ALASKA DEPARTMENT OF FISH AND GAME

DIVISION OF COMMERCIAL FISHERIES

ANNUAL MANAGEMENT REPORT

1983

YUKON AREA

ANCHORAGE AREA OFFICE -- 333 Raspberry Road, 99502
Michael F. Geiger (Yukon Area Biologist)

FAIRBANKS AREA OFFICE -- 1300 College Road, 99701
Frederick M. Andersen (Upper Yukon Area Biologist)

BETHEL FIELD OFFICE -- BOX 90, 99559
Dan Bergstrom (Assistant Area Biologist)

TABLE OF CONTENTS

Page

LIST OF FIGURES..... i

LIST OF TABLES..... ii

APPENDIX TABLES..... iii

ATTACHMENTS..... vi

PREFACE..... vii

AREA INTRODUCTION..... viii

Description of Area..... 1
Fishery Resources..... 1
Water Quality..... 2
District Boundaries..... 3
Commercial Salmon Fishery History and Description..... 3
Historical Catch Trends and Status of Stocks..... 3
Lower Yukon Area..... 9
Upper Yukon Area..... 12
Subsistence Utilization..... 16
Management..... 19
Special Studies..... 23

AREA SALMON REPORT, 1983..... 24

Area Season Summary, 1983..... 24
Commercial Fishery, 1983..... 25
Lower Yukon Area..... 25
King Salmon..... 25
Summer Chums..... 27
Fall Chums..... 27
Coho Salmon..... 28
Commercial Fishing Fleet Survey..... 29
Upper Yukon Area..... 30
King Salmon..... 31
Summer Chums..... 32
Fall Chums..... 33
Coho Salmon..... 33
Salmon Roe Sales..... 34
Subsistence Fishery, 1983..... 34
Lower Yukon Area..... 36
Upper Yukon Area..... 36
Enforcement, 1983..... 37
Lower Yukon Area..... 37
Upper Yukon Area..... 37
Escapement, 1983..... 38

TABLE OF CONTENTS (Continued)

Page

OUTLOOK FOR 1984 39

King Salmon 39
Summer Chum Salmon 39
Fall Chum Salmon 40
Coho Salmon 40

CAPE ROMANZOF DISTRICT HERRING FISHERY 126

Commercial Fishery, 1983 126
Subsistence Fishery, 1983 127

COMMERCIAL FRESHWATER FISHERIES 133

LIST OF FIGURES

Figure | Page

Figure 1. Yukon River drainage map..... 41

Figure 2. The lower Yukon River drainage..... 42

Figure 3. The Koyukuk River drainage..... 43

Figure 4. The Tanana River drainage..... 44

Figure 5. The middle Yukon River and Porcupine River drainage..... 45

Figure 6. The upper Yukon River drainage..... 46

Figure 7. Districts 1-6 of Yukon management area..... 47

Figure 8. District 1 of Yukon management area with statistical areas.. 48

Figure 9. District 2 of Yukon management area with statistical areas.. 49

Figure 10. District 3 of Yukon management area with statistical areas. 50

Figures 11 & 12. District 4 of Yukon management area with statistical area..... 51 & 52

Figure 13. District 5 of Yukon management area with statistical areas. 53

Figure 14. District 6 of Yukon management area with statistical areas. 54

Figure 15. Closed waters Acharon Channel, south mouth Yukon River..... 55

Figure 16. Closed waters of Black River mouth..... 56

Figure 17. Closed waters of Apoon Pass mouth..... 57

Figure 18. Closed waters of Andreafsky River mouth..... 58

Figure 19. Closed waters of Anvik River mouth..... 59

Figure 20. Cape Romanzof herring district.....128

LIST OF TABLES

Table		Page
Table 1.	List of indigenous fishes found in the Yukon area	60
Table 2.	Yukon River drainage mileages	61
Table 3.	Yukon area processors and associated data, 1983	65
Table 4.	Commercial salmon catches by species and district, Yukon area, 1983	68
Table 5.	Commercial salmon catches by statistical area, Yukon area, 1983	69
Table 6.	Yukon area CFEC salmon gear permits issued by residence, 1983	70
Table 7.	Commercial salmon catch and effort data by fishing period, set and drift gill nets combined, district 1, Yukon area, 1983	71
Table 8.	Commercial salmon catch and effort data by fishing period, set and drift gill nets combined, district 2, Yukon area, 1983	72
Table 9.	Commercial salmon catch and effort data by fishing period, set and drift gill nets combined, district 3, Yukon area, 1983	73
Table 10.	Commercial salmon catch and effort data by fishing period, set gill nets and fishwheel gear combined, district 4, Yukon area, 1983	74
Table 11.	Commercial salmon catch and effort data by fishing period, set gill nets and fishwheel gear combined, district 5, Yukon area, 1983	75
Table 12.	Commercial salmon catch and effort data by fishing period, set gill nets and fishwheel gear combined, district 6, Yukon area, 1983	76
Table 13.	Upper Yukon area commercial salmon catches and roe production, 1983	77
Table 14.	Yukon River subsistence salmon catch data, 1983	78
Table 15.	Aerial survey salmon escapement estimates, Yukon River drainage, 1983	80
Table 16.	Cape Romanzof district herring catch and effort data by date, 1983	129
Table 17.	Cape Romanzof district commercial herring data, 1983	130

APPENDIX TABLES

Appendix Table		Page
Appendix Table 1.	Yukon River drainage commercial and subsistence salmon catches, 1903-1983	83
Appendix Table 2.	Commercial salmon catches by species and district, Yukon area, 1960-1983	86
Appendix Table 3.	Commercial Fisheries Entry Commission salmon permits issued by gear type, Yukon area, 1976-1983	88
Appendix Table 4.	Actual number of commercial salmon fishing gear operators (vessels) by district, Yukon area, 1971-1983	89
Appendix Table 5.	Commercial king salmon catches by statistical area, Lower Yukon area, 1971-1983	90
Appendix Table 6.	Commercial king salmon catches by statistical area, Upper Yukon area, 1974-1983	91
Appendix Table 7.	Commercial catches of king and summer chum salmon by mesh size, lower Yukon area, 1961-1983	92
Appendix Table 8.	Commercial king salmon catch data, districts 1 and 2, Yukon area, 1960-1983	93
Appendix Table 9.	King salmon commercial catch data by fishing period, king salmon season, district 1, Yukon area, 1972-1983	94
Appendix Table 10.	Commercial salmon catches taken under quotas or guideline harvest ranges, Yukon area, 1974-1983	95
Appendix Table 11.	Commercial chum salmon catches by statistical area, Lower Yukon area, 1971-1983	96
Appendix Table 12.	Commercial chum salmon catches by statistical area, Upper Yukon area, 1974-1983	97
Appendix Table 13.	Summer and fall chum salmon commercial catches, by district, Yukon area, 1961-1983	98
Appendix Table 14.	Commercial summer chum salmon catch data, districts 1 and 2, Yukon area, 1967-1983	100
Appendix Table 15.	Commercial coho and chum salmon catch data, for the fall season, district 1, Yukon area, 1961-1983	101

APPENDIX TABLES (Continued)

