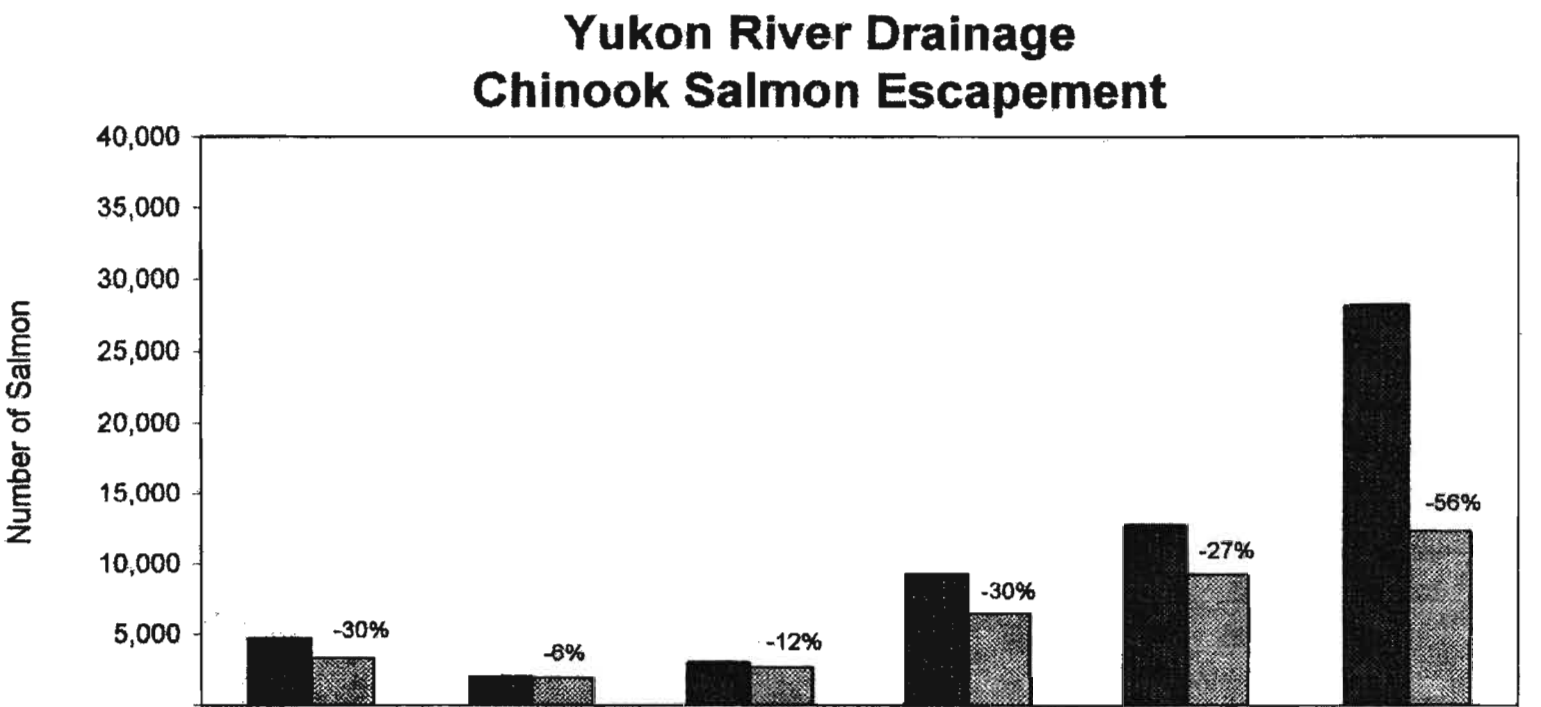


Canadian Chinook Salmon Spawning Escapement



Appendix A.3. Canadian mainstem border passage, harvest and escapement estimates, 1982-1999, and stabilization and rebuilding step escapement goals.

