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YUKON AREA

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PREFACE

This report presents the bulk of current and historical information concerning the management of commercial and subsistence fisheries in the Yukon area. Data from many special research projects are included in this report; complete documentation of these projects and results will be presented in separate reports.

Data presented in this report supercedes information found in previous management reports. An attempt has been made to correct errors in previous reports and previously unrecorded data have been incorporated into this report which are so indicated by the appropriate footnotes.

The report is organized into the following major sections:

1. Area Introduction. This section presents a detailed description of the area, inhabitants, fishery resources, fisheries and management practices.

2. Area Report, 1984. This section presents a comprehensive report of the current year and makes comparisons with previous years.

In order to facilitate use of this report, tabular data has been separated into current year tables and appendix tables where annual comparisons are made. Text for each major section is followed by current year tables and then by appendix tables.

Current year tables which show upper Yukon area commercial salmon catches includes "equivalent numbers" of salmon converted from roe sales. For example five pounds of chum salmon roe, as listed on a fish ticket, is equivalent to five fish (each female chum salmon contains approximately one pound of eggs). All commercial salmon catch appendix tables show final fish ticket computer data corrected through 1984 except Appendix Table 10 which includes equivalent numbers of salmon.

The following is an explanation of how commercial fishing effort and catch per unit effort data, presented throughout this report, have been derived. Boat (or fisherman) hours have been computed, arbitrarily assuming that if a fishing boat delivers in any fishing period, it is fished the entire period for as many hours as were open to commercial fishing.

Catch per fisherman (or boat) hour is obtained by dividing the total fisherman hours into the catch for the corresponding period of time.

Total fishermen (or boats) is the total number of fishermen making deliveries, irrespective of how many deliveries were made or days fished during a particular "season". There are a number of fishermen who deliver only once or twice during the entire season.

"Total days fished" is the total number of hours open for commercial fishing during the season divided by 24.

AREA INTRODUCTION

Description of Area

The Yukon management area includes all waters of the Yukon River and its tributary streams in Alaska and all coastal waters from Canal Point light near Cape Stephens southward to Naskonat Peninsula (Figure 7). The Yukon River is the largest river in Alaska, draining approximately 35 percent of the state, and is the fifth largest drainage in North America (Figure 1). The river originates in British Columbia, Canada, within 30 miles of the Gulf of Alaska and flows over 2,300 miles to its mouth on the Bering Sea draining an area of approximately 330,000 square miles. With the possible exception of a few fish taken at the mouth or adjacent coastal villages, only salmon of Yukon River origin are harvested in this area.

Fishery Resources

All five species of Pacific salmon are found in the Yukon River drainage (Figure 1) with chum salmon being the most abundant. It is estimated that king (chinook), coho, pink and sockeye (red) salmon follow in order of abundance.

Chum salmon are found throughout the Yukon River drainage. Summer and fall chum are the two distinct major runs of chum salmon entering the Yukon River. Summer chums are chiefly characterized by: earlier run timing (early June-mid July), rapid maturation in freshwater, smaller size (average 6-7 pounds), and larger population. Summer chums spawn primarily in run-off streams in the lower 500 miles of the drainage and in the Tanana River system (Figures 2, 3 and 4). Fall chums are mainly distinguished by: later run timing (mid July-early September), robust body shape and bright silvery appearance, larger size (average 7-8 pounds) and smaller population. Fall chums spawn in the upper portion of the drainage in streams which are spring fed, usually remaining ice-free during the winter. Major fall chum spawning areas include the Tanana, Chandalar and Porcupine River systems and also various streams in the Yukon Territory (Figures 4, 5 and 6).

King salmon of the Yukon River are the largest species ranging from 2-90 pounds and averaging 20-25 pounds (sampled from the commercial fishery, large mesh gill nets). Spawning populations of kings have been documented in the Archuelinguk River located approximately 80 miles from the mouth of the Yukon River and as far upstream as the headwaters of the drainage in the Yukon Territory of Canada, nearly 2,000 miles from the mouth (Figures 2-6). Kings enter the mouth of the Yukon River soon after breakup during late May-early June and continuing through mid-July.

Coho salmon enter the Yukon River during late July through mid-September, average about seven pounds in weight and spawn discontinuously throughout the drainage. The major coho spawning concentrations documented to date occur in the tributaries of the upper Tanana River drainage (Figure 4).

Pink salmon enter the lower river during late June-mid July, average approximately 3 pounds in weight and essentially spawn in the lower portion of the drainage (downstream of the village of Grayling) (Figure 2). Pinks have been caught in the main stem Yukon River upstream as far as Ruby (river mile 601).

Sockeye salmon are uncommon in the Yukon River and only a few individuals are caught each year. Sockeyes have been reported taken in the main Yukon River upstream to Rampart (mile 763).

Herring are found in Hooper Bay, Kokechik Bay and Scammon Bay (Figure 21). Spawning populations occur only in the Cape Romanzof area (Kokechik and Scammon Bays) where suitable spawning habitat is available (rocky beaches, Fucus seaweed). Spawning usually occurs from mid-May through mid-June.

Other species common to the freshwater and or coastal marine habitats include: sheefish, several species of whitefish, Arctic char, pike, lake trout, grayling, burbot, suckers, sculpins, blackfish, sticklebacks, lampreys, smelt, capelin, and several species of cods, flatfishes, crabs, shrimps and mollusks. Table 1 presents a list of fishes found in the Yukon area.

Water Quality

Water quality and spawning habitats in the area have been largely preserved in their original condition. Pollution, logging, dam construction and mining activities, except in a few locations, have been to date minimal or nonexistent. It remains to be seen what impact recent oil development activity will have on water quality and fishery resources in the area.

District Boundaries

Commercial salmon fishing is allowed along 1,200 miles of the mainstem Yukon River and the lower 200 miles of the Tanana River. The present district boundaries were established in 1961 and redefined in 1962, 1974 and 1978. The commercial fishing area is divided into six districts for management and regulatory purposes (Figure 7). The Lower Yukon area includes the coastal waters of the area and that portion of the drainage from the mouth to Old Paradise Village, river mile 301 (lower three districts). The Upper Yukon area is that portion of the drainage upstream of Old Paradise Village to the U.S./Canada Border including the Tanana River (upper three districts). The districts are further subdivided into 10 subdistricts and 25 statistical areas for management purposes. Figures 8, 9, and 10 show the lower three districts statistical area charts. Figures 11, 12, 13, and 14 show the upper three districts statistical area charts. Yukon River mileages are listed in Table 2.

Commercial Salmon Fishery History and Description

Historical Catch Trends and Status of Stocks

The first recorded commercial salmon harvest in the drainage dates back to 1903 when 70,000 pounds of king and chum salmon were taken in the Yukon Territory, Canada. A small commercial fishery for these species still exists in Yukon Territory, primarily in Dawson.

The first recorded commercial salmon harvest in Alaska was in 1918 when Carlisle Packing Company operated a floating cannery at Andreafsky (now St. Mary's). Relatively large catches of king, coho and chum salmon were made during the first four years of this fishery (Appendix Table 1). Since restrictions were placed only on commercial fishing inside the river's mouth, a majority of the catch was made in "outside" waters. Because of the existence of a large upriver subsistence fishery, the early commercial fishery

met opposition and was closed completely during 1925-1931. Commercial fishing for king salmon was resumed at a much lower level in 1932, and this species has been taken commercially each year since then. Only king salmon were harvested on a sustained basis prior to statehood (1959). During the period 1918-1959 king salmon commercial catches averaged approximately 30,000 fish annually. Since 1921, commercial catches of chum and/or coho salmon have been made during 1952-54, 1956 and since 1961.

Since the 1950's commercial salmon fishing has been permitted only upstream from the mouth of the Yukon River and in the vicinity of Black River. During the 1954-1960 period, a 65,000 king salmon quota was in effect for the river. Of this total, not more than 50,000 could be taken below the mouth of the Anuk River, 10,000 in the area between the mouths of the Anuk and Anvik Rivers and 5,000 upstream from the Anvik River. During these years, fishing was allowed for five and one-half days a week until specific quotas were obtained.

Under new regulations established by the Department in 1961, the annual king salmon commercial harvest for the entire area averaged 104,371 for the period 1961-1970. This average compared to 63,023 for the previous period, 1952-1960, represents an increase of 66 percent (Appendix Table 1). During the period 1971-1976 catches declined, averaging 88,169 fish annually because of below average runs and regulatory restrictions.

In 1975 the king salmon commercial catch of 63,838 was the smallest since 1960. During the same period (since 1960) commercial fishing effort increased substantially. Restrictions placed on the commercial fishery during the 1970's have generally resulted in improved escapements compared to the 1963-69 period. Above average escapements occurred in 1971 and 1977-81.

Since 1977, due to above-average runs, commercial catches have increased, averaging 129,594 fish annually (1977-1983). The greatest catch ever made in the area was 158,018 king salmon in 1981.

In recent years the decline of the Yukon River king salmon is believed to be partially attributed to the Japanese high seas mothership fishery. The high seas king salmon catches, taken incidentally to more numerous other species, averaged 233,000 fish annually during the period 1960-1977. A peak catch of 554,000 kings as taken in this fishery in 1969 (Appendix Table 31). In some years the Japanese catch has exceeded the total western Alaskan catch (subsistence and commercial). Most of the high seas king salmon catch is composed of immature four year old fish which normally return as six-year-olds, two years later. Based on tagging and scale analysis studies it is estimated that in excess of 80% of the Japanese king salmon catches were of western Alaskan origin (Yukon, Kuskokwim, and Bristol Bay stocks).

The I.N.P.F.C. Treaty was renegotiated in 1977 to afford increased protection for western Alaska salmon stocks. Japanese mothership king salmon catches were 105,000 and 126,000 in 1978 and 1979, respectively. However, in 1980 a record 704,000 kings were taken in the mothership fishery (Appendix Table 31). The large 1980 catch represented an economic loss to western Alaskan fishermen. Following complaints from western Alaska fishermen groups regarding the very large 1980 high seas catch, the Japanese voluntarily agreed to reduce their mothership catch. Reported high seas catches were at reduced levels in 1981 (88,000 kings), 1982 (107,000), 1983 (87,000) and 1984

(82,000).

Also, western Alaskan kings are taken incidentally to the foreign groundfish trawl fishery (1979-83 average catch of 60,000 fish). In addition the Japanese landbased drift gillnet fishery harvests 171,000 kings annually (1979-83 average) but the degree of western Alaskan interceptions is unknown.

Since statehood the Yukon River commercial chum salmon fishery has steadily developed especially during the 1970's. During the period 1961-1965 commercial catches averaged 31,850 while during the same period subsistence chum catches averaged 400,874. As the subsistence fishery declined and regulations were relaxed, coupled with the expansion of the fall chum commercial fishery, the catches increased, averaging 145,295 during 1966-1970. The development of the summer chum fishery and expansion of the upriver commercial fishery resulted in commercial chum catches averaging 874,356 during the period 1971-1983. The largest chum salmon catch in the history of the Yukon River commercial fishery occurred in 1981 when 1,473,389 fish were taken (Appendix Tables 1 and 2).

Prior to the mid-1960's summer chum salmon were used primarily for subsistence, mostly for sled dog food. As the snow machine replaced the dog sled, subsistence fishing for summer chums declined. Beginning in 1967, commercial fishing restrictions regarding summer chums have been liberalized as the dependence for subsistence declined. The Yukon River summer chum salmon commercial harvest has increased sharply as a result of regulation changes (e.g. mesh size specifications and earlier openings of the fishing season), increased fishing effort (including expansion of the upper Yukon fishery), the availability of processing and tendering facilities, higher prices paid to fishermen, the development of Japanese markets, and the occurrence of very large runs in recent years. In 1967 only 11,000 summer chums were taken commercially while in 1978 a record 1,052,226 fish were harvested (Appendix Table 13). Since the recent development of the fishery catches have averaged 743,935 annually (1974-1983). The majority of the harvest takes place in districts 1,2 and 4.

The major summer chum salmon spawning tributaries include the Andreafsky and Anvik Rivers and several others upstream to and including those of the Koyukuk River drainage. Department tag and recovery population estimates indicated total runs of 3.2 and 1.6 million fish in 1970 and 1971, respectively. In 1975 the total Yukon River run was estimated in excess of 3.5 million fish based on commercial and subsistence catch documentation and aerial survey estimates. In 1981, the Yukon River summer run was estimated in excess of 5.6 million fish. In the Anvik River an escapement of over 1 million summer chums was estimated in 1975 and 1981. Overall, Yukon River summer chum escapements have been good in recent years.

The commercial fishery for fall chum salmon in the Yukon River began in the early 1960's; however, the fishery has only recently expanded (since 1969). During the 1961-1968 period, catches averaged 41,378 annually and since 1969 (1969-1983) catches have averaged 251,795. The recent development of the fall chum fishery is also reflected by corresponding increases in fishing effort and processing facilities. Because of their good quality (bright, silvery appearance, large size, robust body shape and high oil content), which is related to their destination to spawning areas in the upper portion of the

drainage, fall chums are in great demand and are harvested in all fishing districts. The majority of the fall chum salmon commercial catches are taken in the lower three districts (Appendix Table 13). The largest fall chum catch occurred in 1981 when 466,451 fish were harvested.

Fall chums are of less importance for subsistence than summer chums throughout the Yukon River drainage except in that portion of the drainage upstream of the mouth of the Koyukuk River where it is estimated that fall chums comprise 60-75% of the total subsistence harvest.

There is evidence that the early run (late July-early August) of fall chums are bound for the Porcupine River system and Yukon Territory streams. The late run of fall chums (mid-August-early September) are believed destined primarily for the Tanana River.

Run magnitudes, based on comparative catch data and limited escapement data, have fluctuated sharply depending on the brood year strength. Large runs were generally experienced in 1971, 1975, 1979, and 1981 while small runs occurred in 1973, 1976, 1980 and 1982. Upper Tanana River drainage escapements in general appear more stable and experience less fluctuation than the Porcupine River and Toklat River systems. For example, aerial survey escapement estimates in the Fishing Branch River (Porcupine River drainage) have ranged from 78,600 (1975) to 5,600 (1984) and the Toklat River (upper area) have ranged from 96,600 (1979) to 3,000 (1982).

The Department will maintain an overall guideline harvest range of 145,500-320,500 (233,000 midpoint) of fall chum salmon until future returns from current levels of harvest can be evaluated. The Board of Fisheries at its December, 1978 meeting replaced the previous quota system with the more flexible guideline harvest range concept. In 1974 the Alaska Board of Fish and Game established quotas of 200,000 chum salmon for the lower three districts (combined) and 50,000 combined chum and coho salmon for the upper three districts.

Yukon River chums, in addition to other western Alaska stocks, are intercepted by the U.S. South Unimak - Shumagin Islands commercial fishery in June as demonstrated by tagging studies. Annual (1970-1979) catches of this interception fishery average 277,000 chums. However in recent years catches have increased sharply: 1980 (528,000), 1981 (575,000), 1982 (1,015,000) and 1983 (756,000).

Coho salmon runs of the Yukon River are of lesser magnitude than fall chum salmon and are taken incidental to the commercial fishery for fall chums. Coho catches have averaged 20,053 fish during the period 1971-1983 (Appendix Table 2).

Commercial salmon catches by district and statistical area since 1961 are presented in Appendix Tables 2, 5-6, and 11-13.

The relatively recent development and expansion of the commercial salmon fishery has enabled many area residents to obtain a cash income. In recent years (1977-1983) fishermen and processing plant employees have received approximately eight million dollars annually (Appendix Table 19). Other forms of employment are often sporadic or nonexistent in this area. The vast

majority of all commercial fishermen are Eskimo and Athabascan Indian residents of the Yukon River drainage.

Most fishermen operate small outboard powered skiffs of 18 to 20 feet in length and do not use gill net rollers, power reels, etc. of any type. In the Yukon area set gill nets, drift gill nets and fishwheels are legal forms of commercial salmon fishing gear.

The majority of the salmon catch is presently processed as a fresh/frozen product in contrast to earlier years when canning and salting were of greater importance (Appendix Table 17). Salmon are processed at shore-based or floating operations and also transported via aircraft outside the area for processing. In the upper Yukon area production of salmon roe (purchased directly from fishermen) has increased in recent years (Appendix Table 18). In recent years, 1979-83, the wholesale value of the pack has averaged 19.3 million dollars.

Lower Yukon Area

The lower Yukon area consists of three districts: District 1 (mouth to Anuk River including Black River), District 2 (Anuk River to Toklik), and District 3 (Toklik to Old Paradise Village) (Figures 8-10).

Since the onset of the commercial salmon fishing in 1918, the majority of the Yukon River harvest has occurred in the lower river area (primarily districts 1 and 2) where fishing and processing effort is concentrated and fish quality is higher. Although the summer chum fishery has developed in recent years, the lower fishery during June and early July is still primarily managed for the intensively fished king salmon run.

Beginning in 1961, when king salmon catch quotas were eliminated for districts 1 and 2, these fisheries have been regulated by scheduled weekly fishing periods. The "king salmon season" (unrestricted mesh size) in these districts opens by emergency order between June 5-15 and is closed by emergency order during late June or early July depending on timing and magnitude of the runs. Fishing time during the king salmon season was allowed for four days a week during 1961-1967, but was reduced to 3-1/2 days a week beginning in 1968, to 3 days a week in 1974 and to 2-1/2 days a week in 1977. Effective for 1982, fishing periods during the king salmon season in districts 1 and 2 were established by emergency order (2 days a week). This was done to provide for adequate king salmon escapements in response to increasing fishing effort and efficiency.

Commercial fishing effort had increased sharply since 1961. License registration for set gill nets more than doubled while drift gill net gear tripled during the period 1961-1975. Set gill nets are commonly used near the river mouth, but drift gill nets are the predominant gear type. The best measurement of effort is the number of actual fishing vessels operated each year since fishermen commonly used more than one type of gear during the season (Appendix Table 4). With the advent of the Limited Entry program in 1976, fishing effort in terms of the number of participants has apparently stabilized but efficiency has increased. In 1984 a total of 703 CFEC gill net permits were issued (Appendix Table 3).

Since 1971 districts 1 and 2 commercial king salmon catches have averaged

101,668 fish annually (1971-1983) (Appendix Table 2). In 1981 the Board of Fisheries established a 60,000-120,000 king salmon guideline harvest range for districts 1 and 2 combined.

In district 3 the commercial salmon fishing season also opens by emergency order between June 5-15 and fishing is allowed three days a week until the 1,800-2,200 king salmon guideline harvest range is taken (Appendix Table 10).

Excluding the 1920's, sale of other species of salmon captured during the king salmon season in the area of the present lower two districts has been allowed only since 1967. The incidental catch of summer chum salmon was limited during the king salmon season as fishermen could use only gill nets of (eight inch or greater) stretched mesh. However, beginning in 1970, each fisherman could substitute up to 50 fathoms of gill net of any mesh size in districts 1 and 2. In 1973 all mesh size restrictions were lifted during the king salmon season (from June 1 through early July) in order to allow greater opportunity to use small mesh nets which are selective toward the more abundant chums. However, the majority of fishermen continue to fish the larger mesh king salmon nets during the king salmon season. Comparative lower Yukon area king and summer chum salmon catches by mesh size are presented in Appendix Table 7.

Since 1961 the commercial fishing season in the lower Yukon districts has been reopened following the closure of the king salmon season. During the second season primarily chum and coho salmon are taken. Prior to 1973 the mid-season closure during most of July and often late June was initially for the purpose of insuring an adequate supply of summer chum salmon for upriver subsistence fishermen. This closure also provided protection for the late stages of the king salmon run.

Subsistence fishing for summer chums has declined in recent years and the Department has liberalized regulations to provide for an earlier reopening in July to harvest the surplus. Concurrent with an early reopening of the season, a regulation was promulgated in 1973 specifying gill nets of only 6-inch mesh or less may be fished after a specified date in early July in districts 1 and 2. Use of small mesh gill nets in early July allowed a greater harvest of summer chums and also minimized the king salmon catch (Appendix Table 7). Beginning with the 1976 fishing season a regulation was promulgated which established a flexible range of dates from June 27 to July 5 in districts 1 and 2 (and July 5-15 in District 3) after which only gill nets of 6-inch or less mesh gill nets may be used.

In recent years (1974-83) the lower Yukon area commercial summer chum salmon catch has averaged 584,045 fish annually (Appendix Table 13).

Fall chum salmon have been harvested in the lower Yukon area beginning in 1961. Since expansion of the fishery in 1969 lower Yukon area fall chum catches have averaged 204,033 fish annually (1969-83) (Appendix Table 13).

In 1974 a 200,000 fall chum salmon quota (after mid-July) was implemented for the combined lower three districts. Also, fishing time was reduced from four to three days a week in districts 1 and 2. These actions were necessary to stabilize the catch in view of increased fishing effort and to provide for a harvest in the newly established upper Yukon area fishery. In 1979 fishing time was reduced further to two days a week and the 200,000 quota was replaced

by a flexible guideline harvest range of 120,000-220,000 chum salmon.

Effective for 1983 fishing time was regulated by emergency order in districts 1, 2, and 3. Two-12 hour fishing periods per week were established by emergency order in districts 1 and 2 except that fishing time remained at two days a week for set net fishermen in the lower portion of district 1 (Figure 15). Fishing time in district 3 was reduced from 3 to 2 days a week. Also a one week season closure in districts 1, 2 and 3 during late July was established.

The harvest of coho salmon in the lower Yukon area is dependent upon the duration of the fishing season (usually related to when the chum salmon guideline harvest range is taken). Cohos peak during mid to late August. Lower Yukon coho salmon catches since 1971 have averaged 17,826 annually (1971-83) (Appendix Table 2).

Nearly all of the lower Yukon River salmon catch is destined for markets as a fresh-frozen product. Freezer ships and barges are located in the vicinity of Emmonak. Fresh salmon is transported by aircraft from St. Marys, Marshall, Russian Mission and Paimuit-Holy Cross for further processing. A hard salting operation is located at Black River and a floating cannery is located near Emmonak.

Upper Yukon Area

For regulatory and administrative purposes, the upper Yukon area is divided into three districts: District 4 extends from Old Paradise Village upstream approximately 360 miles to the mouth of Illinois Creek near Kallands; District 5, from the mouth of Illinois Creek upstream to the U.S./Canadian border (approximately 550 miles), and District 6, the Tanana River drainage, of which the lower 225 miles is open to commercial fishing (Figures 11-14).

Prior to 1974 the upper Yukon area (above the confluence of the Koyukuk River) was designated as a single district (District 4). By regulation, commercial fishing was allowed 7 days per week until the quotas of 2,000 king salmon and 2,000 chum and coho salmon (combined) were taken. These quotas were established for the purpose of allowing a very limited commercial utilization which had occurred for many years.

In recent years, however, the upriver commercial fishery has expanded. Fishing effort nearly doubled from 1972 to 1973, and processors developed outside markets, due in part to the steadily increasing price of salmon the market was experiencing. In recognition of the developing upriver commercial fishery and the desire of fishermen in the upper portion of the drainage for increased participation, the Board of Fish and Game adopted several major regulation changes prior to the 1974 fishing season. These new regulations provided for substantial increases in the upriver catches, reduced gear conflicts and, at the same time, made provisions for allowing escapement needs to be met:

1. District 4 was reduced in size and redefined as that portion of the Yukon River drainage from the mouth of the Bonasila River to the mouth of Illinois Creek at Kallands.

2. Two new districts were added: Districts 5 and 6.

3. Salmon catch quotas were established for the upper Yukon area as follows:

   a. District 4: 1,000 king salmon and after August 15, 10,000 chum and coho salmon combined for the area.

   b. District 5: 3,000 king salmon and after August 15, 25,000 chum and coho salmon combined for the area.

   c. District 6: 1,000 king salmon and after August 15, 15,000 chum and coho salmon combined for the area.

4. In districts 4, 5 and 6 the weekly commercial fishing period was reduced from 7 to 5 days per week.

Since that time the Board of Fisheries has enacted a number of major regulation changes in the upper Yukon area:

1. Weekly fishing periods were reduced in all districts (except the upper portion of district 5) from 5 to 4 days per week, and split-period fishing schedules were established.

2. King salmon and fall chum and coho salmon quotas were replaced by flexible guideline harvest ranges: District 4: 2,250-2,850 king salmon and 10,000-40,000 fall chum and coho salmon; District 5: 2,700-3,300 king salmon and 10,000-40,000 fall chum and coho salmon; and District 6: 600-800 king salmon and 5,500-20,500 fall chum and coho salmon.

3. District 4 boundaries were redefined and new subdistricts created to allow for stock-specific management of fall chum and coho salmon.

4. New subdistricts within district 5 were created to achieve better balanced harvests and escapements.

Because of the common origin of salmon stocks which are harvested throughout the length of the Yukon River, the commercial and subsistence fisheries in the middle and upper river districts cannot be considered separate or distinct from those in the lower portion of the drainage. They do, however, differ in several important respects.

For reasons of relative abundance, flesh quality, and the existing regulation structure, the second, or fall run, of chum salmon is the target species of the commercial fishery in districts 5 and 6.

The summer run of chum salmon is of paramount importance in District 4 and comprises approximately 55% of the total upriver commercial harvest (Table 4). Unlike the lower river fisheries, relatively few summer chum salmon are taken commercially in districts 5 and 6. Because of their low abundance, advanced state of sexual maturity, and consequent poor quality, the flesh is difficult to market; however, roe quality of summer chums is judged to be excellent.

Tradition, local fishing conditions, efficiency, and relative ease of

operation combine to make fishwheels the primary type of gear for harvesting chum salmon and account for roughly 95% of the commercial harvest of that species in the upper Yukon area. In contrast, the lower river fishery focuses primarily on king salmon, with only recent emphasis on expanding the commercial fishery for other species of salmon. Local river conditions and regulations dictate the exclusive use of set and drift gillnets in the lower Yukon area.

The last major difference between the two fisheries is their relative size, both in numbers of fishermen and catch. Because of the developing nature of the commercial fishery in districts 4, 5 and 6 and the absence of major summer chum salmon-producing streams in the upper portion of the drainage, the commercial salmon harvest has averaged approximately 25% of the total area harvest in recent years. During the recent 5-year period, the upper Yukon districts have had an average of 181 participating fishermen or approximately 21% of the Yukon area total (Appendix Table 4). Final implementation of the Limited Entry Program is expected to stabilize year-to-year fishing effort.

King salmon are of lesser importance to the commercial fisheries in the three upper districts; the total harvest guideline range allocated by the Board of Fisheries is 5,550 to 6,950 kings (Appendix Table 10). In most years the guideline harvest range is not met in District 4, as most fishermen choose to retain king salmon for subsistence use. In the Tanana River (district 6), the upper end of the king salmon guideline harvest range is normally taken by late July, and in most years the season remains closed until early to mid-September. A relatively intense fishery for king salmon has developed in the lower portion of District 5, and considerable (gillnet) effort occurs during July.

The majority of commercially caught king salmon are transported to Fairbanks and other population centers for primary processing and sold to wholesalers outside the state as a fresh-frozen product. The balance of the king salmon catch is sold to local supermarkets and restaurants. Most fall chum salmon harvested in these districts are tendered by boat or single-engine aircraft from collection points along the river and are then trucked or flown to processing plants in Manley, Galena, or Nenana for processing. A portion of the fall chum harvest is marketed as a fresh-frozen product, and small quantities of king and fall chum salmon are smoke-cured and sold as "strips", a local specialty product. In addition, limited quantities of chum and coho salmon taken commercially are dried and sold as dog food.

The upper Yukon commercial fishery developed at a time (mid to late 1970's) when salmon runs on the west coast were generally depressed. For this reason, processors were able to overcome quality problems and transportation costs and find ready markets for their product. In recent years, however, salmon runs throughout Alaska have rebounded, and processors are now having to compete with higher quality reds and chums. As a result, prices paid for upriver chums have not kept pace with inflation, and in some areas (particularly subdistrict 4-A) markets have existed only for roe or in some cases higher quality male chums in recent years.

Subsistence Utilization

There are approximately 10,000-15,000 Eskimo and Athabascan Indian people in the area, the majority of whom reside in excess of 45 small villages scattered

along the coast and major river systems. Nearly all of these native people are dependent to varying degrees on fish and game resources for their livelihood.

Subsistence fishermen operate gill nets largely in the main rivers and, to a lesser extent, in the coastal marine waters, capturing mainly salmon, whitefish and sheefish. Fishwheels take considerable numbers of salmon in the upper Yukon and Tanana rivers. Beach seines are occasionally used near spawning grounds to catch schooling or spawning salmon or other species of fish. Traps and fish weirs of various designs are also used, mainly in the fall and winter months, to capture whitefish, blackfish and burbot. Sheefish, pike, char and "tomcod" (saffron cod) are frequently taken through the ice by hand lines. Dip nets are used in late May-early June to take smelt in the delta area and in late October-early November to take lamprey in the main Yukon River downstream of Grayling.

There is usually little intentional wastage of the fish taken for subsistence purposes. The major portion is sun dried or smoked for later consumption while the head and viscera may be fed to sled dogs.

Comprehensive annual surveys of the Yukon River subsistence salmon fishery were initiated by the Department in 1961. Data obtained cannot be easily compared with that of earlier years which was often incomplete or lacking for many years. Methods and coverage of these earlier surveys were not documented and their accuracy cannot be determined. However, there are records indicating that in excess of one million salmon (mainly chums) were taken for subsistence in some years during the early 1900's and even as late as 1940 (Appendix Table 1).

Catch cal. not used in 84

The Department's subsistence fishery surveys (personal interview, catch calendar, and/or catch questionnaires) obtain catch, effort and other associated data from villages and fish camps along the main river in Alaska, including portions of the Tanana River and Chandalar River. Catch data from the Canadian portion of the drainage has been supplied by personnel of Government of Canada - Department of Fisheries and Oceans (Whitehorse office) since 1962. In recent years, the Department has conducted surveys of Koyukuk River villages.

About 1930 the airplane began replacing the sled dog as mail and supply carrier, starting the gradual decline of the subsistence salmon fishery. This decline has been accelerated in the past years as increased welfare payments and employment opportunities, including commercial fishing activities, have become available to the native people. The reduction in subsistence fishing is not necessarily related to fish abundance, but mainly reflects decreases in effort and dependence due to a changing way of life.

To illustrate changes in effort, there were 393 fishwheels operated on the Yukon River in 1918. Fishwheels are very effective if fished properly. A single wheel is capable of taking from 20,000 chum salmon annually. The number of fishwheels recorded during the 1970 survey was an all-time low of 56, a 67% decrease since 1961. However, because of the expansion of the upper Yukon commercial fishery, beginning in 1973, the amount of fishwheel gear used for subsistence has sharply increased (207 units in 1981).

Another very important factor tending to affect subsistence fishing effort during recent years is the increasing use of snow vehicles which may be replacing sled dogs at a faster rate than did the airplane. Since considerable numbers of salmon and other fish are fed to sled dogs, fewer fish will be required for subsistence purposes as the canine population declines. In 1961 each fishing family kept an average of 7.7 sled dogs while in 1972 this figure was down to 3.8 sled dogs. However, due to the renewed interest in sled dog racing, the number of dogs per family increased to 6.8 in 1981. The number of snowmachines owned by fishing families was documented beginning with the 1967 season, when the average number of snowmachines per family was 0.4. Since then the number of snowmachines has steadily increased and in recent years the average number of snowmachines has exceeded 1.1 per family (Appendix Table 22).

Reflecting the above changes in effort and dependency, the subsistence salmon catch has substantially decreased since the early 1960's. Comparing catches from villages surveyed each year ("equivalent catches") the chum salmon harvest averaged 399,001 during 1961-1965. During the period 1966-1973 catches averaged 191,507, a decrease of 54 percent (Appendix Table 22). However, during 1974-1983, the subsistence chum salmon catches, utilized mainly for dog food, have increased, averaging 319,242. This increase can be attributed to above-average size runs, especially summer chums, subsistence roe sales and increasing numbers of recreational sled dog teams.

Subsistence catches of king salmon, which are utilized mainly for human consumption, have remained relatively constant during the period 1961-1982, generally averaging 20-30,000 per year.

The recent evolution of the upper Yukon and Tanana River subsistence fishery has also differed from that in the lower Yukon. Possibly because of the much older, larger and more sophisticated nature of the commercial fishery in the Yukon Delta to Holy Cross area, a more pronounced dependence on a cash income has developed. In contrast, the recent development and limited nature of the commercial fishery in the upper Yukon and the absence of other employment opportunities may have retarded the transition to a cash-based economy. For these reasons, it is speculated that residents of Yukon River villages in the Interior retain a greater degree of dependence on the salmon resources for subsistence purposes. This is illustrated by the catch data presented in Appendix Tables 23 and 24 which show that the majority of the subsistence king and chum salmon catches are taken in upper Yukon River villages.

It should be noted that the practice of keeping sled dogs is much more common in the upper Yukon than in the delta area and is considered a major factor affecting fishing effort. It is also likely that the sale of subsistence-caught salmon roe (legal from 1974-1977) increased subsistence chum salmon catches above normal food and domestic use requirements during that period. Subsistence roe sales were not considered a significant factor affecting domestic use harvests in the twelve major villages in the lower Yukon River area.

Subsistence fisheries which target on non-salmon species such as pike, sheefish and whitefish are inadequately documented and their overall significance is not well known. It is thought, however, that residents of the upper Yukon area are much less dependent on these miscellaneous species than are their downriver counterparts.

Escapement Enumeration

A vital link in responsible management of the Yukon River salmon fisheries includes determination of annual salmon spawning escapements. Knowledge of escapements possess several management applications, such as:

- provide information for determining optimum escapement levels or goals for selected spawning areas or management units.

- provide annual escapement trends for evaluation of the effectiveness of the management program and, in turn, the basis for proposing regulatory changes and management strategies.

- provide information for use in forecasting returns.

The Yukon River drainage is too extensive for complete comprehensive escapement coverage during any given season. Consequently, low-level aerial surveys from single-engine, fixed-wing aircraft are the primary method used to obtain escapement information. However, comprehensive enumeration studies, e.g., by intensified ground surveys, or counting towers, weirs, and hydroacoustic projects, are also conducted. Regardless of the method utilized, the overall objective of escapement enumeration in the Yukon Management Area is to determine abundance (or often indices of relative abundance), timing, and distribution of spawning salmon populations throughout the drainage; realizing specific objectives may vary by individual project.

There are both advantages and disadvantages related to each type of enumeration method. The more comprehensive studies tend to provide estimates of total salmon escapements and are often less dependent upon weather and water conditions. However, due to costs associated with manning and operating such enumeration projects as intensified ground surveys, counting towers and hydroacoustic assessment, they have numbered relatively few and been restricted to selected spawning streams, e.g., the Andreafsky, Anvik, Melozitna, Sheenjek, Salcha, and Delta rivers in Alaska and the Fishing Branch River and Whitehorse fishway in Canada.

Perhaps the greatest advantage of aerial surveys, as it pertains to the Yukon River drainage (330,000 square miles), is the cost-effectiveness of obtaining escapement information throughout an extremely vast area, most of which is remote. Another advantage to aerial surveillance is that real or potential habitat-related problems arising from natural or man-induced causes can be readily identified. Among the disadvantages are that results may be highly variable if non-standardized procedures are used.

Variability in accuracy is dependent upon a number of factors such as weather and water conditions (turbidity) timing of surveys with respect to peak spawning, type of aircraft, survey altitude, experience of both pilot and observer, and species of salmon being enumerated. It is generally recognized that aerial estimates are lower than actual stream abundance due to these factors. Further, peak spawning abundance measured by aerial survey methods is significantly lower than total season abundance due to the die-off of early spawners and arrival of late fish. Also, aerial estimates in a given stream may demonstate a wide range in the proportion of fish being enumerated from

year to year. Peak aerial counts, however, can serve either as indices of relative abundance for examination of annual trends in escapement or estimation of total escapement from base year data or established expansion factors, or they may be used to apportion tributary spawning distribution to a mainstem total escapement estimate obtained from sonar or tower counts.

Aerial escapement estimates are made of as many spawning streams as possible within the confines of fiscal, manpower, and weather restraints. Representative selected spawning streams or "index areas" have been identified and receive highest priority. Index areas have been designated due to their importance as spawning areas and for use in annual comparison with other unsurveyed streams in the general area. Escapement estimates of index streams not only provide yearly escapement trends but also allow for post-season evaluation of management strategies. Preliminary escapement objectives which represent the number of spawners considered necessary to maintain the reproductive potential of each stock are presented in Table 16. Where sufficient data are available "minimum" and optimum" escapement levels have been determined. The minimum escapement level represents the least number of spawners required to meet the escapement objective, whereas, the optimum level represents the desired number of spawners to produce good returns consistent with the useable amount of spawning area.

Management

The overall objective of the Yukon area research and management programs is to manage the various salmon runs on an optimum sustained yield basis. The commercial fishery is regulated on the assumption that a harvestable surplus, after providing for spawning and subsistence utilization requirements, is available. Subsistence fishing has been designated by the Alaska State Legislature and the Board of Fisheries as the highest priority use, although, where the dependence upon subsistence fishing has declined, the Department has liberalized regulations to allow development of commercial fisheries.

Management is made difficult by the complexity of the salmon runs and fisheries in addition to the huge size of the drainage. Since most of the fisheries only became developed or expanded in recent years, there is a lack of adequate comparative catch and return data on which to evaluate the long term effects of increased commercial harvests. In contrast to other management areas in the state where intensive research studies have been conducted for many years, forecasts of actual numbers of salmon returning to the Yukon River system are not available. In addition, due to the character of the fishery (e.g. allocation problems between upriver and downriver fishermen), the salmon runs and of the Yukon River itself, effective management is restricted. For example, the various fisheries scattered over 1,400 river miles are harvesting mixed stocks usually several weeks and hundreds of miles from their spawning grounds. The Yukon commercial fishery is essentially a "cape fishery" (fishing on mixed stocks) and as a result some tributary populations may be under or overharvested in relation to their actual abundance. In a mixed stock fishery, where it is impossible to manage each stock separately, small spawning populations may be reduced to very low levels or even eliminated.

Due to the turbid water conditions of the main river (and some of its tributaries) and the vast size of the Yukon River drainage, accurate in-season assessment of the escapement immediately past the intensive downriver fishery

is very difficult with the present available technology. Also, in-season management of the runs (often mixed species) is hampered by the variable run timing and pattern of entry into the lower river fishery which causes difficulties when attempting to analyze catch data. The usefulness of catch data analysis is also limited by recent changes in the commercial fishery. For example, some fishermen use small mesh gillnets (5 1/2 - 6 inch) during the king salmon season to harvest the larger run of summer chums in contrast to earlier years when 8-8 1/2 inch mesh gillnets were exclusively used. In addition the fishery has become more efficient (e.g. increased mobility, more fishermen operating drift gillnets, improved communications, etc.). As a result, catch data in recent years may not be comparable to earlier years.

It has been a policy of the Alaska Department of Fish and Game to maintain current levels of commercial utilization in order to establish definite trends in subsistence utilization and to obtain more information on the relationship between the salmon catch and return. It should be pointed out that increases in commercial fishing effort and efficiency are expected in some districts and may balance any immediate decline in subsistence utilization with the result that present regulations will be maintained or even made more restrictive. As a result of the above factors the management of the Yukon River salmon runs must take a conservative approach.

The basic regulations that govern the commercial salmon harvest in the area are fishing season openings or closures, scheduled weekly fishing periods, mesh size restrictions and/or guideline harvest ranges. Commercial fishing is normally allowed for a total of from one to four days a week during the open season which depends on the district and species involved. Season guideline harvest ranges are utilized for the king and fall chum salmon fisheries throughout the area. Fishing effort usually occurs during the entire run and not just during any particular segment of the run.

During the fishing season, if it becomes apparent that the run is substantially smaller or larger (based on analysis of comparative commercial and/or test fishing data) than needed for escapement and subsistence requirements, then the commercial harvest rates can be adjusted through the use of the emergency order or, less frequently, emergency regulation authority. A list of emergency orders dealing with changes in fishing time and other regulations issued for the Yukon area in 1984 is presented in Attachment 1. Also presented are 1984 regulation changes promulgated by the Board of Fisheries during its February, 1984 meeting (Attachment 2).

New research and management projects have been initiated and other programs are planned, contingent on additional funding, for obtaining the biological information necessary for better management of the salmon runs. In recent years the following projects were established:

1. Test Fishing. Expansion of program at Middle and North Mouths (set gillnets) in the delta area and new fishwheel sites were established near Kaltag (summer chums) and Ruby (fall chums and cohos).

2. Side Scan Sonar. Projects were initiated to enumerate escapements in East Fork Andreafsky River (summer chums) and Sheenjek River (fall chums).

3. Main River Sonar. BioSonics and fan scan sonar were operated in the main Yukon River near Pilot Station to determine the feasibility of enumerating salmon in order to obtain in-season estimates of abundance.

4. Stock Separation Biology. Catch and escapement scale samples of king salmon were collected throughout the drainage for the purpose of identifying major stocks by scale analysis techniques.

5. Data Processing of Commercial Fishery Statistics. Lower Yukon River commercial catch and effort data analyses from fish tickets, obtained by a new microcomputer at the Emmonak field office, was utilized for in-season management purposes. Also, a separate program under contract to Old Dominion University was initiated to quantify migratory run timing by microcomputer analysis of commercial and test fishing data.

6. Aerial Surveys of Salmon Spawning Streams. Aerial surveys were expanded to develop additional escapement index areas. King salmon spawning surveys were intensified in the Yukon Territory (Canada).

The Division of Commercial Fisheries of the Alaska Department of Fish and Game is responsible for the management of commercial and subsistence fisheries in the state. The permanent staff assigned full time to the Yukon area includes six positions - two area management biologists, one assistant area management biologist and four research biologists. In addition approximately 30 seasonal employees are hired each season to assist the permanent staff in conducting various management and research studies. Also, the staff aids in the enforcement of regulations in cooperation with the Division of Fish and Wildlife Protection (Department of Public Safety).

Operating funds allocated for the Yukon area salmon management and research program from July 1, 1983 through June 30, 1984 were $410,200. An additional $19,100 were allocated to conduct herring studies at Cape Romanzof.

In addition to the salmon and herring management and research programs, the staff works to obtain information to determine the potential for commercial fisheries on under-utilized species such as whitefish.

A unique problem in the lower river area is the language/communication barrier. Many of the older native people cannot read or speak English. Therefore, the staff often uses translators when conducting the many public meetings that are annually held throughout the area. While it may normally take only half an hour or so to conduct a public meeting or hearing in English, it usually takes two to three times that long when Eskimo translators are used. To assist in education and information, a weekly fishery program and special field announcements are broadcast during the fishing season over radio stations KNOM and KICY in Nome, KYUK in Bethel and various radio stations in the Fairbanks area.

Special Studies

Attachment 3 lists special studies undertaken during 1984 and includes a summary of objectives, procedures and results for each.

Area Season Summary, 1984

In 1984 the Yukon River salmon runs were judged average in magnitude, was based on comparable catch and escapement data.

In 1984 there were 119,904 kings, 81,940 cohos, and 796,829 chums, totaling 998,673 salmon taken commercially. The harvest for all species combined was below the previous 5 year average (1979-1983) of 1,275,820 (Appendix Table 2). Tables 4 and 5 present 1984 commercial salmon catches by fishing season and statistical areas. Tables 7 through 12 present period catch data for each district. "Equivalent salmon" converted from roe sales are included in Tables 4-5 and 10-13 for the upper Yukon area.

In 1984 the commercial king salmon catch was below the previous five year average of 142,246. The 1984 data presented in this section does not include commercial catches by Canadian fishermen in the Yukon Territory (Appendix Table 1).

The 1984 commercial chum salmon catch was below the previous five year average of 1,113,555 fish. The harvest was composed of 558,597 summer and 208,232 fall chums (Appendix Table 13). The summer and fall chum salmon catch was below the previous five year average catch of 790,233 and 329,322, respectively.

In 1984 the commercial coho salmon catch was the largest on record and triple the previous five year average of 20,017 fish.

Subsistence harvests in 1984 in the Yukon area (excluding Yukon Territory) were estimated at 42,389 king and 454,165 chum and coho salmon combined.