Appendix Table		Page
Appendix Table 16.	Comparative fall chum salmon commercial catch data by date, fall season, district 1, Yukon area, 1969-1983	102
Appendix Table 17.	Commercial salmon pack by species and type of processing, Yukon area, 1960-1983	103
Appendix Table 18.	Commercial salmon roe sales by subdistrict, upper Yukon area, 1978-1983	104
Appendix Table 19.	Dollar value estimates of Yukon area commercial fishery, 1961-1983	105
Appendix Table 20.	Estimated average prices paid to fishermen, Yukon area, 1961-1983	106
Appendix Table 21.	Average weights of salmon, commercial catch, Yukon area, 1964-1983	107
Appendix Table 22.	Yukon River comparative subsistence catch and effort data, 1961-1983	108
Appendix Table 23.	Comparative Yukon River king salmon subsistence catches by village, 1972-1983	109
Appendix Table 24.	Comparative Yukon River chum salmon subsistence catches by village, 1972-1983	111
Appendix Table 25.	Subsistence salmon catches taken under authority of a permit, Upper Yukon area, 1973-1983	113
Appendix Table 26.	Comparative Yukon River drainage king salmon escapement estimates, 1972-1983	114
Appendix Table 27.	Estimated potential egg deposition of king salmon in three spawning areas of the Yukon River drainage, 1970-1983	115
Appendix Table 28.	Comparative Yukon River drainage summer chum salmon aerial survey escapement estimates, 1974-1983	116
Appendix Table 29.	Comparative Yukon River drainage fall chum salmon aerial survey escapement estimates, 1973-1983	117
Appendix Table 30.	Comparative Yukon River drainage coho salmon escapement estimates, 1971-1983	118

APPENDIX TABLES (Continued)

Appendix Table		Page
Appendix Table 31.	Western Alaska king salmon catch compared to high seas Japanese mothership and landbased catches and foreign trawl catches, 1956-1983.....	119
Appendix Table 32.	Commercial herring fishery data, Cape Romanzof district, 1980-1983.....	131
Appendix Table 33.	Subsistence herring catches by village, in the vicinity of Cape Romanzof, 1975-1983.....	132
Appendix Table 34.	Colville River commercial whitefish catches, 1964-1983.....	134
Appendix Table 35.	Commercial whitefish catches, Upper Yukon area, 1972-1983.....	135
Appendix Table 36.	Commercial freshwater fishery catches, Lower Yukon area, 1978-1983.....	136

ATTACHMENTS

Attachments		Page
Attachment 1.	List of Yukon area emergency orders and regulations, 1983	120
Attachment 2.	Summary of the 1983 Yukon area commercial and subsistence fishing regulations promulgated by Board of Fisheries	124
Attachment 3.	Summary of special projects conducted in the Yukon area, 1983	137
Attachment 4.	1983 Yukon Area Salmon Management Plan for Commercial and Subsistence Fisheries	143

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, 1983. 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 1983 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 15). 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.

Since 1977, due to above-average runs, commercial catches have increased, averaging 126,541 fish annually (1977-1982). The greatest catch ever made in the area was 158,018 king salmon in 1981.

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.

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 limit their mothership catch to 110,000 king salmon per year. Reported high seas catches were at reduced levels in 1981 (88,000 kings), 1982 (107,000), and 1983 (87,000).

Also, western Alaskan kings are taken incidentally to the foreign groundfish trawl fishery (1977-82 average catch of 60,000 fish). In addition the Japanese landbased drift gillnet fishery harvests 172,000 kings annually (1977-82 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 859,930 during the period 1971-1982. 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). 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 (1969-1982) catches have averaged 248,166. 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 466,457 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 1970, 1971, 1975, 1979, and 1981 while small runs occurred in 1973, 1976, 1978, 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 6,000 (1982) and the Toklat River (upper area) have ranged from 108,000 (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.

Chum salmon (both summer and fall run) bound for the Yukon River are probably being intercepted by the Japanese mothership fishery in the Bering Sea. This fishery annually harvests 2-4 million fish of which significant numbers are

believed to be of western Alaska (including Yukon River) origin, although tagging effort in the areas heavily fished by the Japanese has been limited.

Also 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 since 1980 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 20,614 fish during the period 1971-1982 (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 (1977-1982) fishermen and processing plant employees have received approximately nine 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 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, 1978-82, the wholesale value of the pack has averaged 18.6 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" (no mesh size restrictions) 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 1983 a total of 705 CFEC gill net permits were issued (Appendix Table 3).

Since 1971 districts 1 and 2 commercial king salmon catches have averaged 99,416 fish annually (1971-1982) (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 this season as fishermen used gill nets of stretched mesh measure of eight inches or greater. 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 (1973-82) the lower Yukon area commercial summer chum salmon catch has averaged 541,201 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 202,896 fish annually (1969-82) (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 developed 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 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. 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 18,716 annually (1971-82) (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 to Anchorage 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

quality male chums in recent years.

Subsistence Utilization

There are approximately 10,000-15,000 Eskimo and 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).

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 - 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 55, a 67% decrease since 1961 (Appendix Table 22). 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 1974-1982, the subsistence chum salmon catches, utilized mainly for dog food, have increased, averaging 307,248. 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.

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 of the salmon runs is further affected by several limiting factors. 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 measurement of the escapement immediately past the intensive downriver fishery is very difficult with the present available technology. Also, in-season assessment 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.

Post season estimates of escapements in selected tributaries are being developed by establishing index areas. These estimates of spawning stocks, which may be limited by unfavorable stream and survey conditions (e.g. high water, inclement weather), are indicators of the total escapement. Comparable index stream estimates may eventually be of value in developing run forecasts.

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 1983 is presented in Attachment 1. Also presented are 1983 regulation changes promulgated by the Board of Fisheries during its December, 1982 and April, 1983 meetings (Attachment 2). A copy of the 1983 Yukon Area Salmon Management Plan is presented in Attachment 4.

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. For example, in 1980-1983 the following projects were established:

1. Test Fishing. Expansion of program at Middle and North Mouths (set gillnets) of delta area and new fishwheel sites established near Kaltag (summer chums) and Ruby (fall chums and cohos). Also an experimental drift gill test fishing project was established at Fish Village (summer chums).

2. Side Scan Sonar. Projects were initiated to enumerate escapements in East Fork Andreafsky River (summer chums), Melozitna 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 micro-computer 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 micro-computer 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 three 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, 1982 through June 30, 1983 were $474,600. An additional $17,300 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 1983 and includes a summary of objectives, procedures and results for each.

Area Season Summary, 1983

In 1983 the Yukon River salmon runs were judged average in magnitude, was based on comparable catch and escapement data.

In 1983, there were 147,910 kings, 13,320 cohos, and 1,047,477 chums, totaling 1,208,707 salmon taken commercially. The harvest for all species combined was below the previous 5 year average (1978-1982) of 1,316,865 (Appendix Table 2). Tables 4 and 5 present 1983 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 1983 the commercial king salmon catch was above the previous five year average of 132,498. The 1983 data presented in this section does not include commercial catches by Canadian fishermen in the Yukon Territory (Appendix Table 1).

The 1983 commercial chum salmon catch was below the previous five year average of 1,161,782 fish. The harvest was composed of 744,879 summer and 302,598 fall chums (Appendix Table 13). The summer and fall chum salmon catch were below the previous five year average catch of 845,703. The fall chum catch was similar to previous five year average catch of 316,079.

In 1983 the commercial coho salmon catch was below the previous five year average of 22,584 fish.

Subsistence harvests in 1983 in the Yukon area (excluding Yukon Territory) were estimated at 49,478 king and 457,211 chum and coho salmon combined.

In 1983 a total of 778 CFEC gill net permits and 172 fishwheel permits were issued in the area. Table 6 shows the residency of all persons issued CFEC permits for 1983. 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 426,220 pounds in 1983, including 155,063 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 1983 are listed in Table 3.