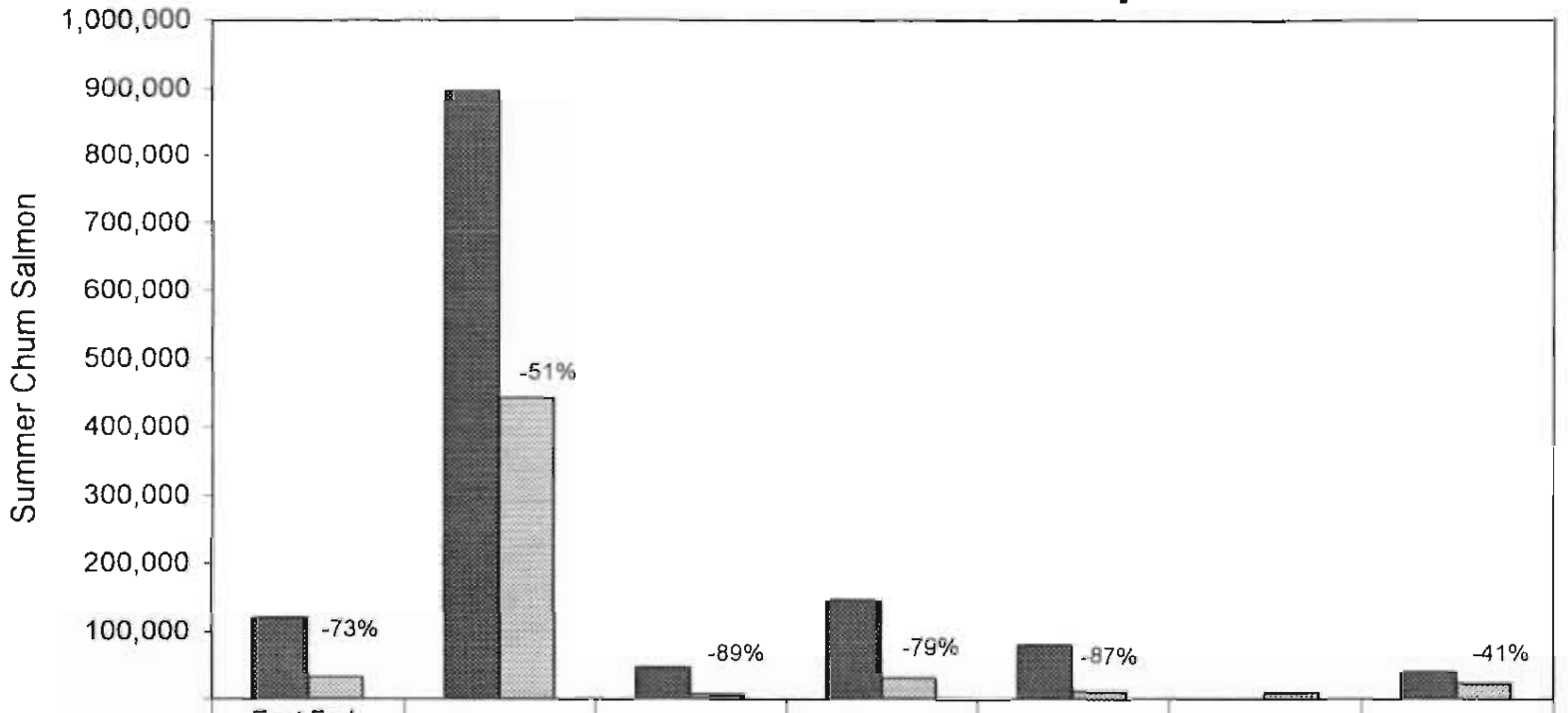
AmnappeMngt pass chart 03/31/2000



***Recent 5-Year Average (1994-1998)**

Appendix A.4. Selected chinook salmon escapements, 5-year average compared to 1999, Yukon River drainage.

Yukon River Drainage
Summer Chum Salmon Escapement



	East Fork Andreafsky River Weir	Anvik River Sonar	Kaltag River Tower	Nulato River Tower	Gisasa River Weir	Chena River Tower	Salcha River Tower
*Average	120,062	895,666	46,378	144,492	79,124		39,618
1999	32,229	441,305	5,300	30,076	9,920	9,165	23,221

***Recent 5-Year Averages (1994-1998)**

Appendix A.5. Selected summer chum salmon escapements, 5-year average compared to 1999, Yukon River drainage.

Appendix A.6. Chinook salmon commercial harvest and escapement comparisons, Yukon River, 1993-1999. Updated March 1, 2000

Chinook Salmon Commercial Harvest a

District/Subdistrict	Guideline Harvest Range	1993	1994	1995	1996	1997	1998	1999	Comparison of 1999 to 5-Yr. Average	Recent 5-Year Average (1994-1998)
Y-1		49,286	62,241	76,106	56,642	66,384	25,413	37,145	-35%	57,357
Y-2		37,293	41,692	41,458	30,209	39,363	16,806	27,070	-20%	33,906
Subtotal Y1 & Y2	60,000-120,000	86,579	103,933	117,564	86,851	105,747	42,219	64,215	-30%	91,263
Y-3	1,800-2,200	1,501	1,114	0	0	0	0	538		223
Y-4A		0	0	0	0	0	0	0		0
Y-4BC		1,577	2,443	499	137	1,457	0	1,437	58%	907
Subtotal Y-4	2,250-2,850	1,577	2,443	499	137	1,457	0	1,437	58%	907
Y-5ABC	2,400-2,800	2,608	3,294	2,753	2,309	3,071	475	2,189	-8%	2,380
Y-5D	300-500	400	450	489	448	607	42	415	2%	407
Subtotal Y-5		3,008	3,744	3,242	2,757	3,678	517	2,604	-7%	2,788
Y-6	600-800	1,445	2,606	2,747	447	2,728	963	689	-64%	1,898
Total Alaska	67,350-129,150	94,110	113,840	124,052	90,192	113,610	43,699	69,563	-28%	97,079
Canada b	16,800-19,800	16,469	20,790	20,091	19,546	15,717	5,838	12,657	-23%	16,396

Chinook Salmon Escapement

Project	Spawning Escapement Goal	1993	1994	1995	1996	1997	1998	1999	Comparison of 1999 to 5-Yr. Average	Recent 5-Year Average (1994-1998)
East Fork Andreafsky River Weir			7,801	5,841	2,955	3,186	4,011	3,347	-30%	4,759
East Fork Andreafsky River Aerial c	>1,500	5,855		1,635		1,140	1,027			N/A
West Fork Andreafsky River Aerial	>1,400	2,765		1,108	624	1,510	1,249 g	870 g		N/A
Pilot Station Sonar				240,000		224,000	122,000	211,000		N/A
Anvik River Index Aerial c	>500	1,526	913 g	1,147	709	2,690	648 g	950 g		N/A
Nulato River Tower			1,795	1,412	756	4,766	1,536	1,932	-6%	2,053
Nulato River Aerial c	>1,300	3,025	1,795	1,649			1,053			N/A
Gisasa River Weir			2,888	4,023	1,952	3,764	2,356	2,631	-12%	2,997
Gisasa River Aerial c	>600	1,573	2,775	410		144 g	889 g			N/A
Chena River Tower/MR Tagging		12,241	11,887	9,680 f	6,833 f	13,390	4,745	6,485	-30%	9,307
Chena River Index Aerial c	>1,700	2,660	1,570	3,039	2,112	3,303	386 g	2,412		N/A
Salcha River Tower/MR Tagging		10,007	18,399	13,643	7,958 f	18,396	5,027	9,198	-27%	12,685
Salcha River Index Aerial c	>2,500	3,562	11,189	3,734	4,800	3,457 g	1,923 g	3,608		N/A
Canada Mainstem Tagging	>28,000	28,558	25,890	32,262	28,409	37,683	16,750	12,303	-56%	28,199
Whitehorse Fishway		668	1,577	2,103	2,958	2,084	777	1,118	-41%	1,900
ESCAPEMENT INDEX h			68,660	66,861	48,863	81,185	34,425	35,896	-40%	59,999

a Commercial harvest includes the estimated harvest of females to produce roe sold.