In 1984 a total of 774 Commercial Fisheries Entry Commission (CFEC) gill net permits and 151 fishwheel permits were issued in the area. Table 6 shows the residency of all persons issued CFEC permits for 1984. Appendix Table 3 shows the number of CFEC permits issued since 1976. The actual number of commercial fishing vessels (fishermen) that made at least one salmon delivery during the season are shown in Appendix Table 4.

The vast majority of the salmon catch was processed primarily as a fresh/frozen product and to a lesser extent by canning and hard salting. Production of salmon roe totaled 468,224 pounds in 1984, including 238,090 pounds of salmon roe purchased from commercial fishermen in the upper Yukon area. Commercial salmon production data is presented in Appendix Tables 17 and 18. All buyers and processors operating in the Yukon area during 1984 are listed in Table 3.

Yukon area commercial fishermen received $5,689,000 for their catches in 1984. In addition an estimated $1,500,000 in wages was earned by processing plant employees and tenderboat operators. The first wholesale value of the 1984 pack was estimated at $14,223,000 (Appendix Table 19).

Average prices paid to fishermen and average salmon weights are presented in Appendix Tables 20 and 21, respectively.

Commercial Fishery, 1984

Lower Yukon Area

The 1984 lower Yukon area (districts 1, 2 and 3) commercial salmon catch totaled 874,241 fish which was comprised of 114,407 king, 686,677 chum (530,694 summer and 155,983 fall chums) and 73,157 coho salmon.

Fishing effort, in terms of the actual number of participating fishermen (gear permit holders), is presented in Appendix Table 4. In 1984 a total of 703 CFEC gillnet permits were issued for the lower Yukon area (Appendix Table 3). A total of 676 permit holders fished at least once in the lower three districts during 1984.

King Salmon: The timing of the king salmon migration in the lower Yukon was late as anticipated by the late break up of the river ice and cool April Nome air temperature. The lower river was generally free of ice by June 1. The first king salmon was reported caught on June 5 at Pitkas Point (mile 103) by a subsistence fisherman. The first king salmon caught in the Department's test fishing nets occurred on June 8 at Big Eddy (mile 24 South Mouth) and June 11 in the middle mouth. The first significant test fishing and subsistence catches occurred June 12 and increased sharply during the next few days in the delta area prior to the opening of the commercial fishery.

Based on monitoring of the subsistence and test fishing catches which indicated the early portion of the king run had passed through the lower river, the commercial fishing season was then opened by emergency order. In accordance with the Yukon Area Salmon Management Plan the fishing season in each district was opened on a staggered basis: June 18 in district 1, June 20 and June 29 in district 3. A fishing schedule of two-24 hour fishing periods per week was established in each district by emergency order.

Commercial and test fishing catch data indicated the king salmon run to be slightly above average in magnitude. The management plan provides for the mid-point of the 60,000 to 120,000 king salmon guideline harvest range for districts 1 and 2 combined to be taken if the run is of average magnitude. As of June 29 approximately 95,000 kings were harvested in districts 1 and 2 primarily with large mesh king salmon nets. The decision was made to close the "king salmon season" (fishing with unrestricted mesh gill nets) and to allow only gill nets of 6 inch or smaller mesh gill nets to be fished effectively July 1 in districts 1 and 2. It was anticipated that an additional 10-20,000 kings would be taken with 6 inch or smaller mesh gill nets. At the time of the closure district 1 had four fishing periods and district 2-three fishing periods, the least amount of fishing time ever during the king salmon season. A total of 16,912 kings was taken with 6" or smaller mesh gill nets in districts 1 and 2. The total season harvest of kings was 74,671 in district 1 and 36,697 in district 2. In district 3, which is managed under a 1,800 to 2,200 guideline harvest range, a total of 3,039 king salmon was taken.

Commercial catch per unit effort data for district 1 is presented in Appendix Tables 8 and 9.

The majority of the king salmon run entered the south mouth and middle mouth areas. Fishermen at Black River caught a record 13,549 kings which represented 21% of the district 1 catch during the king salmon season. Conversely, fishing was poor in the north mouth where only 739 kings were caught. The remainder of the district 1 catch was taken at middle mouth, south mouth and the Head of Passes-Ten Mile area.

The age composition of the commercial catch in district 1 during the king salmon season was approximately 1% 4 year olds, 21% 5 year olds, 62% 6 year olds and 16% 7 year olds.

Summer Chum Salmon: Similar to king salmon, the summer chum run was also late. The first summer chum was caught on June 8 in the Department's test net at Big Eddy. Test net catches increased very sharply thereafter averaging more than 200 per day in one single 5 1/2 inch 25 fathom net at Big Eddy from June 12-18, prior to the opening of the commercial fishing season in district 1. As in 1982, the summer chum run peaked in district 1 during the king salmon season. Due to poor market conditions processors discouraged fishermen from making deliveries or did not purchase summer chums in district 1 in order to process the more valuable kings. Some fishermen were catching up to 200 chums per drift with small mesh gear but in most cases were unable to sell their catch. Although the summer chum run was very strong, only 530,596 were taken in the lower Yukon area which was below the recent 5 year average of 678,167. The catch by district was: district 1 (292,466), district 2 (237,041) and district 3 (1,089). The majority (2/3) of the harvest in district 2 was taken after the switchover to gill nets of 6 inch or smaller mesh size on July 1. Fishing time during the "summer chum salmon season" (early July - mid-July) in districts 1 and 2 was two-24 hour periods a week. Due to lack of markets the fishing season for summer chums in district 3 was not reopened after the closure of the king salmon season. Commercial summer chum salmon catch and effort data is presented in Appendix Tables 13 and 14.

The 1984 summer chum salmon commercial catch in district 1 was composed of approximately 70% 4 year olds and 25% 5 year olds.

Fall Chum Salmon: The first fall chums were observed in the district commercial fishery during the period of July 9-10 when it was estimated that fall chums comprised 10% of the chum catch. The percentage of fall chums in the Big Eddy and Middle Mouth test net ctches increased steadily after mid-July and by July 25 essentially all were fall chums. Effective July 16 in district 1 any chums caught after that date are counted against the 120,000 to 220,000 fall chum guideline harvest range for districts 1, 2 and 3 combined. During the period July 16-17 a total of 19,627 chums (70% which were estimated to be fall chums based on catch sampling observations) was counted against the guideline harvest range.

In district 2 the effective date of the guideline harvest range date is July 19 and 9,091 chums were caught on that date. The fishing season was closed effective July 17 in district 1 and July 19 in district 2 to afford protection for the early fall chum run which are believed destined primarily for the Porcupine River and Yukon Territory streams. A total of 28,718 chums was caught toward the fall chum guideline harvest range in districts 1 and 2 when the season closed.

In accordance with the Yukon Area Salmon Management Plan and regulations adopted by the Board last year, the fall chum fishery in 1984 was closed 12 days (versus 8 days in 1983) during late July. The longer closure in 1984 was judged necessary because of below average run strength as indicated by test fishing catch data.

The commercial fishery season was reopened effective July 30 in district 1, August 1 in district 2, and August 3 in district 3. Fishing was allowed for two-24 hour periods a week in the "Set Net Only Area" (along the coast) in district 1. In the remainder of district 1 and in district 2 fishing was allowed for two-12 hour periods a week. During the reopening of the fishing season both commercial and test fishing data indicated below average run strength and the fishery was closed effective August 7 in district 1, August 8 in district 2 and August 10 in district 3. At the time of the closure a total 111,896 of fall chums had been harvested.

After the closure most processors shut down their operations although they were informed that the season could reopen if substantial numbers of fall chums entered the river during the closure. A reopening of the season would have the added benefit of harvesting the very large coho run that was occurring. During the closure subsistence fishermen in the Tanana-Rampart area of district 5 reported catching very large numbers of fall chums which indicated that the early fall chum run may have been of larger magnitude than indicated by test fishing data. Although only moderate numbers of fall chums entered the lower Yukon River during the closure, it was decided to reopen the commercial fishery on August 13. The fishery remained open for one week to allow the fall chum catch to approach the mid-point (170,000) of the guideline harvest range. The fishery was closed on August 19. The total fall chum harvest was 155,983 for the lower Yukon area (78,751 in district 1; 70,803 in district 2 and 6,429 in district 3). Commercial fall chum catch and effort data are presented in Appendix Tables 15 and 16.

In 1983 the Board of Fisheries adopted regulations establishing a: "Set Net Only Area" in the lower portion of the delta area of district 1 (Figure 15) for the fall chum fishery (after July 19). This special "area" was created to provide additional fishing time for set net fishermen whose fishing effectiveness is influenced by the tides. Fishermen who were required to be registered for this area could only operate set gill nets and once registered could not fish elsewhere in the remainder of district 1 ("Gill Net area") or in districts 2 or 3. Overall fishermen in the Set Gill Net Only Area did considerably better than their counterparts in the Gill net area. A breakdown of the fall chum catches in the Set Net and Gill Net Areas by period is shown below:

Fall chum salmon catch and effort in the Set Net and Gill Net Areas, District 1, 1984.

	Set Net Area			Gill Net Area			Total		
Period	Fishermen	Chum	Catch Per Fishermen	Fishermen	Chum	Catch Per Fishermen	Fishermen	Chum	Catch Per Fishermen
7/30-7/31	93	10,183	109	119	8,133	68	212	18,316	86
8/02-8/03	116	10,677	92	136	6,417	47	252	17,094	68
8/06-8/07	96	963	10	69	796	12	165	1,759	11
8/13-8/14	60	8,204	137	70	3,603	51	130	11,807	91
8/16-8/17	55	4,790	87	82	5,358	65	137	10,148	74
Total	137	34,817	254	164	24,307	148	301	59,124	196

Age composition of the district 1 fall chum commercial catch was 59% 4 year olds and 33% 5 year olds.

Coho Salmon: The first coho was caught in the district 1 commercial fishery during July 16-17. Test fishing cumulative catches through August 10 at both Big Eddy and the Middle Mouth projects were by far the largest ever recorded, indicating an exceptionally strong run. In most years, the commercial coho catch in the lower Yukon is minimal since the fishery is usually closed by mid-August. After the commercial fishery was reopened August 13, a total of 55,794 cohos was taken which represented 77% of the season catch in districts 1 and 2. Record period and total season catches were taken in district 2. The record lower Yukon coho catch of 73,157 was attributed to very large run strength and the later fishing season. The coho catch by district was as follows: district 1 (29,472), district 2 (43,064) and district 3 (621).

Commercial coho salmon catch and effort data for district 1 is shown in Appendix Table 15.

A total of nine processors and one catcher seller operated in the lower Yukon area in 1984. Six processors bought fish in more than one district. Nearly all of the commercial salmon catch were shipped to fresh or fresh-frozen markets. One processor in district 1 hard-salted 31,500 lbs. of salmon. The only processor to do any canning reported 1,768 cases of chum and 5 cases of coho salmon.

Upper Yukon Area

The 1984 upper Yukon area (Districts 4, 5 and 6) commercial salmon catch totaled 293,985 salmon which was composed of 5,497 kings, 279,704 chums (225,127 summer chums and 54,577 fall chums) and 8,783 coho. These figures represent 25% of the total 1984 Yukon area production and are 13% below the 1979-1983 upper Yukon average. These data include fish from which only roe was sold; roe production figures were, as in past years, converted to "equivalent" numbers of fish (Tables 4-5 and 10-13). Upper Yukon River chums average approximately one pound of roe per female; one pound of eggs then converts to one equivalent chum. Table 13 presents actual numbers of salmon and pounds of salmon roe produced in District 4, 5 and 6 during 1984

Upper Yukon fishermen received an estimated (per pound) average of $.95 for kings, $.23 for summer chums, $.26 for fall chums and $.24 for coho and $1.78 for salmon roe (Appendix Table 20). The approximate ex-vessel value of the 1984 harvest was $597,000 and is estimated to be 27% below that calculated for the previous five-year period (1979-1983); earnings per fisherman are estimated to be $4,300. During 1984, a total of 139 fishermen made commercial landings, the lowest effort level since 1974.

A total of 12 processors and 10 catcher-sellers operated in the upper Yukon districts during 1984.

King Salmon: Timing of the 1984 king salmon run was late due to late ice break-up conditions in the lower Yukon. The first reported catch of kings was made in Kaltag on June 22; and the first and only commercial deliveries of kings in that subdistrict (4-A) were made during the period June 24-26. As in past years, the absence of markets and the tendency of fishermen in District 4

to retain kings for personal consumption combined to keep commercial catches at a low level (961 fish). The majority (83%) of the catch was taken by a single catcher-seller located in the upstream portion of the district. Based on commercial harvest data, the run peaked between July 11 and July 17.

Based on indications of run strength from the lower Yukon and on comparative commercial catches from District 5, run strength was judged to be average. Given this, an attempt was made to close the fishery at or near the mid-point of the (subdistricts 5-A, 5-B and 5-C) guideline harvest range. The commercial fishery was closed by emergency order on July 12, at which time the catch was estimated to be approximately 2,500 kings. Late-arriving fish tickets, primarily from catcher-sellers brought the final total to 3,285 king salmon. Peak catches in the lower portion of the district were made during the last period of the season. Only one subdistrict 5-D fisherman participated in the commercial king salmon fishery during 1984. The fishery in the Circle area (based on commercial landings) peaked during the week of July 22 and the season was closed by emergency order on August 7. A total of 31 fishermen participated in the District 5 king salmon fishery and the total season catch was 3,669 kings.

The first king salmon known to have been taken in the Tanana River (district 6) during 1984 was caught near Fairbanks on July 7. Deliveries peaked during the periods July 9-18; however, the peak of the run probably occurred 7-10 days later. The total commercial king salmon catch for the district was 867 fish.

Summer Chum Salmon: The 1984 commercial harvest of 225,127 equivalent summer run chum salmon was slightly below the 1979-1983 average, the run, however, was considered to have been strong.

A price dispute by fishermen in the Nulato, Koyukuk, Galena and Ruby areas idled fishermen in the upper portion of District 4 during the early portion of the summer run. Fishermen in all areas except Nulato, however, did fish for the remainder of the season. Approximately 15 Nulato-area fishermen remained on strike for the duration of the season and this action served to limit catches substantially.

Because of weak markets and high transportation costs from this area, salmon roe is the primary product of this fishery. Deliveries of chum roe were first made in Anvik on June 20 and roe production peaked during the period which ended on July 10, when approximately 35,000 lbs. of roe were landed by 41 fishermen. A total of 167,851 "equivalent" chums were sold in the district, the majority of which was processed in plants located in Anvik, Kaltag, and Galena. A total of 54 District 4 fishermen participated in the summer chum fishery, approximately 35% below the 1979-1983 average.

Summer chums in District 5 are harvested incidentally during the king salmon fishery; a total of 692 chums were commercially harvested during the 1984 season.

Three processors and 27 Tanana River fishermen combined to produce a record summer chum salmon harvest of 56,584 fish in District 6. This catch exceeds the previous record of 38,837 taken in 1980 by 46%. In contrast to the District 4 fishery, processors on the Tanana River are able to purchase and

market summer chums, and as a result, only 335 lbs. of roe were sold during the summer season. The commercial season in district 6 was closed on August 12, by emergency order.

Fall Chum and Coho Salmon: A total of 9,840 "equivalent" chums were taken during the District 4 fall season. Quality and marketability of fall run chums in this area is considerably better than for summer chums, and as a result, only 23% of the "equivalent" fish were marketed as roe. This catch was 50% below the recent five-year average. Catches peaked during the period which ended on August 31 when 1,700 chums were delivered by 11 fishermen. Approximately 61% of these were harvested in subdistrict 4-C.

Based on an evaluation of subsistence catches in the lower portion of District 5, a decision was made to open the commercial fishery for one 24-hour period on August 15. Comparative catch data appeared to warrant additional harvest and two additional 24-hour periods were allowed. The total fall chum harvest for subdistrict 5-A, 5-B and 5-C was 21,147. On September 7, when the run was well distributed throughout the upper portion of the district, the season in subdistrict 5-D was re-opened for a four-day period. During this opening, an additional 1,781 chums were taken by three fishermen for a subdistrict 5-D season total of 2,970 chums. A total of 24,117 fall chums were harvested by 39 fishermen in district 5.

Based on evaluation of lower Yukon commercial and test fishery data and data from the upriver test fishery sites, the fall chum run was judged to be average or below average in strength. For this reason, a cautious approach was taken in the management of the Tanana River fall fishery. By September 12 (based on subsistence catch reports from the Fairbanks and Manley areas) the run was well distributed throughout the lower and middle portions of the Tanana River; the commercial fishery was opened on September 14, and closed on September 17 after two 24-hour periods. The catch was composed of 17,785 chums and 7,006 coho salmon. It as evident from catches that a large run of coho was in progress, but a decision was made, however, not to take advantage of the apparent coho surplus by allowing additional fishing time because of the possiblity of jeopardizing chum salmon escapement levels.

Subsistence Fishery 1984

Subsistence salmon catch data has been collected through the use of personal interviews and catch calendars on which fishermen record daily catches, since 1961. Because of budgetary shortfalls in 1983 and again in 1984, the Department was unable to send survey crews to all villages to interview fishermen. Also, catch calendars were not distributed during 1984 because it was felt the low percentage returned in recent years did not justify the cost. In the lower Yukon, interviews with fishermen were conducted only in district 1 (Sheldon Point, Alakanuk, Emmonak, and Kotlik). Fishermen residing in villages in districts 2 and 3 were mailed questionnaires during September.

In districts 2 and 3 where subsistence catch data were collected by mail, the total number of families who participated in the fishery could not be determined; average numbers of families for each village was derived using data collected during the 1979-1983 period. Catch data from fishermen who were known to have fished for subsistence purposes but who were unavailable for interview or did not return the questionnaire was derived by averaging the

total known catch (by species) for that village and assigning those values to households not contacted. Information regarding numbers of dogs and type and amount of fishing gear was determined in a similar manner.

In the upper Yukon area, personal interviews were conducted in the following villages: Kaltag, Nulato, Koyukuk, Galena, StevensVillage, Fort Yukon and Eagle. Catch data for the remaining villages were collected by questionnaires sent through the mail as was done in the lower Yukon area. For villages in which fishermen were not personally interviewed, the number of fishermen was estimated by using 1978-1982 averages. Data for fishermen not interviewed or who did not respond to questionnaires was derived in the same manner as for the lower Yukon.

Potential problems with expansion of data in the manner described above should be explained. In some cases, a single fisherman may take several thousand chums for purposes of feeding large numbers of sled dogs. When data for a village which include atypical catches like these, the final expanded value may exceed what could reasonably be expected to have been caught. Conversely, expanded data which does not include a fisherman who made extremely large catches, may understate the actual harvest for that village.

Too few questionnaires (two) were returned from Venetie fishermen for a reasonable estimate of total catch. For this reason, average numbers of fishermen, dogs, and catch by species for the period 1979-1983 was used.

During 1984, and estimated 49,000 kings, 411,000 chums and 49,000 cohos were taken for subsistence purpose in the Yukon River drainage. In addition, a minimum of 38,000 whitefish and 11,000 sheefish were harvested incidentally to the salmon catch. The actual numbers of these species is thought to be much higher, as these data were not collected for all villages and where this information was sought, represents catches for the June-October period only. Table 14 presents 1984 catch data for each Yukon River community and Appendix Tables 22-24 show long-term comparative catch data.

The estimated total king salmon harvest of 49,000 fish is the third highest on record and was exceeded only in 1980 and 1983. The estimated 1984 coho salmon harvest of 49,0000 is 218% above the recent five-year average and is the largest recorded catch since 1977 when species composition for salmon (other than kings) was first recorded.

Lower Yukon Area

During the 1984 season, fishermen representing 451 households in districts 1, 2 and 3 harvested an estimated 16,151 kings; 62,624 summer chums; 22,353 fall chums, and 13,817 coho salmon. In general, the numbers of fishing families and total estimated catch have increased substantially during the past decade. In 1984, lower Yukon fishermen comprised 42% of the total effort (for the Alaska portion of the drainage) and took approximately 38% of the subsistence king salmon catch and approximately 22% of the estimated total chum and coho harvest.

A new regulation, adopted by the Board of Fisheries prior to the 1983 season, established special subsistence-only fishing periods in districts 1 and 2. These periods were established to offset decreased subsistence fishing

opportunities which have resulted from gradual reductions in length of commercial fishing periods during the past several years. It is suggested that most fishermen were able to meet subsistence needs prior to the opening of the commercial season in June and during the mid-season closure of the commercial season in June and during the mid-season closure of the commercial fishery during the later part of July. Periodic aerial surveys conducted during these periods showed that fishing effort was light, particularly during the fall chum season.

Upper Yukon Area

Not including Canadian catches, the 1984 upper Yukon area subsistence salmon harvest was approximately 382,000 fish. Of this total, 26,238 were kings, 167,941 were summer chums, 152,311 were fall chums, and 35,119 were cohos. The subsistence king salmon harvest was 9% higher than the previous five-year period and the combined chum and coho catch of 355,000 was approximately 3% below the 1979-1983 average.

The possibility of overestimating the summer chum salmon subsistence harvest in District 4 has been discussed in previous annual management reports. As was discussed in a previous section of this report, commercial fishermen in District 4 have only a very limited market for chum salmon. As a result, fishermen extract roe and sell from their catch and retain the carcasses for personal use. During the 1980-1984 period, it is likely that many fishermen have reported this portion of their commercial harvest as subsistence fish. In fact, it is probable that the unmarketable commercial product has simply replaced a large portion of the subsistence harvest in this area. During 1984, Division of Subsistence personnel conducted the catch surveys in Kaltag and Nulato. Questions regarding summer chum harvest were posed in such a way as to eliminate reporting of "surplus" commercially caught fish as subsistence. For this reason, summer chum catches from these villages (Table 14) is much lower than in previous years.

Subsistence fishing permits are required in three areas within the upper Yukon drainage: (1) the Tanana River drainage upstream of the Wood River confluence; (2) the Yukon River between Hess Creek and Dall River; (3) the Yukon River between the upstream mouth of Twenty-two Mile Slough and the U.S./Canada border. Data from these fisheries are presented in Table 14 and Appendix Table 25.

Escapement, 1984

Comprehensive escapement enumeration studies in 1984 were conducted on the East Fork Andreafsky, Anvik, Sheenjek, and Delta rivers in the Alaska portion of the Yukon River drainage and at the Whitehorse fishway in Yukon Territory, Canada. Studies at each of these locations were designed to either enumerate or estimate total population of spawners. Side-scanning sonar techniques were employed on the first three rivers while intensive (replicate) ground and aerial surveys were conducted on the Delta River. An enumeration window and passage gate was operated by the Department of Fisheries and Oceans at the Whitehorse fishway in Canada. Remaining escapement enumeration throughout the Yukon River drainage was obtained primarily by aerial surveys and occasional ground surveys. Results obtained in 1984 are shown in Table 15 while Figures 2 through 6 show major Yukon River tributary systems.

Appendix Tables 26 and 27 present comparative king salmon escapement data for selected streams during the 1971-1984 period. Aerial surveys of king (and summer chum) salmon in 1984 were severely limited throughout the middle portion of the drainage due to inclement weather or high water conditions. Only in the extreme lower portion (downstream of Anvik) and upper portion (Yukon Territory) of the drainage was adequate coverage made. King salmon escapements observed in index areas of the East and West Fork Andreafsky (4,466 kings) and Anvik (641 kings) rivers, exceeded optimum objectives based upon numbers of fish alone. However, it is not presently known what the optimum level of egg deposition is for these two river systems, and in turn, whether or not it was achieved.

Peak king salmon counts in the Chena (501 kings) and Salcha (1,031 kings) rivers each fell approximately 500 short of the minimum escapement objectives for these two rivers. However, peak counts were made late in the spawning season. Adequate coverage of these two rivers could not be made during the targeted spawning period due to inclement weather or swollen, turbid river conditions. Consequently, it is not known if escapement objectives were actually achieved in these rivers.

King salmon escapements in most index areas of the Yukon Territory appeared to be average for the most part and slightly better than occurred in 1983. This was particularly so for the Nisutlin (1,054 kings), Big Salmon (1,044 kings) and Little Salmon (434 kings) rivers as well as Tatchun Creek (161 kings). The Whitehorse fishway count was 977 kings with an additional 65 utilized for artificial spawning. Escapements to the Pelly River and upper Teslin River drainage were low.

Comparative summer and fall chum salmon escapements since the mid-1970's for selected streams are shown in Appendix Table 28 and 29. Only a few streams received adequate survey coverage for chum salmon in 1984. Summer chum salmon surveys were hindered by inclement weather and high, turbid water conditions except in the extreme lower portion of the Yukon River drainage (downstream of Anvik). In that region the magnitude of escapements was excellent with escapement objectives being met in the Andreafsky and Anvik rivers. A total of 95,200 chums were observed in the East Fork Andreafsky, exceeding the minimum escapement objective, while 238,565 chums observed in the West Fork exceeded the optimum objective for that stream. Also 70,125 chums were enumerated by sonar and counting tower in the East Fork Andreafsky River. Likewise, a sonar count of 891,028 summer chums in the Anvik River was nearly double the optimum escapement objective. Although inclement weather and water conditions severely restricted survey effort in the Koyukuk River drainage, escapement appeared to be good and at least one new summer chum salmon spawning stream was discovered. The U.S. Fish and Wildlife Service estimated 4,500 chum salmon spawners on July 23 in Billy Hawk Creek, a tributary of the North Fork Huslia River. Summer chum escapements in the Tanana River also appeared excellent judging by observations in the Salcha River. The highest summer chum salmon count (9,810) ever made in this stream occurred in 1984.

Magnitude of fall chum salmon to the Porcupine River drainage followed the recent annual trend of declining escapements and fell well short of escapement objectives. A sonar-estimated escapement of 25,120 chums in the Sheenjek River was the lowest since sonar operations began in 1981. The peak aerial

survey estimate of 5,570 chums in the Fishing Branch River was the lowest observed since the early 1970's. By comparison, fall chum salmon surveys of selected index areas in the Tanana River drainage were similar to those occurring in 1983. While fall chum salmon counts in the upper Toklat River (15,861) fell below the escapement objective for that river, 19,054 chums were observed in index areas of the upper Tanana River. Although not met at Bluff Cabin Slough, the escapement objective in the Delta River was achieved. In the upper Yukon River drainage, escapement estimates made in the Kluane River (7,200) and mainstem Yukon River between Fort Selkirk and Carmacks (2,800) appeared below average based upon the limited data base available for fall chum salmon.

Tanana River drainage coho salmon escapements were the highest on record (since early 1970's) to most index areas examined in 1984 (Appendix Table 30).

Enforcement, 1984

Lower Yukon Area

During the fishing season Fish and Wildlife Protection officers made one boat patrol and periodic float plane patrols in the Lower Yukon area. More effective enforcement is needed in view of reported violations (e.g. fishing without permits, fishing large mesh gill nets after 6 inch maximum mesh size regulation become effective, and fishing closed water areas). It is recommended that a two man FWP crew be stationed at either St. Marys or Emmonak to conduct boat patrols throughout the fishing season.

Upper Yukon Area

Compliance with certain commercial and subsistence fishing regulations such as observance of closed periods was good. Other regulations, however, particularly those dealing with the sale of subsistence-caught salmon and salmon roe, are reported to be violated with regularity in certain areas. Also, it is possible that wastage of commercially caught salmon in one area may be more common than previously thought. It is recommended that more intensive enforcement effort be devoted to this fishery.

OUTLOOK FOR 1985

King Salmon

In most years the dominant age class returning are 6-year old fish; however 5 and 7-year-old fish also contribute to the run. The 1979 brood year run (6-year-olds in 1985) was judged above average in abundance as indicated by comparative catch and escapement data. The return of 5-year olds (1980 brood year) is expected to be significant based on above average run strength in 1980. Seven-year olds may contribute significantly to the run in 1985 based on the average above average return of 6-year-olds in 1984. In summary, based on evaluation of brood year run size data, it is expected that the 1985 Yukon river king salmon run will be average to above average in magnitude. The expected commercial harvest is expected to total 90,000-120,000 fish if the run strength is judged average or better.

Summer Chum Salmon

Normally Yukon River summer chum salmon runs are primarily composed of 4-year-old fish, although in some years 5-year-old fish are present in large numbers. The return of 4-year olds in 1985 will be dependent on the strength of the 1981 brood year and the survival of the resulting offspring. Based on available catch and escapement data, the magnitude of the 1981 summer chum salmon run was considered exceptionally strong. The return of 4-year-olds in 1985 is expected to be above average in magnitude. The return of 5-year-olds in 1985 is expected to be significant based on the strong return of 4-year-olds in 1984. In summary, the magnitude of the Yukon River summer chum salmon run in 1985 is expected to be above average in magnitude. The commercial harvest is expected to total 600,000-1,200,000 fish.

Fall Chum Salmon

Similar to the summer run, the majority of the fall chum returning each year are 4-year-old fish. Based on comparative catch and escapement information, the 1981 brood year (4-year-olds) was generally considered above average in magnitude. The returns of 5-year-olds (1980 brood year) is not expected to be significant because of the below average to average return of 4-year-olds in 1984. In summary, the 1985 Yukon River fall chum salmon run is expected to be average to above average in magnitude. The expected commercial harvest should approximate 233,000 fish, the ~~midpoint~~ lower half of the guideline harvest range for the entire river. 145,500-

Coho Salmon

Four-year-old fish (1981 brood year) are the dominant age class. Adequate escapement information for coho salmon is lacking but surveys in the Tanana River system indicated above average escapements in 1981. The return in 1985 is expected to be of similar magnitude. The coho salmon commercial catch is expected to total 20-30,000 fish, depending on amount of fishing effort exerted on the fall chum run and the duration of the fishing season.

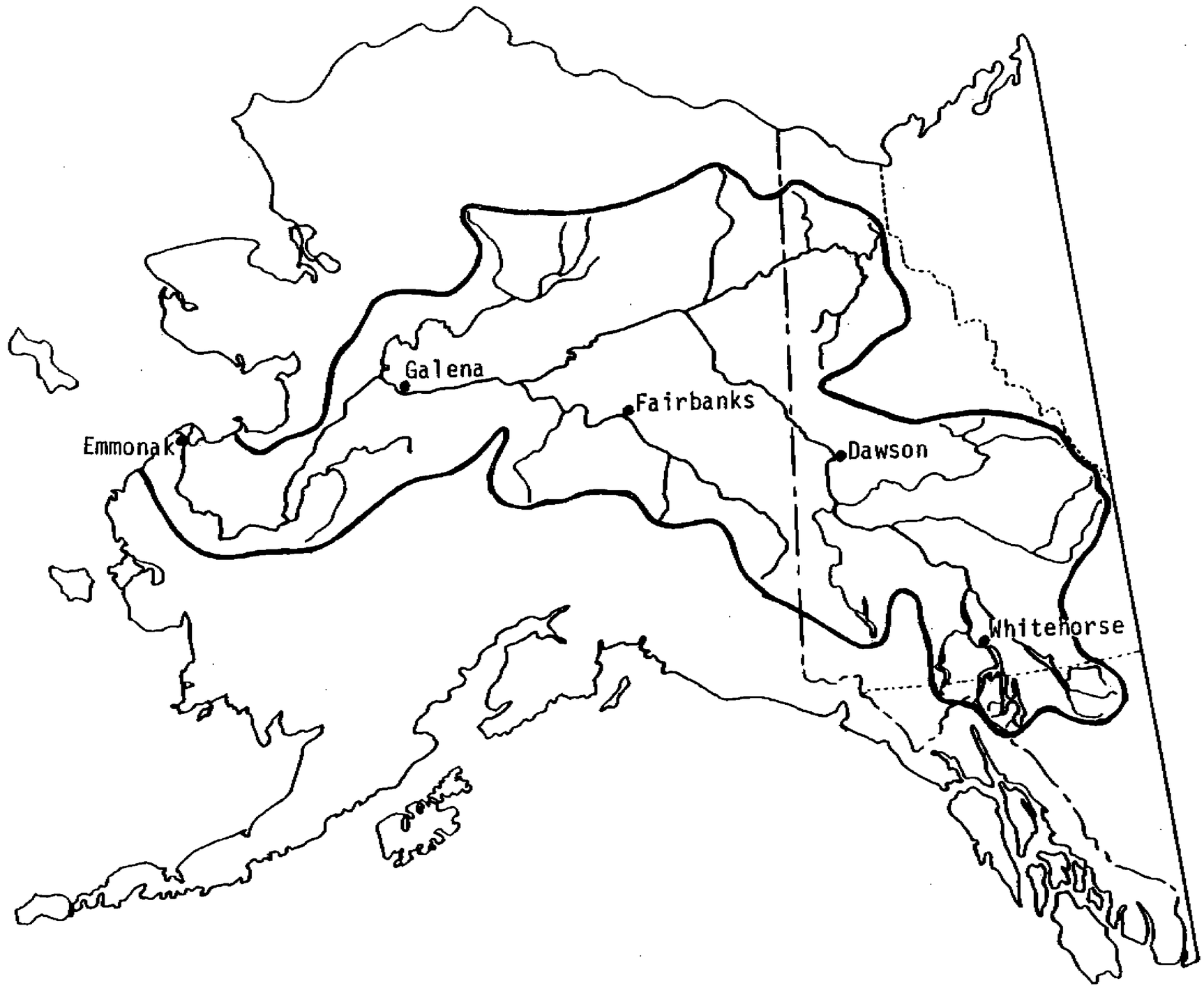


Figure 1. The Yukon River drainage, 330,000 square miles.

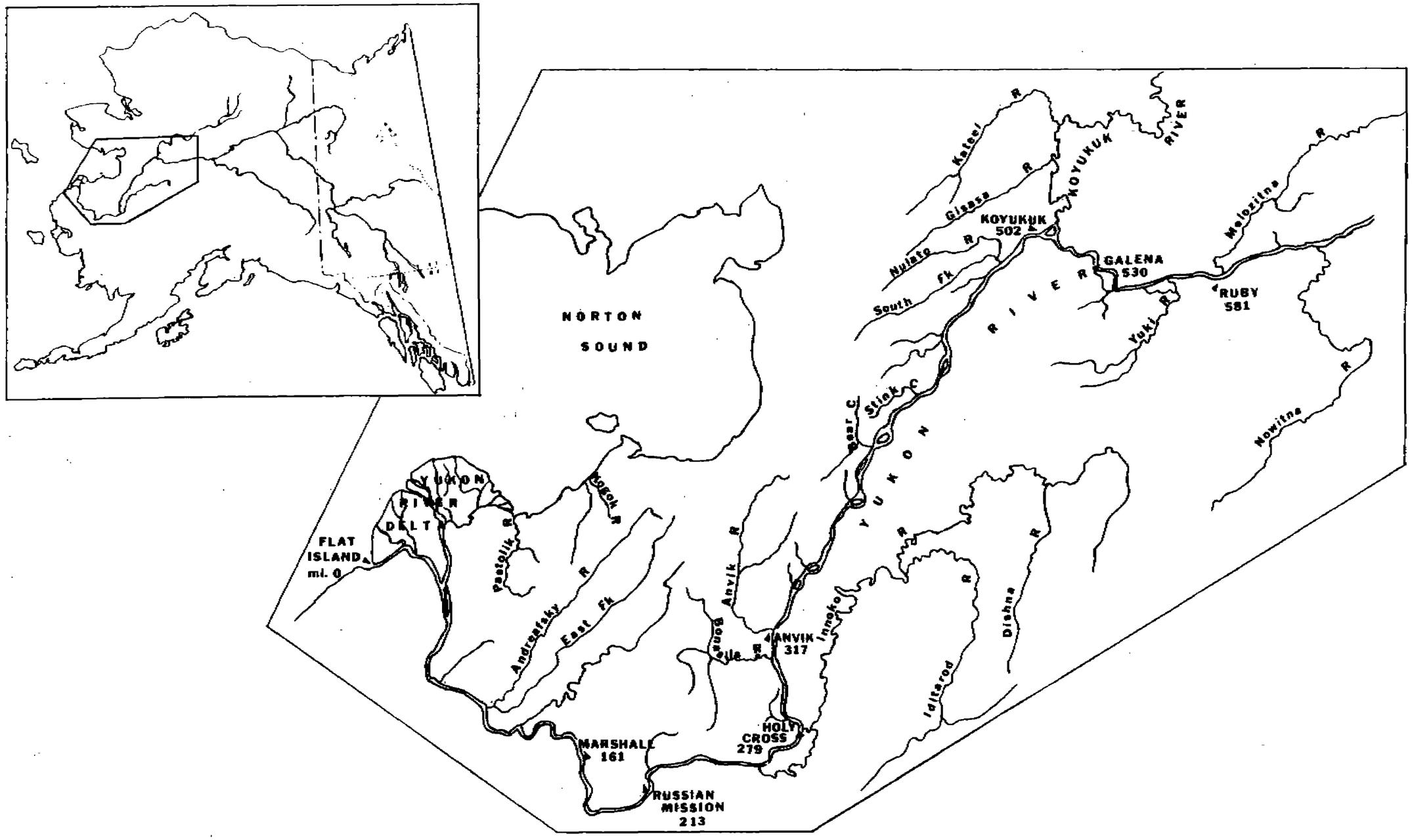


Figure 2. The lower Yukon River drainage.

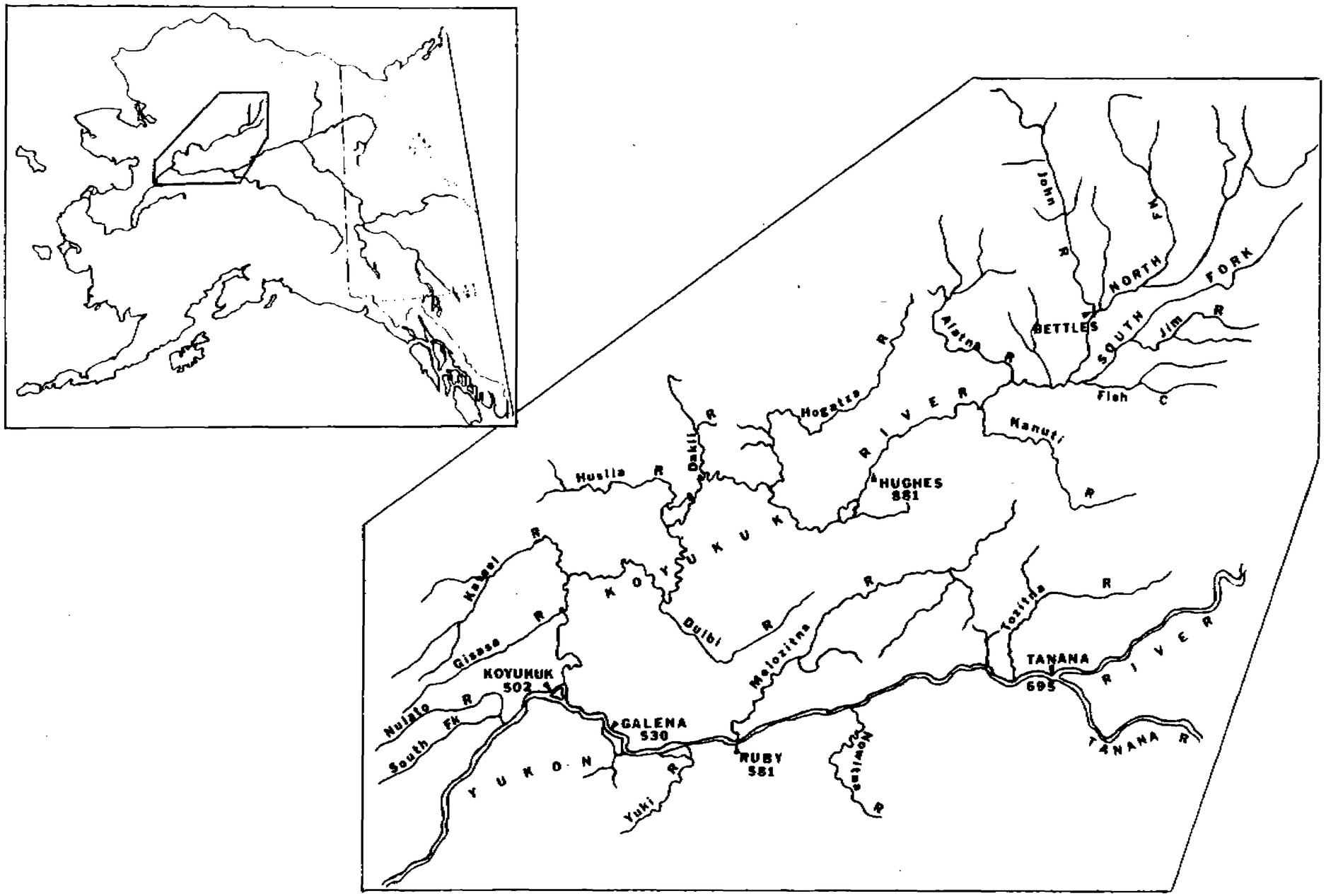


Figure 3. The Koyukuk River drainage.

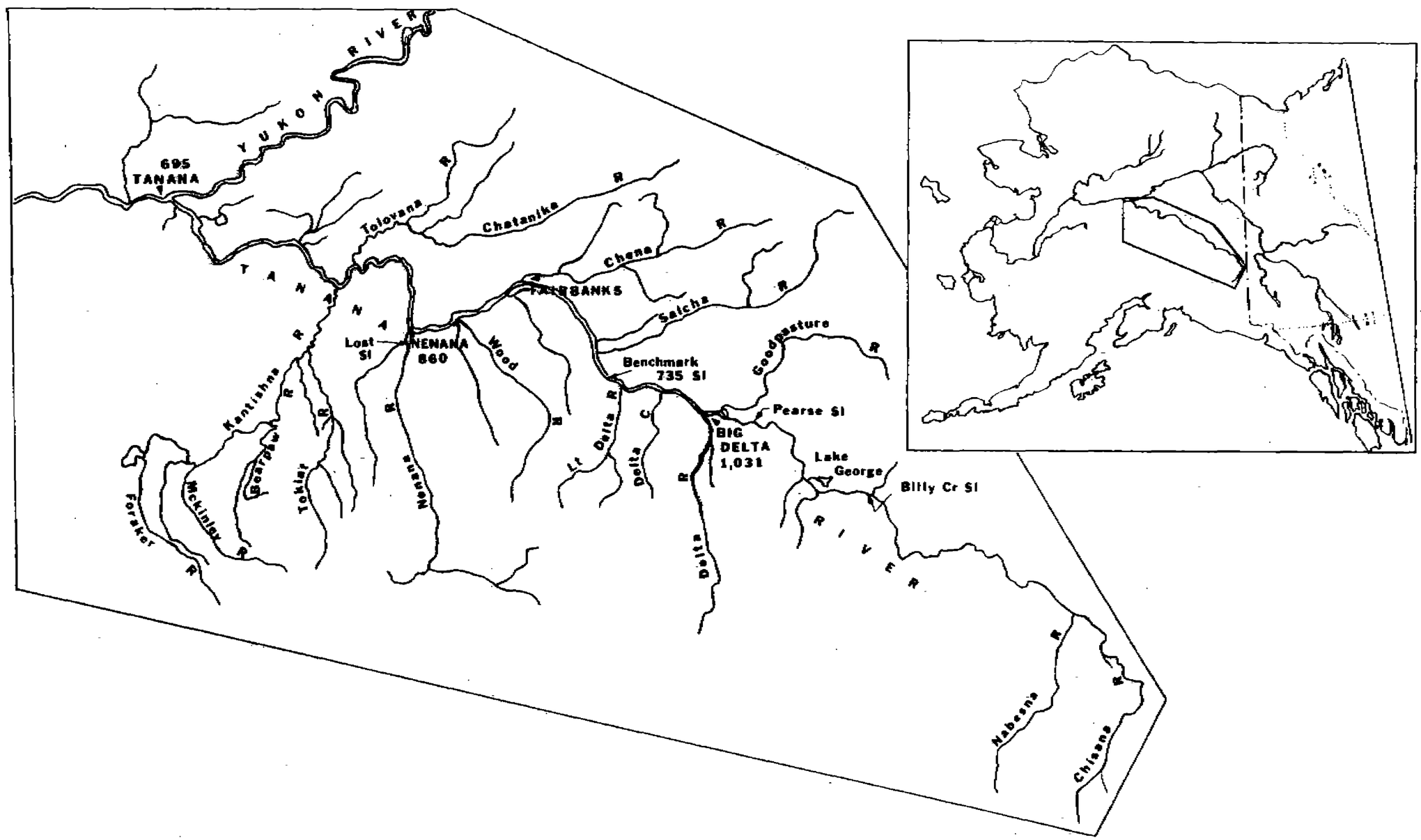


Figure 4. The Tanana River drainage.