Yukon area commercial fishermen received $6,984,800 for their catches in 1983. In addition a minimum estimate of $1,500,000 in wages was earned by processing plant employees and tenderboat operators. The first wholesale value of the 1983 pack was estimated at $17,462,000 (Appendix Table 19).

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

Commercial Fishery, 1983

Lower Yukon Area

The 1983 lower Yukon area (districts 1, 2 and 3) commercial salmon catch totaled 1,083,834 fish which was comprised of 142,792 king, 933,890 chum (713,856 summer and 220,034 fall chums) and 7,152 coho salmon.

Fishing effort, in terms of the actual number of participating fishermen, is presented in Appendix Table 4. In 1983 a total of 706 CFEC gillnet permits were issued for the lower Yukon area (Appendix Table 3). A total of 683 permit holders fished at least once in the lower three districts during 1983.

King Salmon: The timing of the king salmon migration in the lower Yukon was early as was anticipated by the relatively warm April and May air temperatures and the early breakup. River ice was flowing freely out through the south mouth of the Yukon delta by May 19, and by May 21 the river was essentially

1 in district 3. After the closure districts 1 and 2 reopened to a new fishing schedule (established by emergency order) of two-12 hour periods per week. In district 3 fishing time was limited to two-24 hour periods a week by emergency order. In order not to penalize coastal set net fishermen, whose fishing time is limited by tidal variation, a "Set Net Only" registration area was created along the coast in district 1. Fishermen registered for this area were allowed to fish for 24 hours, but were limited to set net gear and could only fish in the Set Net Area. A total of 171 fishermen registered for the Set Net Only Area. Of these only 137 actually fished. Overall registrants in the Set Net Area caught an average of 340 chums per fishermen while fishermen in the remainder of district 1 (the "Gill Net Area") caught an average of 352 chums per fisherman. A breakdown of the fall chum catches in the Set Net and the Gill Net Areas by period is shown below:

Fall chum salmon catch and effort in the Set Net and Gill Net Areas, district 1, 1983.

	SET NET AREA			GILL NET AREA			TOTAL		
Period	Fishermen	Chums	Catch Per Fishermen	Fishermen	Chums	Catch Per Fishermen	Fishermen	Chums	Catch Per Fisherman
7/28-7/29	70	908	13	79	2,063	26	149	2,971	20
8/1-8/2	114	6,994	61	131	11,527	88	245	18,521	76
8/4-8/5	115	8,561	74	122	15,088	124	237	23,649	100
8/8-8/9	111	24,040	217	130	19,994	154	241	44,034	183
8/11-8/12	110	6,080	55	126	12,977	103	236	19,057	81
Total	137	46,583	340	175	61,649	352	312	108,232	347

The total fall chum harvest in districts 1, 2, and 3 were 124,371; 85,645 and 10,018 respectively for a total 220,034 counted against the guideline harvest range. Comparative fall chum salmon catches are presented in Appendix Tables 15 and 16.

Age composition analysis of lower Yukon fall chum salmon catch was primarily 4 year old fish (85-90%).

Coho Salmon: The first coho taken in the commercial fishery, as indicated by fish ticket data, was in late June, however this is not verified. Cohos were first observed in the Department's test nets on August 1. Overall the run appeared to be late and average in magnitude. Commercial catches were the

smallest in 6 years. This is in part due to the fact that the season was closed to protect fall chums prior to peak of the coho run. The commercial coho catches in districts 1 and 2 were 4,595 and 2,557, respectively. There was no coho catch reported in district 3.

Comparative coho salmon catch data for district 1 is shown in Appendix Tables 15 and 16.

A total of ten processors and one catcher seller operated in the lower Yukon in 1983. Seven processors bought fish in more than one district. Nearly all of the Yukon salmon were shipped out to fresh or fresh-frozen markets. One processor in district 1 hard-salted about 23,700 lbs. of salmon. The only processor to do any canning, reported 1,818 cases of chums and 198 cases of cohos.

Commercial Fishing Fleet Survey

A survey of the district 1 commercial fishing fleet was conducted in 1983 to examine changes in effort and efficiency that have occurred in recent years. A special questionnaire was used to interview fishermen to document fishermen's residence; type of vessel construction, length and special equipment; fishing gear specifications; fishing locations and type of gear operated. Key findings of the survey are listed below:

1) A total of 90 fishermen, representing 20% of the 444 fishermen who made deliveries during the king salmon season, were interviewed. The majority of fishermen were local residents. Thirteen fishermen were from outside the Yukon-Kuskokwim delta region.

2) The majority of the fishermen operated boats constructed of wood (62%), while the remainder used aluminum (31%) or fiberglass (7%) boats. The average length of fishing boats was 19.6 feet with a range from 16 to 27 feet. There appears to be a trend toward the use of larger aluminum boats.

3) Only 2 (2%) fishermen used net rollers on their boats. Seven (8%)

kings was very weak. There was, however, a limited local market for king salmon in Fairbanks, and some fishermen, particularly those situated near the bridge, were able to market a portion of their catch by transporting it to Fairbanks and selling it to restaurants and door to door.

Subdistricts 5-A, 5-B, and 5-C were closed by emergency order on July 31. Subdistrict 5-D (which is managed independently of the lower portion of the district) had only two active fishermen during the king season. The commercial harvest for this area totaled 236 kings.

The first reported salmon in district 6 was taken at Fairbanks on June 26. Commercial landings were first made during the subsequent period (June 27-29), and the peak of the run (as gauged by commercial landings) occurred between the 18th and 20th of July. As is normal on the Tanana River, high water and accompanying driftwood hampered fishing effort during late July and early August. The district 6 commercial season was closed by emergency order on August 10. Total commercial king salmon catch for the district was 911 kings.

Summer Chum Salmon: Overall, the 1983 summer chum salmon run is judged to have been below average in magnitude. The total upriver commercial harvest of 181,022 equivalent summer chums is approximately 34% below the recent 5-year average.

In subdistrict 4-A, where the majority of summer chums is harvested, 135,176 were taken in 1983. This compares unfavorably with the recent 5-year average take of 205,112 "equivalent" chums for the area. As has been the case for the last several years, summer chum roe was the primary product of this fishery.

Approximately 6,000 chums were purchased in the round from this district and were experimentally processed by a local buyer in an attempt to develop an Asian market for a paste-type product.

Unlike the district 4 fishery, the Tanana River summer chums are sold

and marketed in the round. The 1983 catch of 24,309 summer chums is nearly 20% below the recent 5-year average. High water during late July and early August is thought to have hindered fishing success.

Fall Chum and Coho Salmon: The early portion of the fall chum run to the upper Yukon districts appeared weak. Catches made in mid-August by subsistence fishermen in district 5, by commercial fishermen in district 4, and by test fishwheels in the Ruby area were comparable to the poor run of 1982. Catches at the north-bank test fishwheel began to show a dramatic improvement on August 23 and remained high for approximately 2-1/2 weeks.

As mentioned above, catches of fall chums in district 4 were weak through mid-August. The Galena-based buyer reopened the plant for processing on August 14 but was forced to terminate his operation by August 19 as fishermen were unable to produce enough volume to warrant his staying open. Catches began to build by August 23; however, only sporadic purchases of chums were made (by a Fairbanks-area processor) until the season was closed on September 16. Total catch for the district was 6,444 fall chums (including 1,962 pounds of roe).