b Total harvest for all fisheries in Canadian mainstem Yukon River.

c Aerial surveys rated good to fair unless noted otherwise.

d Two year average, 1996-1997.

f Mark and recapture tagging estimate; tower counts were minimum/incomplete due to late installation and/or early removal of project, or high water events/weather conditions.

g Aerial surveys rated poor/incomplete; data not comparable to other years.

h The escapement index is the summed escapements for East Fork Andreafsky weir, Nulato tower, Gisasa weir, Chena and Salcha towers, and Canada mainstem tagging.

Appendix A.7. Summer chum salmon commercial harvest and escapement comparisons, Yukon River, 1993-1999 Updated March 1, 2000

Summer Chum Salmon Commercial Harvest a

District/Subdistrict		Guideline Harvest Range	1993	1994	1995	1996	1997	1998	1999	Comparison of 1999 to Average	Recent 5-Year Average (1994-1998)
Y-1			73,659	42,332	142,266	92,506	59,915	21,270	16,181	-77%	71,658
Y-2			19,332	12,869	83,817	30,727	18,242	6,848	11,702	-62%	30,501
Subtotal Y-1 & Y-2		251,000-755,000	92,991	55,201	226,083	123,233	78,157	28,118	27,883	-73%	102,158
Y-3		6,000-19,000	463	35	0	1,534	0	0	0		314
Anvik River	Est. Fish		0	22,574	54,744	84,663	13,548	0	0		35,106
	lbs. Roe	*100,000*	*0*	*19,532*	*48,477*	*76,318*	*13,067*	*0*	*0*		31,479
Y-4A	Est. Fi	113,000-338,000	38,196	131,794	419,688	356,938	100,389	0	0		201,762
	lbs. Roe	*61,000-183,000*	*20,485*	*62,801*	*189,252*	*181,050*	*56,301*	*0*	*0*		97,881
Y-4BC	Est. Fis	16,000-47,000	4,761	17,239	80,155	68,639	10,734	0	1,267	-96%	35,353
	lbs. Roe		*1,962*	*7,384*	*43,345*	*37,882*	*4,863*				23,369
Subtotal Y-4			42,957	171,607	554,587	425,577	111,123	0	1,267		252,579
Y-5ABC			0	464	316	209	125	110	114	-53%	245
Y-5D			0	0	0	127	12	0	1		28
Subtotal Y-5		1,000-3,000	0	464	316	336	137	110	115	-58%	273
Y-6	Est. Fi	13,000-38,000	3,705	31,434	37,428	46,890	25,287	570	148	-99%	28,322
	lbs. Roe		*515*	*7,828*	*9,475*	*18,332*	*9,036*	*140*	*34*		8,962
Total		400,000-1,200,000	140,116	258,741	818,414	682,233	228,252	28,798	29,413	-93%	403,288