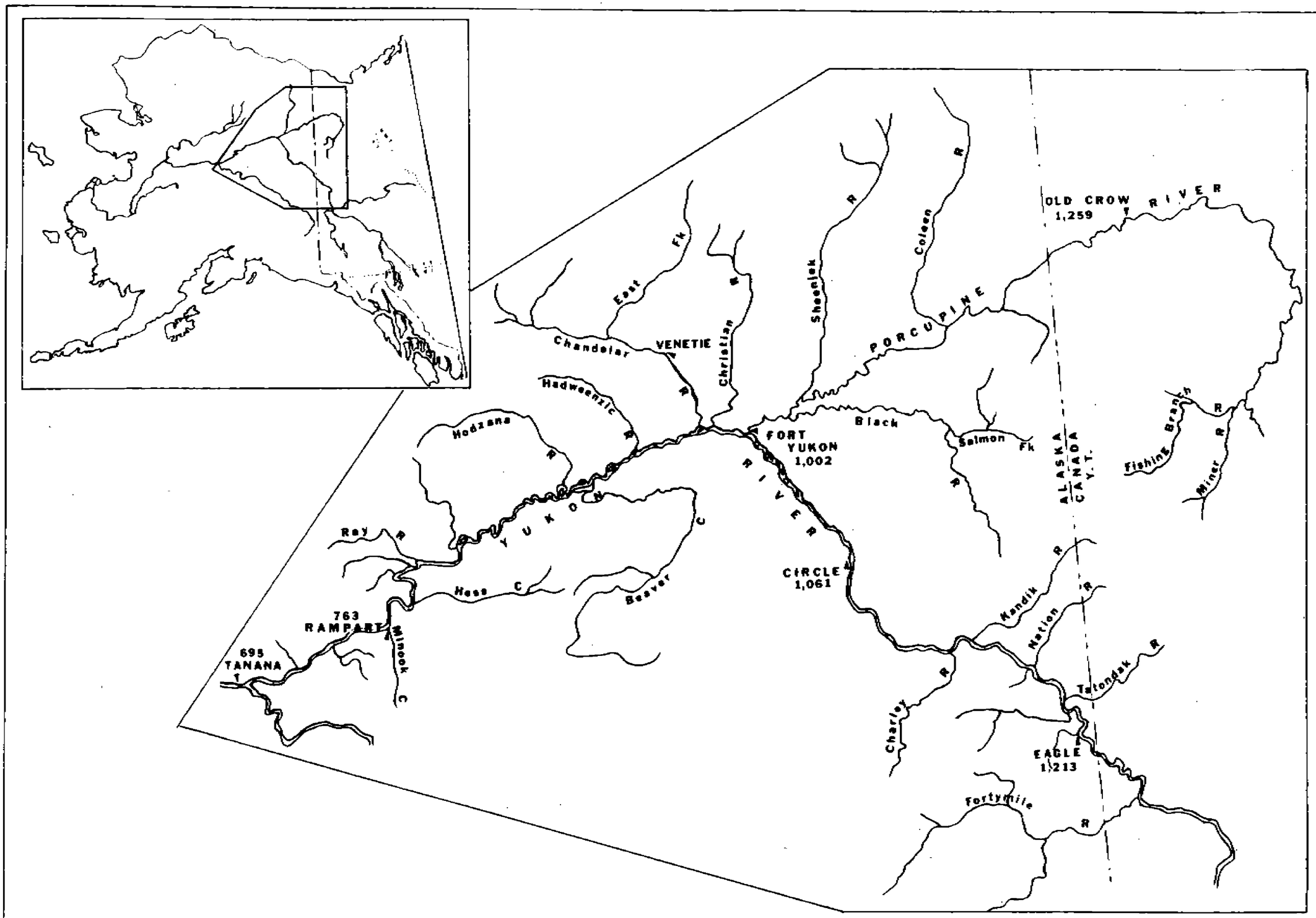


Figure 5. The middle Yukon River and Porcupine River drainage.

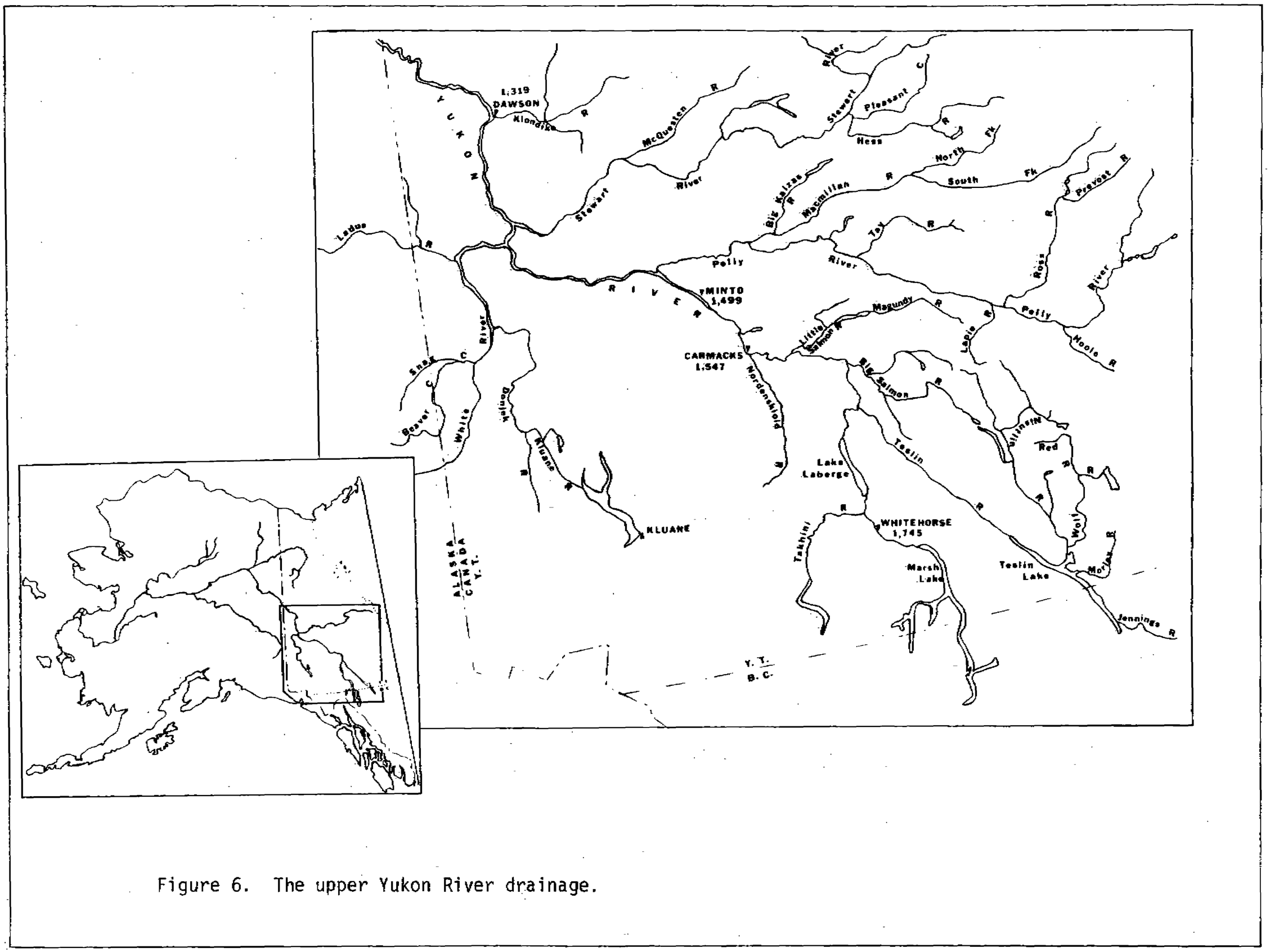


Figure 6. The upper Yukon River drainage.

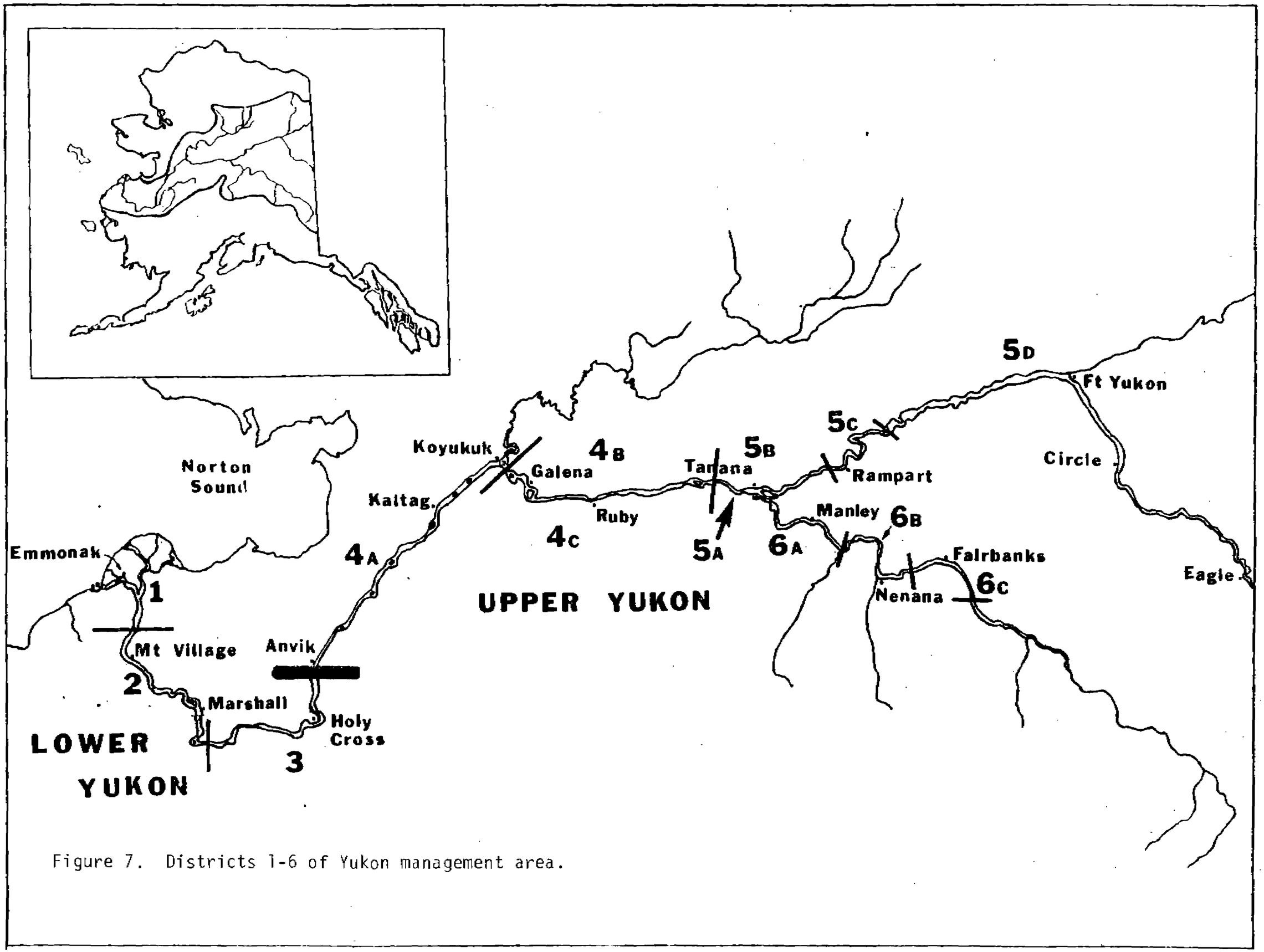


Figure 7. Districts 1-6 of Yukon management area.

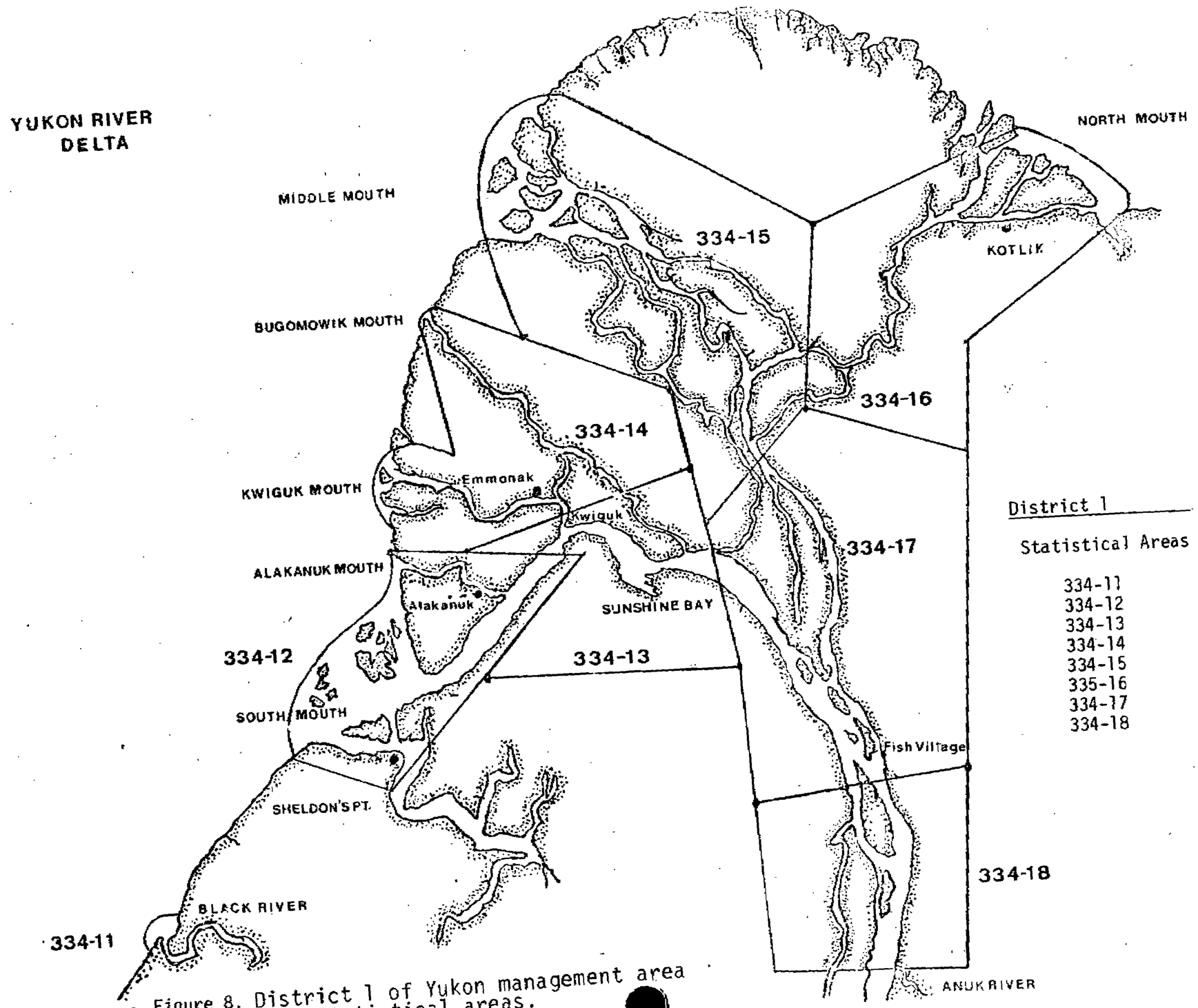
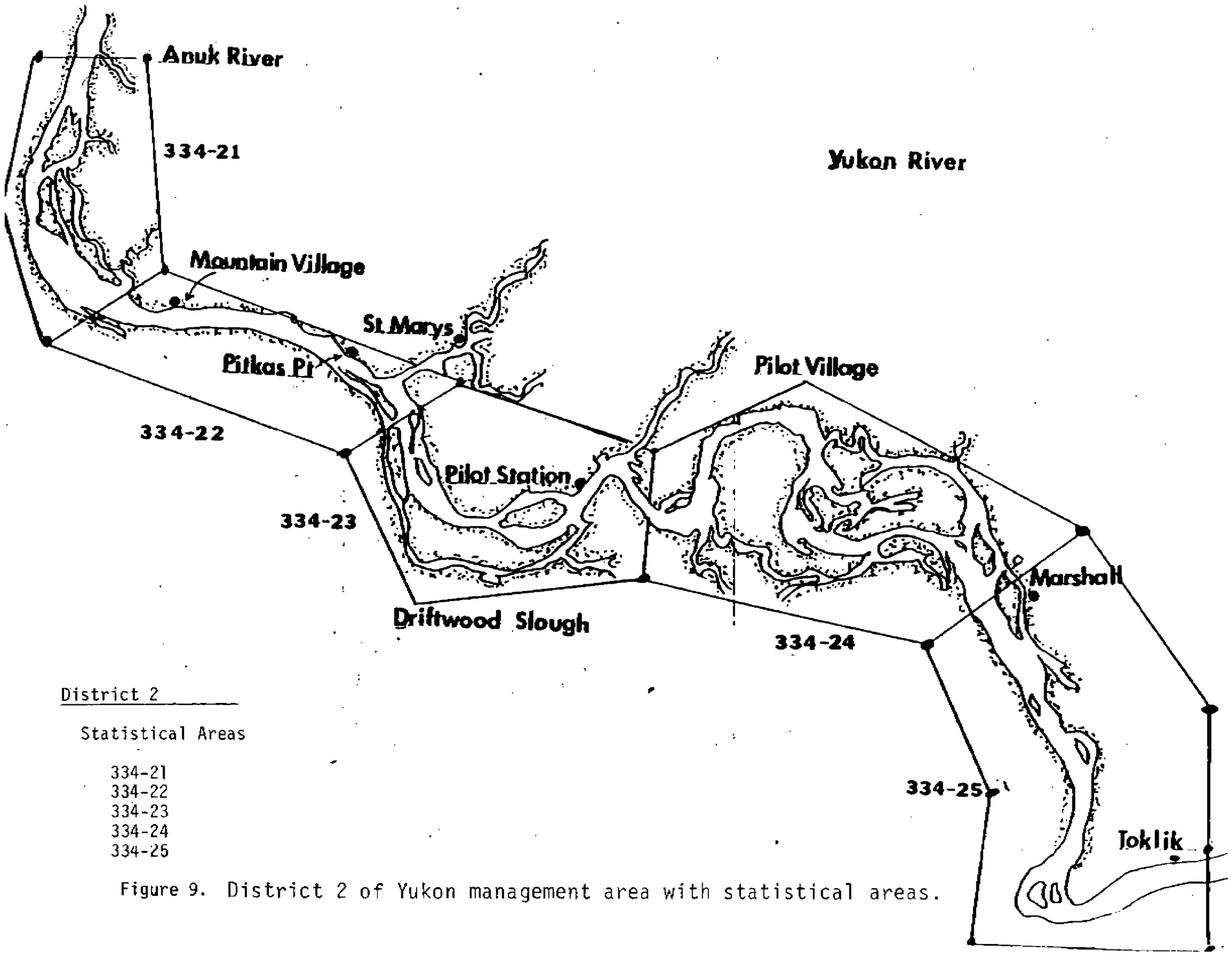


Figure 8. District 1 of Yukon management area with statistical areas.



District 2

Statistical Areas

334-21
334-22
334-23
334-24
334-25

Figure 9. District 2 of Yukon management area with statistical areas.

District 3

Statistical Areas

334-31
334-32

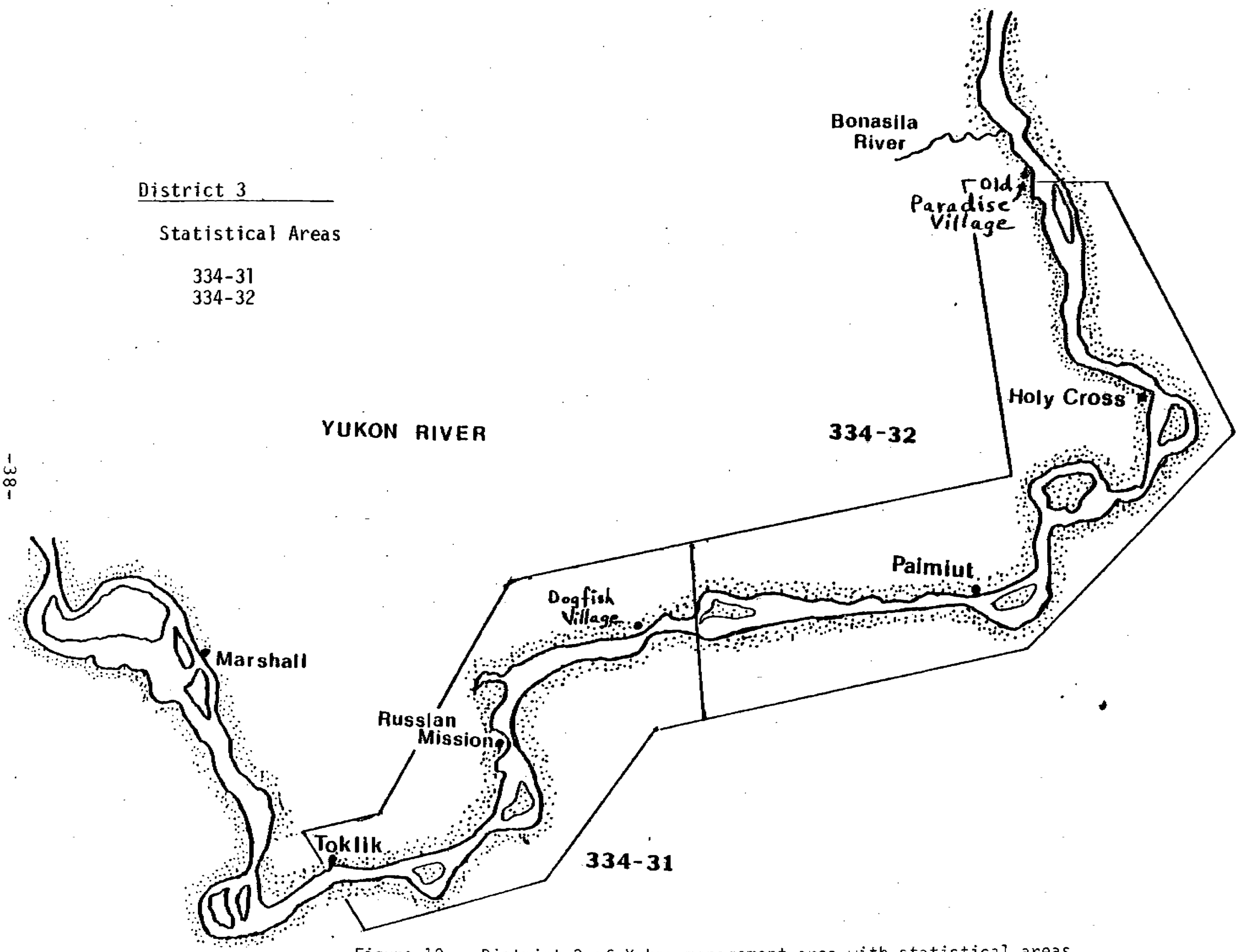


Figure 10. District 3 of Yukon management area with statistical areas.

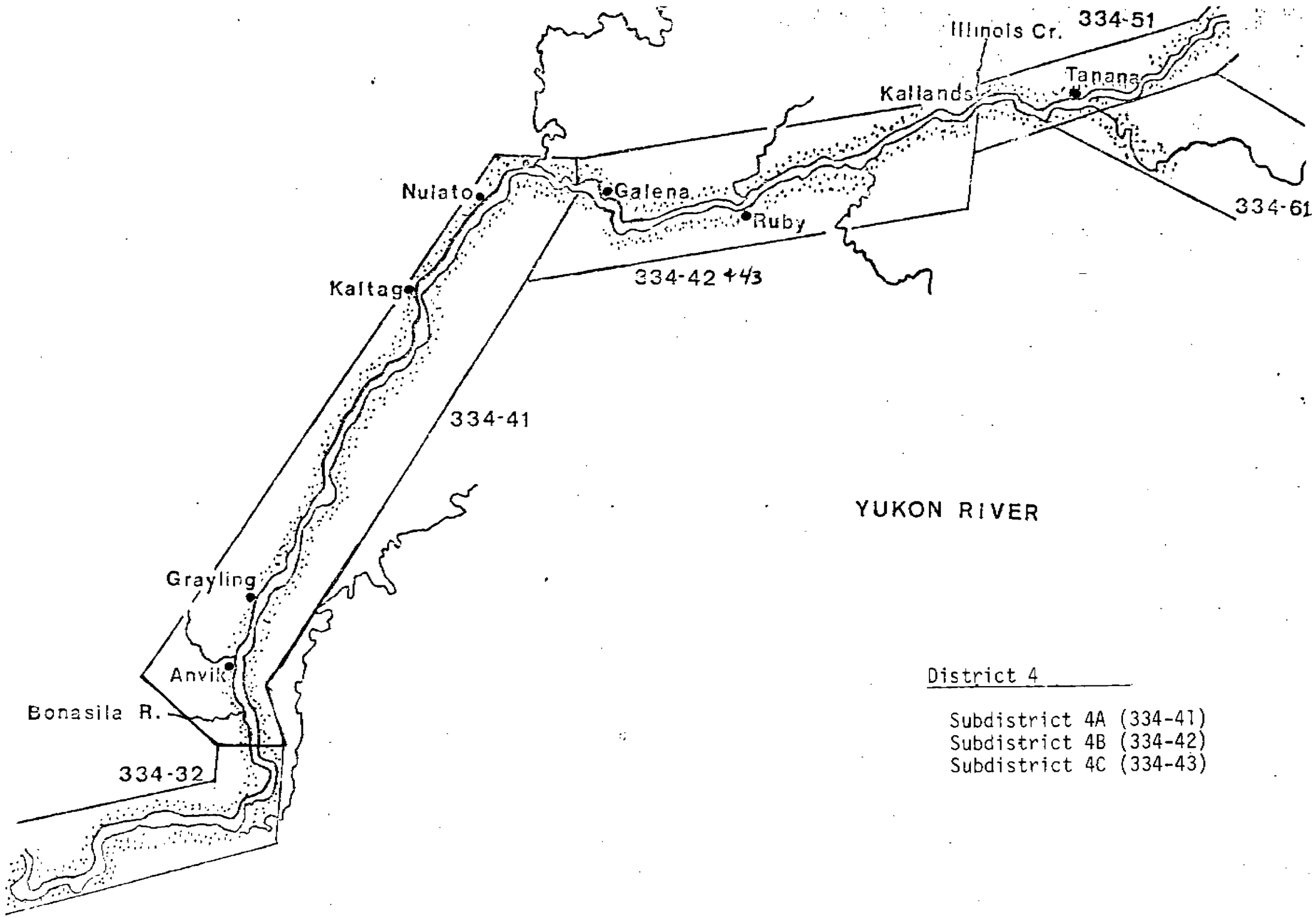
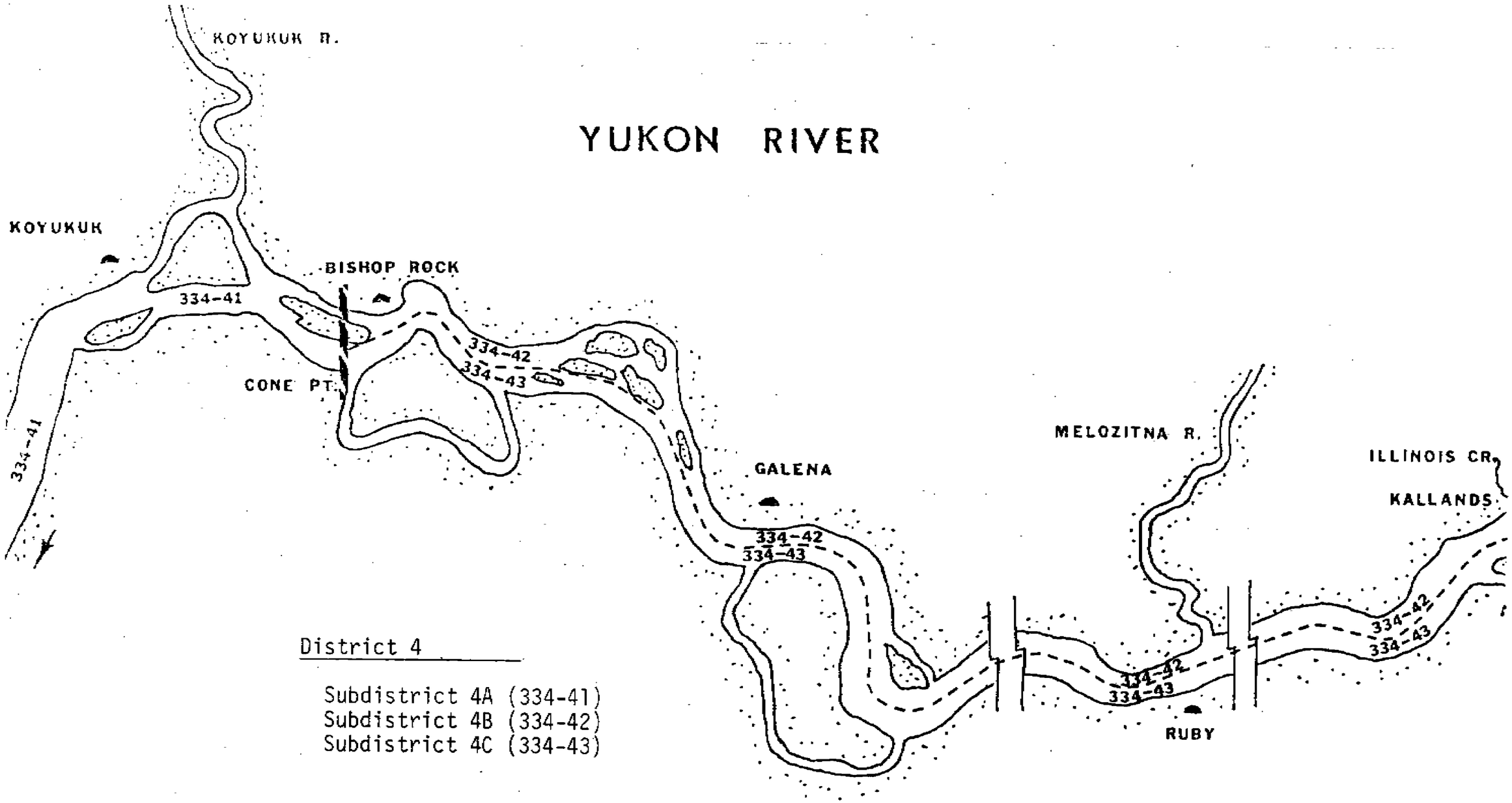


Figure 11. District 4 of Yukon management area with statistical areas.



District 4

Subdistrict 4A (334-41)
Subdistrict 4B (334-42)
Subdistrict 4C (334-43)

Figure 12. District 4 of Yukon management area with statistical areas.

District 5:

Subdistrict 5A (334-51)
Subdistrict 5B (334-52)
Subdistrict 5C (334-53)
Subdistrict 5D (334-54)

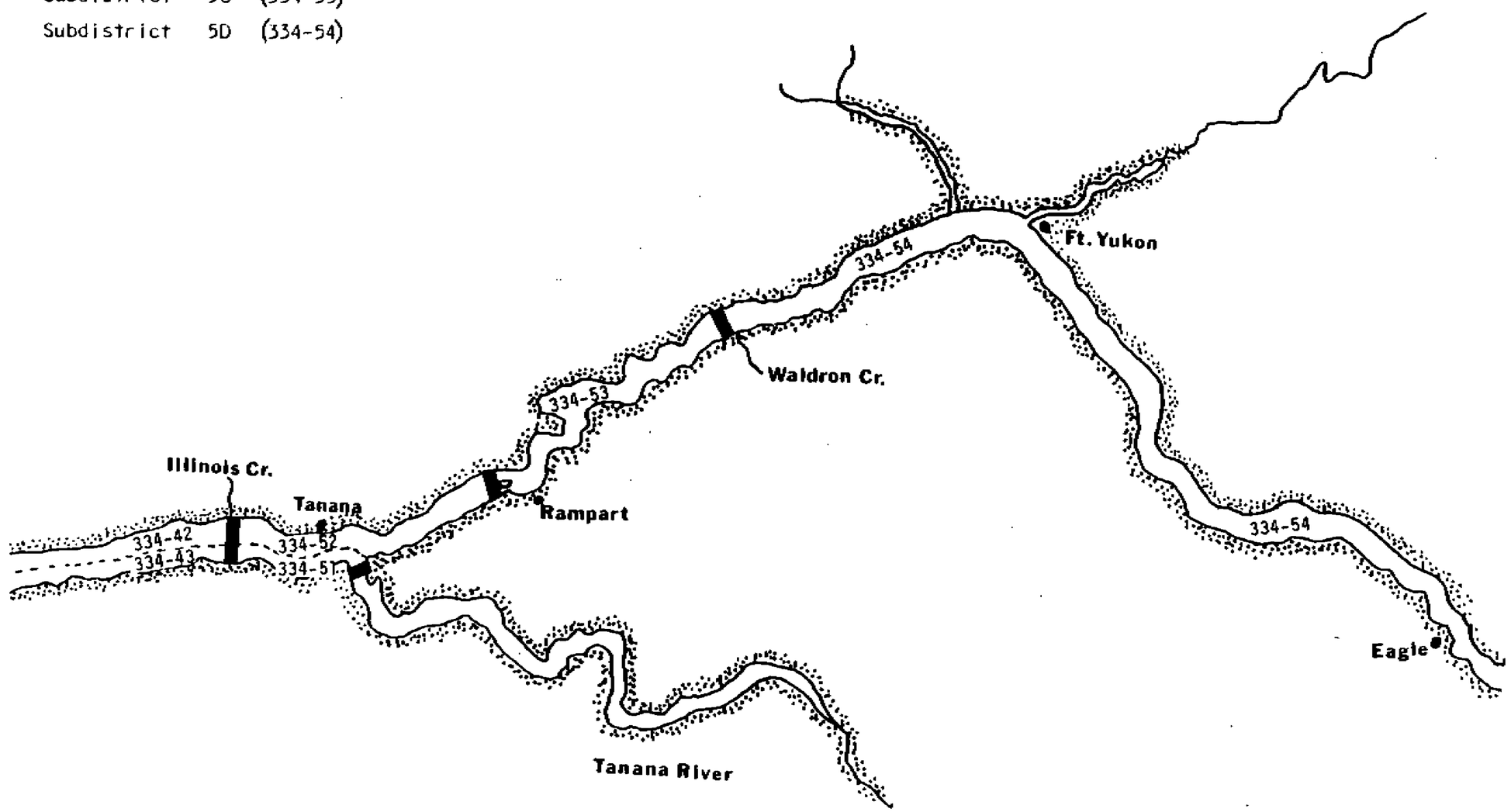
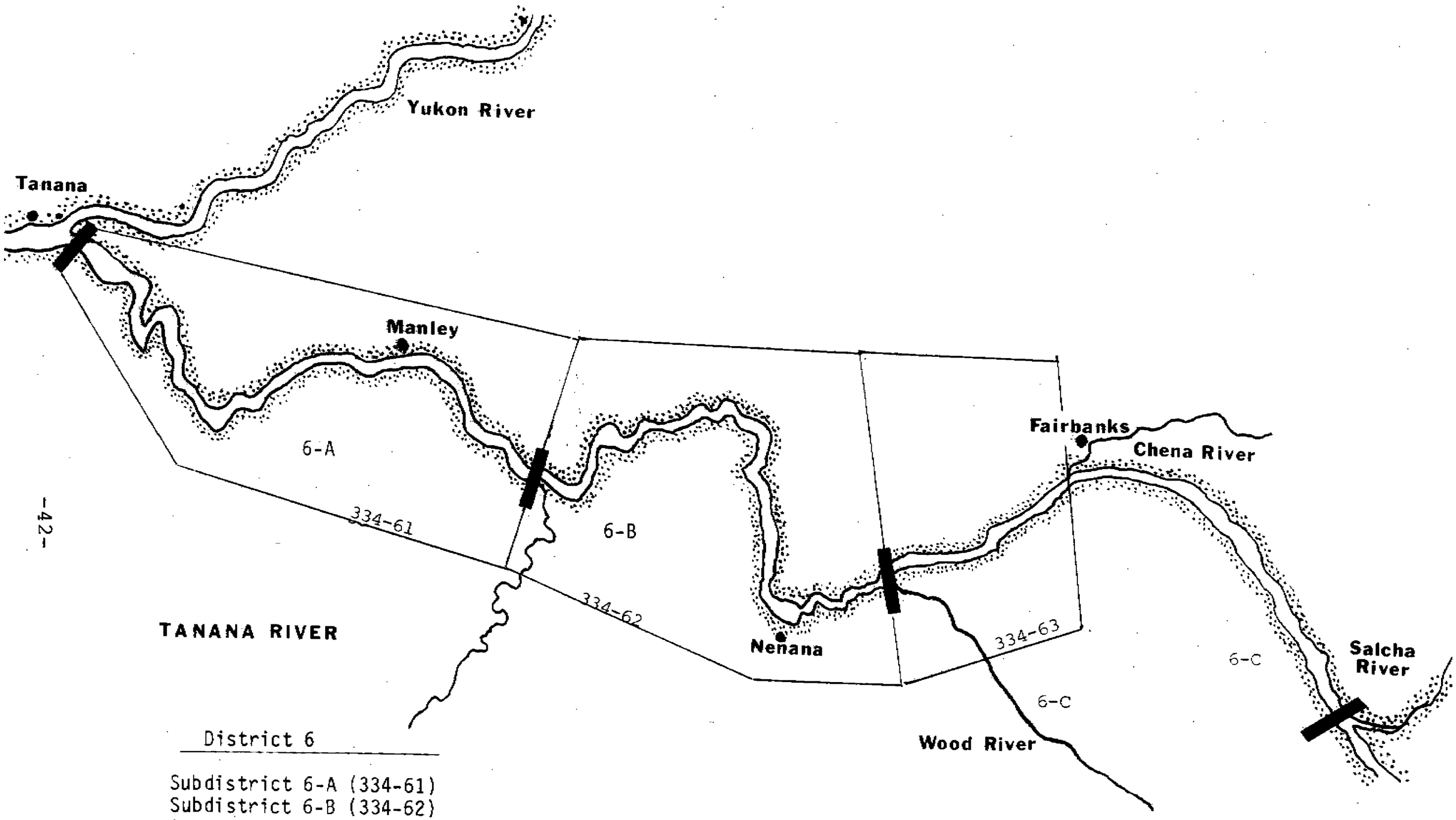


Figure 13. District 5 of Yukon management area with statistical areas.



District 6

Subdistrict 6-A (334-61)
Subdistrict 6-B (334-62)
Subdistrict 6-C
Wood River to Chena R. (334-63)

Figure 14. District 6 of Yukon management area with statistical areas.

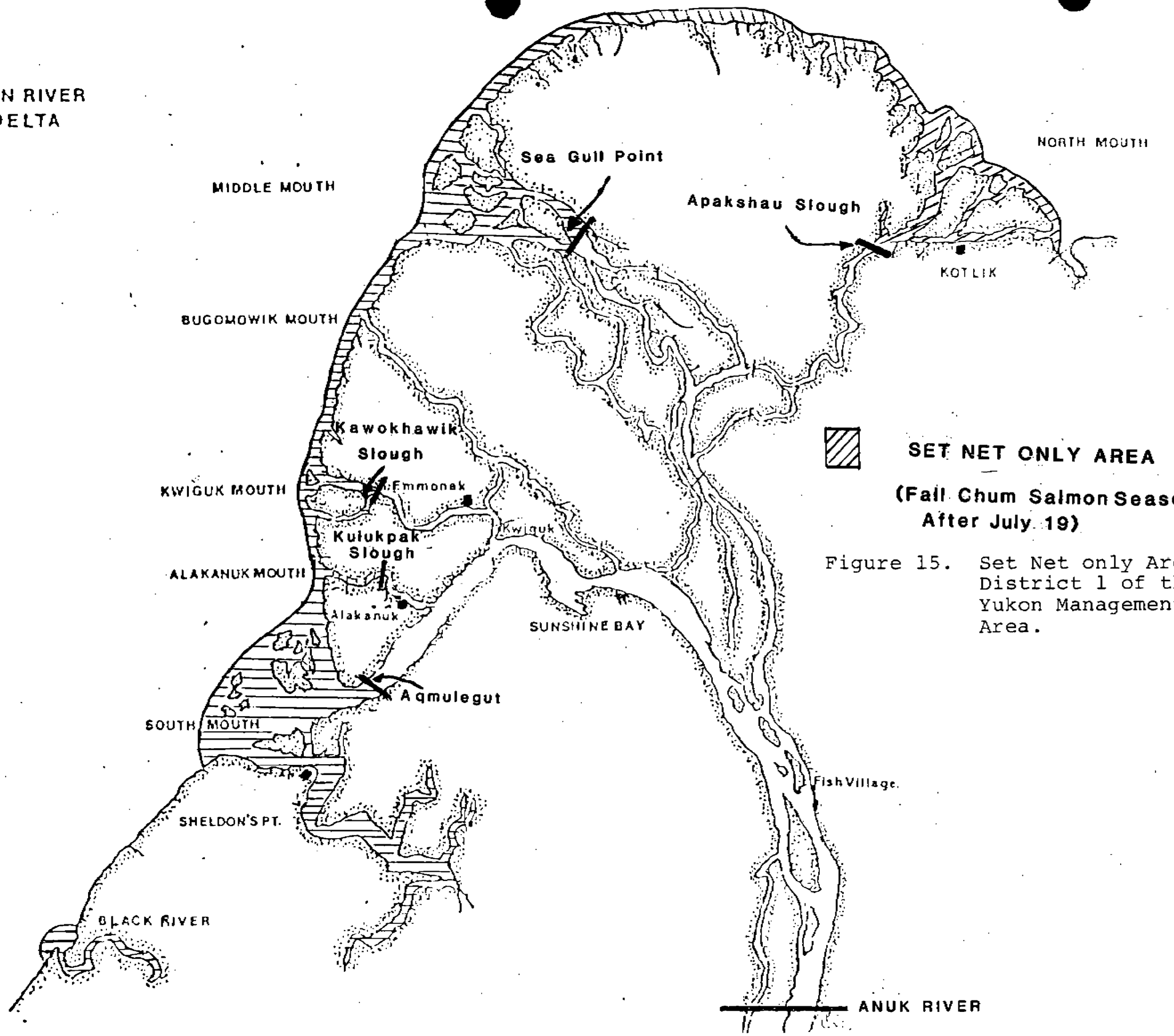


Figure 15. Set Net only Area, District 1 of the Yukon Management Area.