By August 28, catches in district 5 had improved markedly from the previous week. Substantial numbers of fall chums had by that date escaped through the lower portion of the district, and a decision was made to open the commercial fishery on August 30. Approximately 15,000 fall chums were taken during the first 48-hour period and roughly 26,000 during the second period. Even though the second period produced a near record catch, a decision was made to close the fishery on September 5; total harvest for the fall season was 40,943 kings. The commercial fishing season in subdistrict 5-D remained open until September 30. The chum harvest for that area was 3,092 and was taken by two fishermen.

In accordance with the Yukon area management plan, the Tanana River fall chum fishery opening was delayed until the run was well distributed throughout the lower and middle portions of the drainage. Distribution and abundance are determined by analysis of subsistence catch data from

the Manley, Nenana, and Fairbanks areas. The season was opened for a 24-hour period on September 13. Because of the unusually large catch (17,311 chum and coho combined), after the first period a decision to allow two additional 24-hour periods was made. It was understood that this strategy would probably result in a record-level harvest, but it was also clear that the run was strong and two additional periods separated by 48-hour closures would result in increased escapements. Total catch for the (72-hour) fall season was 37,190 "equivalent" fall chums and 6,168 cohos. Timing of the run appeared normal.

Salmon Roe Sales

Because of a tendency for rapid maturation in freshwater and resulting flesh-quality problems, processors in upriver districts have difficulty marketing summer chum salmon from these areas. This problem has been exacerbated in recent years by the coast-wide abundance of higher quality salmon and the increased operating and transportation costs faced by processors in the Interior. A result of these circumstances has been the development of a salmon roe fishery in district 4. In some areas, the value of (chum) salmon roe exceeds the value of the fish; for these reasons, large quantities of eggs are being sold and the carcasses sun dried and retained by the fishermen.

During 1983, 155,063 pounds of roe (unprocessed weight) were sold by upriver fishermen. Average per-pound price received by fishermen was $1.66. The bulk of the 1983 roe production originated in subdistrict 4-A, and lesser amounts were sold in district 5 and 6. Upper Yukon roe production for the years 1978-1983 is presented in Appendix Table 18.

Subsistence Fishery, 1983

Subsistence fishery harvest information was collected in a somewhat different manner than in past years. Because of budgetary problems, the Department was unable to send survey crews to all villages to interview fishermen. Interviews were conducted in all lower Yukon villages (districts 1-3) except Holy Cross. In the upper Yukon, however,

personnel visited only Kaltag, Nulato, Galena, Ruby, Tanana, Fort Yukon, and Eagle. Information from fishermen in the remaining villages was collected by questionnaires sent through the mail.

Data from those villages visited were expanded in the following normal manner. Catch data for known fishermen who fished but were unavailable for interviews were derived by averaging the total catch by species for that village and assigning those values to households not contacted. If, for example, 15 families in a village were known to have fished for subsistence purposes, but only 12 of those families were interviewed, the total (estimated) catch for that village is determined by expanding the known harvest by 25%. Information regarding numbers of persons in the household and numbers of dogs, as well as type and amount of gear, was determined in a similar manner.

For those villages where subsistence catch data were collected by mail only, the total number of people actually fishing could not be determined. In those cases, catch data were expanded to reflect the average number of fishermen for that village during the years 1978-1982. In the case of Rampart, response to the questionnaire was so poor that expansion of the data collected would not have been reasonable. Instead, average values for the recent 5-year period were used.

During 1983, an estimated 55,000 kings, 436,000 chums, and 24,000 coho salmon were taken for subsistence purposes in the Yukon River drainage. The king harvest was second only to the estimated 58,000 harvested in 1980. In addition, a minimum of 33,000 whitefish and 7,000 sheefish were taken incidentally to the salmon catch. It should be noted that the actual catch of these species is probably much higher, as these figures represent estimated harvest for the June-October period only.

Table 14 presents 1983 catch data for each Yukon River community, and Appendix Tables 22-24 show long-term comparative data.

Lower Yukon Area

An estimated 20,238 kings and 88,705 chums, cohos and pink salmon were harvested by 513 fishing families in the three lower Yukon districts. The estimated harvest of 20,238 kings taken in this area was nearly double the 1978-1982 average of 10,700. The 1983 harvest of 88,705 chums and cohos was 25% higher than the recent 5-year average. In 1983, lower river fishermen comprised 47% of the Alaska catch and took approximately 41% of the subsistence king salmon harvest and 19% of the combined chum and coho catch. With the exception of the higher king salmon catches made in 1983, the lower Yukon subsistence fishery appears basically stable in terms of both effort and catch.

A new regulation was adopted by the Board of Fisheries for 1983 establishing special subsistence only fishing periods during the weekends in districts 1 and 2. Surveys were flown periodically to document fishing effort. In general the use was very light. This was due in part to the exceptional subsistence fishing opportunities (large king salmon catches and good fishing conditions) in late May and early June prior to the opening of the commercial season.

Upper Yukon Area

Not including Canadian catches, the 1983 upper Yukon area subsistence harvest totaled approximately 398,000 fish. Of these, 29,240 were kings, 183,702 were summer chums, 171,488 were fall chums, and 13,316 were cohos. The king salmon catch was 39% higher than during the 1978-1982 period, and the combined chum and coho catch was 9% higher than during the previous 5 years.

The possibility of overestimating the summer chum harvest in district 4 should be noted. As indicated in a previous section of this report, many commercial fishermen in this area had no market for their chum salmon. As a result, many fishermen extracted and sold roe from their catch and retained the carcasses for their personal use. It is likely

that in many cases fishermen (particularly in Anvik, Grayling, Kaltag, and Nulato) reported this portion of their commercial catch as subsistence fish. It is not possible to quantify what portion of the catch may have been double counted.

Subsistence fishing permits are required in three areas within the Yukon area: 1) the Tanana River drainage upstream of the Wood River confluence; 2) the Yukon River between Hess Creek and the Dall River; and 3) the Yukon River between the upstream mouth of Twentytwo Mile Slough and the U.S./Canadian border. Tabular data on these permit fisheries are presented in Appendix Table 25.

Enforcement, 1983

Lower Yukon Area

Fish and Wildlife Protection officers made four boat patrols and a number of float plane patrols on the lower Yukon in 1983. Numerous contacts with fishermen were made and a number of violators were cited. The most severe violations included fishing with a borrowed permit and fishing during closed periods. With the vast size of the lower Yukon area and the length of the season, it is impossible to expect all areas to be covered at all times. However, it is recommended that additional boat surveys be conducted, particularly in the early morning hours prior to the openings of the 12-hour periods in the Gill Net Area of district 1.

Upper Yukon Area

Compliance with commercial and subsistence fishing regulations in the upper Yukon area during 1983 was generally good. The illegal sale of subsistence-caught salmon and salmon roe continues to be the most widespread problem. Other common violations include fishing with unmarked gear and fishing during closed periods.

Escapement, 1983

The Yukon River drainage is too extensive for complete aerial survey escapement coverage during any given season. In addition, poor survey conditions prevented surveys from being flown during some years or have resulted in minimum estimates. Table 15 presents aerial survey escapement data for all streams surveyed in 1983. Figures 2-6 show major tributary systems and important spawning streams.

Appendix Tables 26 and 27 presents comparative king salmon escapement data for selected tributaries during the 1971-1983 period. Aerial surveys of king (and summer chum) salmon spawning streams in the lower portion of the drainage in Alaska were severely limited due to inclement weather. King salmon escapement in the index spawning areas adequately surveyed were generally average. Escapements were above average in the Chena River (2,487 kings), Nulato River (1,006 kings) and Tozitna River (388 kings).

In the Yukon Territory, surveys indicated average king salmon escapement levels in the following index areas: Nisutlin River (Sidney Creek - 100 Mile Cr.: 701 kings) and Big Salmon River (540 kings). The Whitehorse Dam Fishway count was 905 kings.