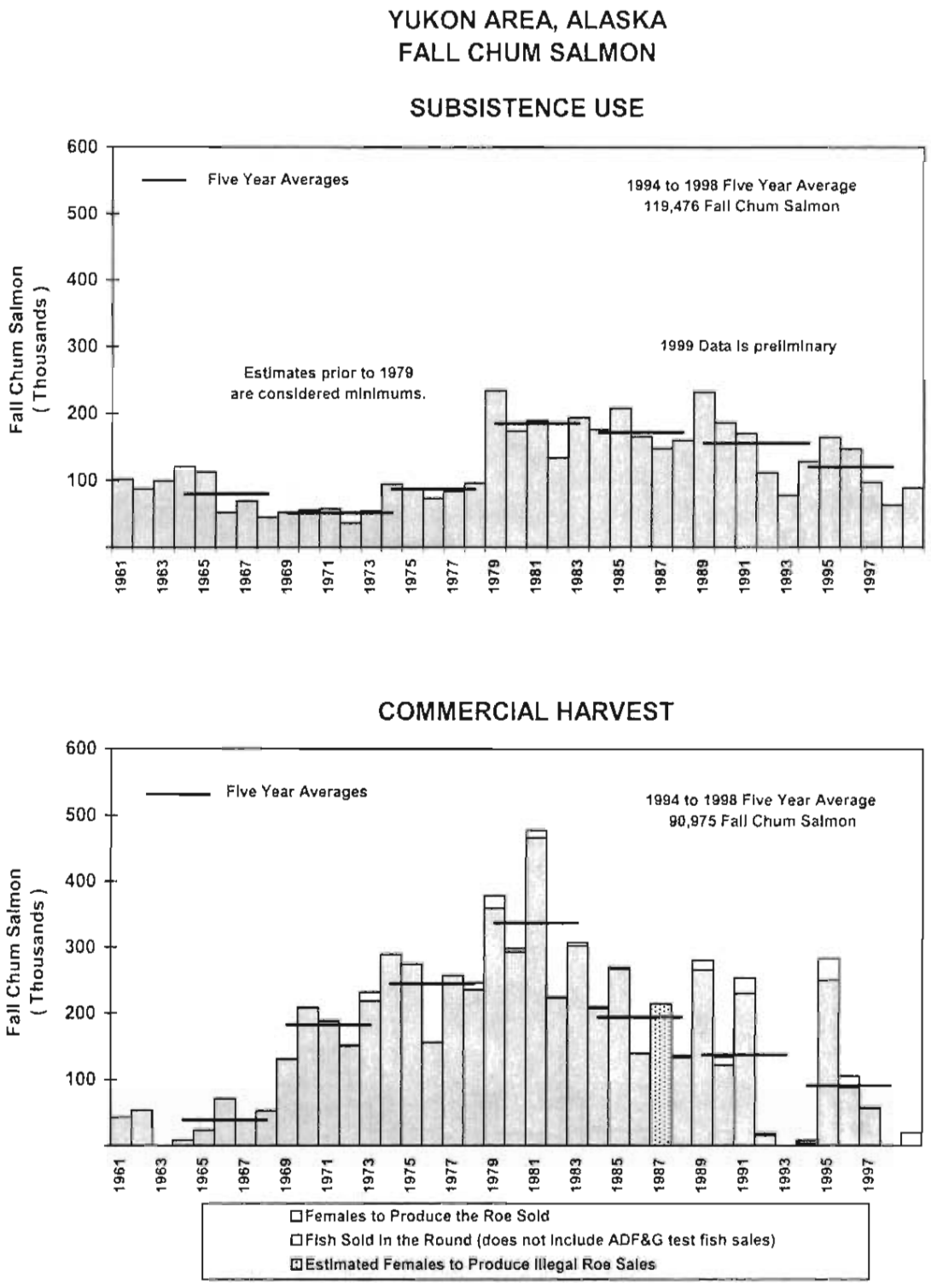
Summer Chum Salmon Escapement

Project	Spawning Escapement Goal	1993	1994	1995	1996	1997	1998	1999	Comparison of 1999 to Average	Recent 5-Year Average (1994-1998)
East Fork Andreafsky River Weir			200,981	172,148	108,450	51,139	67,591	32,229	-73%	120,062
Pilot Station Sonar				3,638,000		1,411,000	831,000	946,000		N/A
Anvik River Sonar	>500,000	517,409	1,124,689	1,339,418	933,240	609,118	471,865	441,305	-51%	895,666
Kaltag River Tower			47,295	77,193	51,269	48,018	8,113	5,300	-89%	46,378
Nulato River Tower			148,762	236,890	129,694	157,975	49,140	30,076	-79%	144,492
Gisasa River Weir			51,116	136,886	157,589	31,800	18,228	9,920	-87%	79,124
Clear Creek Tower				116,735	100,912	76,454	212 c	11,300	-88%	98,034 d
Chena River Tower		5,400	9,984	3,519 c	12,810 c	9,439 c	5,901 c	9,165 c		N/A
Chena River Aerial b		168	1,137	185 f	2,061	594 f				N/A
Salcha River Tower		5,809	39,450	30,784	74,627	35,741	17,289	23,221	-41%	39,618
Salcha River Aerial b	>3,500	212	4,916	934 f	9,722	3,968 f	370 f			N/A
ESCAPEMENT INDEX g			1,612,293	1,993,319	1,455,069	933,791	632,226	551,216	-58%	1,325,340

a Commercial harvest includes the estimated harvest of females to produce roe sold, except for Districts 3 and 4, which also includes the estimated number of males harvested to produce roe sol
b Aerial surveys rated good to fair unless noted otherwise.
c Project counts not comparable to other years; incomplete counts due to early removal of project or high water events/weather conditions.
d Three year average 1995-1997.
f Aerial surveys rated poor/incomplete; data not comparable to other years.
g The escapement index is the summed escapements for East Fork Andreafsky weir, Anvik sonar, Gisasa weir, Kaltag, Nulato, and Salcha towers.

Appendix B

Historical Fall Chum and Coho Salmon Harvest and Escapement Information

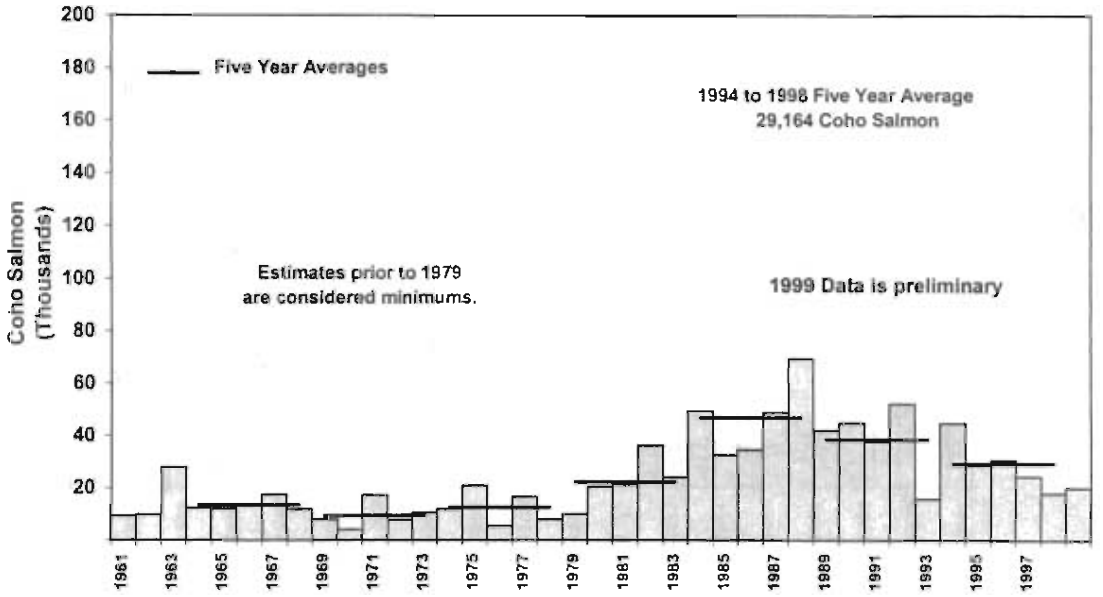


Note: Both graphs are on the same scale.