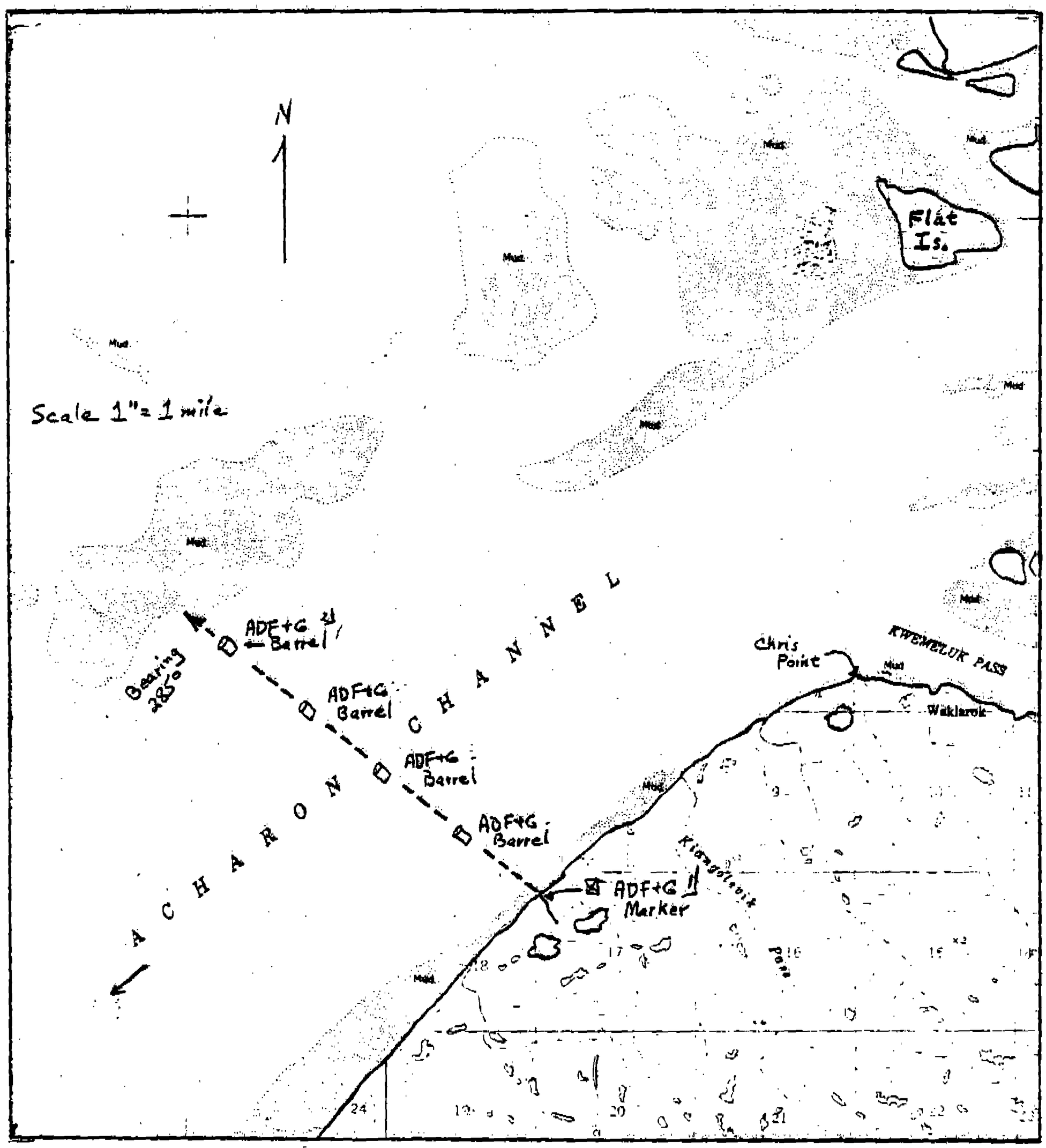


Figure 16. Closed waters Acharon Channel, south mouth Yukon River. (5AAC 05.350. CLOSED WATERS. (1) Acharon Channel of the south mouth area of the Yukon River west of a 2-1/2 nautical mile long line bearing 285° from an ADF&G regulatory marker located below Chris Point to the opposite side of the channel; the line may be marked by a series of yellow and green barrels placed by the Department between shore markers).

1/ ADF&G Regulatory Marker Sign, erected 5' height with driftwood logs, located on river bank at terminus of rivulet between two lakes approximately 2-1/2 miles below Chris Point.

2/ ADF&G yellow and green 55 gal. barrels anchored offshore.

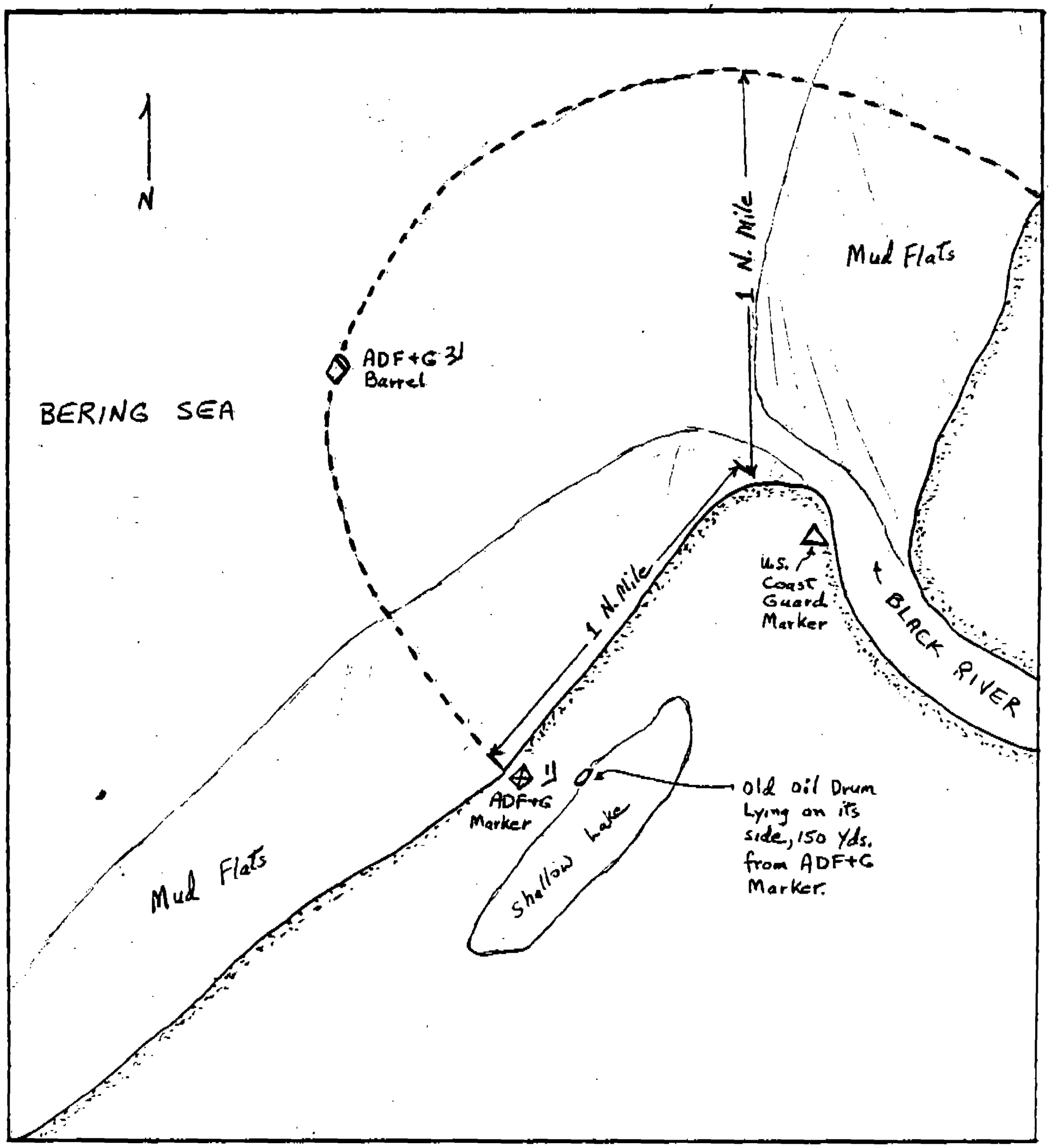


Figure 17. Closed waters of Black River mouth. (5AAC 05.350. CLOSED WATERS. (3) waters west of a one nautical mile radius from the mouth of Black River).

1/ ADF&G Regulatory Marker Sign erected 6' height with driftwood logs.

2/ ADF&G yellow and green 55 gal. barrel anchored 1 nautical mile offshore.

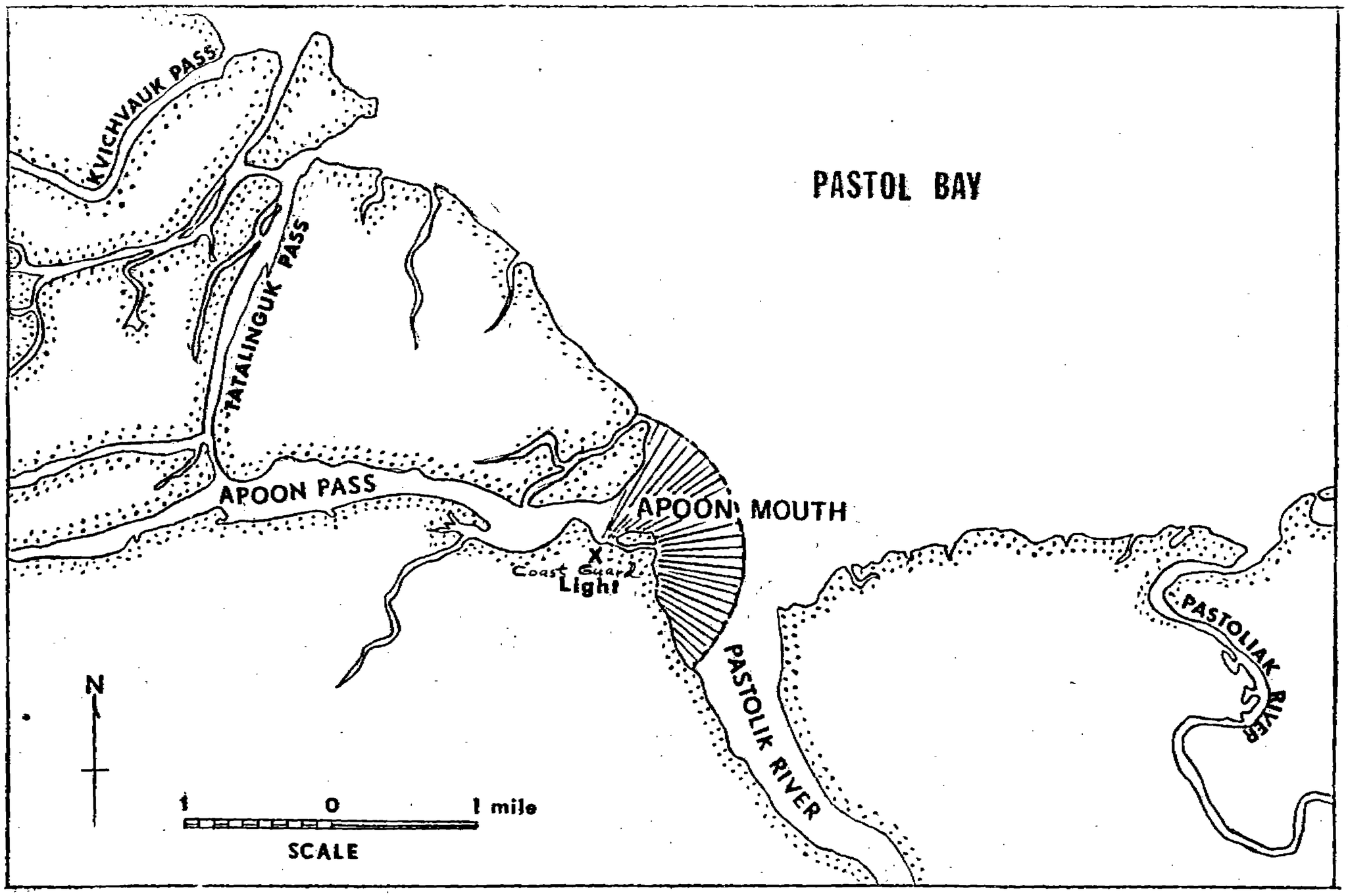


Figure 18. Closed waters of Apoon Mouth, Yukon River (5 AAC 05.350. CLOSED WATERS. (9) Waters east of a one nautical mile radius from a U.S. Coast Guard light at the mouth of Apoon Pass).

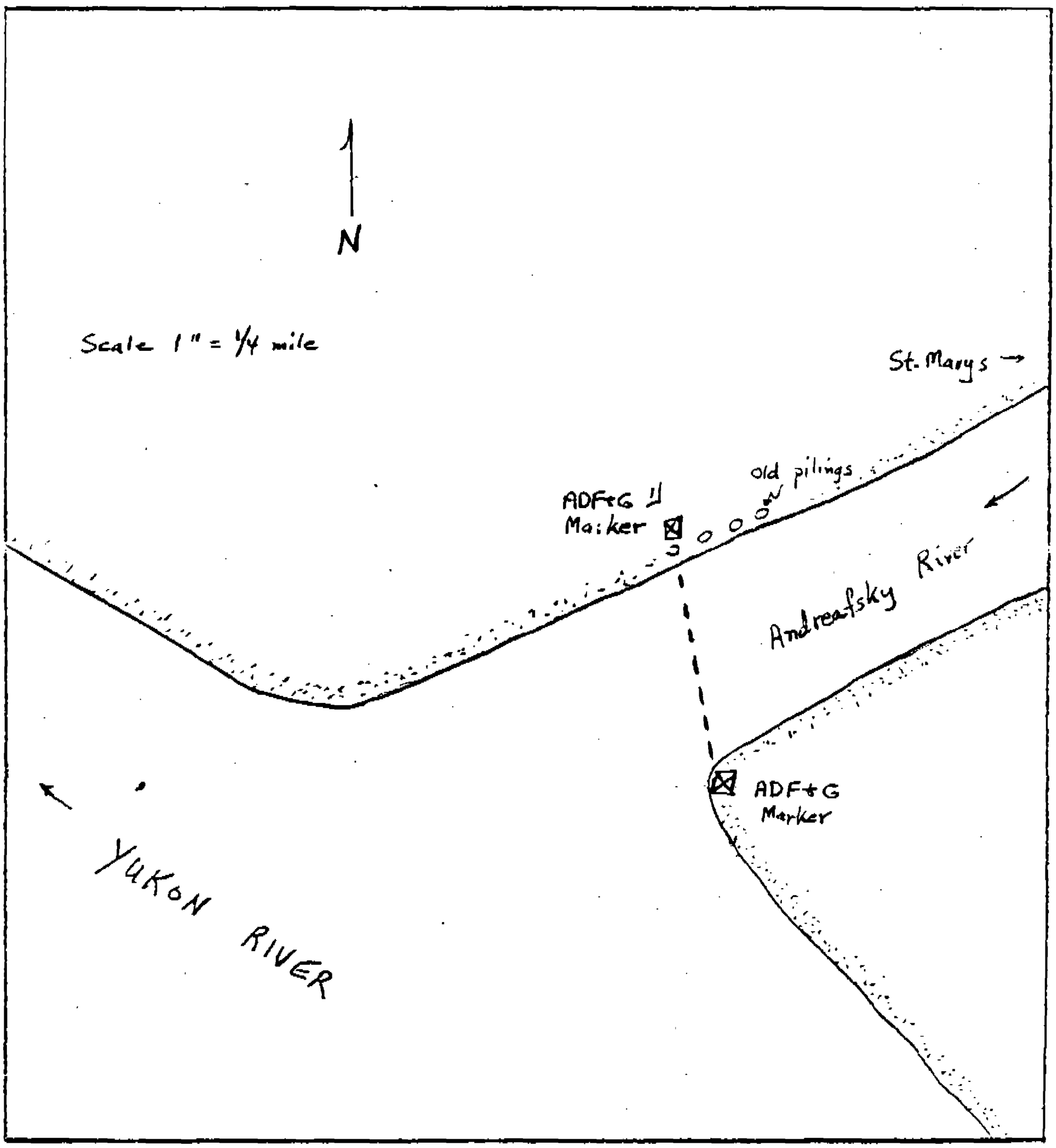


Figure 19. Closed waters of Andreafsky River mouth. (5AAC 05.350. CLOSED WATERS. (4) waters of the Andreafsky River upstream of a line from Department regulatory markers placed on each side of the river at its mouth).

1/ North bank ADF&G regulatory marker sign attached to 4th wooden piling stump downstream.

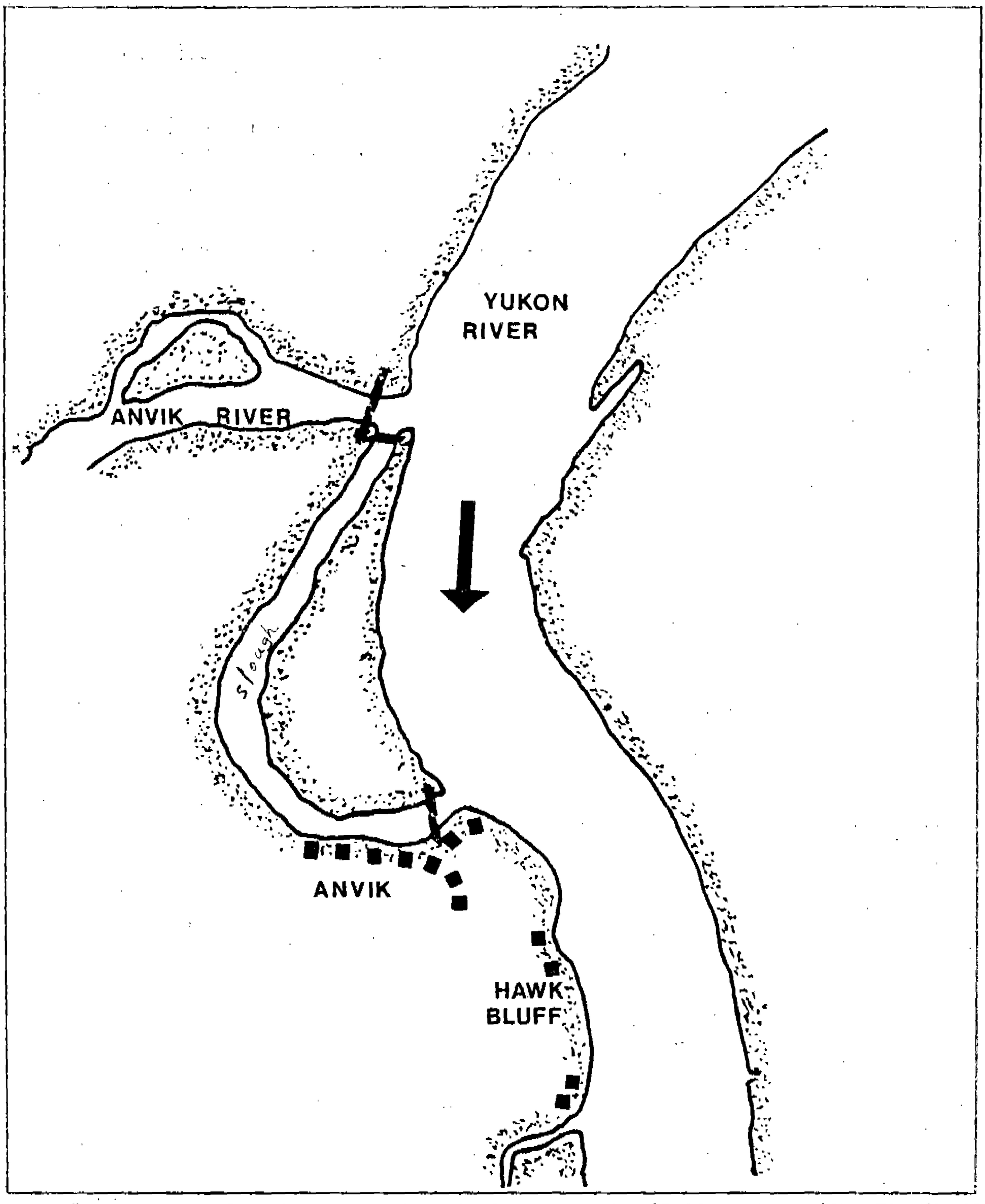


Figure 20. Closed waters of Anvik River mouth. (5AAC 05.350. (CLOSED WATERS.(8) waters of the Anvik River upstream of a line between department regulatory markers placed on each side of the river at its mouth). Markers (6) placed north and south banks of the Anvik River mouth and at upstream and downstream mouths of slough (Old Anvik River Channel).

Table 1. List of indigenous fishes found in the Yukon area. 1/

Species Code	Scientific Name	Common Name
601	Lampetra japonica	Arctic lamprey
570	Stenodus leucichthys	Sheefish
588	Coregonus nasus	Broad Whitefish
589	Coregonus pidschian	Humpback Whitefish
583	Coregonus sardinella	Least Cisco
585	Coregonus laurettae	Bering Cisco
586	Prosopium cylindraceum	Round Whitefish
587	Prosopium coulteri	Pygmy Whitefish
610	Thymallus arcticus	Arctic Grayling
550	Salvelinus namaycush	Lake Trout
520	Salvelinus alpinus	Arctic Char
530	Salvelinus malma	Dolly Varden
410	Oncorhynchus tshawytscha	King Salmon
420	Oncorhynchus nerka	Sockeye Salmon
430	Oncorhynchus kisutch	Coho Salmon
440	Oncorhynchus gorbusch	Pink Salmon
450	Oncorhynchus keta	Chum Salmon
513	Osmerus mordax dentex	Rainbow Smelt
514	Hypomesus olidus	Pond Smelt
500	Esox lucius	Northern Pike
630	Dallia pectoralis	Blackfish
650	Couesius plumbeus	Lake Chub
640	Catostomus catostomus	Longnose Sucker
670	Petcopsis omiscomaycus	Trout-Perch
590	Lota lota	Burbot, Lush
661	Pungitius pungitius	Nine-spine Stickleback
162	Cottus cognatus	Slimy Sculpin
ESTUARINE		
113	Eleginus gracilis	Saffron Cod
129	Platichthys stellatus	Starry Flounder
	Liopsetta glacialis	Arctic Flounder
230	Clupea pallasii	Pacific Herring
516	Mallotus villosus	Capelin

1/ Includes fishes found in the Yukon River drainage in Canada.

Table 2 . Yukon River Drainage Mileages

Location	Mileages from Mouth
North Mouth (Apoon Pass)	
Kotlik	6
Hamilton	26
Middle Mouth (Kwikpak, Kawanak Pass)	
Choolunawick	16
Akers Camp	26
New Hamilton	34
South Mouth (Kwikluak Pass)	
Mouth, Black River	-18
Flat Island	0
Sheldon Point	5
Tin Can Point	8
Alakanuk	17
Emmonak-Kwiguk (Kwiguk Pass)	24
Sunshine Bay	24
Aproka Pass (upstream mouth)	35
Kwikpak Pass (upstream mouth)	44
Head of Passes	48
Fish Village	52
Mouth Anuk River (District 1/2 Boundary)	63
Patsys Cabin	71
Mountain Village	87
Old Andreafsky	97
Pitkas Point	103
Mouth, Andreafsky River	104
St. Marys	107
Pilot Station	122
Mouth, Atchuelinguk (Chulinak) River	126
Pilot Village	138
Marshall (Fortuna Ledge)	161
Upstream Mouth Owl Slough	163
Ingrihak	170
Ohogamut	185
Toklik (District 2/3 Boundary)	191
Kakamut	193
Russian Mission	213
Dogfish village	227
Paimuit	251
Mouth, Innoko River (South Slough)	274

Shageluk	328
Holikachuk	383
Holy Cross	279
Mouth, Koserefski River	286
Old Paradise Village (District 3/4 Boundary)	301
Mouth, Bonasila River	306
Anvik	317
Mouth, Anvik River	318
Grayling	336
Mouth, Thompson Creek	349
Blackburn	370
Eagle Slide	402
Mouth, Rodo River	447
Kaltag	450
Mouth, Nulato River	483
Nulato	484
Koyukuk	502
Mouth, Koyukuk River	508
Mouth, Gisasa River	564
Huslia	711
Mouth, Dakli River	755
Mouth, Hogatza River	780
Hughes	881
Mouth, Kanuti River	935
Alatna (Mouth, Alatna River)	956
Allakaket	956
Mouth, South Fork	986
Mouth, John River	1,117
Bettles	1,121
Middle Fork	1,141
Cold Foot	1,174
Wiseman	1,186
Bishop Rock	514
Prospect Point	519
Galena	530
Whiskey Creek	555
Mouth, Yuki River	562
Ruby	581
Mouth, Melozitna River	583
Horner Hot Springs	605
Kokrines	608
Mouth, Nowitna River	612
Birches	647
Kallands - Mouth of Illinois Creek (District 4/5 Boundary)	664
Mouth, Tozitna River	681
Tanana Village	695
Mouth, Tanana River (District 5/6 Boundary)	695
Manley Hot Springs	765
Mouth, Kantishna River	793
Mouth, Toklat River	838
Mouth, Sushana River	850
Mouth, Bearpaw River	887
Outlet, Lake Minchumina	959

Minto	835
Nenana	860
Mouth, Nenana River	860
Mouth, Wood River	894
Rosie Creek Bluffs	912
Mouth, Chena River (Fairbanks)	920
Mouth, Salcha River	965
Benchmark #735 Slough	991
Mouth, Little Delta River	1,000
Mouth, Delta Creek	1,014
Mouth, Clear Creek (Richardson-Clearwater)	1,015
Mouth, Shaw Creek	1,021
Mouth, Delta River (Big Delta)	1,031
Delta Junction	1,041
Mouth, Goodpaster River	1,049
Bluff Cabin Slough	1,050
Outlet, Clearwater Lake	1,052
Mouth, Clearwater Creek, (Delta Clearwater)	1,053
Mouth, Gerstle River	1,059
Outlet, Healy Lake	1,071
Outlet, Lake George	1,086
Tanacross	1,128
Outlet, Tetlin Lake	1,188
Mouth, Nabesna River	1,210
Northway Junction	1,214
Mouth, Chisana River	1,215
Mouth, Sheep Creek	1,297
Rampart Rapids	731
Rampart	763
Mouth, Hess Creek	789
Mouth, Ray River	817
Highway Bridge - Pipeline Crossing	820
Mouth, Dall River	841
Stevens Village	847
Mouth, Hodzana River	897
Beaver	932
Mouth, Hadweenzic River	952
Mouth, Chandalar River (Venetie Landing)	982
Venetie	1,025
Fort Yukon	1,002
Mouth, Porcupine River	1,002
Mouth, Black River	1,026
Chalkyitsik	1,084
Mouth, Salmon River	1,142
Mouth, Salmon Trout River	1,193
Mouth, Sheenjek River	1,054
Mouth, Coleen River	1,157
U.S.-Canadian Border	1,219
Old Crow	1,259
Fishing Branch River spawning area	1,600
Circle	1,061
Woodchopper	1,110
Mouth, Charley River	1,124

Mouth, Kandik River	1,135
Mouth, Nation River	1,166
Mouth, Tatonduk River	1,186
Mouth, Seventymile River	1,194
Eagle	1,213
U.S.-Canadian Border	1,224
Mouth Fortymile River	1,269
Dawson	1,319
Mouth, Klondike River	1,320
Mouth, Sixty Mile River	1,369
Mouth, Stewart River	1,375
McQuesten	1,455
Stewart Crossing	1,491
Mayo	1,520
Mouth, Hess River	1,594
Mouth, White River	1,386
Mouth, Donjek River	1,455
Mouth Kluane River	1,541
Outlet Kluane Lake	1,587
Burwash Landing	1,595
Kluane	1,625
Fort Selkirk	1,477
Mouth, Pelly River	1,478
Pelly Crossing	1,410
Mouth, MacMillan River	1,442
Ross River	1,602
Minto	1,499
Mouth, Tatchun Creek	1,530
Carmacks	1,547
Mouth, Little Salmon River	1,583
Mouth, Big Salmon River	1,621
Mouth, North Big Salmon River	1,641
Mouth, South Big Salmon River	1,657
Outlet, Big Salmon Lake	1,714
Mouth, Teslin River	1,654
Roaring Bull Rapids	1,707
Johnson's Crossing (Outlet, Teslin Lake)	1,756
Teslin	1,780
Mouth Nisutlin River	1,788
Mouth, Sidney Creek	1,837
Mouth, Hundred Mile Creek	1,851
Mouth, McNeil River	1,887
Outlet, Nisutlin Lake	1,892
Outlet, Lake Laberge	1,679
Inlet, Lake Laberge	1,712
Mouth, Takhini River	1,718
Whitehorse	1,745
Mouth, M'Clintock River	1,769
Outlet, Marsh Lake	1,764
Outlet, Little Atlin Lake	1,788
Outlet, Atlin Lake	1,812
Atlin	1,844
Tagish	1,786
Outlet, Tagish Lake	1,788
Carcross (Outlet Lake Bennett)	1,810
Bennett	1,835

Table 3. Yukon Area processors and associated data, 1984.

Commercial Operator (Processing location/ buying station)	Product	District
Sea Roe Fisheries 3837 13th Ave. West Seattle, WA 98119 (M/V Lafayette, M/V Pribilof, and M/V Pankof)	Sac Roe Herring (Frozen)	Cape Romanzof
Bristol Monarch 121 South River St. Seattle, WA 98108 (M/V Bristol Monarch and M/V Arctic Sun)	Sac Roe Herring (Brine)	Cape Romanzof
Trident Seafoods Corp. 653 N.W. 41st Seattle, WA 98107 (M/V Amatuli and M/V Westling)	Sac Roe Herring (Brine)	Cape Romanzof
Yukon Delta Fish Marketing Co-op Inc. Emmonak, AK 99581 (Emmonak)	Frozen Salmon Kings Cohos Chums Salmon Roe	1 and 2
Amukon Trading Post Scammon Bay, Ak 99662 (Black River)	Hard salt Kings Chums Cohos	1
Bering Sea Fisheries, Inc. 19849 8th N.W. Seattle, WA 98117 (Lamont Slough)	Frozen Salmon and Canned (#1 talls) Kings Cohos Chums Salmon Roe	1 and 2
Schenk Seafood Sales, Inc. P.O. Box 984 Bellingham, WA 98225 (Head of Passes)	Frozen Salmon Kings Cohos Chums Salmon Roe	1 and 2

Table 3. Yukon Area processors and associated data, 1984, continued.

Commercial Operator (Processing location/ buying station)	Product	District
Azachorak Corp., DBA Village Fisheries Mountain Village, AK 99632 (Mt. Village)	Fresh Salmon Kings Chums Cohos	1, 2 and 3
Boreal Fisheries 24320 - 70th Ave. E. Graham, WA 98338 (Old Andrefsky)	Fresh Salmon Kings Chums Cohos	2
Nakamura & Associates 811 First Avenue, #400 Seattle, WA 98104 (Marshall)	Fresh Salmon Kings Chums Cohos Salmon Roe	2 and 3
Y-K Fisheries Kalskag, AK 99607 (St. Marys and Russian Mission)	Fresh Salmon Kings Chums Cohos Salmon Roe	2 and 3
Fish Products Limited (Chet Clark) Box 19 Aniak, AK 99557 (Paimuit/Holy Cross)	Fresh Salmon Kings Salmon Roe	3
Nyquist Investments P.O. Box 10497 Fairbanks, AK 99701 (Tanana)	Fresh Salmon Kings	5
Yutana Fisheries P.O. Box 82445 College, AK 99708 (Manley)	Frozen Salmon Kings Chums Cohos	5 and 6

Table 3. (Continued) Yukon Area processors and associated data, 1984.

Commercial Operator (Processing location/ buying station)	Product	District
Stevens Fisheries Box 38 Nenana, AK 99760 (Nenana)	Frozen Salmon Kings Chums Cohos	6
Lond's Nenana Reefer P.O. Box 374 Nenana, AK 99760 (Nenana)	Frozen Salmon Kings Chums Cohos Salmon Roe	6
Bastein Brothers Interior Fisheries 200 Williams Road Fairbanks, AK 99701 (Fairbanks)	Frozen Salmon Kings Chums Cohos	5 and 6
Kyokko Suisan Alaska Inc. 424 East Manor Anchorage, AK 99501 (Galena Anvik)	Salmon Roe	4
Kaltag Fishermen's Assoc. General Delivery Kaltag, AK 99748 (Kaltag)	Salmon Roe	4
Grayling Air Service General Delivery Grayling, AK 99590	Salmon Roe	4
Walton Co., Inc. General Delivery Aniak, AK 99558 (Aniak)	Salmon Roe	4
Alaska Wild Salmon 140 Eagle St. #201 Anchorage, AK 99501	Fresh Frozen Chums Cohos Salmon Roe	6
George Attla 2406 Whitman Road North Pole, AK 99705	Fresh Salmon Kings Chums	5
T.J. Clark & Sons Route 2 Nenana, AK 99760	Frozen Salmon Kings Chums	6

Table 4. Commercial salmon catches by fishing season and district, Yukon area, 1984.

District	Kings	Summer Chums	Fall Chums	Total Chums	Cohos	Total All Species
District 1						
King salmon season (6/18-6/29)	65,101	164,779	0	164,779	0	229,880
Summer chum salmon season (7/2-7/13)	9,204	127,897	0	127,897	0	137,101
Fall chum salmon season (7/16-8/17)	366	0	78,751	78,751	29,472	108,589
Subtotal	74,671	292,676	78,751	371,427	29,472	475,570
District 2						
King salmon season (6/20-6/28)	29,355	77,297	0	77,297	0	106,652
Summer chum salmon season (7/1-7/18)	7,190	159,634	0	159,634	0	166,824
Fall chum salmon season (7/19-8/19)	152	0	70,803	70,803	43,064	114,019
Subtotal	36,697	236,931	70,803	307,734	43,064	387,495
District 3						
King salmon season (6/28-7/3)	3,036	1,087	0	1,087	0	4,123
Fall chum Salmon season (8/2-8/14)	3	0	6,429	6,429	621	7,053
Subtotal	3,039	1,087	6,429	7,516	621	11,176
TOTAL LOWER YUKON	114,407	530,694	155,983	686,677	73,157	874,241
District 4 a/						
King salmon season (6/20-8/3)	961	167,851	0	167,851	0	168,812
Fall chum salmon season (8/8-9/11)	0	0	9,840	9,840	1,095	10,935
Subtotal	961	167,851	9,840	177,691	1,095	179,747
District 5 a/						
King salmon season (6/29-8/7)	3,669	692	0	692	0	4,361
Fall chum salmon season (8/15-9/11)	0	0	24,117	24,117	0	24,117
Subtotal	3,669	692	24,117	24,809	0	28,478
District 6 a/						
King salmon season (7/6-8/12)	867	56,584	0	56,584	0	57,451
Fall chum salmon season (9/14-9/17)	0	0	20,620 b/	20,620	7,688 b/	28,308
Subtotal	867	56,584	20,620	77,204	7,688	85,759
TOTAL UPPER YUKON	5,497	225,127	54,577	279,704	8,783	293,984
GRAND TOTAL YUKON AREA	119,904	755,821	210,560	966,381	81,940	1,168,225

a/ Includes "equivalent numbers" of chum salmon converted from roe sales.
b/ Includes 2,835 chums and 682 cohos taken in test fishery.

Table 5. Yukon area commercial salmon catches by statistical area, 1984.

Statistical Area	King Salmon Season 1/ King	King Salmon Season 1/ Chum	Summer Chum Salmon Season 2/ King	Summer Chum Salmon Season 2/ Chum	Summer Chum Salmon Season 2/ Coho	Fall Chum Salmon Season 3/ King	Fall Chum Salmon Season 3/ Chum	Fall Chum Salmon Season 3/ Coho	Total King	Total Chum	Total Coho
334-11	13,549	30,376	821	11,888	0	15	315	151	14,385	42,579	151
12	13,579	57,467	1,608	23,828	0	133	24,914	6,743	15,320	106,209	6,743
13	2,139	9,647	454	5,241	0	5	2,488	1,233	2,598	17,376	1,233
14	5,018	19,835	1,240	18,450	0	39	16,234	3,101	6,297	54,519	3,101
15	9,752	9,207	1,314	13,278	0	57	13,536	5,925	11,123	36,021	5,925
16	739	942	629	4,896	0	66	6,873	4,151	1,434	12,711	4,151
17	16,505	26,347	2,552	37,973	0	32	9,390	4,389	19,089	73,710	4,389
18	3,820	10,958	586	12,343	0	19	5,001	3,779	4,425	28,302	3,779
Subtotal District 1	65,101	164,779	9,204	127,897	0	366	78,751	29,472	74,671	371,427	29,472
334-21	7,863	13,205	1,286	33,056	0	30	10,951	4,736	9,179	57,212	4,736
22	8,453	36,434	3,031	55,356	0	89	22,942	26,506	11,573	114,732	26,506
23	3,169	9,656	1,490	33,460	0	9	7,622	5,514	4,668	50,738	5,514
24	4,734	9,716	1,000	26,360	0	18	19,183	4,556	5,752	55,259	4,556
25	5,136	8,286	383	11,402	0	6	10,105	1,752	5,525	29,793	1,752
Subtotal District 2	29,355	77,297	7,190	159,634	0	152	70,803	43,064	36,697	307,734	43,064
334-31	897	447	0	0	0	3	6,429	621	900	6,876	621
32	2,139	640	0	0	0	0	0	0	2,139	640	0
Subtotal District 3	3,036	1,087	0	0	0	3	6,429	621	3,039	7,516	621
TOTAL LOWER YUKON	97,492	243,163	16,394	287,531	0	521	155,983	73,157	114,407	686,677	73,157
334-41 4/	2	148,570	0	0	0	0	0	0	2	148,570	0
42	272	15,843	0	0	0	0	4,183	412	272	20,026	412
43	687	3,438	0	0	0	0	5,657	683	687	9,095	683
Subtotal District 4	961	167,851	0	0	0	0	9,840	1,095	961	177,691	1,095
334-51	128	50	0	0	0	0	1,415	0	128	1,465	0
52	1,589	625	0	0	0	0	10,329	0	1,589	10,954	0
53	1,568	12	0	0	0	0	9,403	0	1,568	9,415	0
54	384	5	0	0	0	0	2,970	0	384	2,975	0
Subtotal District 5	3,669	692	0	0	0	0	24,117	0	3,669	24,809	0
334-61	0	3,769	0	0	0	0	2,782	926	0	6,551	926
62	375	42,383	0	0	0	0	11,809	5,360	375	54,192	5,360
63	492	10,432	0	0	0	0	3,194	720	492	13,626	720
Subtotal District 6	867	56,584	0	0	0	0	20,620 6/	7,688 6/	867	77,204	7,688
TOTAL UPPER YUKON 5/	5,497	225,127	0	0	0	0	54,577	8,783	5,497	279,704	8,783
GRAND TOTAL YUKON AREA	102,989	468,290	16,394	287,531	0	521	210,560	81,940	119,904	966,381	81,940

1/King Salmon Season

District 1 6/18-6/29
District 2 6/20-6/28
District 3 6/28-7/3
District 4 6/20-8/3
District 5 6/29-8/7
District 6 7/6-8/12

2/Summer Chum Salmon Season

District 1 7/2-7/13
District 2 7/1-7/18

3/Fall Chum Salmon Season

District 1 7/16-8/17
District 2 7/19-8/19
District 3 8/2-8/14
District 4 8/8-9/11
District 5 8/15-9/11
District 6 9/14-9/17

4/Season closes 8/1 in 334-41

6/Includes 2,835 chums and 682 cohos taken in test fishery.

5/ Includes "equivalent numbers" of chum salmon converted from roe sales.

Table 6. Yukon Area Commercial Fisheries Entry Commission salmon gear permits issued by residence, 1984.

District	Residence	Gillnet Permits	Fishwheel Permits
1, 2 and 3	Emmonak	98	
	Mountain Village	95	
	Alakanuk	81	
	Kotlik	78	
	St. Marys	67	
	Pilot Station	49	
	Marshall	46	
	Scammon Bay	40	
	Sheldons Point	25	
	Russian Mission	17	
	Anchorage	15	
	Holy Cross	15	
	Bethel	14	
	Fairbanks	12	
	Unalakleet	9	
	Stebbins	9	
	Shaktoolik	4	
	St. Michael	3	
	Wasilla	3	
	Pitkas Point	1	
	Manley Hot Springs	1	
	Tanana	1	
	Fort Yukon	1	
	Hooper Bay	1	
	Aniak	1	
	Dillingham	1	
	Togiak	1	
	Iliamna	1	
	Nome	1	
	Elim	1	
	Eagle River	1	
	Kodiak	1	
	Palmer	1	
	Trapper Creek	1	
	Paxson	1	
	Seward	1	
	Big Lake	1	
	Ward Cove	1	
	Everett, WA	1	
	Gig Harbor, WA	1	
	Bellingham, WA	1	
	Redmond, WA	1	
TOTAL LOWER YUKON		703 1/	
District 4	Anvik	2	5
	Grayling	3	8
	Kaltag	4	10
	Nulato	1	14
	Koyukuk	0	2
	Galena	6	21
	Ruby	2	11
	Holy Cross	2	0
	Anchorage	3	2
	Nenana	1	1
	McGrath	0	1
Subtotal		24	75
District 5	Tanana	10	19
	Rampart	3	3
	Stevens Village	0	2
	Ft. Yukon	0	1
	Circle	1	0
	Fairbanks	18	12
	Kodiak	1	0
	Anchorage	1	0
	Manley	0	2
	Nenana	1	1
	Kennan, WI.	0	1
Subtotal		35	41
District 6	Manley	2	1
	Minto	0	1
	Nenana	7	19
	Fairbanks	3	14
Subtotal		12	35
TOTAL UPPER YUKON AREA		71	151
GRAND TOTAL YUKON AREA		774	151

1/ Does not include transfers

Table 7. Commercial salmon catch and effort data by fishing period, set and drift gill nets combined, District 1, Yukon area, 1984.

	Period Dates	Hours Fished	No. of Fishermen	Period Catch and Catch Per Unit Effort						Cumulative Catch and Catch Per Unit Effort					
				King	CPUE	Coho	CPUE	Chum	CPUE	King	CPUE	Coho	CPUE	Chum	CPUE
1	6/18-6/19	24	374	13,722	1.53	0	0.00	37,334	4.16	13,722	1.53	0	0.00	37,334	4.16
2	6/21-6/22	24	409	18,760	1.91	0	0.00	35,556	3.62	32,482	1.73	0	0.00	72,890	3.88
3	6/25-6/26	24	418	16,102	1.61	0	0.00	67,961	6.77	48,584	1.69	0	0.00	140,851	4.89
4	6/28-6/29	24	419	16,517	1.64	0	0.00	23,928	2.38	65,101	1.67	0	0.00	164,779	4.24
Subtotal a.)		96	439	65,101	1.67	0	0.00	164,779	4.24						
5	7/02-7/03	24	361	5.053	0.58	0	0.00	56,584	6.53	5,053	0.58	0	0.00	221,363	4.66
6	7/05-7/06	24	287	2,699	0.39	0	0.00	37,044	5.38	7,752	0.50	0	0.00	258,407	4.75
7	7/09-7/10	24	316	1,101	0.15	0	0.00	23,107	3.05	8,853	0.38	0	0.00	281,514	4.54
8	7/12-7/13	24	251	351	0.06	0	0.00	11,162	1.85	9,204	0.32	0	0.00	292,676	4.30
Subtotal b.)		192	444	9,204	0.32	0	0.00	292.676	4.30						
9	7/16-7/17	24	227	270	0.05	5	0.00	19,627	3.60	9,474	0.27	5	0.00	19,627	3.60
10	7/30-7/31	24	212	37	0.01	2,557	0.50	18,316	3.60	9,511	0.24	2,562	0.24	37,943	3.60
11	8/02-8/03	24	252	38	0.01	5,028	0.83	17,094	2.83	9,549	0.21	7,590	0.46	55,037	3.32
12	8/06-8/07	24	165	12	0.00	1,403	0.35	1,759	0.44	9,561	0.19	8,993	0.44	56,796	2.76
13	8/13-8/14	24	129	6	0.00	10,683	3.45	11,807	3.81	9,567	0.18	19,676	0.83	68,603	2.90
14	8/16-8/17	24	137	3	0.00	9,796	2.98	10,148	3.09	9,570	0.17	29,472	1.09	78,751	2.92
Subtotal c.)		144	327	9,570	0.17	29,472	1.09	78,751	2.92						
Season Total		336	453	74,671		29,472		371,427							

a.) King salmon season (6/18 to 6/29), no mesh size restrictions.
b.) Summer chum salmon season (6/18 to 7/13). Note, six inch maximum mesh size restriction in effect after 6/29, king salmon subtotal represents catch after mesh size change.
c.) Fall chum salmon season (7/16 to 8/17). Note, C.P.U.E. after 7/17 was calculated assuming 24 hour fishing periods, although the district was actually divided into Set Net (24 hour) and Gill Net (12 hour) areas.