Appendix Tables 28 and 29 present comparative summer and fall chum salmon escapements for selected streams. The magnitude of the summer chum escapements were generally average in the streams surveyed in 1983. A total of 362,912 chums were documented in the Anvik River system where the escapement is enumerated by side scan sonar. In the Andreafsky River (East Fork), a total of 110,608 chum salmon spawners were enumerated by side scan sonar. Escapements to tributary streams in the upper portion of the Koyukuk River drainage were excellent but were judged average to below average in the remainder of the upper Yukon area. High water precluded aerial assessment of summer chum escapements in most of districts 4 and 6. In the Melozitna River a total of 20,126 chums were enumerated by side scan sonar.

In 1983, escapements levels of fall chums were highly variable. Escapements in general were down from the peak four year cycle observed in 1975 and 1979 (Appendix Table 29). Escapements to the upper Tanana River were good, however the Toklat River and streams tributary to the Porcupine River were judged to be below average or average in magnitude. In the Sheenjek River 45,773 fall chums were enumerated by side-scan sonar.

Tanana River drainage coho salmon escapements were generally above average in 1983. Comparative coho salmon escapement data is presented in Appendix Table 30.

OUTLOOK FOR 1984

King Salmon

In most years the dominant age class returning are 6-year old; however 5 and 7-year-old fish also contribute to the run. The 1978 brood year run (6-year-olds in 1984) was judged average to above average in abundance as indicated by comparative catch and escapement data. The return of 5-year olds (1979 brood year) is expected to be significant based on average to above average run strength in 1979. Seven-year olds are expected to contribute significantly to the run in 1984 based on the average return of 6-year-olds in 1983. In summary, based on evaluation of brood year run size data, it is expected that the 1984 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.

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 1984 will be dependent on the strength of the 1980 brood year and the survival of the resulting offspring. Based on the available catch and escapement data, the 1980 summer chum salmon run was considered average in magnitude. The return

of 4-year-olds in 1984 is expected to be of similar magnitude. The return of 5-year-olds is not expected to be significant based on the average return of 4-year-olds in 1983. In summary, the magnitude of the Yukon River summer chum salmon run in 1984 is expected to be average in magnitude. The commercial harvest is expected to total 600,00-1,200,000 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 1980 brood year (4-year-olds) was considered below average to average in magnitude. The returns of 5-year-olds (1979 brood year) is expected to significant because of the strong return of 4-year-olds in 1983. In summary, the 1984 Yukon River fall chum salmon run is expected to be average in magnitude. The expected commercial harvest should approximate 233,000 fish, the midpoint of the guideline harvest range for the entire river.

Coho Salmon

Four-year-old fish (1980 brood year) are the dominant age class. Adequate escapement information for coho salmon is lacking but surveys in the Tanana River system indicated average escapements in 1980. The return in 1984 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.

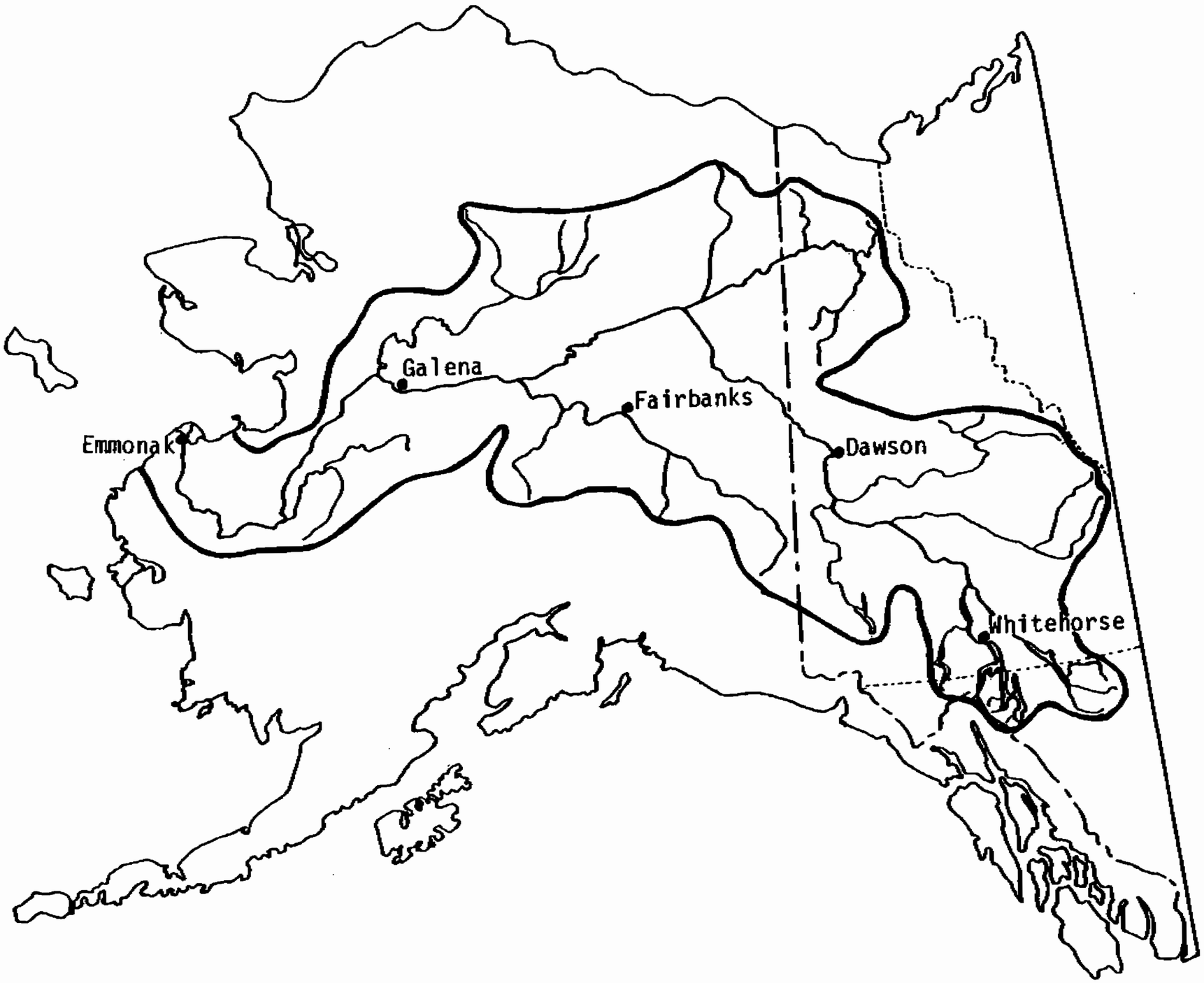


Figure 1. The Yukon River drainage, 330,000 square miles.