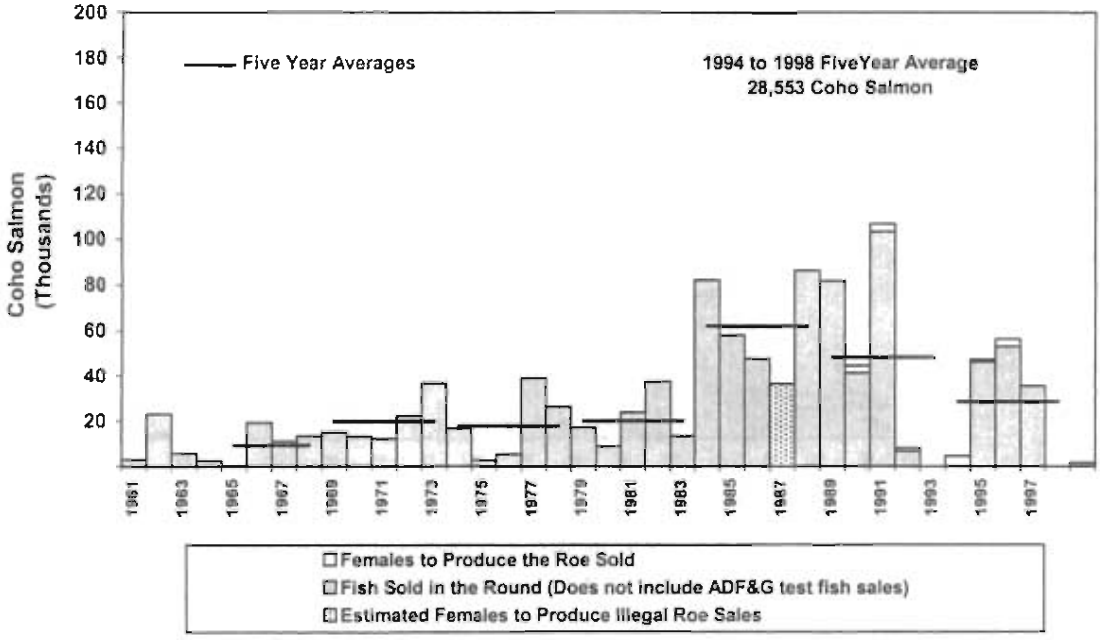
Appendix B.1. Subsistence use and commercial harvest of fall chum salmon, Yukon Area, Alaska, 1961-1999.

YUKON AREA, ALASKA
COHO SALMON

SUBSISTENCE AND PERSONAL USE



COMMERCIAL HARVEST



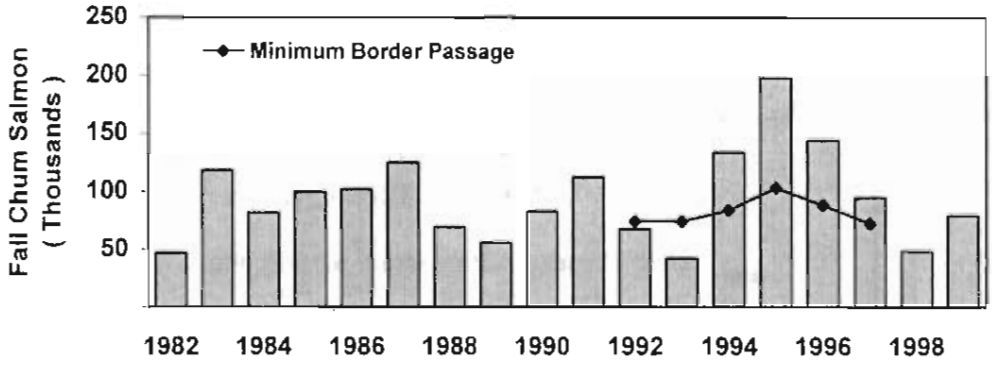
Note: Both graphs are on the same scale.

Appendix B.2. Subsistence and personal use, and commercial harvest of coho salmon, Yukon Area, Alaska, 1961-1999.

CANADIAN MAINSTEM YUKON RIVER

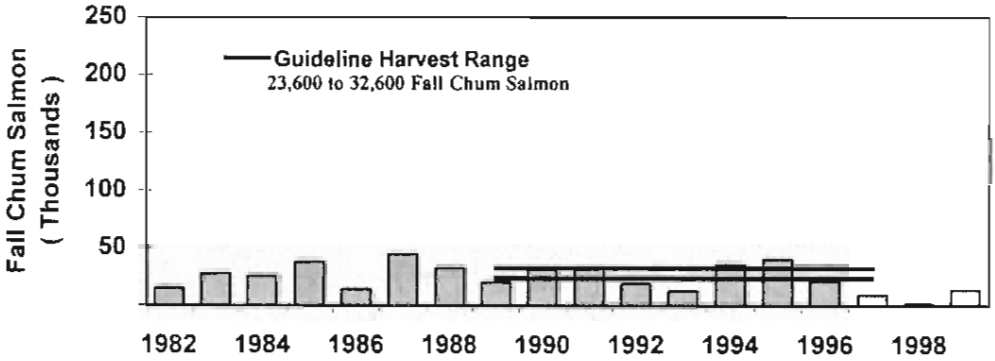
Fall Chum Salmon

Canadian Border Passage

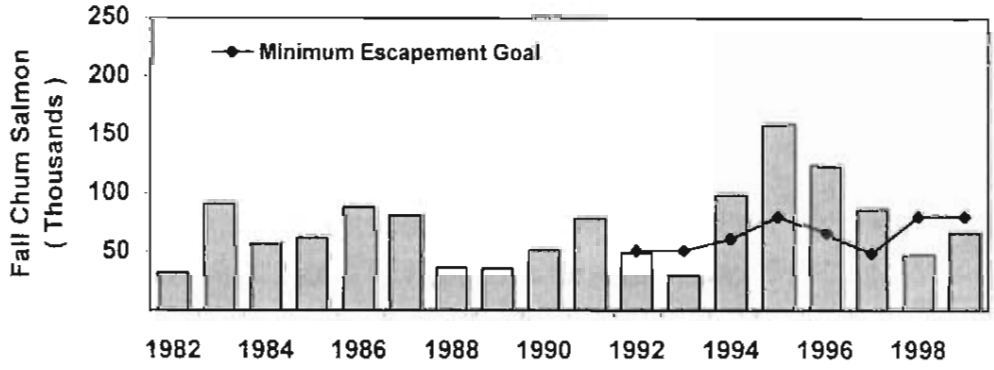


Canadian Mainstem Harvest

(Includes aboriginal, commercial, domestic, and sport harvests)