Table 8. Commercial salmon catch and effort data by fishing period, set and drift gill nets combined, District 2, Yukon area, 1984.

	Period Dates	Hours Fished	No. of Fishermen	Period Catch and Catch Per Unit Effort						Cumulative Catch and Catch Per Unit Effort					
				King	CPUE	Coho	CPUE	Chum	CPUE	King	CPUE	Coho	CPUE	Chum	CPUE
1	6/20-6/21	24	203	5,581	1.15	0	0.00	22,815	4.68	5,581	1.15	0	0.00	22,815	4.68
2	6/24-6/25	24	210	14,356	2.85	0	0.00	31,739	6.30	19,937	2.01	0	0.00	54,554	5.50
3	6/27-6/28	24	196	9,418	2.00	0	0.00	22,743	4.83	29,355	2.01	0	0.00	77,297	5.29
Subtotal a.)		72	213	29,355	2.01	0	0.00	77,297	5.29						
4	7/01-7/02	24	193	2.863	0.62	0	0.00	76,481	16.51	2,863	0.62	0	0.00	153,778	7.99
5	7/04-7/05	24	132	1,592	0.50	0	0.00	28,579	9.02	4,455	0.57	0	0.00	182,357	8.14
6	7/08-7/09	24	171	1,757	0.43	0	0.00	31,222	7.61	6,212	0.52	0	0.00	213,579	8.05
7	7/11-7/12	24	157	682	0.18	0	0.00	14,550	3.86	6,894	0.44	0	0.00	228,129	7.53
8	7/15-7/16	24	82	241	0.12	0	0.00	6,548	3.33	7,135	0.40	0	0.00	234,677	7.28
9	7/18	6	50	55	0.18	0	0.00	2,254	7.51	7,190	0.40	0	0.00	236,931	7.28
Subtotal b.)		198	217	7,190	0.40	0	0.00	236,931	7.28						
9	7/19	18	93	108	0.06	0	0.00	9,091	5.43	7,298	0.37	0	0.00	9,091	5.43
10	8/01-8/01	12	125	10	0.01	948	0.63	19,177	12.78	7,308	0.35	948	0.63	28,268	8.91
11	8/05-8/05	12	176	14	0.01	3,770	1.79	17,152	8.12	7,322	0.32	4,718	1.13	45,420	8.59
12	8/08-8/08	12	142	8	0.00	2,882	1.69	4,999	2.93	7,330	0.29	7,600	1.43	50,419	7.21
13	8/15-8/15	12	162	4	0.00	14,888	7.66	8,473	4.36	7,334	0.27	22,488	3.10	58,892	6.59
14	8/19-8/19	12	175	8	0.00	20,576	9.80	11,911	5.67	7,342	0.25	43,064	4.60	70,803	6.42
Subtotal c.)		78	216	7,342	0.25	43,064	4.60	70,803	6.42						
Season Total		276	236	36,697		43,064		307,734							

a.) King salmon season (6/20 to 6/28), no mesh size restrictions.

b.) Summer chum salmon season (6/20 to 7/18). Note, six inch maximum mesh size restriction in effect after 6/28, king salmon subtotal represents catch after mesh size change. Chum salmon caught during period 9 on 7/18 were considered summer chum salmon.

c.) Fall chum salmon season (7/19 to 8/19). Chum salmon caught after 7/18 were considered fall chum salmon and were counted against the guideline harvest range.

Table 9. Commercial salmon catch and effort data by fishing period, set and drift gill nets combined, District 3, Yukon area, 1984.

	Period Dates	Hours Fished	No. of Fishermen	Period Catch and Catch Per Unit Effort						Cumulative Catch and Catch Per Unit Effort					
				King	CPUE	Coho	CPUE	Chum	CPUE	King	CPUE	Coho	CPUE	Chum	CPUE
1	6/28-6/29	24	18	1,273	2.95	0	0.00	840	1.94	1,273	2.95	0	0.00	840	1.94
2	7/02-7/03	24	18	1,763	4.08	0	0.00	247	0.57	3,036	3.51	0	0.00	1,087	1.26
Subtotal a.)		48	20	3,036	3.51	0	0.00	1,087	1.26						
3	8/02-8/03	24	6	2	0.01	0	0.00	2,191	15.22	2	0.01	0	0.00	2,191	15.22
4	8/06-8/07	24	8	1	0.01	199	1.04	1,730	9.01	3	0.01	199	0.17	3,921	11.67
5	8/09-8/10	24	8	0	0.00	194	1.01	760	3.96	3	0.01	393	0.28	4,681	8.87
6	8/13-8/14	24	8	0	0.00	228	1.19	1,748	9.10	3	0.00	621	0.39	6,429	8.93
Subtotal b.)		96	12	3	0.00	621	0.39	6,429	8.93						
Season Total		144	26	3,039		621		7,516							

a.) King salmon season (6/28 to 7/03), no mesh size restrictions.
b.) Fall chum salmon season (8/02 to 8/14). Six inch maximum mesh size restriction in effect.

Table 10. Commercial salmon catch and effort by fishing period, district 4, Yukon area, set gill net and fishwheel catches combined, 1984. a/

Period Dates	No. of Fishermen	King	Chum	Coho
6/20-6/22	8	0	2,617	0
6/24-6/26	16	4	7,184	0
6/27-6/29	27	125	10,989	0
7/1-7/03	36	220	19,493	0
7/04-7/06	36	106	28,634	0
7/08-7/10	41	128	34,550	0
7/11-7/13	48	161	31,270	0
7/15-7/17	45	126	17,667	0
7/18-7/20	40	72	8,788	0
7/22-7/24	36	19	4,641	0
7/25-7/27	23	0	1,821	0
7/29-7/31	2	0	149	0
8/01-8/03	1	0	48	0
subtotal b/	54	961	167,851	0
8/8-8/10	3	0	292	0
8/12-8/14	10	0	1,150	0
8/15-8/17	14	0	2,213	4
8/19-8/21	15	0	1,311	20
8/22-8/24	10	0	1,267	204
8/26-8/28	11	0	1,518	318
8/29-8/31	11	0	1,695	419
9/02-9/04	2	0	394	130
9/05-9/07	0	0	0	0
9/09-9/11	0	0	0	0
subtotal c/	18	0	9,840	1,095
Totals	58	961	177,691	1,095

a/ Includes "equivalent numbers" of salmon.
b/ King salmon season 6/20-8/3.
c/ Fall chum salmon season 8/8-9/11.

Table 11. Commercial salmon catch and effort by fishing period, district 5, Yukon area, set gill net and fishwheel catches combined, 1984. a/

Period Dates	No. of Fishermen	King	Chum	Coho
6/29-7/1	9	342	0	0
7/03-7/05	15	753	33	0
7/06-7/08	20	929	165	0
7/10-7/12 b/	26	1,261	489	0
7/15-7/21	1	120	0	0
7/22-7/28	1	127	5	0
7/29-8/04	1	97	0	0
8/05-8/07 c/	1	40	0	0
subtotal d/	31	3,669	692	0
8/15-8/16	23	0	5,875	0
8/18-8/19	29	0	6,193	0
8/21-8/22 d/	34	0	10,211	0
9/07-9/08	2	0	520	0
9/09-9/11 e/	3	0	1,318	0
subtotal	39	0	24,117	0
Total	45	3,669	24,809	0

a/ Includes "equivalent numbers" of salmon.
b/ King salmon season in subdistricts 5-A, 5-B and 5-C closed on 7/12.
c/ King salmon season in subdistrict 5-D closed on 8/07.
d/ Fall chum salmon season in subdistrict 5-A, 5-B and 5-C closed on 8/22.
e/ Fall chum salmon season in subdistrict 5-D closed on 9/11.

Table 12. Commercial salmon catch and effort by fishing period, district 6, Yukon area set gill net and fishwheel catches combined, 1984. a/

Period Dates	No. of Fishermen	Kings	Chums	Coho
7/06-7/08	4	66	0	0
7/09-7/11	7	183	113	0
7/13-7/15	18	115	3,036	0
7/16-7/18	16	107	4,764	0
7/20-7/22	17	70	7,835	0
7/23-7/25	18	14	10,069	0
7/27-7/29	17	12	5,603	0
7/30-8/01	15	115	6,958	0
8/03-8/05	19	165	7,614	0
8/06-8/08	20	20	8,204	0
8/10-8/12	13	0	2,388	0
subtotal b/	27	867	56,584	0
9/14-9/15	25	0	10,054	2,516
9/16-9/17	23	0	7,731	4,490
subtotal c/	26	0	20,620 d/	7,688
Total	33	867	77,204	7,688

a/ Includes "equivalent numbers" of salmon.
b/ King salmon season 7/06-8/12.
c/ Fall chum salmon season 9/14-9/17.
d/ Includes 2,835 chums and 682 cohos taken in test fishery.

Table 13. Upper Yukon area commercial salmon catch and roe production, 1984. a/

Subdistrict	No. of fishermen	Kings	Summer chums			Fall chums			Coho
			Chums	Chum roe b/	Equiv. chums	Chums	Chum roe c/	Equiv. chums	
4-A	37	2	51	148,519	148,570	0	0	0	0
4-B	15	272	659	15,184	15,843	2,961	1,222	4,183	412
4-C	12	687	299	3,139	3,438	4,664	993	5,657	683
Subtotal District 4	58	961	1,009	166,842	167,851	7,625	2,215	9,840	1,095
5-A	5	128	50	0	50	1,415	0	1,415	0
5-B	20	1,589	578	47	625	10,329	0	10,329	0
5-C	23	1,568	12	0	12	9,403	0	9,403	0
5-D	3	384	5	0	5	2,913	57	2,970	0
Subtotal District 5	48	3,669	645	47	692	24,060	57	24,117	0
6-A	5	0	3,769	0	3,769	5,617	0	5,617	1,608
6-B	20	375	42,231	152	42,383	11,809	0	11,809	5,360
6-C	8	492	10,249	183	10,432	3,138	56	3,194	720
Subtotal District 6	33	867	56,249	335	56,584	20,564	56	20,620	7,688
Total	139	5,497	57,903	167,224	225,127	52,249	2,328	54,577	8,783

a/ All figures in pounds of unprocessed product.

Table 14 Yukon River subsistence salmon catch data 1984. [a]

Village	Survey date	Fishing families	Dogs[b]	Kings	Summer chums[c]	Fall chums	Coho	Subtotal chums & coho	Total salmon	Whitefish/ sheefish	8" Nets	6" Nets	Fish-wheels
Sheldon's Pt.	8/20	18	75	802	2,701	555	245	3,501	4,303	98/52	11	20	
Alakanuk	8/23	71	164	1,028	10,095	1,219	776	12,090	13,118	606/339	44	83	
Emmonak	8/28	76	197	2,099	10,053	3,329	3,659	17,041	19,140	111/305	35	68	
Kotlik	8/22	46	172	695	5,610	3,782	1,415	10,807	11,502	84/219	81	90	
Subtotal		211	608	4,624	28,459	8,885	6,095	43,439	48,063	899/915	171	261	
Mt. Village	Oct	60	173	1,217	8,665	3,497	982	13,144	14,361	g/	g/	g/	
Pitka's Pt.	Oct	12	48	996	2,129	1,186	600	3,915	4,911	g/	g/	g/	
St. Mary's	Oct	44	190	1,667	8,890	2,741	1,424	13,055	14,722	g/	g/	g/	
Pilot Station	Oct	42	103	1,116	3,236	832	1,114	5,182	6,298	g/	g/	g/	
Marshall	Oct	38	241	2,176	4,076	3,138	2,946	10,160	12,336	g/	g/	g/	
Subtotal		196	755	7,172	26,996	11,394	7,066	45,456	52,628				
Russion Mission	July/Jan	22	73	1,899	2,045	701	656	3,402	5,301	g/	g/	g/	
Holy Cross	Oct	22	71	2,456	5,124	1,373	0	6,497	8,953	g/	g/	g/	
Subtotal		44	144	4,355	7,169	2,074	656	9,899	14,254				
Lower Yukon Total		451	1,507	16,151	62,624	22,353	13,817	98,794	114,945				
Anvik	d/	16	112	576	22,433[j]	720	40	23,193	23,769	872/164	7	8	4
Grayling	d/	23	216	879	28,060	1,950	97	30,107	30,986	2,438/129	9	9	18
Kaltag	July-Nov	11	g/	487	1,800	1,330	0	3,130	3,617	g/	g/	g/	12
Nulato	July-Nov	13	g/	966	232	1,675	0	1,907	2,873	g/	g/	g/	2
Koyukuk	Aug-Nov	9	63	1,009	5,215	1,560	200	6,975	7,984	60/245	7	6	1
Galena	Aug-Nov	21	221	1,226	19,480	7,270	452	27,202	28,428	392/272	13	6	11
Ruby	Aug-Nov	18	185	1,107	4,282	8,505	1,631	14,418	15,525	1,598/162	2	0	14
Subtotal		111	797	6,250	81,502	23,010	2,420	106,932	113,182	5,360/972			62
Tanana	Nov	30	806	2,682	10,620	42,690	16,898	70,208	72,890	15,000/5,845	32	29	31
Rampart	d/	12	180	876	7,650	4,395	120	12,165	13,041	0/210	20	4	3
Fbks. Fish Camp[e]	d/	30[f]	g/	2,499	4,065	12,920	254	17,239	19,738	3,299/743	g/	g/	7
Steven's Village	Oct	24	70	2,177	5,952	4,932	145	11,029	13,206	137/62	g/	g/	5
Beaver	d/	5	12	553	167	0	0	167	720	50/0	8	2	0
Ft. Yukon	Oct	23	146	3,608	3,032	7,525	33	10,590	14,198	2,399/154	8	NA	11
Circle	d/	11	44	545	0	3,107	0	3,107	3,652	0/6	11	8	0
Eagle	Nov	43	254	1,998	49	18,519	17	18,585	20,583	123/138	g/	g/	5
Subtotal		178	1,512	14,938	31,535	94,088	17,467	143,090	158,028	21,008/7,158			62
Main River Totals		740	3,816	37,339	175,661	139,451	33,704	348,816	386,155	27,267/9,045	288	333	122

Table 14. Yukon River Subsistence Salmon Catch Data 1984.[a/] - continued -

Village	Survey date	Fishing families	Dogs[b/]	Kings	Summer chums[c/]	Fall chums	Coho	Subtotal chums & coho	Total salmon	Whitefish/ sheefish	8" Nets	6" Nets	Fish-wheels
Manley	d/	6	107	282	1,260	2,196	1,566	5,022	5,304	66/0	5	2	5
Minto	July-Nov	20	226	440	5,042	4,025	800	9,867	10,307	200/0	3		6
Nenana	d/	26	346	2,556	13,962	13,520	10,270	37,752	40,308	1,612/429	10	8	26
Fbks[h/]	d/	212[i/]	g/	321	3,177	2,985	2,149	8,311	8,632	185/15	g/	g/	8
Tanana River Subtotal		264	679	3,599	23,441	22,726	14,785	60,952	64,551	2,063/444			45
Huslia	Nov	19	169	169	12,550	6,306	12	18,868	19,037	3,159/349	7	36	2
Hughes	Nov	12	120	856	14,744	1,280	400	16,424	17,280	3,400/348	8	40	0
Alatna	Nov	1	15	2	205	0	35	240	242	41/36		2	0
Allakaket	Nov	20	56	373	3,964	556	0	4,520	4,893	2,322/627	13	24	0
Koyukuk River Totals		52	360	1,400	31,463	8,142	447	40,052	41,452	8,922/1,360	28	102	2
Venetie[k/]	Nov	8	73	51	0	4,345	0	4,345	4,396	221/3	2	7	0
Subtotal Chandalar River		8	73	51	0	4,345	0	4,345	4,396	221/3	2	7	0
Subtotals Upper Yukon (Alaska)		613	3,421	26,238	167,941	152,311	35,119	355,371	381,609	37,574/9,937			
Totals Yukon River drainage (Alaska)		1,064	4,928	42,389	230,565	174,664	48,936	454,165	496,554	38,473/10,852			171
Yukon Territory Totals	l/	g/	g/	6,160	0	6,230	500	6,730	12,890	g/	g/	g/	g/
Grand Total Yukon River drainage		1,064	4,928	48,549	230,565	180,894	49,436	460,895	509,444	38,473/10,852	333	452	171

a/ Catch data expanded.
b/ Data from fishing families only.
c/ Includes small numbers of pinks upstream to Nulato.
d/ Survey conducted by mail Nov-Jan.
e/ Data from fishermen who fished between Hess Creek and Dall River.
f/ 65 permits issued, 11 did not fish, 4 did not report catches; catches by Steven's Village residents shown under Steven's Village.
g/ Data not collected.
h/ Data from fishermen who fished on the Tanana River between Wood River and Salcha River.
i/ 308 permits issued, 71 permittees did not fish or fished unsuccessfully, 25 did not report.
j/ Includes approximately 500 pink salmon.
k/ Insufficient data for estimate. These figures represent 1979-1983 averages.
l/ Data from ECFS (includes Indian food fishery catches and Domestic fishery catches) also includes 500 king, 4,000 chum and 500 coho taken at Old Crow.

Table 15. Aerial survey salmon escapement estimates, Yukon River drainage, 1984.[a]

Stream (drainage)	Date	Survey rating	Kings	Coho	Summer chums	Fall chums
Andreafsky River						
East Fork sonar count[b]	6/22-7/25		2,473	-	70,125	-
East Fork	7/13	poor	(1,573)	-	(95,200)	-
West Fork	7/13	good	1,933	-	238,565	-
Subtotal			4,466	-	308,690	-
Anvik River						
Aerial	7/17	poor	641	-	-	-
Sonar[b]	6/22-7/27		-	-	891,028	-
Subtotal			641		891,028	
Atchuelinguk River	7/14	fair	280	-	31,605	-
Stuyahok River	7/17	poor	few	-	few	-
Koyukuk River Drainage						
Huslia River						
North Fork[c]	7/23	fair	-	-	2	-
Billy Hawk Creek[c]	7/23	fair	-	-	4,500	-
Subtotal					4,502	
Hogatza River						
Caribou Creek						
Bear Creek[d]	7/18	fair	-	-	184	-
Henshaw Creek	7/30	poor	253	-	532	-
South Fork Koyukuk	7/30	poor	23	-	4	-
Fish Creek	7/30	poor	6	-	-	-
Jim River	7/30	poor	85	-	311	-
Subtotal			114		315	
TOTAL Koyukuk R. Drainage			367		5,533	
LOWER Tanana River Drainage						
Kantishna River Drainage						
Toklat River						
Barton Creek	8/8	poor	30	-	-	-
Geiger Creek	10/28	fair	-	20	-	3,000
Sushana River[e]	10/27	good	-	185	-	5,960
Toklat-vic. Rdhse[e]	10/27	good	-	15	-	6,901
Toklat subtotal			30	220		15,861
Clear Creek	8/8	fair	48	-	-	-
Nenana River Drainage						
Lost Slough	10/17	good	-	2,677	-	-
Julius Creek						
Clear Creek[f,g]	9/21	fair	-	2,600	-	100
Wood Creek Weir[g,h]			-	8,805	-	2,126
June Creek[e,g]	9/28	good	-	55	-	-
Panguingue Creek[e,g]	9/28	good	-	26	-	-
Nenana Subtotal				14,163		2,226

Table 15. Continued. Aerial survey salmon escapement estimates, Yukon River drainage, 1984.[a]

Stream (drainage)	Date	Survey rating	Kings	Coho	Summer chums	Fall chums
Chatanika River	8/15	poor	9	-	70	-
Chena River	8/7	fair	501	-	1,861	-
Salcha River	8/7	good	1,031	-	9,810	-
UPPER Tanana River Drainage						
Slough near Eielson AFB	10/30	poor	-	-	-	2
Slough near BM 735 Slough	10/30	poor	-	-	-	91
Slough near mouth of Little Delta River	10/30	poor	-	-	-	7
Richardson Clearwater R.	10/30	fair-poor	-	428	-	-
Between Andersen Slough and Delta River	10/30	fair	-	-	-	222
Delta River[e]	11/15	good-poor	-	7	-	12,327
South Bank Tanana	10/30	fair	-	-	-	2,150
Blue Creek	10/30	fair	-	31	-	42
Bluff Cabin Slough[e]	11/7	good	-	110	-	4,017
Clearwater Lake Outlet Slough	10/30	poor	-	-	-	851
Clearwater Lake and outlet	10/30	fair	-	1,368	-	-
Delta Clearwater River[f,i]	11/5-6	fair	-	11,061	-	-
One mile Slough	10/30	poor	-	170	-	560
Goodpaster River	8/8	good	165	-	189	-
Subtotal			165	13,147	189	20,269
TOTAL TANANA RIVER DRAINAGE			1,784	27,530	11,930	38,356
Porcupine River Drainage						
Sheenjek River[j]	9/20	good	-	3	-	(11,402)
Sonar count[b]	8/30-9/25		-	-	-	25,120
Fishing Branch[k]	10/16	fair	-	-	-	5,570
Porcupine Subtotal				3		30,690
Yukon Territory Streams						
Kluane River[k]	10/17	good	-	-	-	7,200
Tincup Creek[k]	8/19	good	125	-	-	-
Koidern River[k]	10/17	good	-	-	-	1,300
Mainstem Yukon[k,l]	10/12	good	-	-	-	2,800
Tatchun Creek[l]	8/31	-	161	-	-	-
Little Salmon River	8/18	good	434	-	-	-
Big Salmon River	8/15-19	fair	1,456	-	-	-
Teslin River Drainage						
Swift River (Lower Teslin River)	8/14	poor	3	-	-	-
Nisutlin River	8/18	good-fair	1,347	-	-	-
Wolf River	8/16	good-fair	374	-	-	-
Morley River	8/16	fair	93	-	-	-
Swift River	8/16	good	62	-	-	-
Jennings River	8/16	fair	29	-	-	-
Gladys River	8/16	poor	0	-	-	-
Upper Teslin River	8/16	fair-poor	86	-	-	-
Whitehorse Fishway[k,m]	8/1-30		977	-	-	-

Table 15. Continued. Aerial survey salmon escapement estimates, Yukon River drainage, 1984.[a]

Stream (drainage)	Date	Survey rating	Kings	Coho	Summer chums	Fall chums
Pelly River Drainage						
Lapie River	8/17	good	5	-	-	-
Ross River	8/17	fair-poor	89	-	-	-
Prevost River	8/17	good-fair	0	-	-	-
Lewis Lake outlet	8/17	fair-poor	62	-	-	-
Lower Pelly Lake outlet	8/17	fair	24	-	-	-
Hoole River	8/17	good	58	-	-	-
Subtotal			5,385	-	-	11,300
YUKON RIVER DRAINAGE TOTALS			12,923	27,533	1,248,786	80,346

a Only peak estimates listed; carcass counts included. Data in parentheses not included in subtotals.
b Side-scan sonar estimate.
c Surveyed by USFWS.
d Combination foot and aerial estimate.
e Foot survey.
f Boat survey.
g Surveyed by F.R.E.D. Division.
h Weir count by F.R.E.D. Division. No chums allowed to spawn wild. Only 6,018 coho (2,835 males; 3,183 females) were passed and allowed to spawn wild. Remainder (2,787) went for Clear hatchery egg-take.
i Surveyed by Sport Fish Division.
j Incomplete survey - minimal estimates.
k Surveyed by Department of Fisheries and Oceans (Canadians).
l Mainstem Yukon River from Yukon Crossing to Fort Selkirk.
m An additional 65 kings were utilized in egg-take operation (42 females; 30 males).

Table 16. Yukon area (Alaska) escapement index objectives for king and chum salmon.

	Escapement Objective 1/	
KING SALMON	Minimum	Optimum
Andreafsky River		
East Fork	1,100	1,600
West Fork	700	1,000
Anvik River		
(Mainstem Yellow River to McDonald Creek)	300	500
Nulato River		
North Fork		500
South Fork		500
Gisasa River		650
Chena River	1,000	1,700
(Flood Control Dam to middle Fork)		
Salcha River	1,500	3,500
SUMMER CHUM SALMON		
Andreafsky River		
East Fork	76,000	109,000
West Fork	62,000	116,000
Anvik River		
(Mainstem Goblet Creek to McDonald Cr.)	209,000	356,000
Sonar		487,000 2/
Nulato River		
North Fork	37,000	53,000
Hogatza River		
Clear Creek	5,000	8,000
Caribou Creek	5,000	9,000
Salcha River		3,500
FALL CHUM SALMON		
Upper Tanana River Drainage		
Delta River		7,900
Bluff Cabin Slough		5,200
Upper Toklat River		
Peak Years 3/		69,000
Non-Peak Years		22,000
Sheenjek River		
Peak Years 3/		60,000
Non-Peak Years		19,000

1/ Escapement objectives in numbers of fish are preliminary and are subject to change as additional data becomes available. Unless otherwise indicated, escapement objectives are based on aerial survey index estimates which do not represent total escapement, but do reflect annual spawner abundance trends when using standard survey methods under acceptable survey conditions.

2/ Optimim number calculated from escapement-return relationships.

3/ Four year cycle in 1971, 1975, 1979 etc.

Appendix Table 1. Yukon River drainage commercial and subsistence salmon catches, 1903-1984.

	Commercial Catch										
	Alaska				Yukon Territory			Total			
Year	King	Coho	Chum	Total	King	Chum	Total	King	Coho	Chum	Total
1903							4,666 8/				4,666
1904											
1905											
1906											
1907											
1908							7,000				7,000
1909							9,238				9,238
1910											
1911											
1912											
1913							12,133				12,133
1914							12,573				12,573
1915							10,466				10,466
1916							9,566				9,566
1917											
1918	12,239	26,144	73,921	112,304			7,066	12,239	26,144	73,921	119,370
1919	104,822	37,070	327,898	469,790 9/			1,800	104,822	37,070	327,898	471,590
1920	58,467		155,655	214,122 9/			12,000	58,467		155,655	226,122
1921	69,646	1,000	111,098	181,744			10,840	69,646	1,000	111,098	192,584
1922	16,825			16,825			2,420	16,825			19,245
1923	13,393			13,393			1,833	13,393			15,226
1924	27,375			27,375			4,560	27,375			31,935
1925							3,900				3,900
1926							4,373				4,373
1927							5,366				5,366
1928							5,733				5,733
1929							5,266				5,266
1930							3,660				3,660
1931							3,473				3,473
1932	4,739			4,739			4,200	4,739			8,939
1933	8,829			8,829			3,333	8,829			12,162
1934	25,365			25,365			2,000	25,365			27,365
1935	7,265			7,265			3,466	7,265			10,731
1936	20,963			20,963			3,400	20,963			24,363
1937	6,226			6,226			3,746	6,226			9,972
1938	13,727			13,727			860	13,727			14,587
1939	9,987			9,987			720	9,987			10,707
1940	18,053			18,053			1,153	18,053			19,206
1941	29,905			29,905			2,806	29,905			32,711
1942	22,487			22,487			713	22,487			23,200
1943	27,650			27,650			609	27,650			28,259
1944	14,232			14,232			986	14,232			15,218
1945	19,727			19,727			1,333	19,727			21,060
1946	22,782			22,782			353	22,782			23,135
1947	54,026			54,026			120	54,026			54,146
1948	33,842			33,842				33,842			33,842
1949	36,379			36,379				36,379			36,379
1950	41,808			41,808				41,808			41,808
1951	3/ 56,278			56,278				56,278			56,278
1952	38,637	10,868		49,505				38,367	10,868		49,505
1953	58,859		5,977	64,836				58,859		5,977	64,836
1954	64,545		14,375 4/	78,290				64,545		14,375	78,920
1955	55,925			55,925				55,925			55,925
1956	62,208	1	10,742 5/	72,951				62,208	1	10,742	72,951
1957	63,623			63,623				63,623			63,623
1958	63,375			63,375	3,000	1,500	4,500 7/	66,735		1,500	68,235
1959	78,370			78,370	2,477	1,098	3,575	80,847		1,098	81,945
1960	6/ 67,597			67,597	4,085	5,493	9,578	71,682		5,493	77,175
1961	119,664	2,855	42,461	165,096 5/	3,446	3,278	6,724	123,110	2,855	45,739	171,820
1962	94,734	22,926	53,116	170,820 5/	4,037	936	4,973	98,771	22,926	54,052	175,793
1963	117,048	5,572		122,623 5/	2,283	2,192	4,475	119,331	5,572	2,192	127,098
1964	93,587	2,446	8,347	104,380	3,208	1,929	5,137	96,795	2,446	10,276	109,517
1965	118,098	350	23,317	141,765	2,265	2,071	4,336	120,363	350	25,388	146,101
1966	93,315	19,254	71,045	183,614 5/	1,942	3,157	5,099	92,257	19,254	74,202	188,713
1967	129,656	11,047	49,209	190,115 5/	2,187	3,343	5,530	131,893	11,047	52,552	195,645
1968	106,526	13,303	67,375	187,204	2,212	435	2,647	108,738	13,303	67,810	189,851
1969	91,027	15,093	193,276	299,396	1,640	2,279	3,919	92,667	15,093	195,555	303,315
1970	79,145	13,188	346,601	439,189 5/	2,611	2,479	5,090	81,756	13,188	349,080	444,279
1971	110,507	12,203	289,684	412,395 5/	3,178	1,761	4,939	113,685	12,203	291,445	417,334
1972	92,840	22,233	287,844	402,917	1,769	2,532	4,301	94,609	22,233	290,376	407,218
1973	75,353	36,641	517,599	629,694 5/	2,199	2,806	5,005	77,552	36,641	520,405	634,699
1974	98,089	16,777	879,668	994,534	1,808	2,544	4,352	99,897	16,777	882,212	998,886
1975	63,838	2,546	985,304	1,051,796 5/	3,000	2,500	5,500	66,836	2,546	987,804	1,057,296
1976	87,776	5,184	757,284	850,285 5/	3,500	1,000	4,500	91,276	5,184	758,284	854,785
1977	96,757	38,863	792,861	928,481	4,720	3,990	8,710	101,477	38,863	796,851	937,191
1978	99,168	26,152	1,288,609	1,413,930 5/	2,975	3,356	6,331	102,143	26,152	1,291,965	1,420,261
1979	127,673	17,165	1,139,262	1,284,107 5/	6,175	9,084	15,259	133,848	17,165	1,148,346	1,299,366
1980	153,985	8,745	1,222,039	1,384,769	9,500	9,000	18,500	163,485	8,745	1,231,039	1,403,269
1981	158,018	23,680	1,473,389	1,655,087	8,593	15,260	23,853	166,611	23,680	1,488,649	1,678,940
1982	123,644	37,176	685,611	846,431	8,640	11,312	19,952	132,284	37,176	696,923	866,383
1983	147,910	13,320	1,047,477	1,208,707	13,027	25,990	39,017	160,937	13,320	1,073,467	1,247,724
1984	119,904	81,940	796,829	998,673	9,885	22,931	32,816	129,789	81,940	819,760	1,031,489

Appendix Table 1. (Continued)

	Subsistence Catch								
	Alaska 1/			Yukon Territory			Total		
Year	King	Other Salmon 2/	Total	King	Other Salmon	Total	King	Other Salmon 2/	Total
1903									
1904									
1905									
1906									
1907									
1908									
1909									
1910									
1911									
1912									
1913									
1914									
1915									
1916									
1917									
1918		1,400,000	1,400,000					1,400,000	1,400,000
1919		269,000	269,000					269,000	269,000
1920	20,000	860,000	880,000				20,000	860,000	880,000
1921									
1922	15,000	330,000	345,000				15,000	330,000	345,000
1923	17,500	435,000	452,500				17,500	435,000	452,500
1924		1,130,000	1,130,000					1,130,000	1,130,000
1925	15,000	259,000	274,000				15,000	259,000	274,000
1926	20,500	555,000	575,500				20,500	555,000	575,500
1927		520,000	520,000					520,000	520,000
1928		670,000	670,000					670,000	670,000
1929		537,000	537,000					537,000	537,000
1930		633,000	633,000					633,000	633,000
1931	26,693	565,000	591,693				26,693	565,000	591,693
1932	23,160	1,092,000	1,115,160				23,160	1,092,000	1,115,160
1933	19,950	603,000	622,950				19,950	603,000	622,950
1934		474,000	474,000					474,000	474,000
1935	20,400	537,000	557,400				20,400	537,000	557,400
1936	22,750	560,000	582,750				22,750	560,000	582,750
1937	5,528	346,000	351,528				5,528	346,000	351,528
1938	19,244	340,450	359,694				19,244	340,450	359,694
1939	18,050	327,650	345,700				18,050	327,650	345,700
1940	14,400	1,029,999	1,043,400				14,400	1,029,000	1,043,400
1941	17,703	438,000	455,703				17,703	438,000	455,703
1942		197,000	197,000					197,000	197,000
1943		200,000	200,000					200,000	200,000
1944									
1945									
1946									
1947									
1948									
1949									
1950									
1951									
1952									
1953		380,000	380,000					380,000	380,000
1954									
1955									
1956									
1957									
1958	11,890	337,500	349,390	8,000		8,000	19,890	337,500	357,390
1959				5,957	2,000 7/	7,957	7,957	2,000	7,957
1960				6,965	8,429	15,394	6,965	8,429	15,394
1961	21,488	407,089	428,577	10,376	5,800	16,176	31,864	412,889	444,753
1962	11,110	349,141	360,251	10,500	9,300	19,800	21,610	358,441	380,051
1963	24,862	396,125	420,987	8,108	25,500	33,608	32,970	421,625	454,595
1964	16,231	481,440	497,671	6,646	4,181	10,827	22,877	485,621	508,498
1965	16,608	449,131	465,739	3,115	9,800	12,915	19,723	458,931	478,654
1966	11,572	206,011	217,583	2,700	8,600	11,300	14,272	214,611	228,883
1967	16,448	274,977	291,425	3,213	13,600	16,813	19,661	288,577	308,238
1968	12,106	178,507	190,613	2,900	11,100	14,000	15,006	189,607	204,613
1969	14,000	208,254	222,254	1,000	5,500	6,500	15,000	213,754	228,754
1970	13,874	222,005	235,879	2,100	1,200	3,300	15,974	223,205	239,179
1971	25,684	228,649	254,333	2,800	14,000	16,800	28,044	228,749	256,793
1972	20,258	144,008	164,266	3,960	5,000	8,960	24,218	149,008	173,226
1973	24,317	214,682	238,999	2,099	7,129	9,228	26,416	221,811	248,227
1974	19,964	321,587	341,551	3,770	9,102	12,872	23,734	330,689	354,423
1975	13,045	298,479	311,524	3,000	18,100	21,100	16,045	316,579	332,624
1976	17,806	259,199	277,005	1,525	4,200	5,725	19,331	263,399	282,730
1977	17,581	258,606	276,187	2,778	8,489	11,267	20,359	267,095	287,454
1978	27,391	293,581	320,972	2,906	6,210	9,116	30,297	299,791	330,088
1979	31,005	439,328	470,333	4,200	13,000	17,200	35,205	452,328	487,533
1980	42,724	465,213	507,937	13,500	12,718	26,218	56,224	477,931	534,155
1981	29,690	418,037	447,727	8,366	6,721	15,087	38,056	424,758	462,814
1982	28,158	429,760	457,918	7,768	4,379	12,147	35,926	434,139	470,065
1983	49,478	457,211	506,689	5,400	3,100	8,500	54,878	460,311	515,189
1984	42,389	454,165	496,554	6,160	6,730	12,890	48,549	460,895	509,444

Appendix Table 1. (Continued)

	Total Utilization								
	Alaska			Yukon Territory			Total		
Year	King	Other Salmon 2/	Total	King	Other Salmon	Total	King	Other Salmon 2/	Total
1903						4,666			4,666
1904									
1905									
1906									
1907									
1908						7,000			7,000
1909						9,238			9,238
1910									
1911									
1912									
1913						12,133			12,133
1914						12,573			12,573
1915						10,466			10,466
1916						9,566			9,566
1917									
1918	12,239	1,500,065	1,512,304			7,066	12,239	1,500,065	1,519,370
1919	104,822	738,790	843,612			1,800	104,822	740,590	845,412
1920	78,467	1,015,655	1,843,612			12,000	78,467	1,015,655	1,106,122
1921	69,646	112,098	181,244			12,840	69,646	112,098	192,584
1922	31,825	330,000	361,825			2,420	31,825	330,000	364,245
1923	30,893	435,000	465,893			1,833	30,893	435,000	467,726
1924	27,375	1,130,000	1,157,375			4,560	27,375	1,130,000	1,161,935
1925	15,000	259,000	274,000			3,900	15,000	259,000	277,900
1926	20,500	555,000	575,500			4,373	20,500	555,000	579,873
1927		520,000	520,000			5,366		520,000	525,366
1928		670,000	670,000			5,733		670,000	675,733
1929		537,000	537,000			5,226		537,000	542,226
1930		633,000	633,000			3,660		633,000	636,660
1931	26,693	565,000	591,693			3,473	26,693	565,000	595,166
1932	27,899	1,092,000	1,119,899			4,200	27,899	1,092,000	1,124,099
1933	28,779	603,000	631,779			3,333	28,779	603,000	635,112
1934	23,365	474,000	497,365			2,000	23,365	474,000	499,365
1935	27,665	537,000	564,665			3,466	27,665	537,000	568,131
1936	43,713	560,000	603,713			3,400	43,713	560,000	607,113
1937	12,154	346,000	358,154			3,746	12,154	346,000	361,900
1938	32,971	340,450	373,421			860	32,971	340,450	374,281
1939	28,037	327,650	355,687			720	28,037	327,650	356,407
1940	32,453	1,029,000	1,061,453			1,153	32,453	1,029,000	1,062,606
1941	47,608	438,000	485,608			2,806	47,608	438,000	488,414
1942	22,487	197,000	219,487			713	22,487	197,000	220,200
1943	27,650	200,000	227,650			609	27,650	200,000	228,259
1944	14,232		14,232			986	14,232		15,218
1945	19,727		19,727			1,333	19,727		21,060
1946	22,782		22,782			353	22,782		23,135
1947	54,026		54,026			120	54,026		54,146
1948	33,842		33,842				33,842		33,842
1949	36,379		36,379				36,379		36,379
1950	41,808		41,808				41,808		41,808
1951	56,278		56,278				56,278		56,278
1952	38,637	10,868	49,505				38,637	10,868	49,505
1953	58,859	385,977	444,836				58,859	385,977	444,836
1954	64,545	14,375	78,920				64,545	14,375	78,920
1955	55,925		55,925				55,925		55,925
1956	62,208	10,743	72,951				62,208	10,743	72,951
1957	63,623		63,623				63,623		63,623
1958	75,625	337,500	413,125	11,000	1,500	12,500	86,625	339,000	425,625
1959	78,370		78,370	8,434	3,098	11,532	86,804	3,098	89,902
1960	67,597		67,597	11,050	13,922	24,972	78,647	13,922	92,569
1961	141,152	452,521	593,673	13,822	9,078	22,900	154,974	461,599	616,573
1962	105,844	425,277	531,071	14,537	10,236	24,773	120,381	435,463	555,844
1963	141,910	401,700	543,610	10,931	27,692	38,623	152,841	429,392	582,233
1964	109,818	492,233	602,051	9,854	6,110	15,904	119,672	498,343	618,015
1965	134,706	472,798	607,504	5,380	11,871	17,251	140,086	484,669	624,755
1966	104,887	296,310	401,197	4,642	11,757	16,399	109,529	308,067	417,596
1967	146,104	335,436	481,540	5,400	16,943	22,343	151,504	352,379	503,883
1968	118,632	259,185	377,817	5,112	11,535	16,647	123,744	270,720	394,464
1969	105,027	416,623	521,650	2,640	7,779	10,419	107,667	424,402	532,069
1970	93,019	582,049	675,068	4,711	3,679	8,390	97,730	585,728	683,458
1971	136,191	530,537	666,728	5,978	15,761	21,739	142,169	546,298	688,467
1972	113,098	454,085	567,183	5,729	7,532	13,261	118,827	461,617	580,444
1973	99,670	769,023	868,693	4,298	9,935	14,233	103,968	778,958	882,926
1974	118,053	1,218,032	1,336,085	5,578	11,646	17,224	123,631	1,229,678	1,353,309
1975	76,883	1,286,437	1,363,320	6,000	20,600	26,600	82,883	1,307,037	1,389,920
1976	105,582	1,021,708	1,127,290	5,025	5,200	10,225	110,607	1,026,908	1,137,515
1977	114,338	1,090,330	1,204,668	7,498	12,479	19,977	121,836	1,102,809	1,224,645
1978	126,559	1,608,343	1,734,902	5,881	9,566	15,447	132,440	1,617,909	1,750,349
1979	158,678	1,595,762	1,754,440	10,375	22,084	32,459	169,053	1,617,846	1,786,899
1980	196,709	1,695,997	1,892,706	23,000	21,718	44,718	219,709	1,717,715	1,937,424
1981	187,708	1,915,106	2,102,814	16,959	21,981	38,940	204,667	1,937,087	2,141,754
1982	151,802	1,152,547	1,304,349	16,408	15,691	32,099	168,210	1,168,238	1,336,448
1983	197,388	1,518,008	1,715,396	18,427	29,090	47,517	215,815	1,547,098	1,762,913
1984	162,293	1,332,934	1,495,227	16,045	29,661	45,706	178,338	1,362,595	1,540,933

1/ Does not include subsistence catches from the villages outside of the Yukon River mouth.
2/ Mostly chum salmon, but includes small numbers of pink and coho salmon.
3/ Data source for Alaska commercial catches: USFWS Stat. Digest No. 50 for the years 1951-59, unless otherwise indicated.
4/ Data source: Alaska Fisheries and Fur-Seal Industry Report for 1954.
5/ Includes small numbers of pink or red salmon (less than 300).
6/ Data source for Alaska commercial catches: ADF&G Stat. Leaflets for years since 1960.
7/ Data source: Environment Canada, Fisheries Service (Whitehorse) since 1958.
8/ Catch data for years 1903-1947 obtained by dividing total poundage of mixed salmon by an arbitrary weight of 15 lbs. Species breakdown is unknown. Figures are considered conservative (data collected by Royal Canadian Mounted Police).
9/ Does not include sockeye catch of 300 fish in 1919 and 60 fish in 1920 estimated from case pack (Gilbert, C.H. 1924. The salmon of the Yukon River. Bull. U.S. Bur. Fish. 38:317-332).

Appendix Table 2. Commercial salmon catches by species and districts, Yukon area, 1961-1984.