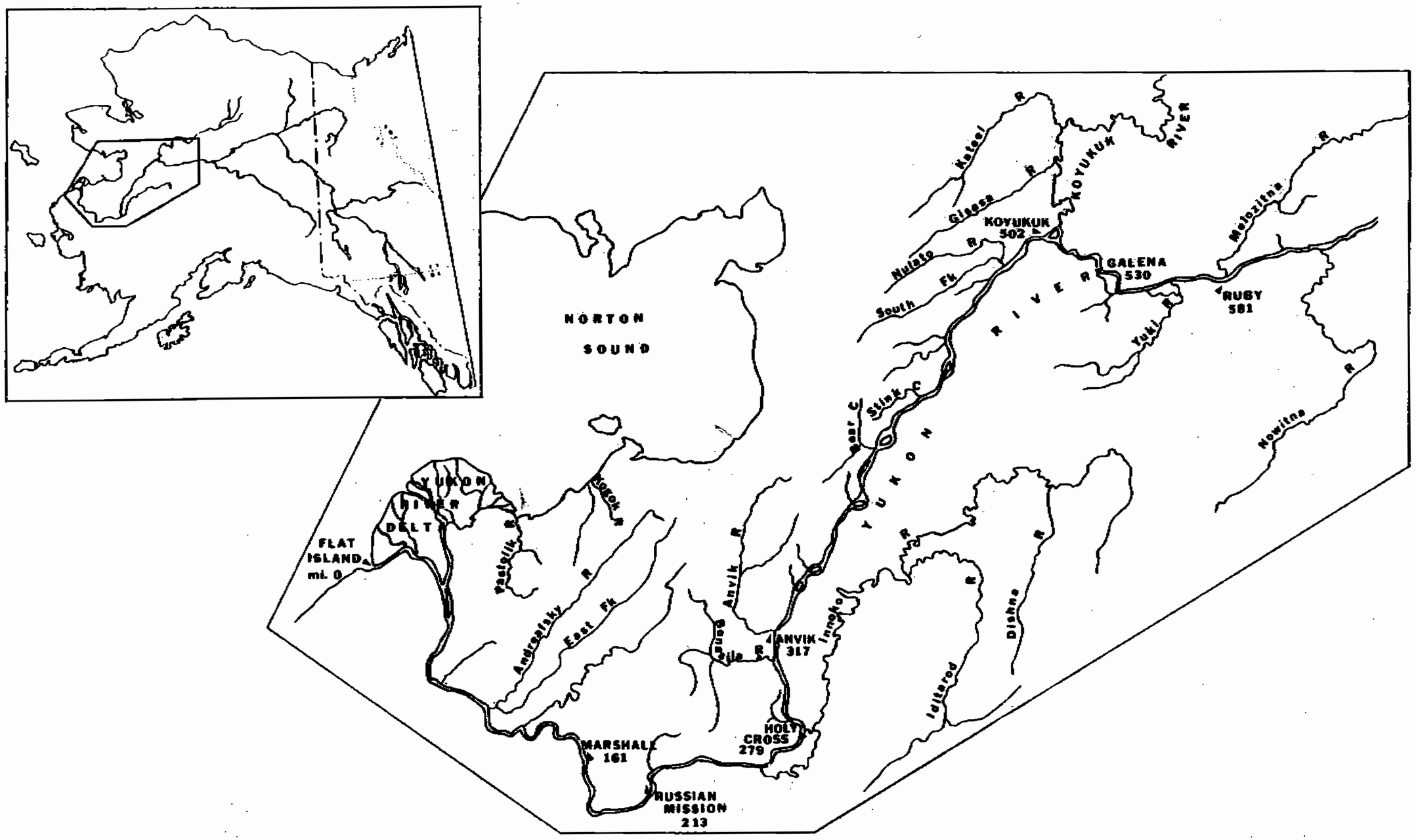


Figure 2. The lower Yukon River drainage.

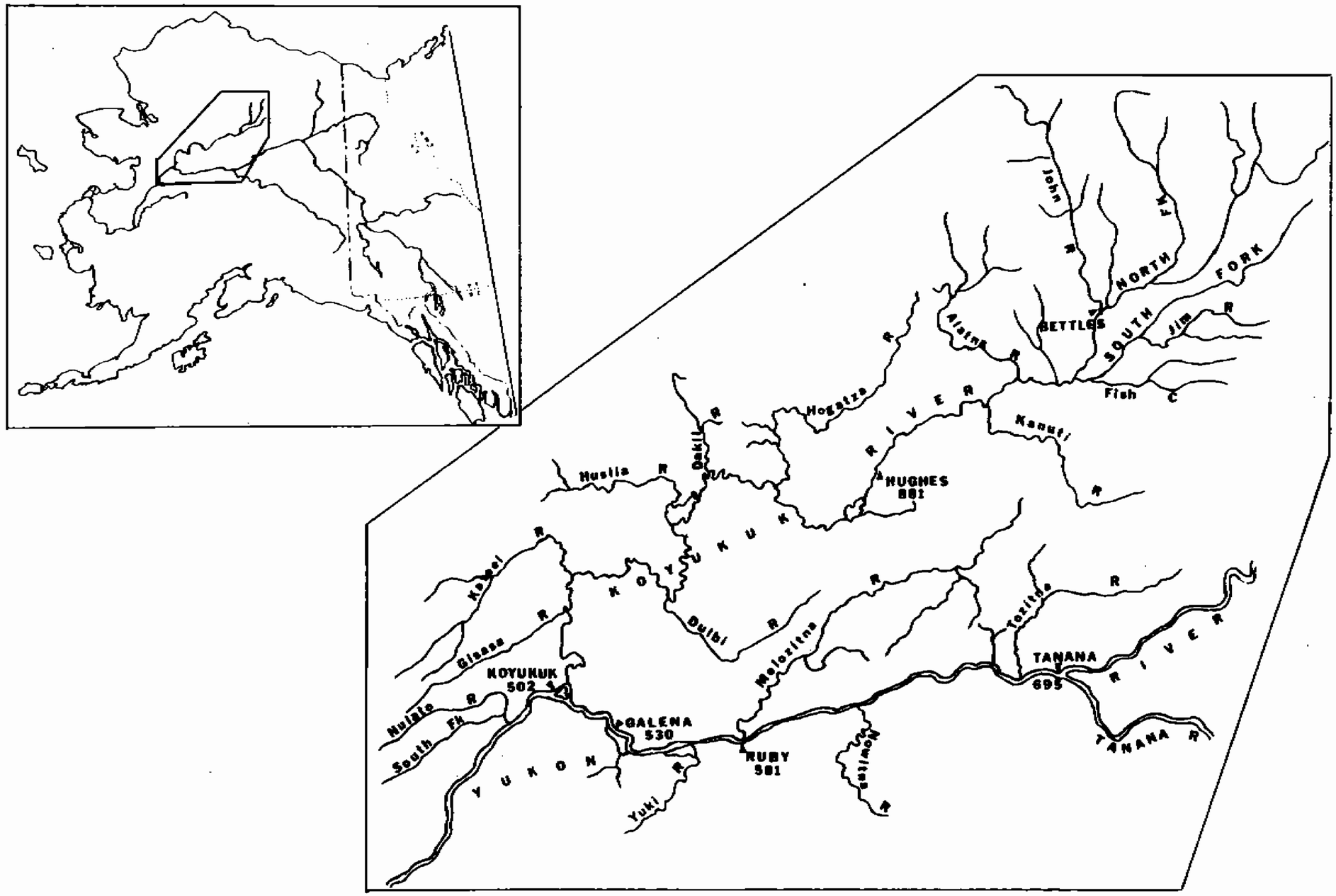


Figure 3. The Koyukuk River drainage.