Canadian Spawning Escapement



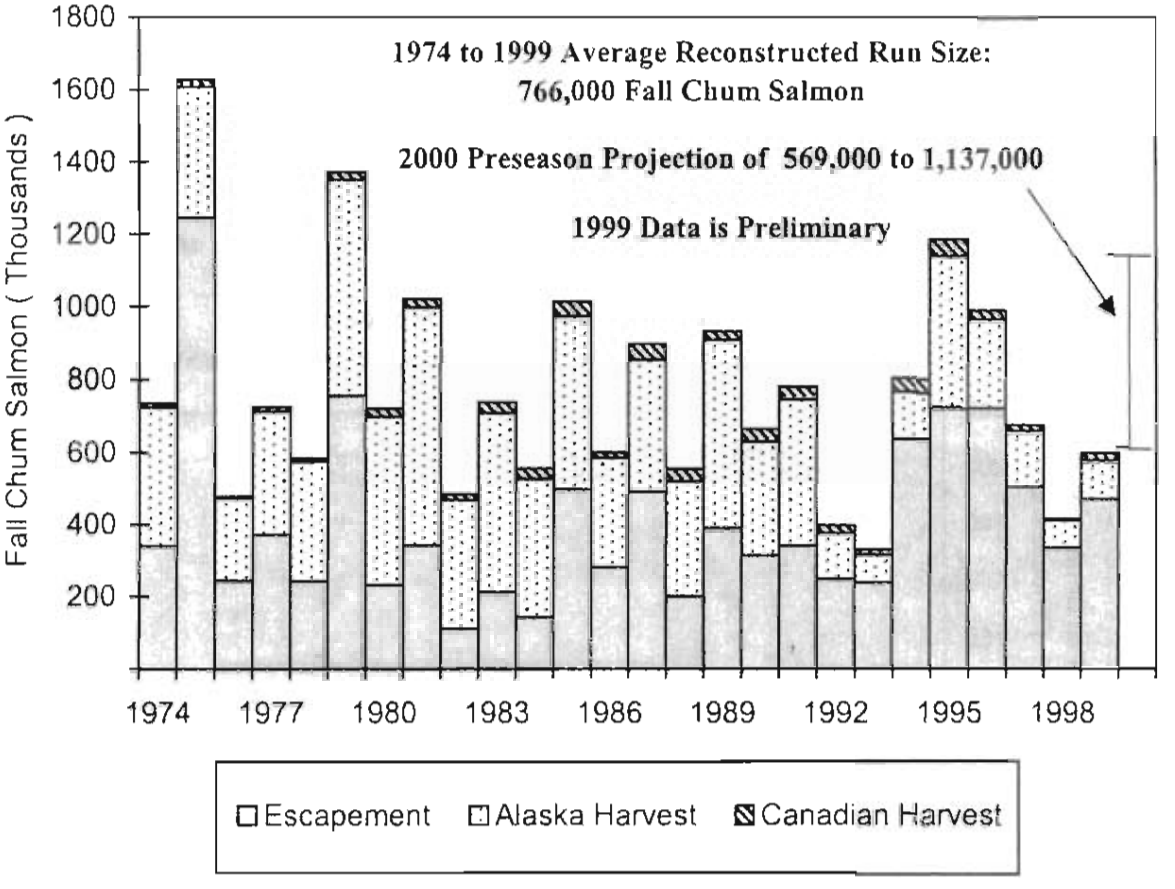
All 1999 data is preliminary

Appendix B.3. Canadian mainstem border passage, harvest and escapement estimates, 1982 to 1999, and targeted goals for the rebuilding period from 1992 through 1999.

YUKON RIVER DRAINAGE

ALASKA AND CANADA

FALL CHUM SALMON HARVEST AND ESCAPEMENT



Harvest estimates from JTC Report, October 1999. Historical escapement estimates as provided in the 2000 Fall Chum Salmon Run Projection Memorandum, by L. Barton, dated January 31, 2000.

Appendix B.4. Estimated harvest and escapement, fall chum salmon, Yukon River drainage, 1974 to 1999, and the 2000 preseason projection.

Appendix B.5. The Yukon River drainage fall chum salmon management plan, 2000.

Run Size Estimate *b* (Point Estimate)	Recommended Management Action *a* Fall Chum Salmon Directed Fisheries				Targeted Drainagewide Escapement
	Commercial	Personal Use	Sport	Subsistence	
350,000 or Less	Closure	Closure	Closure	Closure *c*	350,000
350,001 to 450,000	Closure	Closure	Closure	Restrictions *d*	350,000
450,001 to 550,000	Closure	Closure	Closure	Restrictions *d*	375,000
550,001 to 600,000	Closure	Closure *e*	Closure *e*	Restrictions *d*	400,000
600,001 to 675,000	Closure	Normal Fishing Schedules	Retention Allowed	Normal Fishing Schedules	400,000 or More
Greater Than 675,000	Commercial Fishing Considered *f*	Normal Fishing Schedules	Retention Allowed	Normal Fishing Schedules	400,000 or More

1999 Run Reconstruction 598,800 Fall Chum Salmon

2000 Preseason Projection 569,000 to 1,137,000 Fall Chum Salmon

a Considerations for the Toklat River and Canadian Mainstem rebuilding plans may require more restrictive management actions.

b The department will use the best available data including preseason projections, mainstem river sonar passage estimates, test fisheries indices, subsistence and commercial fishing reports, and passage estimates from escapement monitoring projects to assess the run size.

c The department may, by emergency order, allow subsistence chum salmon directed fisheries in areas that indicator(s) suggest that the escapement goal(s) in that area will be achieved.