KING SALMON

Year	Lower Yukon Area Dist. 1	Dist. 2	Dist. 3	Subtotals	Upper Yukon Area Dist. 4	Dist. 5	Dist. 6	Subtotals	Totals
1961	84,466	29,026	4,368	117,860	-	-	-	1,804 1/	119,664
1962	67,099	22,224	4,687	94,010	-	-	-	724 1/	94,734
1963	85,004	24,221	7,020	116,245	-	-	-	803	117,048
1964	67,555	20,246	4,705	92,506	-	-	-	1,081	93,587
1965	89,268	23,763	3,204	116,235	-	-	-	1,863	118,098
1966	70,788	16,927	3,612	91,327	-	-	-	1,988	93,315
1967	104,350	20,239	3,618	128,207	-	-	-	1,449 1/	129,656
1968	79,465	21,392	4,543	105,400	-	-	-	1,126	106,526
1969	71,688	14,756	3,595	90,039	-	-	-	988	91,027
1970	56,648	17,141	3,705	77,494	-	-	-	1,651	79,145
1971	86,042	19,226	3,490	108,758	-	-	-	1,749	110,507
1972	70,052	17,855	3,841	91,748	-	-	-	1,092	92,840
1973	56,981	13,859	3,204	74,044	-	-	-	1,309	75,353
1974	71,840	17,948	3,480	93,268	685	2,663	1,473	4,821	98,089
1975	44,585	11,315	4,177	60,077	389	2,872	500	3,761	63,838
1976	62,410	16,556	4,148	83,114	409 3/	3,151	1,102	4,662	87,776
1977	69,915	16,722	3,965	90,602	985	4,162	1,008	6,155	96,757
1978	59,006	32,924	2,916	94,846	608	3,079	635	4,322	99,168
1979	75,007	41,498	5,018	121,523	1,989	3,389	772	6,150	127,673
1980	90,382	50,004	5,240	145,626	1,521	4,891	1,947	8,359	153,985
1981	99,506	45,781	4,023	149,310	1,347	6,374	987	8,708	158,018
1982	74,450	39,132	2,609	116,191	1,087	5,385	981	7,453	123,644
1983	95,457	43,229	4,106	142,792	601	3,606	911	5,118	147,910
1984	74,671	36,697	3,039	114,407	961	3,669	867	5,497	119,904

COHO SALMON

Year	Lower Yukon Area Dist. 1	Dist. 2	Dist. 3	Subtotals	Upper Yukon Area Dist. 4	Dist. 5	Dist. 6	Subtotals	Totals
1961	2,855	-	-	2,855	-	-	-	-	2,855
1962	22,926	-	-	22,926	-	-	-	-	22,926
1963	5,572	-	-	5,572	-	-	-	-	5,572
1964	2,446	-	-	2,446	-	-	-	-	2,446
1965	350	-	-	350	-	-	-	-	350
1966	19,254	-	-	19,254	-	-	-	-	19,254
1967	9,925	-	1,122	11,047	-	-	-	-	11,047
1968	13,153	-	150	13,303	-	-	-	-	13,303
1969	13,989	-	1,009	14,998	-	-	-	95	15,093
1970	12,632	-	-	12,632	-	-	-	556	13,188
1971	12,165	-	-	12,165	-	-	-	38	12,203
1972	21,705	506	-	22,211	-	-	-	22	22,233
1973	34,860	1,781	-	36,641	-	-	-	-	36,641
1974	13,713	176	-	13,889	-	1,409	1,479	2,888	16,777
1975	2,288	200	-	2,488	-	5	53	58	2,546
1976	4,064	17	-	4,081	-	-	1,103	1,103	5,184
1977	31,720	5,319	538	37,577	-	2	1,284	1,286	38,863
1978	16,460	5,835	758	23,053	32	1	3,066	3,099	26,152
1979	11,369	2,850	-	14,219	155	-	2,791	2,946	17,165
1980	4,829	2,660	-	7,489	30	-	1,226	1,256	8,745
1981	13,129	7,848	419	21,396	-	-	2,284	2,284	23,680
1982	15,115	14,179	87	29,381	15	-	7,780	7,795	37,176
1983	4,595	2,557	-	7,152	-	-	6,168	6,168	13,320
1984	29,472	43,064	621	73,157	1,095	-	7,688	8,783	81,940

Appendix Table 2. Commercial salmon catches by species and districts, Yukon area, 1961-1984. (continued)

CHUM SALMON

	Lower Yukon Area				Upper Yukon Area				
Year	Dist. 1	Dist. 2	Dist. 3	Subtotals	Dist. 4	Dist. 5	Dist. 6	Subtotals	Totals
1961	42,461	-	-	42,461	-	-	-	-	42,461
1962	53,116	-	-	53,116	-	-	-	-	53,116
1963	-	-	-	-	-	-	-	-	-
1964	8,347	-	-	8,347	-	-	-	-	8,347
1965	22,936	-	-	22,936	-	-	-	381	23,317
1966	69,836	-	1,209	71,045	-	-	-	-	71,045
1967	45,904	1,425	1,880	49,209	-	-	-	-	49,209
1968	62,852	1,407	3,116	67,375	-	-	-	-	67,375
1969	185,752	5,080	1,722	192,554	-	-	-	722	193,276
1970	317,667	24,507	3,285	345,455	-	-	-	1,146	346,601
1971	282,461	6,112	50	288,623	-	-	-	1,061	289,684
1972	250,945	33,805	1,840	286,590	-	-	-	1,254	287,844
1973	395,427	108,706	463	504,596	-	-	-	13,003	517,599
1974	642,040	127,692	2,273	772,005	37,079	30,382	40,202	107,663	879,668
1975	576,506	150,805	5,590	732,901	178,720	40,209	33,474	252,403	985,304
1976	379,055	120,402	14,052	513,509	213,049	6,161	24,565	243,775	757,284
1977	382,410	157,673	19,263	559,346	183,521	27,004	22,990	233,515	792,861
1978	521,732	279,194	38,530	839,456	375,172	25,908	48,073	449,153	1,288,609
1979	479,340	266,880	65,970	812,190	218,329	56,067	52,676	327,072	1,139,262
1980	498,081	392,585	58,301	948,967	175,538	42,227	55,307	273,072	1,222,039
1981	674,992	506,761	73,514	1,255,267	71,800	87,856	58,466	218,122	1,473,389
1982	347,000	278,925	9,901	635,826	7,541	13,827	28,417	49,785	685,611
1983	575,535	333,737	24,618	933,890	11,154	44,035	58,398	113,587	1,047,477
1984	371,427	307,734	7,516	686,677	8,634	24,705	76,813	110,152	796,829

TOTAL SALMON

	Lower Yukon Area				Upper Yukon Area				
Year	Dist. 1	Dist. 2	Dist. 3	Subtotals	Dist. 4	Dist. 5	Dist. 6	Subtotals	Totals
1961	129,898 2/	29,026	4,368	163,292	-	-	-	1,804	165,096
1962	143,185 2/	22,224	4,687	170,096	-	-	-	724	170,820
1963	90,579 2/	24,221	7,020	121,820	-	-	-	803	122,623
1964	78,348	20,246	4,705	103,299	-	-	-	1,081	104,380
1965	112,554	23,763	3,204	139,521	-	-	-	2,244	141,765
1966	159,878	16,927	4,821	181,626	-	-	-	1,988	183,614
1967	160,382 2/	21,664	6,620	188,666	-	-	-	1,449	190,115
1968	155,470	22,799	7,809	186,078	-	-	-	1,126	187,204
1969	271,429	19,836	6,326	297,591	-	-	-	1,805	299,396
1970	387,198 2/	41,648	6,990	435,836	-	-	-	3,353	439,189
1971	380,669 2/	25,338	3,540	409,547	-	-	-	2,848	412,395
1972	342,702	52,166	5,681	400,549	-	-	-	2,368	402,917
1973	487,272 2/	124,443 2/	3,667	615,382	-	-	-	14,312	629,694
1974	727,593	145,816	5,753	879,162	37,764	34,454	43,154	115,372	994,534
1975	623,480 2/	162,327 2/	9,767	795,574	179,109	43,086	34,027	256,222	1,051,796
1976	445,537 2/	137,008 2/	18,200	600,745	213,458	9,312	26,770	249,540	850,285
1977	484,045	179,714	23,766	687,525	184,506	31,168	25,282	240,956	928,481
1978	597,199 2/	317,953	42,204	957,356	375,812	28,988	51,774	456,574	1,413,930
1979	565,723 2/	311,228	70,988	947,939	220,473	59,456	56,239	336,168	1,284,107
1980	593,292	445,249	63,541	1,102,082	177,089	47,118	58,480	282,687	1,384,769
1981	787,627	560,390	77,956	1,425,973	73,147	94,230	61,737	229,114	1,655,087
1982	436,565	332,236	12,597	781,398	8,643	19,212	37,178	65,033	846,431
1983	675,587	379,523	28,724	1,083,834	11,755	47,641	65,477	124,873	1,208,707
1984	475,570	387,495	11,176	874,241	10,690	28,374	85,368	124,432	998,673

1/ Data source: Arctic-Yukon-Kuskokwim Area Annual Management Report.
2/ Includes small numbers of pink or red salmon (less than 300).
3/ Does not include 493 fish erroneously key punched as "kings" in final computer fish ticket summary.

Appendix Table 3. Commercial Fisheries Entry Commission (C.F.E.C.) salmon permits issued by gear type, Yukon area, 1976-1984.

	Number of GILLNET Permits		
Year	Lower Yukon 1/ 2/ 5/	Upper Yukon 3/ 4/	Total
1976	678	118	796
1977	692	66	758
1978	695	68	763
1979	702	64	766
1980	703	78	781
1981	706	72	778
1982	707	72	779
1983	703	72	775
1984	703	71	774

	Number of FISHWHEEL Permits
Year	Upper Yukon 4/
1976	169
1977	161
1978	161
1979	166
1980	164
1981	175
1982	163
1983	172
1984	151

1/ Information obtained from Commercial Fisheries Entry Commission Annual Reports or microfiche listing.
2/ Set or drift gillnet.
3/ Set gillnet only.
4/ Includes Interim-use permits.
5/ Does not include transfers.

Appendix Table 4. Actual number of commercial salmon fishing gear operators (vessels) by district, Yukon area, 1971-1984. 1/

KING SALMON SEASON

	Lower Yukon Area				Upper Yukon Area				
Year	Dist. 1	Dist. 2	Dist. 3	Subtotals	Dist. 4	Dist. 5	Dist. 6	Subtotals	Total
1971	405	154	33	592	-	-	-	-	-
1972	426	153	35	614	-	-	-	-	-
1973	438	167	38	643	-	-	-	-	-
1974	396	154	42	592	27	31	20	78	670
1975	441	149	37	627	93	52	36	181	808
1976	453	189	42	684	80	46	29	155	839
1977	392	188	46	626	87	41	18	146	772
1978	429	204	22	655	80	45	35	160	815
1979	425	210	22	657	87	34	30	151	808
1980	407	229	21	657	79	35	33	147	804
1981	448	225	23	696	80	43	26	149	845
1982	450	225	21	696	74	44	20	138	834
1983	444	212	19	675	77	34	25	136	811
1984	439	213	20	672	54	31	27	112	784

FALL SEASON

	Lower Yukon Area 2/				Upper Yukon Area 3/				
Year	Dist. 1	Dist. 2	Dist. 3	Subtotals	Dist. 4	Dist. 5	Dist. 6	Subtotals	Total
1971	352	-	-	352	-	-	-	-	-
1972	353	75	3	431	-	-	-	-	-
1973	445	183	-	628	-	-	-	-	-
1974	322	121	6	449	17	23	22	62	511
1975	428	185	12	625	44	33	33	110	735
1976	422	194	28	644	18	36	44	98	742
1977	337	172	37	546	28	34	32	94	640
1978	429	204	28	661	24	43	30	127	788
1979	458	220	32	710	31	44	37	112	822
1980	395	232	23	650	33	43	26	102	752
1981	462	240	21	723	30	50	30	110	833
1982	445	218	15	678	15	24	25	64	742
1983	455	225	20	700	13	29	23	65	765
1984	327	216	12	555	18	39	26	83	638

COMBINED SEASONS

	Lower Yukon Area				Upper Yukon area				
Year	Dist. 1	Dist. 2	Dist. 3	Subtotals	Dist. 4	Dist. 5	Dist. 6	Subtotals	Total
1971	473	154	33	660	-	-	-	27	687
1972	476	153	35	664	-	-	-	-	664
1973	529	205	38	772	-	-	-	47	819
1974	485	190	42	717	28	43	27	98	815
1975	491	197	39	727	95	57	46	198	925
1976	482	220	44	746	96	62	56	214	960
1977	402	208	54	664	96	53	39	188	852
1978	472	221	29	722	82	53	38	173	895
1979	461	230	33	724	90	49	40	179	903
1980	432	247	27	706	88	51	38	177	883
1981	507	257	26	790	94	56	31	186	976
1982	486	244	22	752	76	53	27	156	908
1983	458	235	26	719	79	47	31	157	876
1984	453	238	26	717	58	45	33	136	853

1/ Actual number of gear operators which made at least one delivery. Data presented shows the number of gear operators in each district. Some individual fishermen in the lower Yukon area may have operated in more than one district during the year.

2/ "Fall Season" (or second season) refers to period when 6" or smaller mesh size restriction is in effect.

3/ "Fall Season" refers to period when fall chum salmon fishery occurs.

Appendix Table 5. Commercial king salmon catches by statistical area, lower Yukon Area, 1971-1984.

District 1

	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	Total
1971	3,038	25,679	7,204	10,576	17,140	3,949	12,446	6,010	86,042
1972	2,845	12,307	3,608	9,403	18,582	5,331	13,469	4,507	70,052
1973	7,475	29,962	4,657	3,647	1,371	276	7,184	2,409	56,981
1974	2,935	30,174	6,984	3,987	12,721	2,048	6,826	6,165	71,840
1975	6,396	15,844	8,763	314	1,720	606	6,879	4,063	44,585
1976	8,333	27,937	7,507	851	5,101	1,415	6,164	5,102	62,410
1977	11,278	16,787	8,866	1,216	15,214	1,550	7,109	7,895	69,915
1978	886	12,237	4,135	4,388	22,019	3,738	7,533	4,070	59,006
1979	1,017	13,152	4,149	5,782	12,839	10,960	18,976	8,202	75,077
1980	464	12,832	3,235	9,224	30,737	12,333	13,654	7,903	90,382
1981	6,639	12,875	2,975	8,976	19,730	15,158	22,251	10,902	99,506
1982	3,439	11,268	2,842	9,038	9,331	7,295	18,185	13,052	74,450
1983	7,919	23,523	8,161	14,961	9,416	5,297	19,172	7,008	95,457
1984	14,385	15,320	2,598	6,297	11,123	1,434	19,089	4,425	74,671

District 2

	334-21	334-22	334-23	334-24	334-25	Total
1971	5,926	7,893	3,061	2,346	-	19,226
1972	1,839	11,216	1,426	3,374	-	17,855
1973	5,959	5,574	1,106	1,220	-	13,859
1974	6,344	5,611	2,624	3,369	-	17,948
1975	3,282	3,045	2,785	2,203	-	11,315
1976	5,083	4,490	3,031	3,952	-	16,556
1977	6,577	4,584	2,110	3,451	-	16,722
1978	9,004	7,953	5,248	8,499	2,220	32,924
1979	10,698	11,214	6,733	7,573	5,280	41,498
1980	11,544	12,903	8,259	9,591	7,707	50,004
1981	12,341	13,275	7,024	5,950	7,191	45,781
1982	10,567	9,236	5,262	8,932	5,135	39,132
1983	12,433	10,424	7,779	6,260	6,333	43,229
1984	9,179	11,573	4,668	5,752	5,525	36,697

District 3

	334-31	334-32	Total
1971	1,352	2,138	3,490
1972	1,783	2,058	3,841
1973	2,264	940	3,204
1974	1,423	2,057	3,480
1975	2,791	1,386	4,177
1976	1,827	2,321	4,148
1977	1,617	2,348	3,965
1978	746	2,170	2,916
1979	2,195	2,823	5,018
1980	2,039	3,201	5,240
1981	1,241	2,782	4,023
1982	896	1,713	2,609
1983	1,335	2,771	4,106
1984	900	2,139	3,039

Appendix Table 6. Commercial king salmon catches by statistical area, upper Yukon area, 1974-1984.

District 4

	334-41	334-42	334-43	Total
1974	0	685	-	685
1975	15	374	-	389
1976	44 a/	365	-	409
1977	317	668	-	985
1978	183	425	-	608
1979	785	370	834	1,989
1980	352	549	620	1,521
1981	106	867	374	1,347
1982	78	497	512	1,087
1983	0	382	219	601
1984	2	272	687	961

District 5

	334-51	334-52	334-53	334-54	Total
1974	2,284	379	-	-	2,663
1975	2,602	270	-	-	2,872
1976	2,843	308	-	-	3,151
1977	4,013	149	-	-	4,162
1978	2,838	241	-	-	3,079
1979	3,389	0	-	-	3,389
1980	4,554	337	-	-	4,891
1981	97	3,051	2,477	749	6,374
1982	61	2,352	2,277	695	5,385
1983	0	632	2,738	236	3,606
1984	128	1,589	1,568	384	3,669

District 6

	334-61	334-62	334-63	Total
1974	111	1,102	260	1,473
1975	77	153	270	500
1976	490	320	292	1,102
1977	405	365	238	1,008
1978	34	58	543	635
1979	102	336	334	772
1980	92	1,588	267	1,947
1981	438	366	183	987
1982	414	309	258	981
1983	249	364	298	911
1984	0	375	492	867

a/ Does not include 493 fish (summer chums) erroneously keypunched as "kings" in final computer summary.

Appendix Table 7. Commercial catches of king and summer chum salmon by mesh size, districts 1 and 2, Yukon area, 1961-1984.

	Unrestricted Mesh Size 1/ Districts 1 and 2		5-1/2 - 6 inch Mesh Size 2/ Districts 1 and 2	
	Kings	Summer Chums	Kings	Summer Chums
1961	113,434	-	-	-
1962	89,296	-	-	-
1963	109,215	-	-	-
1964	87,801	-	-	-
1965	113,031	-	-	-
1966	87,710	-	-	-
1967	124,574	10,919	-	-
1968	100,857	14,402	-	-
1969	85,387	41,418	97	15,437
1970	73,610	104,705	57	16,623
1971	103,623	42,189	1,176	57,851
1972	85,376	78,698	1,991	37,881
(Avg. 1961-72)	(97,826)	(48,722)	(830)	(31,948)
1973 3/	65,269	89,841	5,168	196,540
1974	86,921	349,758	1,631	227,507
1975	50,614	148,919	4,162	345,472
1976	71,688	267,075	7,631	128,431
1977	81,073	157,909	4,720	205,634
1978	82,070	275,512	7,737	354,603
1979	95,137	136,973	22,136	434,188
1980	120,912	95,876	19,711	605,679
1981	125,698	163,979	18,648	758,767
1982	106,399	225,106	6,887	217,563
1983	107,078	121,927	31,002	590,329
1984	94,456	242,076	16,394	287,531
(Avg. 1973-84)	(90,610)	(189,579)	(12,152)	(362,687)

1/ Primarily 8-8-1/2 inch mesh size used during early June - early July.
2/ Catch through July 15-20, relatively few kings and summer chums taken after these dates.
3/ Six inch maximum size regulation beginning late June-early July became effective in districts 1 and 2.

Appendix Table 8. Commercial king salmon catch and effort data, Districts 1 and 2, Yukon area, 1961-1984. 1/

Commercial Catch		Dist. 1	Dist. 2	Total
	1961	84,406	29,028	113,434
	1962	67,072	22,224	89,296
	1963	85,004	24,211	109,215
	1964	67,555	20,246	87,801
	1965	89,268	23,763	113,031
	1966	70,783	16,927	87,710
	1967	104,335	20,239	124,574
	1968	79,465	21,392	100,857
	1969	70,588	14,799	85,387
	1970	56,469	17,141	73,610
	1971	84,397	19,226	103,623
	1972	68,059	17,317	85,376
	1973	52,790	12,479	65,269
	1974	69,457	17,464	86,921
	1975	41,550	9,064	50,614
	1976	56,392	15,296	71,688
	1977	65,745	15,328	81,073
	1978	53,198	28,872	82,070
	1979	61,790	33,347	95,137
	1980	78,157	42,755	120,912
	1981	88,038	37,660	125,698
	1982	70,743	35,656	106,399
	1983	76,280	30,798	107,078
	1984	65,101	29,355	94,456

Boat Hours (Catch per boat hour)		District 1	District 2	Total
	1961	79,224 (1.07)	29,118 (1.00)	108,342 (1.05)
	1962	84,792 (0.79)	38,118 (0.58)	122,910 (0.73)
	1963	72,288 (1.18)	27,672 (0.87)	99,960 (1.09)
	1964	56,736 (1.19)	22,398 (0.91)	79,134 (1.11)
	1965	78,096 (1.14)	31,008 (0.77)	109,104 (1.04)
	1966	69,894 (1.01)	22,380 (0.76)	92,274 (0.95)
	1967	102,456 (1.02)	37,488 (0.54)	139,944 (0.89)
	1968	92,450 (0.86)	32,280 (0.66)	124,730 (0.81)
	1969	84,864 (0.83)	27,828 (0.53)	112,692 (0.76)
	1970	61,260 (0.92)	20,460 (0.84)	81,720 (0.91)
	1971	73,272 (1.15)	19,956 (0.96)	93,228 (1.11)
	1972	79,236 (0.86)	19,872 (0.87)	99,108 (0.86)
	1973	75,036 (0.70)	23,496 (0.63)	98,532 (0.66)
	1974	86,256 (0.80)	29,808 (0.60)	116,064 (0.75)
	1975	49,944 (0.83)	8,376 (1.08)	58,320 (0.67)
	1976	64,572 (0.87)	23,484 (0.65)	88,160 (0.81)
	1977	42,618 (1.54)	15,180 (1.01)	57,798 (1.40)
	1978	57,528 (0.92)	25,524 (1.13)	83,052 (0.99)
	1979	53,040 (1.17)	23,904 (1.39)	76,944 (1.24)
	1980	45,348 (1.73)	20,196 (2.12)	65,544 (1.85)
	1981	43,632 (2.02)	19,536 (1.93)	63,168 (1.99)
	1982	55,416 (1.28)	22,008 (1.62)	77,424 (1.37)
	1983	38,448 (1.98)	18,696 (1.65)	57,144 (1.88)
	1984	38,880 (1.67)	14,568 (2.01)	53,448 (1.77)

1/ "King salmon season" during June & early July with unrestricted mesh size gillnets.

Appendix Table 9. King salmon commercial catch data by fishing period, king salmon season, District 1, Yukon area, 1972-1984.

	Cumulative catch 1/ (Cumulative catch /boat hour) 2/												
Date	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
6/1													
6/2													
6/3													
6/4													
6/5			3.5(0.46)					6.1(0.81)					
6/6		0.3(0.15)											
6/7										11.1(1.49)			
6/8			11.0(0.60)					11.0(0.71)					
6/9		2.8(0.25)					2.5(0.35)			26.7(1.68)			
6/10	0.04(0.08)								6.8(1.01)			22.3(2.44)	
6/11				0.2(0.09)									
6/12			25.7(0.82)					30.5(1.26)		41.2(1.69)			
6/13		9.4(0.44)					8.3(0.56)						
6/14	1.04(0.17)			0.6(0.11)		0.04(0.05)			32.9(1.63)			35.0(1.90)	
6/15			36.8(0.84)								5.6(0.69)		
6/16		21.5(0.59)			0.1(0.06)			39.8(1.08)		59.5(1.75)			
6/17	4.5(0.24)						25.9(0.91)		47.5(1.67)			63.6(2.21)	
6/18				1.7(0.17)		2.6(0.41)					18.0(1.00)		
6/19			55.6(0.99)		3.3(0.27)			56.5(1.23)		88.0(2.02)			13.7(1.53)
6/20		30.6(0.65)					33.4(0.91)						
6/21	21.5(0.68)			7.4(0.39)		13.0(0.92)			73.7(1.80)			76.3(1.98)	
6/22			58.5(0.96)					61.8(1.17)			38.0(1.41)		32.5(1.72)
6/23		42.6(0.68)			12.9(0.49)				78.2(1.72)				
6/24	37.8(0.77)						47.8(0.96)						
6/25				24.5(0.75)		39.3(1.50)					45.1(1.24)		
6/26			65.7(0.90)		28.3(0.69)								48.6(1.68)
6/27		52.8(0.70)		34.3(0.83)			53.2(0.92)						
6/28	53.2(0.86)					57.0(1.62)							
6/29			69.5(0.80)								63.2(1.38)		65.1(1.67)
6/30					42.1(0.76)								
7/1	68.1(0.86)			41.6(0.83)		65.7(1.54)							
7/2					56.4(0.87)						70.7(1.28)		
7/3													
7/4													
7/5													
7/6													
7/7													
7/8													

1/ Cumulative catch in thousands of fish by period for the "king salmon season" (June & early July).
2/ Boat hours computed by multiplying the number of hours in the period by number of boats making at least one delivery during the period; however for the years 1961-1966 the number of boats in the period was obtained by using the greatest number of boats making one delivery during any day of the period.

Appendix Table 10. Commercial salmon catches taken under quotas or guideline harvest level ranges, Yukon area, 1974-1984.

KING SALMON 1/

	Lower Yukon Area		Upper Yukon Area 2/		
	Districts 1 and 2	District 3	District 4	District 5	District 6
1974	-	3,413 (3,000)	685 (1,000)	2,661 (3,000)	1,473 (1,000)
1975	-	4,177 (3,000)	389 (1,000)	2,865 (3,000)	500 (1,000)
1976	-	4,070 (3,000)	902 (1,000)	3,151 (3,000)	1,102 (1,000)
1977	-	3,938 (3,000)	985 (1,000)	4,162 (3,000)	1,008 (1,000)
1978	-	2,657 (2,000)	701 (1,000)	3,115 (3,000)	635 (1,000)
1979 3/	-	3,073 (1,800-2,200)	1,232 (900-1,100)	3,389 (2,700-3,300	772 (900-1,100)
1980	-	3,896 (1,800-2,200)	1,517 (900-1,100)	5,383 (2,700-3,000	2,076 (900-1,100)
1981	145,287 (60,000-120,000)	3,220 (1,800-2,200)	1,347 (2,250-2,850)	6,452 (2,700-3,000)	1,264 (600-800)
1982	113,582 (60,000-120,000)	2,608 (1,800-2,200)	1,087 (2,250-2,850)	5,385 (2,700-3,300)	981 (600-800)
1983	138,686 (60,000-120,000)	3,318 (1,800-2,200)	601 (2,250-2,850)	3,606 (2,700-3,300)	911 (600-800)
1984	111,368 (60,000-120,000)	3,039 (1,800-2,200)	961 (2,250-2,850)	3,669 (2,700-3,300)	867 (600-800)

FALL CHUM AND COHO SALMON 1/

	Lower Yukon Area 4/	Upper Yukon Area 2/ 5/		
	Districts 1, 2 and 3	District 4 6/	District 5	District 6
1974	230,128 (200,000)	9,213 (10,000)	25,051 (25,000)	26,192 (15,000)
1975	215,439 (200,000)	13,552 (10,000)	27,212 (25,000)	18,735 (15,000)
1976	131,313 (200,000)	1,742 (10,000)	5,387 (25,000)	19,051 (15,000)
1977	199,603 (200,000)	13,996 (10,000)	25,695 (25,000)	19,910 (15,000)
1978	191,120 (200,000)	11,262 (10,000)	21,017 (25,000)	16,325 (15,000)
1979 3/	229,403 (120,000-220,000)	50,375 (10,000-40,000)	51,161 (10,000-40,000)	34,316 (7,500-22,500)
1980	204,229 (120,000-220,000)	32,058 (10,000-40,000)	42,343 (10,000-40,000)	20,746 (7,500-22,500)
1981	341,760 (120,000-220,000)	19,447 (10,000-40,000)	95,844 (10,000-40,000)	29,008 (5,500-20,500)
1982	199,880 (120,000-220,000)	4,076 (10,000-40,000)	13,678 (10,000-40,000)	15,196 (5,500-20,500)
1983	220,034 (120,000-220,000)	6,445 (10,000-40,000)	43,993 (10,000-40,000)	37,190 (5,500-20,500)
1984	155,983 (120,000-220,000)	9,840 (10,000-40,000)	24,117 (10,000-40,000)	20,620 (5,500-20,500)

1/ Quotas or guideline harvest level shown in parenthesis.
2/ Includes "equivalent numbers" of salmon converted from roe sales.
3/ Beginning in 1979, quotas were replaced by guideline harvest level ranges.
4/ Chum salmon only; coho salmon catch not applied toward quotas or G.H.L.
5/ Chum and coho salmon combined; mostly fall chum.
6/ Beginning in 1978 quota or guideline harvest levels in effect for area upstream of Cone Point only. Subdistrict 4-A closed August 1.

Appendix Table 11. Commercial chum salmon catches by statistical area, lower Yukon area, 1971-1984.

District 1

	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	Total
1971	834	87,740	24,766	34,891	40,617	8,063	67,635	17,915	282,461
1972	5,186	98,909	12,146	25,943	56,039	4,073	38,274	10,375	250,945
1973	17,259	176,119	39,583	18,608	61,969	6,413	52,770	22,706	395,427
1974	38,322	338,412	116,940	22,011	50,593	5,357	37,724	32,681	642,040
1975	28,970	257,485	103,423	12,078	41,295	5,779	99,232	28,244	576,506
1976	26,277	203,024	52,480	9,338	28,848	2,872	32,093	24,123	379,055
1977	34,312	181,459	54,082	9,872	41,799	1,083	41,026	18,777	382,410
1978	5,072	195,080	67,098	56,995	79,352	4,602	75,090	38,443	521,732
1979	1,791	115,528	38,161	43,263	92,706	46,401	93,777	47,713	479,340
1980	3,840	82,898	16,940	46,164	87,270	98,326	109,005	53,638	498,081
1981	25,569	206,200	26,220	76,591	91,722	51,660	143,747	53,283	674,992
1982	9,908	83,130	17,910	54,795	56,632	20,602	60,263	43,760	347,000
1983	42,300	122,374	40,200	75,016	65,665	42,903	121,328	65,749	575,535
1984	42,579	106,209	17,376	54,519	36,021	12,711	73,710	28,302	371,427

District 2

	334-21	334-22	334-23	334-24	334-25	Total
1971	2,255	3,144	286	427	-	6,112
1972	3,091	22,746	250	7,718	-	33,805
1973	22,207	56,193	6,181	24,125	-	108,706
1974	39,116	52,514	11,191	24,871	-	127,692
1975	20,947	98,986	11,028	19,844	-	150,805
1976	22,282	58,016	18,173	21,931	-	120,402
1977	26,158	75,281	23,789	32,445	-	157,673
1978	48,868	132,002	31,990	60,770	5,564	279,194
1979	73,509	86,020	29,988	33,069	44,294	266,880
1980	80,931	156,962	75,513	47,772	31,407	392,585
1981	76,143	215,346	88,040	78,218	49,014	506,761
1982	60,611	103,689	27,600	61,685	25,340	278,925
1983	74,985	76,494	80,631	53,099	48,528	333,737
1984	57,212	114,732	50,738	55,259	29,793	307,734

District 3

	334-31	334-32	Total
1971	26	24	50
1972	-	1,840	1,840
1973	-	463	463
1974	1,697	576	2,273
1975	-	5,590	5,590
1976	4,450	9,602	14,052
1977	12,839	6,424	19,263
1978	20,028	18,502	38,530
1979	28,272	37,698	65,970
1980	23,646	34,655	58,301
1981	35,597	37,917	73,514
1982	3,896	6,005	9,901
1983	7,713	16,905	24,618
1984	6,876	640	7,516

Appendix Table 12. Commercial chum salmon catches by statistical area, upper Yukon area, 1974-1984. 1/

District 4

	334-41	334-42	334-43	Total
1974	1,200 (2/)	35,879 (2/)	-	37,079 (9.2)
1975	107,813 (2.2)	70,907 (11.4)	-	178,720 (13.6)
1976	178,510 3/(0.5)	34,539 (1.3)	-	213,049 (1.8)
1977	150,356 (1.9)	33,165 (12.1)	-	183,521 (14.0)
1978	309,086 (-)	66,086 (11.0)	-	375,172 (11.0)
1979	136,324 (-)	62,221 (33.0)	19,784 (15.9)	218,329 (48.9)
1980	119,398 (-)	41,457 (15.3)	14,683 (12.9)	175,538 (27.9)
1981	45,980 (-)	17,647 (5.8)	8,245 (6.3)	71,800 (12.1)
1982	1,032 (-)	2,033 (1.0)	4,476 (2.9)	7,541 (3.9)
1983	3,407 (-)	6,946 (3.7)	801 (0.8)	11,154 (4.5)
1984	51 (-)	3,620 (3.0)	4,963 (4.7)	8,634 (7.6)

District 5

	334-51	334-52	334-53	334-54	Total
1974	30,229 (2/)	153 (2/)	-	-	30,382 (23.6)
1975	40,199 (27.2)	10 (-)	-	-	40,209 (27.2)
1976	6,089 (5.4)	72 (.1)	-	-	6,161 (5.4)
1977	27,004 (25.7)	0	-	-	27,004 (25.7)
1978	25,619 (20.7)	289 (.3)	-	-	25,908 (21.0)
1979	55,994 (47.4)	73 (.1)	-	-	56,067 (47.5)
1980	40,188 (39.7)	2,039 (.2)	-	-	42,227 (39.9)
1981	1,115 (-)	34,046 (34.0)	48,574 (48.6)	4,121 (4.1)	87,856 (86.7)
1982	8,264 (-)	1,253 (1.1)	4,310 (4.3)	-	13,827 (5.4)
1983	3,143 (3.1)	19,808 (19.8)	17,992 (17.9)	3,092 (3.1)	44,035 (43.9)
1984	1,465 (1.4)	10,907 (10.3)	9,415 (9.4)	2,918 (2.9)	24,705 (24.1)

District 6

	334-61	334-62	334-63	Total
1974	11,082 (9.6)	25,883 (15.4)	3,237 (1.9)	40,202 (26.9)
1975	18,811 (13.3)	5,218 (2.8)	9,445 (2.6)	33,474 (18.7)
1976	9,315 (6.4)	9,257 (7.9)	5,993 (3.6)	24,565 (17.9)
1977	5,101 (3.7)	12,457 (11.2)	5,432 (3.9)	22,990 (18.8)
1978	6,874 (4.7)	35,934 (8.0)	5,265 (0.5)	48,073 (13.2)
1979	7,392 (7.1)	36,352 (21.6)	8,932 (5.5)	52,676 (34.2)
1980	11,456 (6.3)	38,192 (27.3)	5,659 (2.2)	55,307 (35.8)
1981	9,541 (4.9)	42,383 (18.9)	6,542 (2.3)	58,466 (26.1)
1982	5,688 (0.7)	17,138 (4.6)	5,591 (1.5)	28,417 (6.8)
1983	5,449 (3.5)	44,742 (23.1)	8,207 (7.5)	58,398 (34.1)
1984	9,386 (5.6)	54,040 (11.8)	13,387 (3.2)	76,813 (20.6)

1/ Fall chum catch in thousands of fish shown in parenthesis.
2/ Information not available.
3/ Includes 493 fish (summer chums) erroneously key punched as "kings" in final computer run.

Appendix Table 13. Summer and fall chum salmon commercial catches, Yukon area, 1961-1984.

SUMMER CHUMS

	Lower Yukon Area				Upper Yukon Area				
Year	Dist. 1	Dist.2	Dist. 3	Sub-Total	Dist. 4	Dist. 5	Dist. 6	Sub-Total	Total
1961	-	-	-	-	-	-	-	-	-
1962	-	-	-	-	-	-	-	-	-
1963	-	-	-	-	-	-	-	-	-
1964	-	-	-	-	-	-	-	-	-
1965	-	-	-	-	-	-	-	-	-
1966	-	-	-	-	-	-	-	-	-
1967	9,453	1,425	57	10,935	-	-	-	-	10,935
1968	12,995	1,407	68	14,450	-	-	-	-	14,450
1969	56,886	5,080	-	61,966	-	-	-	-	61,966
1970	117,357	19,649	-	137,006	-	-	-	-	137,006
1971	93,928	6,112	50	100,090	-	-	-	-	100,090
1972	114,234	20,907	527	135,668	-	-	-	-	135,668
1973	221,644	63,402	463	285,509	-	-	-	-	285,509
1974	466,004	74,152	1,721	541,877	27,866	6,831	13,318	48,015	589,892
1975	418,323	99,139	-	517,462	165,054	12,997	14,782	192,833	710,295
1976	273,204	99,190	9,802	382,196	211,307 1/	774	6,617	218,698	600,894
1977	250,652	105,679	3,412	359,743	169,541	1,274	4,317	175,132	534,875
1978	393,785	227,548	27,003	648,336	364,184	4,892	34,814	403,890	1,052,226
1979	369,934	172,838	40,015	582,787	169,430	8,608	18,491	196,529	779,316
1980	391,252	308,704	44,782	744,738	147,560	456	35,855	183,871	928,609
1981	507,158	351,878	54,471	913,507	59,718	1,236	32,477	93,431	1,006,938
1982	249,516	182,344	4,086	435,946	3,647	234	21,597	25,478	461,424
1983	451,164	248,092	14,600	713,856	6,672	42	24,309	31,023	744,879
1984	292,676	236,931	1,087	530,694	1,009	645	56,249	57,903	588,597

1/ Includes 493 fish erroneously keypunched as "kings" in final computer fish ticket summary.

Appendix Table 13. (Continued)

FALL CHUMS									
	Lower Yukon Area				Upper Yukon Area				
Year	Dist. 1	Dist. 2	Dist. 3	Sub-Total	Dist. 4	Dist. 5	Dist. 6	Sub-Total	Total
1961	42,461	-	-	42,461	-	-	-	-	42,461
1962	53,116	-	-	53,116	-	-	-	-	53,116
1963	-	-	-	-	-	-	-	-	-
1964	8,347	-	-	8,347	-	-	-	-	8,347
1965	22,936	-	-	22,936	-	-	-	381	23,317
1966	69,836	-	1,209	71,045	-	-	-	-	71,045
1967	36,451	-	1,823	38,274	-	-	-	-	38,274
1968	49,857	-	3,068	52,925	-	-	-	-	52,925
1969	128,866	-	1,722	130,588	-	-	-	722	131,310
1970	200,306	4,858	3,285	208,449	-	-	-	1,146	209,595
1971	188,533	-	-	188,533	-	-	-	1,061	189,594
1972	136,711	12,898	1,313	150,922	-	-	-	1,254	152,176
1973	173,783	45,304	-	219,087	-	-	-	13,003	232,090
1974	176,036	53,540	552	230,128	9,213	23,551	26,884	59,648	289,776
1975	158,183	51,666	5,590	215,439	13,666	27,212	18,692	59,570	275,009
1976	105,851	21,212	4,250	131,313	1,742	5,387	17,948	25,077	156,390
1977	131,758	51,994	15,851	199,603	13,980	25,730	18,673	58,383	257,986
1978	127,947	51,646	11,527	191,120	10,988	21,016	13,259	45,263	236,383
1979	109,406	94,042	25,955	229,403	48,899	47,459	34,185	130,543	359,946
1980	106,829	83,881	13,519	204,229	27,978	41,771	19,452	89,201	293,430
1981	167,834	154,883	19,043	341,760	12,082	86,620	25,989	124,691	466,451
1982	97,484	96,581	5,815	199,880	3,894	13,593	6,820	24,307	224,187
1983	124,371	85,645	10,018	220,034	4,482	43,993	34,089	82,564	302,598
1984	78,751	70,803	6,429	155,983	7,625	24,060	20,564	52,249	208,232

Appendix Table 14. Commercial summer chum salmon catch and effort data, districts 1 and 2, Yukon area, 1967-1984.

	District 1					District 2				
Year	Duration	Days Fished	Boat Hours	Catch	(Catch/Boat Hour)	Duration	Days Fished	Boat Hours	Catch	(Catch/Boat Hour)
1967	6/8-6/27	11.0	77,208	9,494	(0.12)	-	-	-	-	-
1968	6/6-7/3	14.0	91,380	12,995	(0.13)	6/13-7/2	10.5	27,600	1,407	(0.05)
1969	6/2-6/28	12.5	84,864	8,840	(0.10)	6/15-7/1	8.0	16,620	5,024	(0.30)
1970	6/11-7/3	10.5	58,056	87,169	(1.50)	6/14-7/3	9.0	15,756	17,536	(1.11)
1971	6/14-7/3	10.5	73,032	36,077	(0.49)	6/20-7/5	8.5	17,832	6,112	(0.34)
1972	6/8-7/1	12.5	79,236	69,658	(0.88)	6/15-7/1	8.5	19,296	9,040	(0.47)
1973 1/	6/7-7/11	14.5	100,284	191,840	(1.91)	6/10-7/14	14.5	36,000	56,481	(1.57)
1974	6/3-7/13	16.5	114,624	461,025	(4.02)	6/5-7/16	15.5	35,316	72,281	(2.05)
1975	6/9-7/16	15.0	86,304	394,447	(4.72)	6/22-7/18	10.5	21,024	99,139	(4.72)
1976	6/14-7/14	12.0	90,658	272,493	(3.00)	6/20-7/16	11.0	32,624	99,190	(3.04)
1977	6/13-7/12	12.0	63,036	232,427	(3.69)	6/19-7/15	10.0	27,048	102,759	(3.80)
1978	6/8-7/15	13.5	100,008	393,785	(3.94)	6/8-7/14	13.5	44,376	218,196	(4.92)
1979	6/4-7/14	13.5	106,680	369,934	(3.47)	6/3-7/13	13.5	44,748	172,838	(3.87)
1980	6/9-7/15	12.8	89,412	391,252	(4.37)	6/8-7/17	12.5	48,060	308,704	(6.42)
1981	6/6-7/14	12.0	94,656	507,158	(5.36)	6/7-7/16	12.0	46,560	351,458	(7.54)
1982	6/14-7/13	9.5	81,240	248,950	(3.07)	6/16-7/16	10.0	37,920	180,321	(4.76)
1983	6/9-7/15	11.0	94,920	451,164	(4.75)	6/12-7/18	11.0	44,712	248,092	(5.55)
1984	6/18-7/13	8.0	67,776	291,966	(4.30)	6/20-7/16	8.0	32,208	234,677	(7.29)

1/ 6 inch maximum mesh size regulation during late June-early July became effective in 1973.

Appendix Table 15. Commercial coho and chum salmon catch and effort data for the fall chum season, district 1, Yukon area, 1961-1984.

Year	Dates	Days 1/ Fished	Boat Hours	Commercial catch (catch/boat hour) Coho	Commercial catch (catch/boat hour) Chum
1961	8/1-8/31	16	14,772	2,855 (0.2)	42,461 (2.9)
1962	8/1-9/3	21	46,950	22,926 (0.5)	53,116 (1.1)
1963	8/9-9/6	18	2,100	5,572 (2.7)	no purchases
1964	8/3-8/27	17	8,346	2,446 (0.3)	8,347 (1.0)
1965	8/2-8/4	2/	2/	350 (2/)	22,936 (2/)
1966	7/25-9/10	28	41,994	19,254 (0.5)	69,836 (1.7)
1967	7/24-8/27	21	19,272	9,925 (0.5)	36,451 (1.9)
1968	7/22-8/28	22	47,232	13,153 (0.3)	49,857 (1.1)
1969	7/21-8/23	20	39,408	14,041 (0.4)	128,866 (3.3)
1970	7/20-8/26	22	56,160	12,245 (0.2)	200,306 (3.6)
1971	7/22-8/28	22	85,344	11,582 (0.1)	178,744 (2.1)
1972	7/20-8/26	22	81,726	19,655 (0.2)	134,752 (1.6)
1973	7/19-8/25	22	107,136	34,860 (0.3)	173,783 (1.6)
1974	7/18-8/14	12	41,868	13,758 (0.2)	137,235 (3.3)
1975	7/21-8/16	12	52,128	2,240 (0.04)	158,183 (3.0)
1976	7/19-8/13	11	55,026	4,084 (0.07)	91,091 (1.7)
1977	7/18-8/23	11	50,568	30,588 (0.6)	129,486 (2.6)
1978	7/17-8/29	13	56,184	16,262 (0.2)	127,947 (2.3)
1979	7/19-8/14	8	47,352	11,231 (0.2)	101,400 (2.1)
1980	7/17-8/19	7	24,216	4,819 (0.2)	106,829 (4.4)
1981	7/16-8/17	7	35,520	11,174 (0.3)	167,834 (4.7)
1982	7/19-8/13	8	40,944	15,114 (0.4)	91,271 (2.2)
1983 3/	7/18-8/12	6	32,904	4,560 (0.1)	124,371 (3.8)
1984 3/	7/16-8/17	6	26,928	29,472 (1.1)	78,751 (2.9)

1/ One "day" is equivalent to 24 hours during open fishing period.
2/ Information not avilable.
3/ Fishing effort and C.P.U.E. calculated assuming 24 hour fishing periods while the district was actually divided into a Set Net (24 hour) area and a Gill Net (12 hour) area.

Appendix Table 16. Fall chum salmon commercial catch data by period, fall season, district 1, Yukon area, 1969-1984.