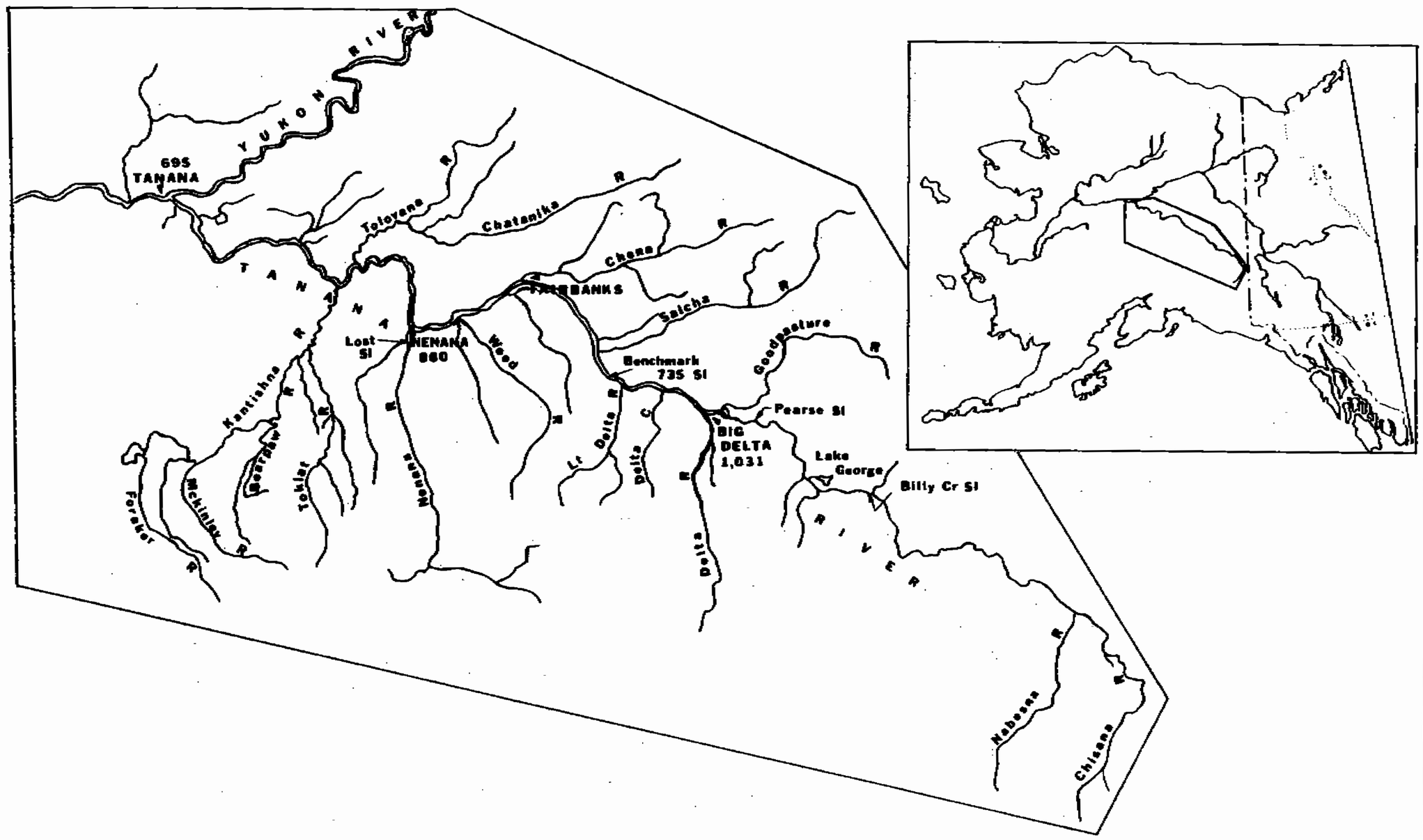


Figure 4. The Tanana River drainage.

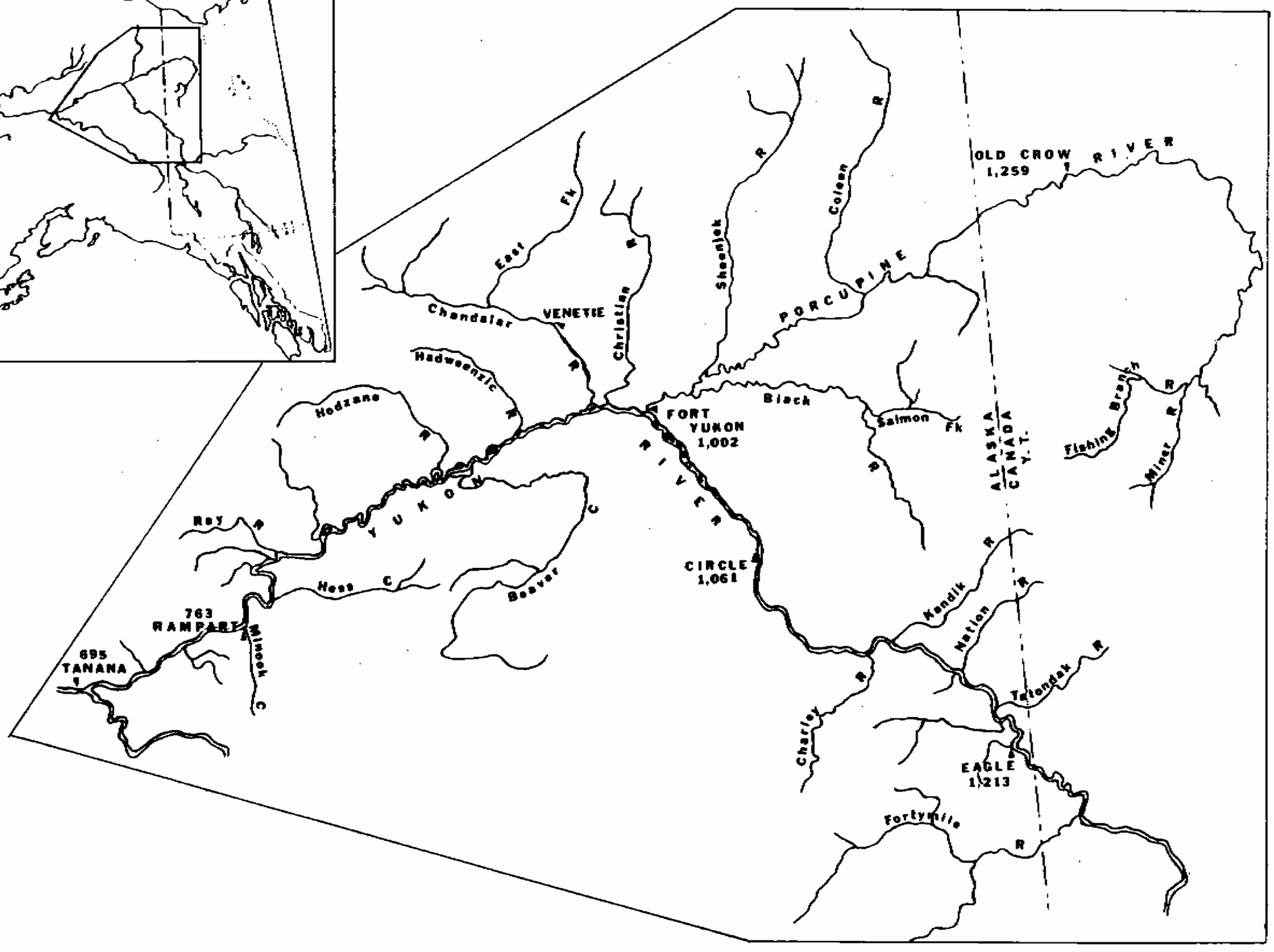


Figure 5. The middle Yukon River and Porcupine River drainage.