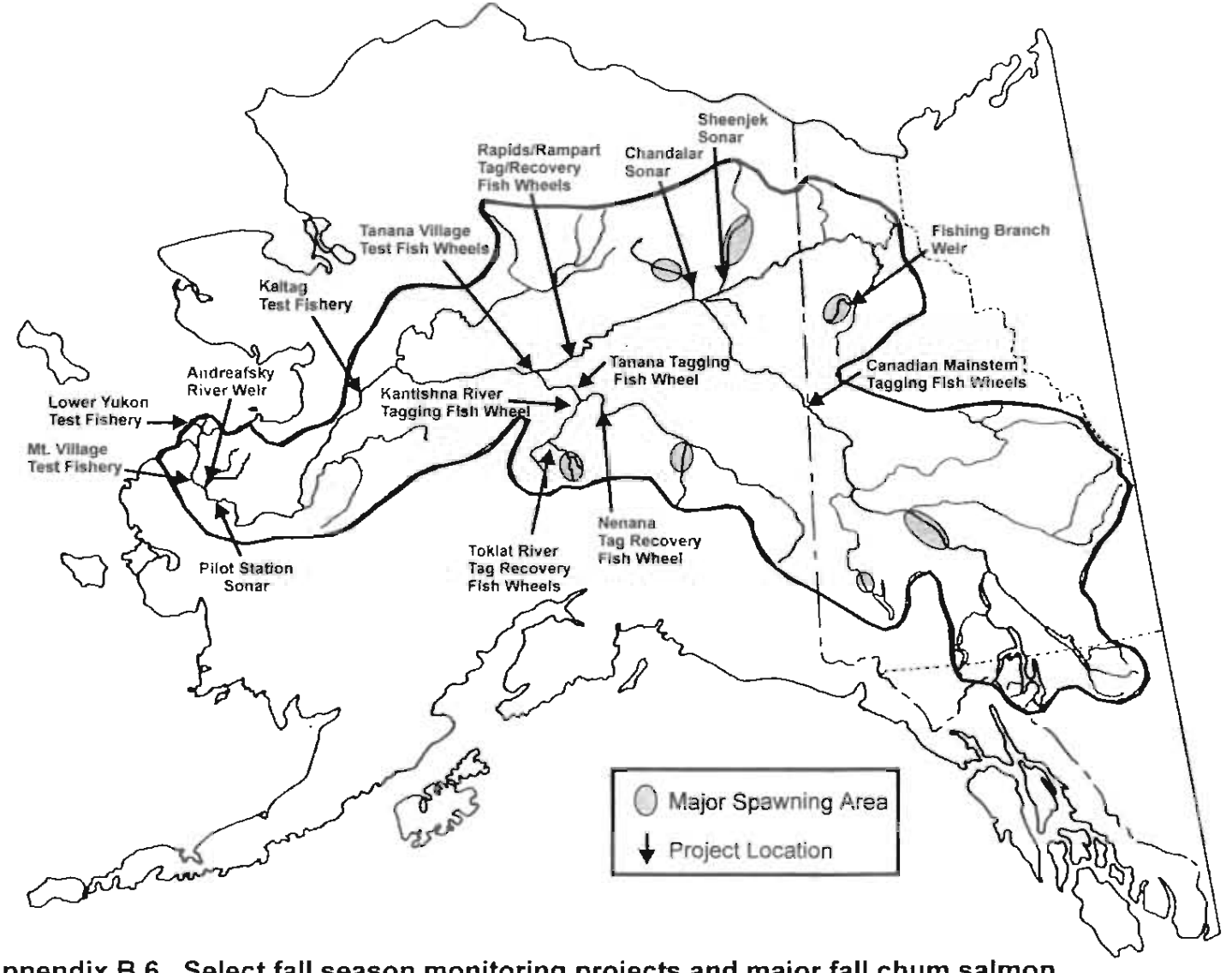
d The department may, by emergency order, allow a less restrictive or a normal subsistence fishing schedule in areas that indicator(s) suggest that the escapement goal(s) in that area will be achieved.

e The department may, by emergency order, allow personal use and sport fishing in areas that have normal subsistence fishing schedules and indicator(s) that suggest the escapement goal(s) in that area will be achieved.

f When the projected run size is more than 675,000 chum salmon, the department may allow for a drainage-wide commercial fishery with the targeted harvest of the surplus above 625,000 chum salmon distributed by district or subdistrict proportional to the guideline established in harvest range 5 AAC 05.365. The department shall distribute the harvest at levels below the low end of the guideline harvest range by district or subdistrict proportional to the mid-point of the guideline harvest range.

5 AAC 05.365. (4) manage the commercial fishery during the fall chum salmon season for a guideline harvest range of 72,750 to 320,500 chum salmon, distributed as follows:

(A) Districts 1, 2 and 3:	60,000 to 220,000 chum salmon;
(B) Subdistricts 4-B and 4-C:	5,000 to 40,000 chum salmon;
(C) Subdistricts 5-B and 5-C:	4,000 to 36,000 chum salmon;
(D) Subdistrict 5-D:	1,000 to 4,000 chum salmon;
(E) District 6:	2,750 to 20,500 chum salmon.



Appendix B.6. Select fall season monitoring projects and major fall chum salmon spawning areas, Yukon River drainage, 2000.