Cumulative Catch 1/ (Cumulative catch/boat hour)

Date	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981 2/	1982	1983 3/ 4/	1984 4/ 5/ 6/
7/18		16.1 (1.86)			16.4 (1.26)					6.3 (1.70)		4.2 (1.55)				
7/19	3.8 (1.10)			18.6 (1.91)					21.4 (3.72)						16.1(2.56)	
7/20						12.1 (1.57)					6.0 (1.35)			4.3 (0.90)		
7/21			8.2 (1.05)		53.6 (2.03)			6.9 (0.73)		11.4 (1.36)			6.0 (1.3)			
7/22		29.6 (1.67)		45.8 (2.23)					23.4 (2.54)			10.8 (1.97)				
7/23	29.7 (3.75)						12.9 (1.51)							32.1 (2.79)		
7/24			31.9 (1.71)			24.7 (1.76)		9.7 (0.60)			13.2 (1.31)		7.3 (1.18)			
7/25		30.4 (1.54)			67.4 (1.91)					64.2 (4.14)		21.2 (2.24)				
7/26	44.5 (3.48)			54.8 (1.88)			37.0 (2.33)		33.1 (2.38)							
7/27						59.0 (2.81)					28.0 (1.66)			36.1 (2.31)		
7/28			37.6 (1.38)		112.8 (2.28)			16.7 (0.69)		67.0 (3.34)			64.6 (4.93)			
7/29		81.6 (2.95)		63.7 (1.72)					40.8 (2.16)			36.5 (3.07)			19.1(1.93)	
7/30	57.0 (3.24)						55.9 (2.54)							47.8 (2.32)		
7/31			53.5 (1.48)			86.9 (3.16)		79.5 (2.24)			37.7 (1.62)	37.9 (2.94)	87.8 (4.58)			18.3(3.60)
8/1		126.8 (3.57)			122.9 (2.01)					81.4 (3.05)						
8/2	71.8 (3.20)			70.5 (1.62)			86.9 (2.80)		41.7 (1.91)						37.6(2.39)	
8/3						91.8 (2.86)					55.2 (1.82)					35.4(3.19)
8/4			89.6 (1.94)		127.9 (1.84)			87.3 (1.98)		81.8 (2.89)				55.7 (2.16)		
8/5		159.4 (3.67)		73.6 (1.46)					44.9 (1.76)			44.1 (3.16)			61.3(2.86)	
8/6	94.2 (3.45)						112.4 (2.87)							56.9 (1.98)		
8/7			104.3 (1.89)			93.0 (2.73)		87.7 (1.85)			93.0 (2.44)	57.6 (3.62)				37.2(2.46)
8/8		188.4 (3.67)			133.9 (1.72)					83.2 (2.68)						
8/9	108.6 (3.39)			108.6 (1.85)			134.2 (2.90)		94.9 (3.06)						105.3(3.87)	
8/10						94.7 (2.57)					94.3 (2.27)			70.6 (2.06)		
8/11			110.2 (1.74)		164.6 (1.84)			88.4 (1.69)		84.8 (2.53)		62.8 (3.61)				
8/12		189.9 (3.47)		123.5 (1.86)					96.4 (2.76)					91.3 (2.53)	124.4(3.78)	
8/13	112.5 (3.21)						134.6 (2.78)	91.0 (1.65)					131.6 (5.22)			
8/14			148.3 (2.07)			137.4 (3.31)					101.4 (2.14)	64.6 (3.48)				49.0(2.69)
8/15		192.2 (3.35)			170.7 (1.77)					86.2 (2.30)						
8/16	120.7 (3.18)			125.1 (1.65)			158.2 (3.04)		113.0 (2.79)							
8/17																59.1(2.75)
8/18			153.2 (1.95)		177.5 (1.70)					96.4 (2.29)			135.5 (4.64)			
8/19		209.1 (3.45)		146.3 (1.77)								106.8 (4.41)				
8/20	130.4 (3.18)								120.0 (2.65)							
8/21			177.4 (2.10)													
8/22		214.5 (3.39)			185.3 (1.64)					118.3 (2.44)						
8/23	132.6 (3.09)			150.5 (1.79)					125.8 (2.55)							
8/24																
8/25			185.5 (2.05)		187.5 (1.57)					122.7 (2.29)						
8/26		216.4 (3.34)		153.3 (1.76)												
8/27																
8/28			187.0 (2.01)													
8/29					189.3 (1.54)					127.9 (2.28)						
8/30				154.6 (1.60)												
8/31																

1/ Cumulative catch in thousands of fish by period beginning July 18. Fall chum salmon run usually well underway in the lower Yukon River by this date.
2/ Season closed 8/1 - 8/12.
3/ Season closed 7/20 - 7/27.
4/ Cumulative catch per boat hour after 7/19 calculated assuming 24 hour fishing period, while the district was actually divided into a Set Net (24 hour) area and a Gill Net (12 hour) area.
5/ Season closed 7/18-8/1.
6/ Season closed 8/8-8/12.

Appendix Table 17. Commercial salmon pack by species and type of processing, Yukon area, 1960-1984. 1/

	Cases (48#)			Fresh-Frozen (round wt. in lbs.)			Cured king Salmon		Cured Chum Salmon		Salmon Roe (lbs.
	King	Coho	Chum	King	Coho	Chum	Tierces	1/2 Tierce	Tierces	1/2 Tierce	
1960	13,000			2/	2/	2/	250	180			
1961	19,474			2/	2/	2/	504	146			
1962	15,959	512	1,760	2/	2/	2/	464	280			
1963	16,400	1,190		2/	2/	2/	2/	2/			
1964	12,041			2/	17,000	66,770	537	499			
1965	18,149			275,000	2,500	160,500	670	67			
1966	14,026	836	2,812	414,000	61,355	301,240	398	60			
1967	21,503		126	475,900	66,400	366,496	627	96			1,755
1968	19,499		816	561,690	93,154	454,409	351	170			21,000
1969	9,560	1,104	4,499	423,597	26,973 3/	829,586 3/	647	95	15		29,000
1970	6,431	1,002	6,413	716,600	12,900	1,725,000	447	191	51		26,300
1971	6,500	502	3,213	1,058,034	45,836	1,432,455	659	229	139		55,177
1972	7,418	1,005	6,249	1,002,395	83,960	1,495,922	497	147			85,278
1973	5,227	1,008	9,902	1,339,317	181,928	2,929,532	61	133		72	137,594
1974	6,660	603	21,074	1,062,666	58,816	3,879,300	381	56	57		208,842
1975	5,297	40	14,226	781,902	13,299	4,751,941	80	53	45	119	201,404
1976	3,921	80	11,375	1,398,779	29,778	4,256,679	93	92	72	10	226,893
1977	4,642	415	9,428	1,513,484	270,241	4,877,918	180	237	26	-	210,568
1978	5,711	74	9,340	1,473,354	168,241	8,639,156	222	117	7	75	261,422
1979	6,277	22	7,854	2,014,156	108,011	8,098,075	112	91	-	2	410,540
1980	8,764	130	15,783	3,341,262	56,295	8,781,062	29	18	-	37	579,927
1981	1,107	378	11,573	3,686,238	130,097	11,398,680	25	13	9	28	507,550
1982	-	7	751	2,790,456	246,500	4,992,877	-	19	-	1	584,053
1983	-	198	1,181	3,000,843	72,447	10,637,613	5	39	-	7	426,220
1984	-	5	1,768	2,426,205	590,526	5,516,532	-	36	-	16	468,244

1/ Pack represents type of processing when fish were shipped out of district.
2/ Information not available.
3/ Includes approximately 11,600 and 110,500 (round weight) of coho and chum salmon respectively, as salted fish for Japanese market.

Appendix Table 18. Commercial salmon roe sales by subdistrict, upper Yukon area, 1978-1984. 1/ Figures in parenthesis represent catch during the fall season.

	Subdistrict 4-A		Subdistrict 4-B		Subdistrict 4-C		Total District 4	
	King 2/	Chum 3/	King 2/	Chum 3/	King 2/	Chum 3/	King 2/	Chum 3/
1978	0	16,920	330	1,721 (1721)	0	0 (0)	330	18,641 (0)
1979	0	35,117	0	3,399 (3199)	0	0 (0)	0	38,516 (3199)
1980	0	119,957	0	16,174 (1789)	0	4,040 (2558)	0	140,171 (4347)
1981	0	160,757	0	24,988 (1311)	0	2,598 (0)	0	188,343 (1311)
1982	0	137,611	0	12,570 (20)	0	1,267 (147)	0	151,488 (167)
1983	0	130,013	0	19,140 (1591)	0	935 (372)	0	150,088 (1963)
1984	0	148,519	0	16,406 (1222)	0	4,132 (993)	0	169,057 (2215)

	Subdistrict 5-A		Subdistrict 5-B		Subdistrict 5-C		Subdistrict 5-D		Total District 5	
	King 2/	Chum 3/	King 2/	Chum 3/	King 2/	Chum 3/	King 2/	Chum 3/	King 2/	Chum 3/
1978	1,046	4,551 (3946)	25	1,274 (1274)	0	0 (0)	0	0 (0)	1,071	5,826 (5220)
1979	0	9,106 (8097)	0	0 (0)	0	0 (0)	0	0 (0)	0	9,106 (8097)
1980	1,317	605 (605)	211	0 (0)	0	0 (0)	0	0 (0)	1,528	605 (605)
1981	0	178 (178)	33	6,809 (6760)	221	17 (17)	0	0 (0)	254	7,004 (6955)
1982	0	21 (0)	0	23 (23)	0	19 (19)	0	0 (0)	0	42 (42)
1983	0	242 (0)	0	269 (0)	0	1,345 (0)	0	0 (0)	0	1,856 (0)
1984	0	0 (0)	0	47 (0)	0	0 (0)	0	57 (57)	0	104 (57)

	Subdistrict 6-A		Subdistrict 6-B		Subdistrict 6-C		Total District 6	
	King 2/	Chum 3/	King 2/	Chum 3/	King 2/	Chum 3/	King 2/	Chum 3/
1978	238	3,294 (1826)	0	7,796 (1680)	4	833 (181)	242	11,923 (3687)
1979	Data not available						0	11,061 (7170)
1980	0	0 (0)	207	2,325 (53)	214	1,025 (15)	421	3,350 (68)
1981	0	0 (0)	395	3,709 (2784)	184	1,297 (235)	579	5,006 (3019)
1982	0	0 (0)	0	1,623 (596)	0	490 (0)	0	2,113 (596)
1983	0	0 (0)	0	3,027 (3009)	0	92 (92)	0	3,119 (3101)
1984	0	0 (0)	0	152 (0)	0	239 (56)	0	391 (56)

1/ All figures are pounds of unprocessed roe.
2/ May include small amounts of chum roe.
3/ May include small amounts of king roe except during fall seasons.

Appendix Table 19. Dollar value estimates of Yukon area commercial salmon fishery, 1961-1984. 1/

Year	Gross value of catch to fishermen				Wages Earned 2/	Total Income To Area	Wholesale Value Of Pack 3/	Tax Revenues To State 4/
	King	Coho	Chum	Total				
1961	420,900	1,400	14,700	437,000			1,292,300	37,500
1962	330,300	11,500	20,100	361,900			1,275,250	50,400
1963	409,500	2,800	-	412,300			1,500,400	42,000
1964	351,000	1,200	2,200	354,400			1,203,800	35,000
1965	531,400	200	10,700	542,300			1,412,700	42,000
1966	419,900	9,600	25,000	454,500			1,308,100	37,000
1967	583,700	5,500	17,200	606,400	250,000	856,400	1,864,800	41,700
1968	494,300	6,700	34,000	535,000	264,000	799,000	1,655,200	47,000
1969	415,000	8,200	96,000	519,200	234,000	753,000	1,976,200	40,000
1970	401,300	10,300	211,500	623,100	185,800	808,900	2,113,100	45,000
1971	590,100	10,000	182,900	783,000	357,700	1,140,700	2,106,600	42,000
1972	547,800	20,400	215,800	784,000	445,400	1,229,400	2,405,200	45,300
1973	561,400	46,500	609,100	1,217,000	585,800	1,802,900	4,453,900	62,800
1974	881,300	28,400	1,011,300	1,921,000	500,100	2,421,100	6,035,900	84,100
1975	589,000	3,500	1,201,400	1,793,900	596,600	2,390,500	4,939,700	87,100
1976	983,500	8,600	1,158,900	2,151,000	687,600	2,838,600	6,815,500	96,900
1977	1,928,400	143,000	1,997,300	4,068,700	850,000	4,918,700	10,499,400	151,000
1978	2,133,700	79,200	3,101,800	5,314,700	1,085,700	6,400,400	14,194,800	179,400
1979	3,008,000	84,400	4,527,100	7,619,500	1,210,000	8,829,500	19,048,800	248,600
1980	3,639,300	21,800	2,676,800	6,703,100 5/	1,475,000	8,178,100	16,757,700	205,400
1981	4,635,500	91,900	5,323,300	10,050,700 6/	1,616,000	11,666,700	26,267,500	322,500
1982	3,871,300	153,700	2,693,800	6,718,800 7/	1,500,000	8,218,800	16,797,000	222,000
1983	4,198,600	29,000	2,499,800	6,984,800 8/	1,500,000	8,484,800	17,462,000	230,000
1984	3,620,400	268,800	1,498,000	5,689,000 9/	1,500,000	7,189,000	14,223,000	181,000

1/ Information not available for wages earned during 1961-1966.
2/ Includes wages paid to tender boat operators and resident processing plant employees in district.
3/ Based on type of processing when fish were shipped out of the district.
4/ Processors tax and vessel and crewmember license fees. Does not include CFEC permit fee.
5/ Includes $365,200 in roe sales upper Yukon area.
6/ Includes $601,100 in roe sales upper Yukon area.
7/ Includes $422,500 in roe sales upper Yukon area.
8/ Includes $257,400 in roe sales upper Yukon area.
9/ Includes $301,800 in roe sales upper Yukon area.

Appendix Table 20. Estimated average prices paid to fishermen, Yukon area, 1961-1984.

PRICE PER FISH

	Lower Yukon Area				Upper Yukon Area			
Year	King	Summer Chum	Fall Chum	Coho	King	Summer Chum	Fall Chum	Coho
1961	$3.50							
1962	3.50							
1963	3.50							
1964	3.75		.25	.50				
1965	4.50		.35					
1966	4.50		.35	.50				
1967	4.50	.35	.35	.50				
1968	4.64	.50	.50	.50				
1969	4.60	.50	.50	.55				
1970	5.00	.61	.61	.84				
1971	5.34	.64	.64	.82				
1972	5.90	.75	.75	.92				
1973	7.45	1.18	1.18	1.27				
1974	9.00	1.36	1.58	1.75	8.67	1.00	1.00	1.00
1975	9.24	1.30	1.50	1.51	16.25	1.12	1.12	1.12
1976	11.17	1.56	1.80	1.78	12.96	1.22	1.22	1.22
1977	20.32	2.80	3.60	3.75	24.17	1.75	1.75	1.75
1978	21.60	3.20	3.62	4.20	15.38	1.54	1.97	1.97
1979	22.74	3.87	5.05	5.87	20.20	1.65	2.24	2.24
1980	23.41	1.38	1.93	2.32	13.60	1.52	2.08	1.89
1981	29.76	3.00	4.40	4.08	23.70	1.42	2.59	2.00
1982	32.43	2.80	4.27	4.59	21.83	1.28	2.10	2.41
1983	28.70	2.45	2.69	2.45	20.63	1.06	1.46	1.86
1984	30.75	1.77	2.40	3.50	18.62	1.47	1.90	1.46

PRICE PER POUND

	Lower Yukon Area				Upper Yukon Area				
Year	King	Summer Chum	Fall Chum	Coho	King	Summer Chum	Fall Chum	Coho	Roe
1964	.17		.03						
1965	.20								
1966	.20								
1967	.19	.05	.05	.07					
1968	.18	.06	.06						
1969	.19	.08	.08	.08					
1970	.22	.09	.09	.12					
1971	.24	.10	.10	.12					
1972	.24	.11	.11	.13					
1973	.30	.16	.16	.18					
1974	.38	.21	.21	.25	.50	.15	.13	.15	.75
1975	.42	.20	.20	.21	.92	.17	.14	.17	1.16
1976	.51	.24	.24	.27	.74	.19	.16	.19	1.33
1977	.85	.40	.45	.50	1.37	.27	.22	.27	2.66
1978	.90	.45	.47	.60	.87	.24	.25	.24	a/
1979	1.09	.52	.68	.80	1.00	.25	.29	.25	3.00
1980	1.04	.20	.28	.36	.85	.23	.27	.29	2.50
1981	1.20	.40	.55	.60	1.00	.20	.35	.35	3.00
1982	1.41	.40	.55	.69	1.02	.18	.28	.37	2.75
1983	1.40	.34	.34	.35	1.08	.16	.19	.31	1.66
1984	1.50	.26	.32	.50	0.95	.23	.26	.24	1.78

a/ Data not available.

Appendix Table 21. Average weight of salmon, commercial catch, Yukon area, 1964-1984.

	AVERAGE WEIGHT IN POUNDS 1/								
	Lower Yukon Area					Upper Yukon Area			
Year	King	Summer Chum	Fall Chum	Coho	Year	King	Summer Chum	Fall Chum	Coho
1964	22.6	-	-	-					
1965	23.0	-	-	-					
1966	23.0	-	-	-					
1967	24.0	-	-	7.3					
1968	26.5	-	-	-					
1969	23.9	-	-	6.7					
1970	22.3	-	-	7.1					
1971	22.6	-	-	6.9					
1972	24.6	6.6	7.6	7.1					
1973	24.5	6.8	7.9	7.1					
1974	23.7	6.5	7.5	7.0	1974	17.3	6.7	7.7	6.7
1975	22.0	6.5	7.5	7.2	1975	17.7	6.6	8.0	6.6
1976	21.9	6.5	7.5	6.6	1976	18.4	6.4	8.0	7.5
1977	23.9	7.0	8.0	7.5	1977	17.6	6.5	8.0	6.5
1978	24.0	7.1	7.7	7.0	1978	20.2	6.8	7.4	6.4
1979	20.9	7.4	7.4	7.3	1979	20.2	6.6	7.7	6.5
1980	22.5	6.9	6.9	6.4	1980	16.0	6.6	7.7	6.5
1981	24.8	7.5	8.0	6.8	1981	23.7	7.1	7.4	5.7
1982	23.0	7.1	7.7	6.7	1982	21.4	7.1	7.5	6.5
1983	20.5	7.2	7.9	7.0	1983	19.1	6.6	7.7	6.0
1984	20.5	6.8	7.5	7.0	1984	19.6	6.4	7.3	6.1

1/ Information not available for some species. Data obtained from age-length-weight samples or fish ticket entries.

Appendix Table 22. Yukon River subsistence catch and effort data, 1961-1984 (numbers per fishing family are in parentheses).

	Total Catch		Equivalent Catch 1/		Equivalent Catch Per Family 1/	
Year	King Salmon	Other 2/ Salmon	King Salmon	Other 2/ Salmon	King Salmon	Other 2/ Salmon
1961	31,864	405,632	20,117	403,765	32	647
1962	21,610	356,754	10,217	325,244	18	577
1963	32,790	408,381	23,919	376,440	40	625
1964	22,877	485,630	14,847	458,609	25	762
1965	19,723	458,379	16,499	430,949	30	788
1966	14,272	214,236	11,507	204,913	23	416
1967	19,661	288,595	16,306	256,956	35	546
1968	15,066	189,607	11,883	170,552	25	358
1969	15,000	213,725	13,916	195,476	30	426
1970	15,794	223,237	13,474	199,613	34	498
1971	27,953	228,849	24,058	191,011	48	383
1972	21,868	151,008	19,314	129,343	46	311
1973	26,459	219,275	23,530	198,054	44	374
1974	23,137	323,834	19,014	284,977	38	580
1975	15,466	300,379	12,600	262,741	21	448
1976	19,329	262,624	16,196	235,056	25	358
1977	20,388	267,127	15,740	235,401	27	408
1978	30,297	299,791	25,496	255,447	36	360
1979	35,205	452,328	26,616	315,681	33	387
1980	58,224	479,713	38,749	436,321	51	571
1981	38,354	425,366	24,070	332,512	35	485
1982	36,385	433,219	23,880	407,099	32	542
1983	52,578	462,611	46,172	427,189	60	484
1984	48,549	460,895	39,525	424,162	50	532

Year	Fishing Familes Surveyed 1/	People in Fishing Families 1/	Snow-machines 1/	Sled Dogs 1/	Gear Operated 1/ Fishwheels
1961	624	3,626 (5.8)		4,806 (7.7)	169
1962	564	3,279 (5.8)		3,848 (6.8)	138
1963	602	4,154 (6.9)		4,214 (7.0)	156
1964	602	3,612 (6.0)		4,003 (6.6)	155
1965	547	3,993 (7.3)		3,993 (7.3)	127
1966	492	3,149 (6.4)		3,112 (6.3)	116
1967	471	2,779 (5.9)	192 (0.4)	2,752 (5.8)	86
1968	476	3,094 (6.5)	262 (0.6)	2,719 (5.7)	71
1969	459	2,984 (6.5)	349 (0.8)	2,448 (5.3)	63
1970	400	2,680 (6.7)	346 (0.9)	2,214 (5.5)	55
1971	499	3,244 (6.5)	460 (0.9)	2,226 (4.5)	63
1972	416	2,621 (6.3)	438 (1.0)	1,589 (3.8)	59
1973	530	3,339 (6.3)	571 (1.1)	2,375 (4.5)	83
1974	491	3,093 (6.3)	534 (1.1)	2,105 (4.3)	90
1975	587	3,698 (6.3)	762 (1.3)	2,585 (4.4)	126
1976	657	4,139 (6.3)	882 (1.3)	3,401 (5.2)	154
1977	577	3,635 (7.3)	785 (1.4)	3,413 (5.9)	164
1978	711	3,929 (5.5)	843 (1.2)	3,722 (5.2)	178
1979	815	4,386 (5.3)	914 (1.1)	4,623 (5.7)	179
1980	764	4,101 (5.4)	891 (1.2)	4,874 (6.4)	179
1981	685	4,314 (6.3)	812 (1.2)	4,663 (6.8)	173
1982	751	3,936 (5.2)	840 (1.1)	4,513 (6.0)	141
1983	883	3/	3/	4,539 (5.1)	156
1984	798	3/	3/	4,630 (5.8)	158

1/ Data from villages surveyed each year since 1961: mouth to Fort Yukon and Tanana River (does not include Fairbanks or Shageluk).
2/ Mostly chum salmon, some pinks and cohos.
3/ Information not available.

Appendix Table 23. Yukon River king salmon subsistence catches by village, 1972-1984. 1/

Village	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Mouth to Anuk River													
Sheldons Point	462	165	283	108	122	302	546	91	427	163	79	1,021	802
Alakanuk	647	461	569	130	363	213	1,125	893	1,595	423	336	1,582	1,028
Emmonak-Kwiguk	300	1,071	208	55	398	62	2,738	1,362	1,175	1,021	1,328	2,436	2,099
Aproka Pass & vicinity	37	106	5	-	-	-	64	-	-	-	-	-	-
Kotlik-Hamilton	342	1,008	394	204	472	173	773	533	472	675	568	1,224	695
Subtotal	1,788	2,811	1,459	497	1,355	750	5,246	2,879	3,669	2,282	2,311	6,263	4,624
Anuk River to Owl Slough													
Mountain Village	932	912	460	394	397	172	817	1,025	843	811	218	1,875	1,217
Pitkas Point-St. Marys	1,517	1,270	878	438	1,273	576	1,314	1,718	1,297	1,380	985	2,432	2,663
Pilot Station	1,558	1,508	517	107	502	556	1,027	804	433	399	428	2,703	1,116
Marshall	713	1,163	1,068	436	694	364	806	721	1,101	990	478	2,055	2,176
Subtotal	4,720	4,853	2,923	1,375	2,866	1,668	3,964	4,268	3,674	3,580	2,109	9,065	7,172
Owl Slough to Bonasila R.													
Russian Mission	975	1,387	1,243	2,098	1,328	639	1,498	1,476	1,660	1,689	1,628	2,634	1,899
Holy Cross	2,359	3,708	2,243	2,792	1,492	1,920	2,404	1,787	3,123	2,312	1,731	2,276	2,456
Subtotal	3,334	5,095	3,486	4,890	2,820	2,559	3,902	3,263	4,783	4,001	3,359	4,910	4,355
Bonasila R. to Illinois Cr.													
Anvik	72	67	111	83	84	67	180	261	161	191	354	744	576
Grayling	185	516	547	100	117 2/	149	292	391	3,664	222	294	951	879
Kaltag	83	148	616	192	57	216	127	435	694	179	344	652	487
Nulato	364	307	1,161	1,119	968	1,531	1,354	1,245	2,297	1,117	811	1,135	966
Koyukuk	417	564	604	50	437	752	518	495	699	541	493	966	1,099
Galena	608	510	706	1,294	435	1,155	945	1,591	1,205	570	735	1,477	1,226
Ruby-Kokrines	2,076	2,418	2,899	912	1,959	735	1,539	2,221	1,736	964	1,168	2,346	1,107
Subtotal	3,805	4,530	6,644	3,750	4,057	4,605	4,955	6,639	10,456	3,784	4,199	8,271	6,250
Illinois Cr. to U.S. Can.Border													
Tanana	1,461	965	789	80	1,338	858	1,851	1,604	5,711	2,517	2,230	5,547	2,682
Rampart	1,457	2,614	452	517	581	1,194	987	1,820	1,169	488	887	1,070	876
Stevens Village	1,002 3/7/	1,027 3/	590	362	643 7/	1,252 7/	3,178	2,194 7/	3,962 7/	2,387 7/	3,745 7/	5,203 7/	4,676 7/
Beaver	241	358	34	168	188	299	558	394	506	552	250	220	553
Fort Yukon	520	536	1,030	215	1,158	1,061	2,642	1,922	2,527	2,794	1,894	1,887	3,608
Circle	345	225	406	16	528	304	212	1,175	769	728	969	648	545
Eagle	353	421	66	20	633	1,171	963	2,888	2,880	3,782	2,864	2,183	1,998
Subtotal	5,379	6,146	3,367	1,377	5,069	6,129	10,391	11,997	17,524	13,248	12,839	16,758	14,938

Appendix Table 23. (Continued)

Village	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Innoko River													
Shageluk	-	-	-	-	11	-	-	62	35	10	-	-	-
Holikachuk	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	-	-	-	-	11	-	-	62	35	10	-	-	-
Koyukuk River													
Huslia	1	35	69	23	21	50	132	146	154	61	125	459	169
Hughes	27	32	10	25	155	72	216	180	226	402	479	318	856
Alatna	3	1	17	0	0	1	7	2	20	0	6	6	2
Allakaket	25	73	138	151	231	172	239	236	197	185	268	700	373
Subtotal	56	141	234	199	407	295	594	564	597	648	878	1,483	1,400
Tanana River													
Minto-Manley Hot Spr.	99	58	176	213	326	752	298	269	764	711	797	1,265	722
Nenana	887	683	1,431	533	864	742	807	800	771	974	1,195	966	2,556
Fairbanks	190	26	38	32	31	67	126	264	291	400	451	475	321
Subtotal	1,176	767	1,645	778	1,221	1,561	1,231	1,333	1,826	2,085	2,443	2,706	3,599
Chandalar River													
Venetie	-	-	-	-	-	-	9	-	160	52	20	22	51
Subtotal	-	-	-	-	-	-	9	-	160	52	20	22	51
Porcupine River													
Canyon Village	-	-	-	-	-	-	-	-	-	-	-	-	-
Chalkyai & Kevinjik R. Fish Camp	-	-	-	-	-	-	-	-	-	-	-	-	-
Old Crow, Y.T.	-	4	75	100	25	29	-	100	2,000	100	400	200	500
Subtotal	-	4	75	100	25	29	-	100	2,000	100	400	200	500

Appendix Table 23. (Continued)

Yukon Terr.Villages													
Dawson	-	-	-	-	500	531	421	1,200	13,500	1,016	20	-	-
Stewart River	100	99	-	-	-	-	-	-	-	1,000	62	-	-
Mayo-Stewart Crossing	-	25	233	-	-	61	105	-	-	-	720	-	-
Fraser Falls	-	25	-	-	-	-	-	-	-	-	-	-	-
Burwash-Kluane R.	-	-	-	-	-	-	-	-	-	-	0	-	-
Fort Selkirk	-	45	-	-	-	-	-	-	-	-	164	-	-
Pelly	380	53	433	-	200	265	500	-	-	-	3,142	-	-
Faro	-	75	-	-	-	-	-	-	-	3,286	-	-	-
Ross River	35	75	30	-	-	-	-	-	-	-	440	-	-
Minto	15	261	-	-	-	-	-	-	-	400	-	-	-
Tatchun Creek	-	-	-	-	-	-	-	-	-	-	-	-	-
Carmacks	1,080	1,384	2,563	-	800	1,121	1,280	3,000	-	-	3,172	-	-
Lake Laberge-Whitehorse	-	-	-	-	-	-	-	-	-	3,042	7	-	-
Takhini	-	-	-	-	-	-	-	-	-	-	-	-	-
McClintock R.	-	-	-	-	-	-	-	-	-	-	-	-	-
Carcross	-	-	-	-	-	-	-	-	-	-	-	-	-
Teslin-Johnson's Crossing	-	54	20	-	-	800	600	-	-	-	500	-	-
Subtotal 5/	3,960	2,095	3,695	2,900 6/	1,500	2,749	2,906	4,100	13,500 6/	8,266	7,268	5,200 6/	5,660 6/
Total	24,218	26,416	23,734	16,045	19,331	20,359	30,297	35,205	58,224	38,056	35,926	54,878	48,549

1/ 1961-1971 data available from 1981 Annual Management Report.
2/ Includes Shageluk-Holikachuk fish camp catches.
3/ Includes New Minto fish camp catches.
4/ Includes Minto catches.
5/ Data by village obtained from annual reports. Subtotals includes revised catch data and summation of village catches may not equal subtotal. Does not include Old Crow catches.
6/ Catch by village not available.
7/ Includes catches made by Fairbanks permit holders who fished in Yukon River near bridge crossing.

Appendix Table 24. Yukon River chum salmon subsistence catches by village, 1972-1984. 1/

Village	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Mouth to Anuk River													
Sheldon's Point	4,355	3,554	2,720	6,247	2,033	1,327	3,420	2,177	2,545	3,200	3,541	2,093	3,501
Alakanuk	5,696	6,551	12,743	3,656	10,866	6,591	9,583	11,252	5,091	7,684	7,874	10,688	12,090
Emmonak-Kwiguk	4,828	10,135	7,388	5,336	8,397	7,501	9,826	12,634	7,720	10,557	17,679	12,406	17,041
Aproka Pass & vicinity	344	580	1,460	229	231	25	473	-	-	-	-	-	-
Kotlik-Hamilton	3,976	7,639	6,098	6,578	10,289	7,152	9,127	9,053	9,857	9,158	10,566	11,320	10,807
Subtotal	18,398	27,625	33,936	17,258	31,816	22,596	32,429	35,116	25,213	30,619	39,660	36,507	43,439
Anuk R. to Owl Slough													
Mountain Village	5,909	7,524	11,661	6,720	8,278	11,368	6,920	13,304	10,548	8,232	9,689	16,748	13,144
Pitkas Point-St. Marys	11,072	9,201	14,478	8,644	12,060	12,347	10,097	12,275	7,898	9,204	14,574	13,236	16,970
Pilot Station	7,026	8,474	8,567	7,849	5,498	5,708	4,000	6,489	5,242	5,054	6,347	6,623	5,182
Marshall	5,174	4,934	6,763	5,710	3,938	2,896	2,562	7,002	7,229	7,234	7,572	7,202	10,160
Subtotal	29,181	30,133	41,469	28,923	29,774	32,319	23,579	39,070	30,917	29,724	38,182	43,809	45,456
Owl Slough to Bonasila R.													
Russian Mission	2,919	2,459	4,740	4,113	2,407	2,262	1,256	1,927	880	3,559	2,205	2,889	3,402
Holy Cross	3,421	3,532	4,611	4,691	1,546	5,404	939	3,474	4,773	4,753	5,969	5,500	6,497
Subtotal	6,340	5,991	9,351	8,804	3,953	7,666	2,195	5,401	5,653	8,312	8,174	8,389	9,899
Bonasila R. to Illinois Cr.													
Anvik	3,689	20,850	29,261	30,924	26,660	23,847	16,021	14,950	31,426	29,140	31,233	21,744	23,193
Grayling	6,428	12,778	27,421	26,476	27,500 2/	17,102	18,824	20,630	32,308	16,898	50,992	28,080	30,107
Kaltag	4,285	23,135	14,920	11,699	13,106	16,588	19,921	31,424	57,339	30,552	37,999	30,507	3,130
Nulato	7,648	13,568	37,312	22,552	13,253	12,065	9,056	11,336	31,062	8,295	20,033	14,289	1,907
Koyukuk	1,772	1,964	14,978	5,667	2,440	3,946	5,268	10,133	17,445	12,630	19,691	15,600	6,975
Galena	1,353	4,612	8,307	11,500	13,435	5,527	11,945	6,815	16,699	18,564	22,945	10,807	27,202
Ruby-Kokrines	6,725	12,932	19,235	8,820	10,777	4,349	14,709	16,731	21,017	14,272	15,068	22,245	14,418
Subtotal	31,900	89,839	151,434	117,638	107,171	83,424	95,124	112,019	207,296	30,351	197,761	143,272	106,932
Illinois Cr. to U.S. Can. Border													
Tanana	13,108	10,795	12,447	26,342	21,592	19,790	22,683	39,218	38,261	40,066	37,944	49,494	70,208
Rampart	3,674	8,986	1,527	8,117	14,175	10,056	2,771	25,010	6,101	7,485	5,495	9,372	12,165
Stevens Village	1,118 3/	6,078 3/	6,728 3/	2,297	1,170 5/	4,926 5/	16,460	12,413 5/	11,685 5/	23,061 5/	19,429 5/	23,690 5/	28,268 5/
Beaver	3,157	1,372	1,583	1,270	517	716	1,717	1,826	458	881	2,412	6,104	167
Fort Yukon	1,597	3,074	142	19,458	1,143	13,630	21,580	22,266	7,828	24,632	3,485	11,120	10,590
Circle	752	592	1,266	1,283	153	203	859	3,541	1,785	7,228	290	3,762	3,107
Eagle	587	2,109	66	1,825	1,141	7,432	5,027	27,048	16,773	31,105	15,142	20,154	18,585
Subtotal	23,933	33,006	23,759	60,592	39,891	56,753	71,097	131,322	82,891	134,458	84,197	123,696	143,090
Innoko River													
Shageluk	-	-	-	-	1,577	-	-	6,647	2,485	2,671	-	-	-
Holikachuk	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	-	-	-	-	1,577	-	-	6,647	2,485	2,671	-	-	-
Koyukuk River													
Huslia	534	4,482	6,601	5,026	8,791	3,753	8,656	21,255	16,800	12,815	6,928	22,591	18,868
Hughes	2,777	2,541	8,786	5,429	4,280	4,856	6,555	12,865	13,455	6,849	9,640	2,232	16,424
Alatna	490	27	3,510	950	650	210	681	104	370	304	438	436	240
Allakaket	867	2,465	7,034	5,609	4,215	3,686	9,833	8,505	12,204	8,964	8,289	5,669	4,520
Subtotal	4,668	9,515	25,931	17,014	17,936	12,505	25,725	43,229	42,829	28,932	25,295	30,928	40,052

Appendix Table 24. (Continued)

Village	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Tanana River													
Minto-Manley Hot Spr.	6	7	20	6,000	9,400	16,192	15,494	22,213	19,801	19,930	12,128	33,898	14,889
Nenana	20,864	14,154	26,340	26,634	14,345	24,167	27,625	33,525	37,549	17,901	16,084	22,806	37,752
Fairbanks	8,608	1,657	2,958	1,615	2,826	725	3,917	6,043	7,849	9,009	7,229	6,106	8,311
Subtotal	29,478	15,818	29,318	34,249	26,571	41,084	47,036	62,581	65,199	46,480	35,441	62,810	60,952
Chandalar River													
Venetie	50	410	-	2,401	508	1,660	2,606	3,943	2,730	6,400	850	7,800	4,345
Subtotal	50	410	-	2,401	508	1,660	2,606	3,943	2,730	6,400	850	7,800	4,345
Porcupine River													
Canyon Village	-	-	-	-	-	-	-	-	-	-	-	-	-
Chalkytsik	-	-	-	-	-	600	-	-	-	-	-	-	-
Old Crow, Y.T.	5,000	6,247	7,000	11,000	3,100	5,560	5,000	7,000	7,500	3,500	1,000	2,000	4,500
Subtotal	5,000	6,247	7,000	11,000	3,100	6,160	5,000	7,000	7,500	3,500	1,000	2,000	4,500
Yukon Terr. Villages													
Dawson	-	-	-	-	-	-	728	-	-	1,792	-	-	-
Stewart River	-	-	-	-	-	-	-	-	-	-	-	-	-
Mayo-Stewart Crossing	-	-	-	-	-	-	-	-	-	-	-	-	-
Fraser Falls	-	-	-	-	-	-	-	-	-	-	-	-	-
Burwash-Kluane R.	-	199	32	-	-	-	-	-	-	-	500	-	-
Fort Selkirk	-	-	-	-	-	-	-	-	-	-	283	-	-
Pelly	-	-	14	-	100	650	-	-	-	1,395	2,000	-	-
Faro	-	-	-	-	-	-	132	-	-	-	-	-	-
Ross River	-	327	-	-	-	-	-	-	-	-	-	-	-
Minto	-	-	-	-	-	-	-	-	-	-	-	-	-
Tatchun Creek	-	-	-	-	-	-	-	-	-	-	-	-	-
Carmacks	-	487	1,590	-	200	780	350	-	-	642	676	-	-
Lake Laberge-Whitehorse	-	-	-	-	-	-	-	-	-	-	-	-	-
Takhini	-	-	-	-	-	-	-	-	-	-	-	-	-
McClintock R.	-	-	-	-	-	-	-	-	-	-	-	-	-
Carcross	-	-	-	-	-	-	-	-	-	-	-	-	-
Teslin-Johnson's Crossing	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal 4/	-	882	2,102	7,100 6/	1,100	2,329	1,210	6,000 6/	5,218 6/	3,221	3,379	1,100 6/	2,230 6/
Total	149,008	221,811	330,689	316,579	263,399	267,095	299,791	452,328	477,931	424,758	434,139	460,311	460,895

1/ Includes small numbers of coho and pink salmon. 1961-1971 data available from 1981 Annual Management Report.
2/ Includes Shageluk - Holikachuk fish camp catches.
3/ Includes Fairbanks fish camp catches.
4/ Data by villages obtained from annual reports. Subtotals include revised catch data and summation of village catches may not equal subtotal. Does not include Old Crow catches.
5/ Includes catches made by Fairbanks permit holders who fished in Yukon River near bridge crossing.
6/ Catch by village not available.

Appendix Table 25. Subsistence salmon catches taken order authority of a permit, upper Yukon area, 1973-1984.

Upper Tanana River (upstream of Wood River) Subsistence Salmon Fishery

Year	No. of permits issued	Permittees Reporting Catches	Kings	Summer Chums	Fall Chum and Coho
1973	22	4	26	771	886
1974	70	1/	38	1,373	1,580
1975	36	1/	32	751	864
1976	110	1/	31	1,314	1,512
1977	89	33	81	118	607
1978	160	126	126	2,729	1,188
1979	246	199	264	2,384	4,459
1980	315	254	282	3,729	4,059
1981	346	228	400	3,239	5,770
1982	330	209	451	2,708	4,521
1983	259	147	475	2,276	3,830
1984	308	212	321	3,177	5,134

Upper Tanana River (Big Delta area) Subsistence Chum Salmon Carcass Fishery

Year	No. of permits issued	Permittees Reporting Catches	Fall Chum Salmon Carcasses
1973	16	8	1,561
1974	21	1/	1,974
1975	26	1/	2,573
1976	36	1/	3,441
1977	46	29	5,816
1978	70	43	2,517
1979	32	25	4,582
1980	57	36	4,915
1981	43	27	5,030
1982	37	13	1,690
1983	45	29	5,357
1984	31	14	2,353

Upper Yukon River (Hess Creek to Dall River) Subsistence Salmon Fishery

Year	No. of permits issued	Permittees Reporting Catches	Kings	Chums	Cohos
1974	29	1/	591	1,857	1,271
1975	19	1/	727	778	70
1976	28	18	531	974	-
1977	38	1/	467	2,567	-
1978	57	1/	1,333	9,735	-
1979	55	41	2,194	12,374	-
1980	70	67	1,350	6,488	36
1981	57	24	1,095	12,034	-
1982	64	44	1,935	11,328	20
1983	68	46	2,672	15,059	-
1984	67	54	4,676	27,869	399

Upper Yukon River (22 Mile Slough to U.S.-Canadian Border) Subsistence Salmon Fishery

Year	No. of permits issued	Permittees Reporting Catches	Kings	Chums	Cohos
1979	75	60	4,063	30,475	114
1980	48	39	3,649	18,477	6
1981	71	51	4,510	38,333	-
1982	60	61	3,833	15,432	-
1983	53	52	2,831	23,708	-
1984	58	54	2,543	21,675	17

1/ Information not available.

Appendix Table 26. Comparative Yukon River king salmon aerial escapement estimates, 1972-1984.[a]

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1982	1984
Andreafsky River													
East Fork	798	825		993	818	2,008	2,487	1,180	958[b]	2,146[f]	1,274	2,720[g]	2,473[g]
West Fork	582[b]	788	285	301	643	1,499	1,062	1,134	1,500	231[b]	851	-	1,993
Total	1,380	1,613	285[b]	1,294	1,461	3,507	3,549	2,314	2,458	2,377[b]	2,125	2,720[b]	4,466
Anvik River Drainage													
Tower Count	1,104	517	471[b]	548	958	1,261	1,088	1,247					
Below Tower Site (includes tributaries)	94[c]	96[b]		182[c]	196[c,d]	110	236	237					
Above Tower Site (includes tributaries)	346	126[b]		249	107		56			807[h]			
Subtotal	440	222[b]		431	298	110	292	237					
Total (best estimate of escapements, combined tower, sonar, aerial, and boat surveys)	1,198	613	471[b]	730	1,154	1,371	1,324	1,484	1,330	807[b]	-	653[b]	641
Nulato River													
North Fork (including main river)			55[b]	123	471	286	498	1,093	954	-	-	526	-
South Fork			23[b]	81	177	201	422	414	369	791		480	-
Total			78	204	648	487	920	1,507	1,323	791[b]	-	1,006	-
Gisasa River			161	385	332	255	45[b]	484	951		421	572	-
Tozitna River				202	42[b]	123	194		257		51	388	-
Chena River	138[b,c]	21	1,035[c]	316[c]	531	563	1,726	1,159	2,541	600[b]	2,073	2,553	501
Salcha River	1,193	391	1,857	1,055	1,641	1,202	3,499	4,789	6,757	1,237[b]	2,534	1,961	1,031
Tatchun Creek[i]	97	99	192	175	52	150	200	150	222	133[e]	73	264[e]	161[c]
Little Salmon River[i]	126	27[b]				171	330	489[b]	296[b]	670	403	101[b]	434
Big Salmon River[i]													
Big Salmon Lake-Scurvey Cr	112	23[b]		153				555	470	930	174	189	228
Scurvey Cr - vicinity Souch Cr	448	52[b]						77	1,098	1,481	583	351	816
Total	560	75[b]	70[b]	153[b]	86[b]	316[b]	524	632	1,568	2,411	757	540	1,044
Nisutlin River Drainage[i]													
Sidney Cr - 100 Mile Cr	237	36[b]		239	102	77	375	713	975	1,626	578	701	832
McNeil Ri - Nisutlin Lake	46	6[b]		84	50		109		400	168	97	107	222
Wolf Ri (Wolf Lake-Red Ri)	13			40[b]				183	477	395	104	95	124
Total	296	42[b]	150[b]	363[b]	152[b]	77[b]	484[b]	896[b]	1,852	2,189	779	903	1,178
Whitehorse Dam[i]													
(Fishway Counts)	391	224	273	313	121	277	725	1,184	1,383	1,539	473	905	977[j]

a Data obtained from aerial surveys unless otherwise indicated. Only peak estiamtes are listed.
b Incomplete or poor survey conditions resulting in a very minimal count.
c Boat survey.
d Also includes 93 kings observed in Yellow River.
e Foot survey.
f Sonar estimate was 5,343.
g Sonar estimate.
h Above sonar site.
i Yukon Territory streams.
j An additional 65 kings were taken for artificial spawning.

Appendix Table 27. Estimated potential egg deposition of king salmon in three spawning areas of the Yukon River drainage (Salcha River, Anvik River, and Whitehorse Fishway), 1970-1984.

	Salcha River				Anvik River				Whitehorse Fishway			
Year	est. total escapement[a]	% female	total female	potential egg deposition (10^6)[b]	est. total escapement[c]	% female	total female	potential egg deposition(10^6)[b]	est. total escapement[d]	% female	total female	potential egg deposition (10^6)[b]
1970	1,882	21.0	395	3.56					625	13.2	83	0.75
1971	158[e]	(NO SAMPLES COLLECTED)							856	51.3	439	3.96
1972	1,193	55.3	660	5.96					391	53.8	210	1.90
1973	391	37.6	147	1.33					224	39.0	87	0.79
1974	1,857	25.0	464	4.19					273	40.0	109	0.98
1975	1,055	38.9	410	3.70	720	25.0	180	1.62	313	(NO SAMPLES COLLECTED)		
1976	1,641	41.3	678	6.12	1,155	26.7	308	2.78	121	54.5	66	0.60
1977	1,202	65.9	792	7.15	1,354	50.4	682	6.15	277	57.1	158	1.43
1978	3,499	48.1	1,683	15.19	1,281	53.2	681	6.15	725	46.3	336	3.03
1979	4,789	37.4	1,791	16.16	1,474	19.5	287	2.59	1,184	(NO SAMPLES COLLECTED)		
1980	6,756	45.6	3,081	27.80	1,330	46.4	617	5.57	1,383	54.2	750	6.77
1981	1,237[e]	44.3	548	4.95	807[e]	58.8	475	4.29	1,539	68.7	1,057	9.54
1982	2,534	35.9	910	8.21	--	(NO SURVEY MADE)			473	53.5	253	2.28
1983	1,961	56.0	1,098	9.91	653[e]	43.1	281	2.54	905	40.0	362	3.27
1984	1,031	42.1	434	3.92	641[e]	41.3	264	2.38	977	49.4	483	4.36

[a] Aerial survey escapement estimates.
[b] Potential egg deposition is based upon an average fecundity of 9,024 eggs/female.
[c] Boat or aerial survey escapement estimate.
[d] Actual weir count.
[e] Poor survey--minimal escapement estimate.

Appendix Table 28. Comparative Yukon River summer chum salmon escapement estimates, 1974-1984.[a]

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Andreafsky River											
East Fork	3,215[b]	223,485	105,347	112,722	127,050	66,471	36,823[b]	81,555[f]	7,501[b,g]	110,608[c]	70,125[c]
West Fork	33,578	235,954	118,420	63,120	57,321	43,391	115,457		7,267	--	238,565
Total	--	459,439	223,767	175,842	184,371	109,862	152,280	--	--	--	308,690
Anvik River Drainage											
Tower Count	201,277	601,880	237,851	162,614	166,102	37,457	--	--	--	--	--
Below Tower Site (includes tributaries)		211,130	168,315	100,240	85,237	280,537[c]	--	--	--	--	--
Above Tower Site (includes tributaries)		634,355	243,695	--	--	84,620	--	--	--	--	--
Subtotal	--	845,485	412,010	100,240	85,237	--	--	--	--	--	--
Total (best estimate of escapements, combined tower, sonar, aerial, and boat surveys)	201,277	845,485	406,166	262,854	251,339	280,537[c]	492,676[c]	1,479,582[c]	444,581[c]	362,912[c]	891,028[c]
Rodo River	16,137	25,335	38,258	16,118	17,845	--	--	--	--	--	--
Nulato River											
North Fork (including main river)	22,144	87,280	30,771	58,275	41,659	35,598	11,244[b]	--	--	19,749	--
South Fork	29,016	51,215	9,230[b]	11,385	12,821	1,506	3,702[b]	14,348	--	1,263[i]	--
Total	51,160	138,495	40,001[b]	69,660	54,480	37,104	--	--	--	21,012	--
Gisasa River (Koyukuk R. drainage)	22,022	56,904	21,342	2,204[b]	9,280[b]	10,962	10,388	--	334[h]	2,356[b]	--
Hogatza River (Koyukuk R. drainage)											
Clear Creek	--	7,610	9,356	6,437	2,716	5,132	12,375	--	4,198	14,051	--
Caribou Creek	--	14,745	11,388	4,297	2,386	9,089	7,411	--	786	14,090	--
Total	--	22,355	20,744	10,734	5,102	14,221	19,786	--	4,984	28,141	--
Tozitna River	1,823	3,512	725[b]	761	2,262	--	580	--	874	1,604	--
Chena River	4,350[d]	2,702[d]	685	610	1,609	1,025	338[b]	3,500[b]	1,509	1,097	1,861
Salcha River	3,510	7,573	6,474	677	5,405	3,060	4,140	8,500	3,756	716	9,810

a Only peak estimates are presented. Survey rating is fair-good unless otherwise indicated.
b Poor survey.
c Sonar estimate.
d Boat survey.
e Combined aerial and boat.
f Sonar estimate was 147,312.
g Sonar estimate was 180,078.
h Surveyed too late.
i Surveyed too early.

Table 29. Fall chum salmon escapement to selected index areas in the Yukon River drainage, 1973-1984.[a]

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
TANANA RIVER DRAINAGE												
Upper Toklat River[b]	6,957	34,310	42,418[c]	35,190	21,800[c]	35,000	96,550[d]	23,054	13,907	3,309[e]	15,105[e]	15,861
Lower Toklat River	--	--	35,867[c]	(2,000[d])	--	--	64,540	(2,140)	--	--	--	--
Upper Tanana River												
Benchmark #735 Slough	127	1,450[c]	--	336	1,270	1,705[c]	2,714	1,900[e]	168[c]	--	--	--
Delta River	7,971[f]	4,010	3,089[e]	5,498	17,925	10,051	8,125	4,637	22,375[e,n]	3,433[e]	7,230[e]	12,327[e]
South Bank Tanana River[g]	5,635	4,567[f]	--	4,979	3,797	5,700	20,820	3,444	7,063	--	1,350[c]	2,150
Bluff Cabin Slough	3,450	4,840[f]	5,000[c,d]	3,197	6,491	5,340	6,875	3,190	6,120	1,156[e]	12,715[e]	4,017[e]
One mile Slough	1,720	1,235	745[d]	1,552	1,900	475	3,850[c]	885[c]	632	--	1,115[c]	560[c]
Subtotal	18,903	16,102	8,834[k]	15,562	31,383	23,271	42,384	14,056	36,358	4,589[k]	22,410[k]	19,054
TOTAL TANANA INDICES	25,860	50,412	87,119[k]	50,752	53,183	58,271	203,474	39,250	50,265	7,898[k]	37,515[k]	34,915[k]
PORCUPINE RIVER DRAINAGE												
Sheenjek River	1,175[f,h]	40,507	78,060	11,866	20,506	14,610[c]	41,140	13,027	69,043[i]	29,093[i]	45,733[i]	25,120[i]
Fishing Branch River (YT)	15,987[j]	32,525[j]	353,282[j]	13,450	32,500	15,000	44,080	20,319[c]	10,549[c,k]	5,846	10,000	5,570
Total Porcupine Indices	17,162[l]	73,032[l]	431,342[l]	25,316	53,006	29,610	85,220	33,346	79,592[l]	34,939[l]	55,733[l]	30,690[l]
UPPER YUKON TRIBUTARIES												
Chandalar River	--	17,455	6,345[c,k]	58[c,k]	4,183	--	--	2,607	4,906[m,k]	1,145[m]	--	--
Kluane River (YT)	2,500	350[k]	362[e,f]	20[f]	3,555	0[f]	4,640[e]	3,150	25,806	5,378[e]	8,578[e,k]	7,200
Yukon River (YT) Ft. Selkirk-Carmacks	--	--	7,671	--	--	--	--	--	250[k]	1,020	7,560	2,800

a Peak aerial survey counts, rating is fair-good unless indicated otherwise.
b Includes following areas: Toklat River in vicinity of roadhouse; Sushana River; Geiger Creek. Lower Toklat River counts included in Total Tanana Index for peak years of 1975 and 1979.
c Poor survey.
d Combined aerial and ground surveys.
e Foot survey.
f Survey rating not given.
g Richardson Highway bridge to Blue Creek.
h Surveyed before peak spawning--too early.
i Sonar-estimated escapement.
j Weir count.
k Incomplete survey--partial survey of index areas--more chums present.
l Figure includes a weir or sonar count--not comparable.
m Fair to poor survey.
n Peak aerial count was 10,664.

Appendix Table 30. Comparative Yukon River drainage coho salmon aerial escapement estimates, 1972-1984.[a]

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Nenana River													
Lost Slough	--	--	1,388	943	118	524	350	227	499	274	--	766	2,677
Clear Creek	--	--	--	--	13	--	--	--	--	--	--	--	2,600[b,e]
Wood Creek[b]	--	--	--	--	--	310[c]	300[c]	--	1,603[c]	849[h]	1,436[h]	1,044[h]	8,805[h]
Seventeenmile Slough	--	--	27	956	281	1,167	466	1,987	592	1,005	--	103	--
Subtotal Nenana River	--	--	1,415	1,899	412	2,001	816	2,214	1,091	2,128	1,436	1,913	14,082
Delta Clearwater River[d,e]	632	3,322	3,954	5,100	1,920	4,793	4,798	8,970	3,946	8,563[f]	8,365[f]	8,019[f]	11,061
Clearwater Lake and Outlet	417	551[d]	560	1,575[d,e]	1,500[d,e]	730[d,e]	570[d,e]	1,015[d,e]	1,545[d,e]	459[g]	--	253	1,368
Richardson Clearwater River	454[g]	375[d]	652[d]	4[g]	80[g]	327	--	372	611	550	--	88	428

a Peak estimates presented only. Survey rating is fair-good unless indicated otherwise.
b Surveyed by F.R.E.D.
c Foot survey.
d Surveyed by Sport Fish.
e Boat survey.
f Population estimate.
g Poor survey.
h Weir count.

Appendix Table 31. Estimated total catch in thousands of western Alaska and Canadian Yukon king salmon by the Japanese mothership and landbased driftnet fishery, foreign groundfish fisheries and U.S. commercial and subsistence fisheries, 1964-1983. 1/

Year	Japanese Mothership 2/	Japanese Landbased Driftnet 2/	Joint Venture/ Foreign Groundfish 3/	Sub-Total	Western Alaska Commercial	Western Alaska Subsistence	Western Alaska Sub-Total	Total
1964	179 (410)	40 (208)	-	239	260	51	311	550
1965	106 (185)	20 (102)	-	126	263	53	316	442
1966	108 (208)	22 (118)	-	130	208	70	278	408
1967	71 (128)	22 (115)	-	93	284	82	366	459
1968	244 (362)	18 (97)	-	262	259	54	313	575
1969	367 (554)	17 (88)	-	384	288	65	353	737
1970	312 (437)	28 (148)	-	340	291	95	386	726
1971	132 (206)	27 (139)	-	159	283	74	357	516
1972	189 (261)	20 (107)	-	209	224	67	291	500
1973	56 (119)	31 (165)	-	87	177	70	247	334
1974	208 (361)	36 (188)	-	244	180	57	237	481
1975	108 (162)	20 (137)	-	128	126	77	203	331
1976	117 (285)	42 (201)	-	159	242	84	326	485
1977	55 (93)	31 (146)	44	130	296	84	380	510
1978	36 (105)	63 (210)	39	138	380	75	455	593
1979	69 (126)	45 (160)	100	214	429	99	528	742
1980	416 (704)	22 (160)	112	550	333	113	446	996
1981	30 (88)	55 (190)	44	129	510	130	640	769
1982	45 (107)	41 (165)	21	107	506	111	617	724
1983	31 (87)	44 (178)	24	99	494	140	634	733
1984	31 4/ (82)							

1/ Data from INPFC documents.
2/ Estimates do not include dropouts; (total catch in parenthesis).
3/ Assume 100% of the catch is of Western Alaska and Canadian Yukon origin.
4/ Preliminary estimate.

CAPE ROMANZOF DISTRICT HERRING FISHERY

Commercial Fishery, 1984

A total of 1,075 metric tons of herring (100% sac roe) was harvested in 1984 in the Cape Romanzof District. The 1984 harvest was the largest on record in the history of the fishery which dates back to 1980 (Appendix Table 32). The entire harvest was taken in Kokechik Bay (Statistical Area 334-08) (Figure 20). Processing and tender vessels belonging to three processors were anchored inside Kokechik Bay near Anikitun Island (Table 3). The catch was frozen in the round or brined. Average roe recovery for the season was 8.6%. Average price paid for 10% roe herring was $300 per short ton with a $30 per 1% point differential. Fishermen operating in the Cape Romanzof District earned an estimated $355,000 for their catch.

During 1984, a total of 66 fishermen (C.F.E.C. interim-use permit holders) made at least one delivery and operated out of 59 boats (Table 16). Also 104 crewmembers participated in the fishery. With the exception of one "non-local" boat and fisherman, the entire fishing fleet was from the local villages of Hooper Bay, Chevak and Scammon Bay. Only a few Scammon Bay fishermen participated in the fishery due to ice conditions which prevented travel to Kokechik Bay. The entire harvest, except for one delivery, was made by local fishermen. Catch and effort data by resident status is presented in Table 17.

Only one "non-local" fisherman participated in the Cape Romanzof district fishery in 1984. This reduction in fishing effort of non-local fishermen is primarily attributed to the "Exclusive Use Area" designation implemeted for the Cape Romanzof district by the Board of Fisheries at its December 1982 meeting. This exclusive use designation mandated that fishermen (interim-use or permit holders) harvesting and selling herring in the Cape Romanzof district are prohibited from participating in any other herring fishery. Conversely, herring interim-use or permit holders participating in any of the other fisheries cannot harvest, sell or crew (act as a helper) on a herring fishing vessel in the Cape Romanzof district. The same restrictions apply to herring fishing vessels. As a result of this exclusive use requirement, it is speculated that boats which may have stopped at Cape Romanzof before traveling to Norton Sound instead headed directly to Norton Sound (also an exclusive use area) where the guideline harvest level is larger.

The commercial fishing season opened by regulation on April 15 but fishing did not begin until May 31 when the first fishing period was established by emergency order. Three fishing periods of 34, 32 and 24 hours duration were allowed from May 31 until June 5. Test fishing catches and spawning deposition surveys indicated that the herring run was strong. The record catch was attributed to large run strength, excellent fishing conditions and increased processing and tender facilities. Catch and effort data by fishing period is shown in Table 16.

During fishing period closures spawning ground surveys and test fishing with variable mesh gill net was conducted to assess stock conditions. In most years turbid water conditions usually preclude making aerial biomass estimates. However two surveys were flown in 1984 along the north shore of Cape Romanzof (Scammon Bay) and an estimated minimum biomass of 3,300 mt was

documented. Data obtained in 1984 indicate that the magnitude of the herring run was probably the largest documented. The majority of the herring in 1984 were composed of age 5, 6 and 7 year old fish indicating a run of large magnitude in 1985.

Subsistence Fishery, 1984

In 1984, a total subsistence harvest of 9.9 mt (21,884 lbs) of herring were reported taken by 46 fishing families from Hooper Bay, Chevak and Scammon Bay. Subsistence fishing effort in recent years has probably decreased for some of these villages as local residents participated in the commercial fishery in the Cape Romanzof District. Comparative subsistence catch and effort data is presented in Appendix Table 33.

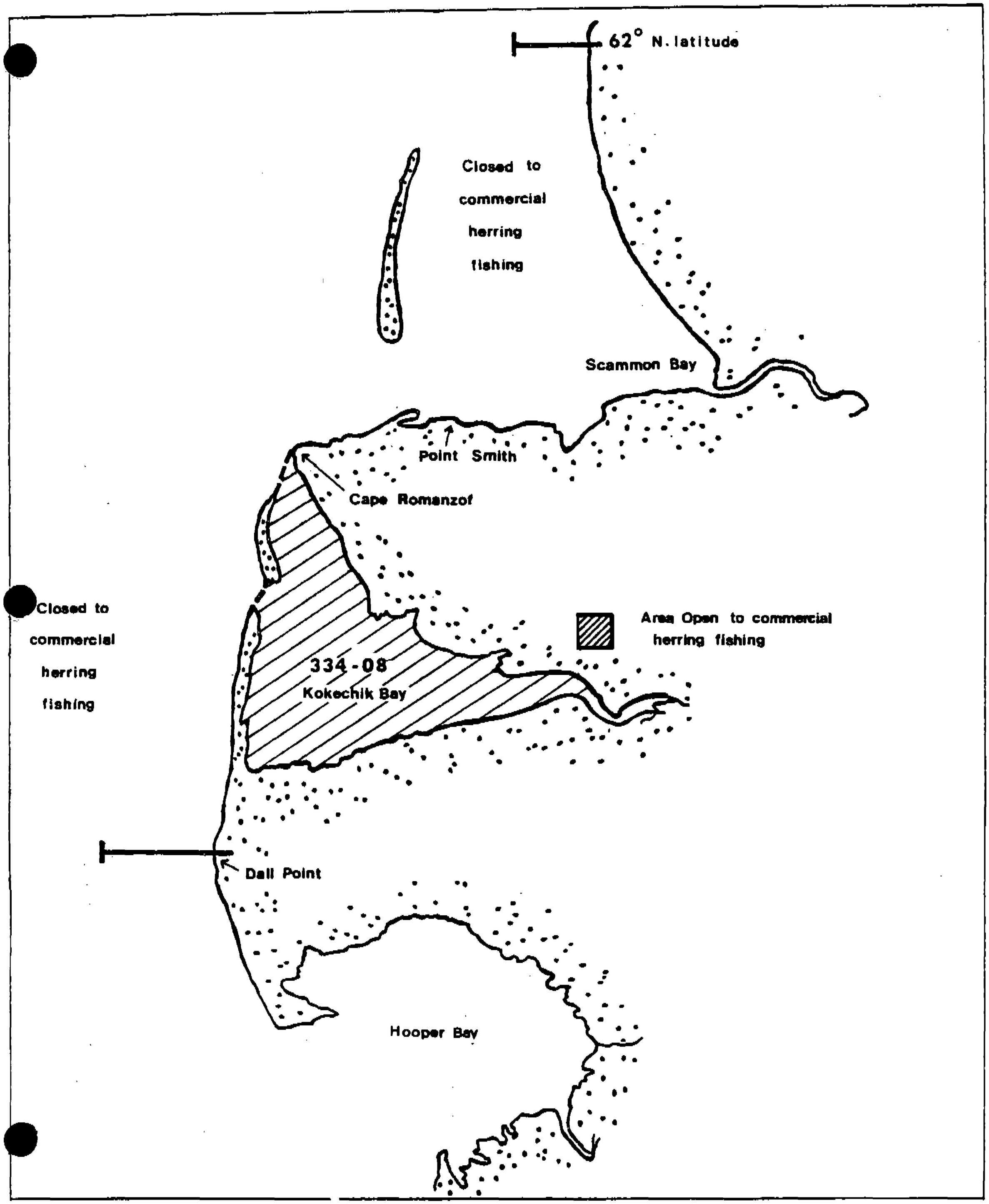


Figure 21. Cape Romanzof herring district and statistical reporting area.

Table 17. Commercial herring catch and effort data by fishing period, Cape Romanzof district, 1984.

Date	Hrs.	Deliveries	permit Holders	Boats	Sac Roe(mt)	Cummulative To Date	Ave. Roe%
5/31	16	79	37	36	135.65	135.65	8.21
6/1	18	150	49	45	259.60	395.25	8.36
Subtotal	34	229	49	45	395.25		8.28
6/2	18	178	49	46	288.58	683.83	8.73
6/3	14	70	44	42	114.77	798.60	9.08
Subtotal	32	248	52	48	403.35		8.90
6/4	10	94	51	48	114.95	913.55	8.61
6/5	14	133	55	54	161.42	1074.97	8.76
Subtotal	24	227	62	57	276.37		8.65
Total	90	704	66	59	1074.97	1074.97	8.60

Table 18. Commercial herring catch (mt) and effort (permit holders) by residency, Cape Romanzof district, 1984.

Date		Locals [1]	Non-Locals	Residents	Non-Residents
5/31	Effort	37	0	37	0
	Catch	135.65	0	135.65	0
6/1	Effort	49	0	49	0
	Catch	259.60	0	259.60	0
6/2	Effort	49	1	49	0
	Catch	286.53	2.05	288.58	0
6/3	Effort	44	0	44	0
	Catch	114.77	0	114.77	0
6/4	Effort	51	0	51	0
	Catch	114.95	0	114.95	0
6/5	Effort	55	0	55	0
	Catch	161.42	0	161.42	0
Total	Effort	65 (98.5%)	1 (1.5)%	66	0
	Catch	1072.92 (99.8%)	2.05 (0.2%)	1074.97 (100%)	0

[1] Residents of Scammon Bay, Chevak, and Hooper Bay Villages.

Appendix Table 32. Commercial Herring Fishery Data for Cape Romanzof district, 1980 - 1984.

	1980	1981	1982	1983	1984
Catch	554 m.t.	653 m.t.	596 m.t.	740 m.t.	1075 m.t.
Number of Fishermen 1/	69	111	75	63	66
Number of Buyers	2	4	2	3	3
Roe Recovery	9.8%	8.0%	9.3%	9.0%	8.6%
Estimated Value 2/	$110,000	$212,000	$218,000	$330,000	$355,000
First Catch Date	5/21	5/14	6/2	5/16	5/31
Peak Catch Date	5/22	5/17	6/8	5/19-22	6/1-2

1/ Interim-use CFEC permit holders
2/ Value to Fishermen

Appendix Table 33. Subsistence herring catches village, in the vicinity of Cape Romanzof, 1975-1984.

	Catches in Pounds (No. Fishing Families)									
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Scammon Bay	- 1/	1,390(4)	- 1/	1,300	12,000(21)	6,270(18)	15,400(16)	7,750(15)	5,050(14)	8,600(16)
Chevak	- 1/	1,400(9)	300(2)	- 1/	4,600(21)	7,100(20)	4,264(10)	3,860(10)	2,900(5)	5,105(7)
Hooper Bay	5,543(34)	6,007(28)	4,750(28)	7,780(29)	6,145(42)	7,375(23)	7,914(20)	9,346(18)	10,356(18)	8,469(24)
Total	5,543(34)	8,797(41)	5,050(30)	9,080(29)	22,745(84)	20,745(61)	27,578(46)	20,956(43)	18,306(37)	22,174(47)

1/ Information not available.

COMMERCIAL FRESHWATER FISHERIES

Regulations adopted by the Board of Fisheries allow the Department of Fish and Game to issue permits for the commercial harvest of miscellaneous species of fish such as whitefish, sheefish, char, trout pike, blackfish and lamprey. Permit authorization is not required for the sale of these species when taken incidentally in conjunction with commercial salmon fishing.

Commercial fisheries for species other than salmon have been allowed in widely scattered locations throughout the Yukon and Tanana River drainages and in the Colville River on the North Slope; most of these fisheries are limited, experimental-type operations and occur only sporadically.

A commercial fishery for whitefish has existed in the Colville River delta (located approximately 60 miles west of Prudhoe Bay) since 1964. Fishing generally takes place during late June and July for broad and humpback whitefish, and October through early December for arctic and least cisco. Set gillnets (of 3- and 5-inch stretch measure) are used as capture gear, and fishing during fall months occurs under the ice (Appendix Table 34).

In the upper Yukon area set net fisheries targeting on whitefish have been permitted in recent years in Lake Minchumina and Healy Lake. Catch data are presented in Appendix Table 35.

Numerous other permits allowing limited harvests of whitefish, primarily for the upper Yukon area, have been issued; for reasons unknown, these fisheries did not occur.

Permits for the taking of non-salmon species have been issued for various locations in the lower Yukon area. Reported harvests for those fisheries are presented in Appendix Table 36. Set gillnets are primarily used for taking whitefish and sheefish and the catch is marketed in local village stores or Bethel.

Appendix Table 34. Colville River commercial whitefish catches, 1964-1984.

Year	Broad whitefish	Humpback whitefish	Arctic cisco ("kaktok")	Least cisco ("herring")
1964	2,951 a		16,000	9,000
1965	3,000 a		50,000	
1966	2,500 a		40,000	
1967	data not available			
1968	3,130		42,055	18,180
1969	data not available			
1970	2,080 a		19,602	25,930
1971	3,815	132	38,016	22,713
1972	3,850	1,497	37,333	13,283
1973	2,161		71,569	25,188
1974	3,117	2,316	35,601	13,813
1975	2,201	1,946	28,291	20,778
1976	2,172	1,815	31,659	34,620
1977	443	1,431	31,796	14,961
1978[b]	20 [c]	1,102	17,292	21,589
1979	[c]	1,831	8,684	24,984
1980	[c]	4,231	14,657	31,459
1981	1,035	469	38,206	16,584
1982	1,662	201	15,067 [d]	25,746 [d]
1983	[c]	408 [c]	18,162	35,322
1984	789	179	27,686	13,076

a/ Includes small numbers of humpback whitefish.
b/ Also reported taken were 1 king salmon, 2 red salmon, 9 chum salmon, and 118 pink salmon.
c/ No fishing effort during June or July.
d/ No fishing effort during November or December.

Average weights: Broad whitefish 5.1 lbs.
Least cisco 0.9 lbs.
Arctic cisco 1.0 lbs.

Appendix Table 35. Commercial freshwater fishery catches, upper Yukon area, 1972-1984.

	Healy Lake			Lake Minchumina	
	Whitefish			Whitefish	
Year	Number	Pounds	Year	Number	Pounds
1972	2,605	3,950	1971	3,277	9,831
1973	2,187	3,915	1972	718	2,154
1974	1,885	3,390	1973	1,697	5,037
1975	1,357	2,375	1974	854	2,562
1976	1,440	2,625			
1979	1,336	2,306			
1980	data not available				
1981	no effort				
1982	no effort				
1983	no effort				
1984	no effort				

	Tanana River 1/	
	Burbot	
Year	Number	Pounds
1984	-	76

1/ Taken between mouth of Wood River and mouth of Kantishna River.

Appendix Table 36. Commercial freshwater fishery catches, lower Yukon area, 1978-1984.

	Sheefish		Whitefish			Blackfish	Burbot		Pike
Year	Number	Pounds	Number	Pounds	Ave. wt.	Pounds	Number	Pounds	Pounds
1978	-	-	19	87	4.6	-	-	-	-
1979	5	39	23	55	2.4	-	-	-	-
1980	283	2,265	78	250	3.2	293	-	-	-
1981	299	2,812	779	2,875	3.7	-	-	-	9
1982	754	6,161 8.2	1,633	6,214	3.8	-	102	482	-
1983	395	2,692 6.8	163	648	4.0	-	-	-	-
1984	94	762	794	2,362	3.0	-	-	-	-

Attachment 1. List of Yukon Area emergency orders issued, 1984.

E.O. NO.	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
3-Y-1-84	May 31	Establish the first fishing period beginning 8:00 am. May 31 for the commercial herring fishery in the Cape Romanzof district	Test fishing and spawning ground observations indicate mature herring are present in harvestable numbers
3-Y-02-84	June 1	Close the first fishing period on 6:00 pm. June 1; provide for a second fishing period beginning 6:00 pm. June 2 and continuing until further notice for the Cape Romanzof district commercial herring fishery.	Aerial survey biomass estimates and spawn deposition observations indicate high abundance of herring.
3-Y-03-84	June 3	Close the second fishing period in the Cape Romanzof distrtict on 2:00 pm. June 3 and establish a 3rd fishing period of 24 hours from 2:00 pm. June 4, until 2:00 pm. June 5, after which the commercial herring season will close.	Spawn deposition surveys, test fishing data and above average commercial catch rates indicate very high abundance of herring. An additional 200 metric tons should be taken during the last period which should result in a total harvest of approximately 1,000mt.
3-Y-04-84	June 18	Open the commercial salmon fishing season and estasblish two 24-hour fishing periods a week in district 1 of the Yukon area.	Monitoring of subsistence and test fishing catch data indicate that substantial numbers of king salmon have entered the river and that escapements from this portion of the run should be good.
3-Y-05-84	June 20	Open the commercial salmon fishing season and establish two-24 hour fishing periods a week in district 2.	Monitoring of subsistence and test fishing catch data indicate that substantial numbers of king salmon have entered the river and that escapements from the early portion of the run should be good.

3-Y-06-84	June 28	Open the commercial salmon fishing season and reduce fishing time to two days a week in district 3.	King salmon are present in harvestable numbers and well distributed throughout the district. A two day a week fishing schedule will be established to provide for better balanced catch and escapement.
3-Y-07-84	June 29	Establish 24 hour subsistence fishing periods every other weekend during commercial salmon fishing closures in districts 1 and 2, through July 19.	Special subsistence fishing periods established by emergency order as stipulated by regulation.
3-Y-08-84	July 1	Allow the taking of salmon for commercial purposes with gillnets of six inch or smaller mesh size in districts 1 and 2.	Action taken to allow harvest of more abundant summer chum and to minimize harvest of late portion of the king salmon run.
3-Y-09-84	July 1	Specify that only gillnets of six inch or smaller mesh size may be operated by commercial fishermen for subsistence purposes in districts 1 and 2.	Action taken to prevent king salmon taken under the guise of subsistence fishing from entering commercial channels.
3-Y-10-84	July 4	Close the commercial salmon fishing season in district 3.	The 1,800-2,200 king salmon guideline harvest range was exceeded.
3-Y-11-84	July 13	Close the commercial salmon fishing season in subdistricts 5A, 5B and 5C.	The 2,400-2,800 king salmon guideline harvest range was exceeded.
3-Y-12-84	July 17	Close the commercial salmon fishing season in districts 1 and 2.	Action taken to provide for a closure of approximately 10 days to allow for increased escapements of the early fall chum salmon run.
3-Y-13-84	July 30	Reopen the commercial salmon fishing season in districts 1, 2 and	During the season closure test fishing and subsistence catch

		3; establish two-24 hour weekly fishing periods in the set net only area in the lower portion of district 1 and in district 3; and establish two-12 hour weekly fishing periods in the upper portion of district 1 and in district 2.	data indicate a below average to average run magnitude. A reopening of the fishing season is warranted to further evaluate run strength.
3-Y-14-84	August 2	Establish 24 hour subsistence fishing periods each weekend during commercial salmon fishing closures in district 1 (except in the set net only area) and in district 2.	Special subsistence fishing periods established by emergency order as stipulated by regulation.
3-Y-15-84	August 7	Close the commercial salmon fishing season in subdistrict 5-D.	The 300-500 king salmon guideline harvest range was taken.
3-Y-16-84	August 7	Close the commercial salmon fishing season in districts 1, 2 and 3.	Test fishing catch data to date indicate below average fall chum run strength.
3-Y-17-84	August 12	Close the commercial salmon fishing season in district 6.	The king and summer chum salmon runs are essentially over. Fishing season will reopen in mid-September for the fall chum salmon run.
3-Y 18-84	August 13	Reopen the commercial salmon fishing season and establish fishing schedules in districts 1, 2 and 3.	Since the closure large subsistence catches in the Tanana-Rampart area of district 5 indicate that the fall chum run may be of larger magintude than indicated by lower Yukon test fishing data.

3-Y-19-84	August 15	Reopen the commercial salmon fishing season and establish two-24 hour fishing periods from August 15-19 in district 5.	Test fishing and subsistence catch data indicate average fall chum run strength. A limited opening of the commercial fishery will be allowed to better evaluate run strength.
3-Y-20-84	August 19	Close the commercial salmon fishing season in districts 1, 2 and 3.	The fall chum catch of approximately 160,000 fish is near the midpoint of the 120,000 to 220,000 guideline harvest range.
3-Y-21-84	August 21	Reopen the commercial salmon fishing season and establish a 24 hour fishing period during August 21-22 in district 5.	An additional 24 hour fishing period will result in a total season catch of approximately 20,000 fall chum.
3-Y-22-84	September 5	Reopen the commercial salmon fishing season in subdistrict 5-D.	The fall chum run was judged of average run strength and well distributed throughout the upper portion of district 5.
3-Y-23-84	September 11	Close the commercial salmon fishing season in subdistricts 4-B and 4-C.	The salmon runs have peaked and commercial fishing effort is negligible. Closure of commercial fishing season will allow for increased subsistence fishing.
3-Y-24-84	September 11	Close the commercial salmon fishing season in subdistrict 5-D.	The commercial catch will approach 3,000 fall chums which is the midpoint of the 2,000 to 4,000 chum and coho salmon combined guideline harvest.
3-Y-25-84	September 14	Reopen the commercial salmon fishing season and establish three-24 hour fishing periods from September 14-19 in district 6.	A limited opening of the commercial fishery is warranted to test run strength.

3-Y-26-84	September 17	Close the commercial salmon fishing season in district 6.	The upper end of the 5,500 to 20,500 fall chum and coho salmon combined guideline harvest range was exceeded.

Attachment 2. Summary of 1984 Yukon area subsistence fishing regulations promulgated by the Board of Fisheries during February, 1984 meeting in Anchorage.

Section	Action Taken
5AAC 01.247. (f) TANANA RIVER SUBDISTRICT 6-C SUBSISTENCE SALMON MANAGEMENT PLAN	Specified that fishermen shall report their weekly salmon catches to the department by telephone.

Attachment 3. Summary of special projects conducted in the Yukon area by the Division of Commercial Fisheries, 1984.

1. LOWER YUKON TEST FISHING.

a. Location:

1) Big Eddy Test Fishing Project: Kwikluak Pass near Emmonak (South Mouth of the Yukon River Delta).

2) Middle Mouth Test Fishing Project: Kawanak and Apoon Passes (Middle and North mouths of the Yukon River Delta).

b. Objectives: To determine run timing, distribution and relative abundance of king, summer chum, fall chum and coho salmon in the lower Yukon River using set gillnets.

c. Results:

1) Big Eddy Test Fishing Project:

a) KING AND SUMMER CHUM: Index set nets for king and summer chum salmon were operated from June 3 to July 15. A total of 1,558 king and 5,465 summer chum salmon were captured. The king salmon catch increased slightly compared to 1983. The mean date (the date on which statistically the central point of the migration passed the test fishery) for king salmon was calculated to be June 24, a late year. The mean date for summer chum salmon was June 22 and was calculated from data obtained from two test nets, the same as for king salmon. In previous years summer chum salmon mean dates were based on only one test net and were considered less reliable than king salmon mean dates.

b) FALL CHUM AND COHO: Index set nets for fall chum and coho were operated from July 16 until August 28. A total of 856 fall chum and 887 coho salmon were taken. Fall chum salmon catches decreased significantly from 1983 levels, but were above the 1982 level. Coho salmon catches were the largest since the project was initiated in 1977. Test fishing data indicated mean dates of August 5 and August 12 for fall chum and coho salmon, respectively.

2) Middle Mouth Test Fishing Project:

a) KING AND SUMMER CHUM: Index set nets for king and summer chum salmon were operated from June 5 until July 15. A total of 1,637 king and 1,811 summer chum were captured. King salmon catches were slightly down from 1983. The mean date of migration was June 22, indicating average run timing. Summer chum salmon catches were up significantly from 1982 and 1983 levels. The mean date for summer chum salmon was June 20.

b) FALL CHUM AND COHO SALMON: Index set nets for fall chum and coho salmon were fished from July 16 until August 28. A total of 2,044 fall chum and 1,162 coho salmon were captured. Fall chum salmon catches decreased significantly from 1983. The coho salmon catch was up slightly from 1983 and was the largest ever for the project. The mean dates of migration were calculated to be August 5 and August 13 for fall chum and coho salmon, respectively.

2. UPPER YUKON RIVER TEST FISHING

a. Location

1) Stink Creek: West bank of Yukon River approximately 4.5 miles upstream of the confluence of Stink Creek (site 1).

2) Ruby: North bank of Yukon River approximately 21 miles upstream from Ruby (site2) and south bank of Yukon River approximately 24 miles upstream from Ruby.

3) Manley: North bank of Tanana River approximately two miles downstream from the mouth of Manley Slough.

b. Objectives: To determine run timing and relative abundance of summer chum salmon at the Stink Creek site and of fall chum and coho salmon in the middle portion of the Yukon River drainage.

c. Results:

1) Summer Chum Salmon: One fishwheel was operated from June 24 through July 24. A total of 109 king salmon and 17,467 chums was captured. The peak of the chum run occurred between July 9 and July 14.

2) Fall Chum and Coho Salmon: At the south bank site, a fishwheel was operated from August 11 until September 22. A total of 5,975 chums and 1,166 coho salmon was captured. Peak chum catches were made on August 17 and September 11. Coho run passage peaked on September 17. At site 3, (north bank, mile 621) 2,098 chum and 120 coho salmon were captured. The chum run was judged to have peaked between August 12 and August 15. During operation of the fishwheel at the Manley site, 3,991 chums and 949 coho were taken. Peak catches of both chum and coho salmon were made on September 5.

3. SUBSISTENCE SALMON FISHERY SURVEYS

a. Location: Yukon, Kokukuk, and Tanana Rivers and Yukon Territory Villages.

b. Objectives: Determine subsistence utilization of salmon and fishing effort needed for formulating future management procedures and goals.

c. Results: A total of 1,064 fishing families were surveyed in the Yukon River drainage and their catches totaled 48,549 king salmon and 460,895 other salmon. Catch and effort information was obtained by personal interviews, catch calendars and questionnaires. Yukon Territory subsistence catch data was furnished by Government of Canada - Department Fisheries and Oceans (Whitehorse).

4. COMMERCIAL SALMON CATCH SAMPLING

a. Location: Various locations in the different district fisheries.

b. Objectives: Obtain age, sex and size information for commercially caught fish.

c. Results: Several hundred samples of king, chum and coho salmon were collected in 1984. Detailed age, sex and size composition data has been compiled and will be presented in a seperate report.

5. CHINOOK SALMON STOCK BIOLOGY

a. Location: Various locations in the different district fisheries and major spawning escapements throughout the Yukon River drainage.

b. Objectives: Determine the stock composition of the Yukon River commercial and subsistence chinook salmon fisheries. This information, in conjunction with data collected from the major spawning escapements, will be used to build a stock-specific data base of basic fishery statistics for Yukon chinook salmon.

c. Results: Commercia catch sampling for age, sex and size data was expanded to sample 584 ageable scales per week in the district 1 and 2 commercial fisheries. Age and sex computations were calculated in-season and these summaries were supplied to fishery managers for use during the fishery.

Major chinook salmon spawning escapements throughout the Yukon River drainage were sampled for age, sex and size data. Samples were mostly collected from carcasses sampled during the peak spawner die-off. Sampled escapements include the Anvik, Andreafsky, Salcha, Chena, Big Salmon, Little Salmon, Nisutlin and Tatchun Rivers.

All Yukon River chinook salmon scale samples, including samples collected from District 4, 5 and 6 fisheries and samples collected by the Canadian Fisheries Service, were coalesced and aged by the project biologist. Age, sex, and size summaries were computed for all Yukon River chinook salmon fisheries and sampled spawning escapements. These data will be published along with 1984 chum and coho salmon age, sex, size data in a seperate catch and escapement report.

Scale samples collected from the spawning escapements and from commercial and subsistence catches will be digitized and scale measurements used to build stock identification models for allocation of the Yukon River fisheries to geographic area of origin. These data will be published in a separate Informational Leaflet.

6. ANDREAFSKY RIVER ESCAPEMENT STUDY

a. Location: River mile 20 of the East Fork Andreafsky River.

b. Objectives: Enumerate summer chum and king salmon escapement to the East Fork Andreafsky River using side-scanning sonar. Collect chum and king salmon beach seine and carcass samples for age, sex and size data.

c. Results: A total of 65,283 chum salmon and 1,922 king salmon was counted by sonar between June 22 and July 13. Sonar counts were apportioned to the two species based on visual calibrations. The electronics were adjusted such that pink salmon generally did not register sonar counts. However, the increasing abundance of pink salmon after July 13 made it impossible to accurately count chum and king salmon by sonar. Escapement for the period July 14 through project completion on July 25 was estimated by expanding visual tower counts. An additional 4,842 chum and 551 king salmon were counted during this period, resulting in total season escapement estimates of 70,125 chum salmon and 2,473 king salmon. The 1984 escapement of 70,125 summer chum salmon was only 48% of the average sonar escapement estimate (1981-1983) of 146,424 fish. Mean date of passage occurred on the July 6, and the peak daily count of 8,893 chum and king salmon combined (12.2 % of season total) occured on July 8. An expanded total of 166,039 pink salmon was visually counted from July 14 - 25. The passage rates observed during the period of sonar enumeration indicates that the total season escapement was probably about 250,000 pink salmon.

Chum salmon age composition was 70% age 4, 24% age 5, and females accounted for 51% of the fish sampled. King salmon were 50% age 5, 36% age 6, and only 27% of the pooled beach seine and carcass sample was female. This was the third consecutive year of low female king salmon escapement to this system.

7. ANVIK RIVER ESCAPEMENT STUDY

a. Location: River mile 48 of the Anvik River.

b. Objectives: Enumerate summer chum salmon escapement to the Anvik River using side-scanning sonar. Collect chum and king salmon samples by beach seine and carcass survey for age, sex and size data.

c. Results: Escapement to the Anvik River in 1984 was estimated by sonar to be 891,028 summer chum salmon, which is 1.8 times the objective of 487,000 fish. The 1984 escapement was well above the 12 year average (1972-1983) of 521,393 summer chum salmon, and was exceeded only by the escapement in 1975 and 1981 of 900,967 and 1,4799,582 fish, respectively. Mean date of passage and the peak daily count of 80,563 summer chum salmon (99% of season total) occurred on the same day, July 9. Pink salmon were much less abundant than they were at the Andreafsky River, and did not affect the accuracy of sonar enumeration. Few king salmon were seen during visual calibration, and all sonar counts were attributed to summer chum salmon.

Chum salmon age composition was 87% age 4, 11% age 5, and females accounted for 61% of the sample. King salmon age composition was 50% age 5, 36% age 6, and 41% of the sample was female.

8. SHEENJEK RIVER ESCAPEMENT STUDY

a. Location: Rivermile 6 of the Sheenjek River.

b. Objectives: Determine timing and magnitude of salmon escapement to this river and collect salmon age-sex-size information.

c. Results: A sonar estimate of 25,120 fall chum salmon was made in the Sheenjek River from August 30 through September 25, 1984. Mean date of run passage was September 11. Substrate avoidance during conditions of low water level and velocity accounted for a large proportion of those fish which passed upstream undetected by sonar. Chum salmon were basically west-bank oriented at the project site and displayed greatest upstream movement during periods of darkness or suppressed light.

Beach seine samples were composed of 10% age 3_1; 81% age 4_1; and 9% age 5_1 chum salmon. Test gillnet samples resulted in 59% age 4_1 and 41% age 5_1 fish; underestimating younger and overestimating older age classes.

9. MAIN RIVER SONAR

a. Location: Approximately one mile upstream from Pilot Station. One camp was located on each side of the river.

b. Objectives:

1) Determine profiles and areas of ensonified zones of the river cross-section.

2) Determine diel distribution of salmon.

3) Determine horizontal distribution of salmon from beach and offshore transducer.

4) Determine species composition from drift gillnets and beach seines.

5) Determine the horizontal and vertical position by species, by mesh size of gillnets.

6) Determine sex composition relative to net mesh size.

7) Determine length by species through time.

8) Determine the structure (frequency of occurence) of counts before, during and following commercial fishing periods in District 2.

9) Collect data for sampling time analysis.

10) Analyze trends of sonar catches with test fish catches at the mouth of the Yukon River.

11) Collect meterological and hydrological data.