Appendix B.7. Preliminary fall chum salmon commercial harvest and escapement comparison, Yukon River drainage, 1993-1999. a

		Fall Chum Salmon Commercial Harvest b								
District/Subdistrict	Guideline Harvest Range	1993	1994	1995	1996	1997	1998	1999	Comparison to Average	5 Year Average (1994 to 1998)
Y-1		0	0	79,345	33,629	27,483	0	9,987		28,091
Y-2		0	0	90,831	29,651	24,326	0	9,703		28,962
Y-3		0	0	0	0	0	0	0		0
Subtotal Y-1, Y-2, & Y-3	60,000-220,000	0	0	170,176	63,280	51,809	0	19,690	-	57,053
Y-4BC	5,000-40,000	0	0	8,731	2,918	2,458	0	681		2,821
Subtotal Y-4	5,000-40,000	0	0	8,731	2,918	2,458	0	681	-	2,821
Y-5ABC	4,000-36,000	0	0	26,054	17,461	3,069	0	0		9,317
Y-5D	1,000-4,000	0	3,630	3,979	4,397	851	0	0		2,571
Subtotal Y-5	5,000-40,000	0	3,630	30,033	21,858	3,920	0	0	-	11,888
Y-6	2,750-20,500	0	4,369	74,117	17,574	0	0	0		19,212
Subtotal Y-6		0	4,369	74,117	17,574	0	0	0	-	19,212
Total Alaska	72,750-320,500	0	7,999	283,057	105,630	58,187	0	20,371		90,975
Canada[c]		12,422	35,354	40,111	21,329	9,286	1,745	13,574	-	21,565

		Fall Chum Salmon Escapements								
Project	Spawning Escapement Goal	1993	1994	1995	1996	1997	1998	1999	Comparison to Average	5 Year Average (1994 to 1998)
East Fork Andreafsky River Weir [d]		-	-	2,584	2,978	2,048	1,276	763	-66%	2,222 [f]
Pilot Station Sonar			-	1,247,541	-	623,367	397,157	510,891	-	-
South Fork Koyukuk River Weir		-	-	19,485	21,651	11,340	-	-	-	17,492 [g]
Toklat River	>33,000	27,838	76,057	54,513	18,264	14,511	15,605	4,551	-87%	35,790
Delta River	>11,000	19,857	23,777	20,587	19,758	7,705	7,804	16,534	4%	15,926
Chandalar River Sonar		-	-	280,999	208,170	199,874	75,811	88,662	-54%	191,214 [f]
Sheenjek River Sonar	>64,000	42,922	153,013	235,269	247,965	80,423	32,894	14,229	-91%	149,913
Canada Fishing Branch River Weir	50,000-120,000	28,707	65,247	51,971	77,278	26,959	13,248	12,904	-73%	46,941
Canada Mainstem Tagging	>80,000	29,743	98,358	158,092	122,429	85,439	46,035	65,896	-35%	102,071

a Data from the 1998 AMR used when available.
b Commercial harvest includes the estimated harvest of females to produce roe sold.
c Total harvest for all fisheries in Canadian mainstem Yukon River (Aboriginal, Domestic, and Commercial).
d (1993-1998) Data taken from 1999 Yukon Area Fall Season Data Notebook (Table C.1).
f Four year average, 1995 to 1998.
g Three year average 1995 to 1997.

Appendix B.8. Preliminary coho salmon commercial harvest and escapement comparison, Yukon River drainage, 1993-1999. a

Coho Salmon Commercial Harvest									
District/Subdistrict	1993	1994	1995	1996	1997	1998	1999	Comparison to Average	5 Year Average (1994 to 1998)
Y-1	0	0	21,625	27,705	21,450	0	855		14,156
Y-2	0	0	18,488	20,974	13,056	1	746		10,504
Y-3	0	0	0	0	0	0	0		0
Subtotal Y-1, Y-2, & Y-3	0	0	40,113	48,679	34,506	1	1,601	-	24,660
Y-4A	0	0	0	0	0	0	0		0
Y-4BC	0	0	0	161	814	0	0		195
Subtotal Y-4	0	0	0	161	814	0	0	-	195
Y-5ABC	0	0	0	0	0	0	0		0
Y-5D	0	0	0	0	0	0	0		0
Subtotal Y-5	0	0	0	0	0	0	0	-	0
Y-6	0	4,451	6,900	7,142	0	0	0		3,699
Subtotal Y-6	0	4,451	6,900	7,142	0	0	0	-	3,699
Total Alaska	0	4,451	47,013	55,982	35,320	1	1,601	-	28,553

Coho Salmon Escapements										
Project	Spawning Escapement Goal	1993	1994	1995	1996	1997	1998	1999	Comparison to Average	5 Year Average (1994 to 1998)
East Fork Andreafsky River Weir		-	-	10,901	8,037	9,462	5,417	2,963	-65%	8,454 [b]
Pilot Station Sonar			-	154,462	-	153,502	176,792	94,532		-
Geiger Creek		138	410	142	233	274	157	29	-88%	243
Barton Creek Weir		141	2,000	192	0	-	-	-		583 [c]
Lost Slough		484	944	4,169	2,040	1,524	1,360	1,002	-50%	2,007
Mainstem Nenana		419	1,648	2,218	2,171	1,446	2,771	745	-64%	2,051
Wood Creek		666	1,317	500	2,416	1,464	353	-		1,210 [d]
Seventeen Mile Slough		561	2,909	2,972	3,668	1,996	1,413	662	-74%	2,592
Delta Clearwater River	>9,000	10,875	62,675	20,100	14,075	11,525	11,100	10,975	-54%	23,895
Clearwater Lake & Outlet		3,525	3,425	3,625	1,125	2,775	2,775	-		2,745 [d]

a Data from the 1998 AMR used when available.
b Four year average, 1995 to 1998.
c Four year average, 1993 to 1996.
d Five year average 1994 to 1998.