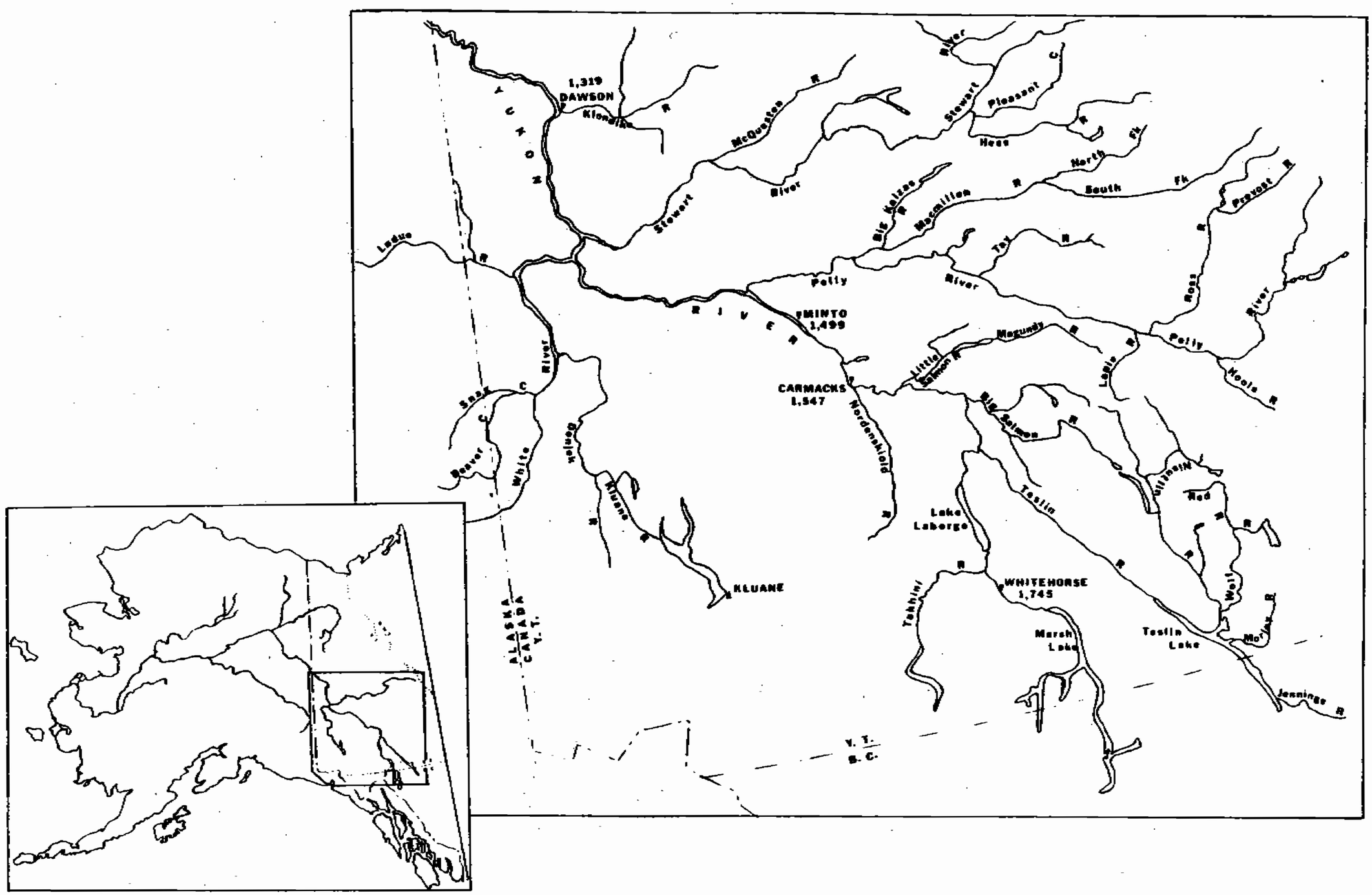


Figure 6. The upper Yukon River drainage.

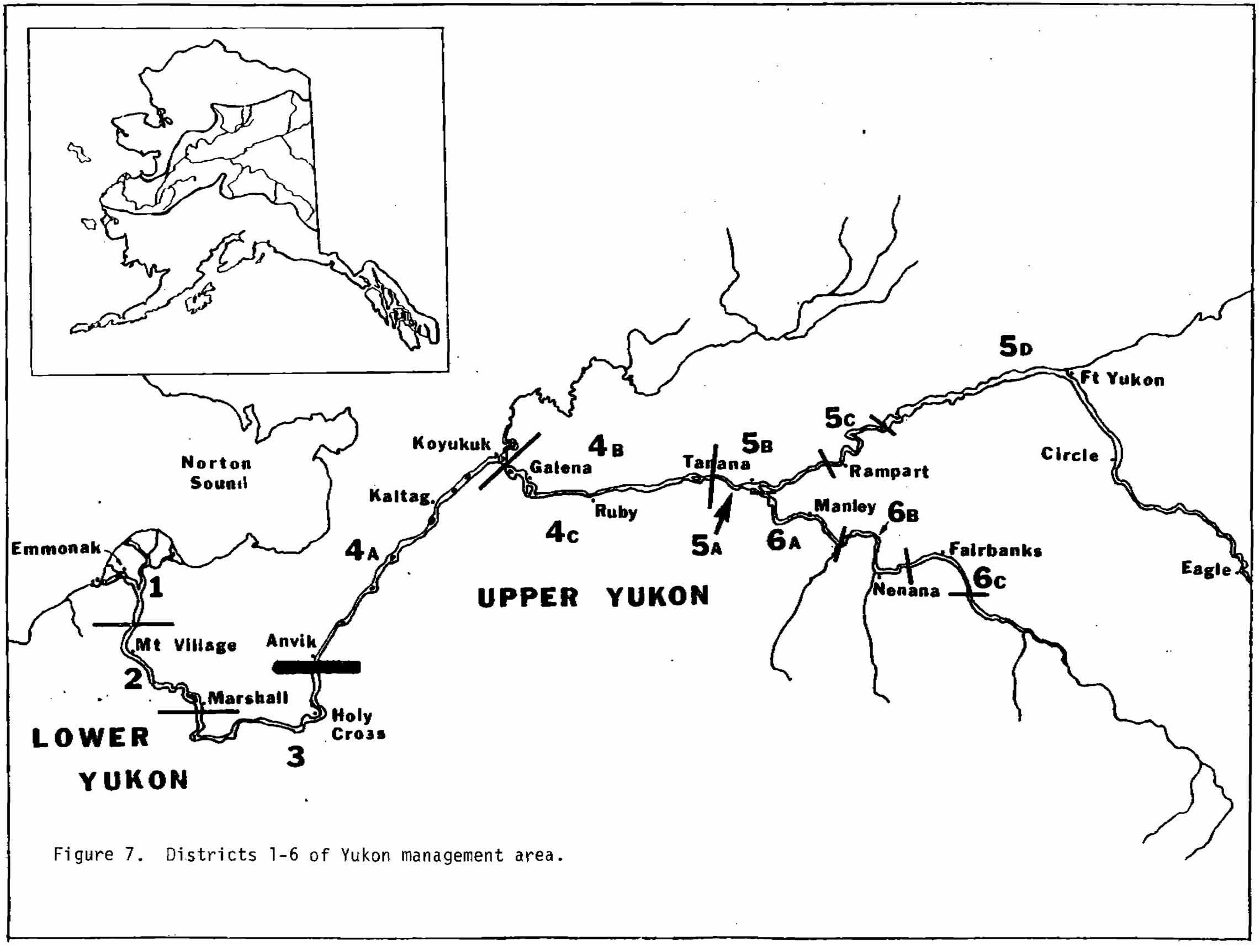


Figure 7. Districts 1-6 of Yukon management area.

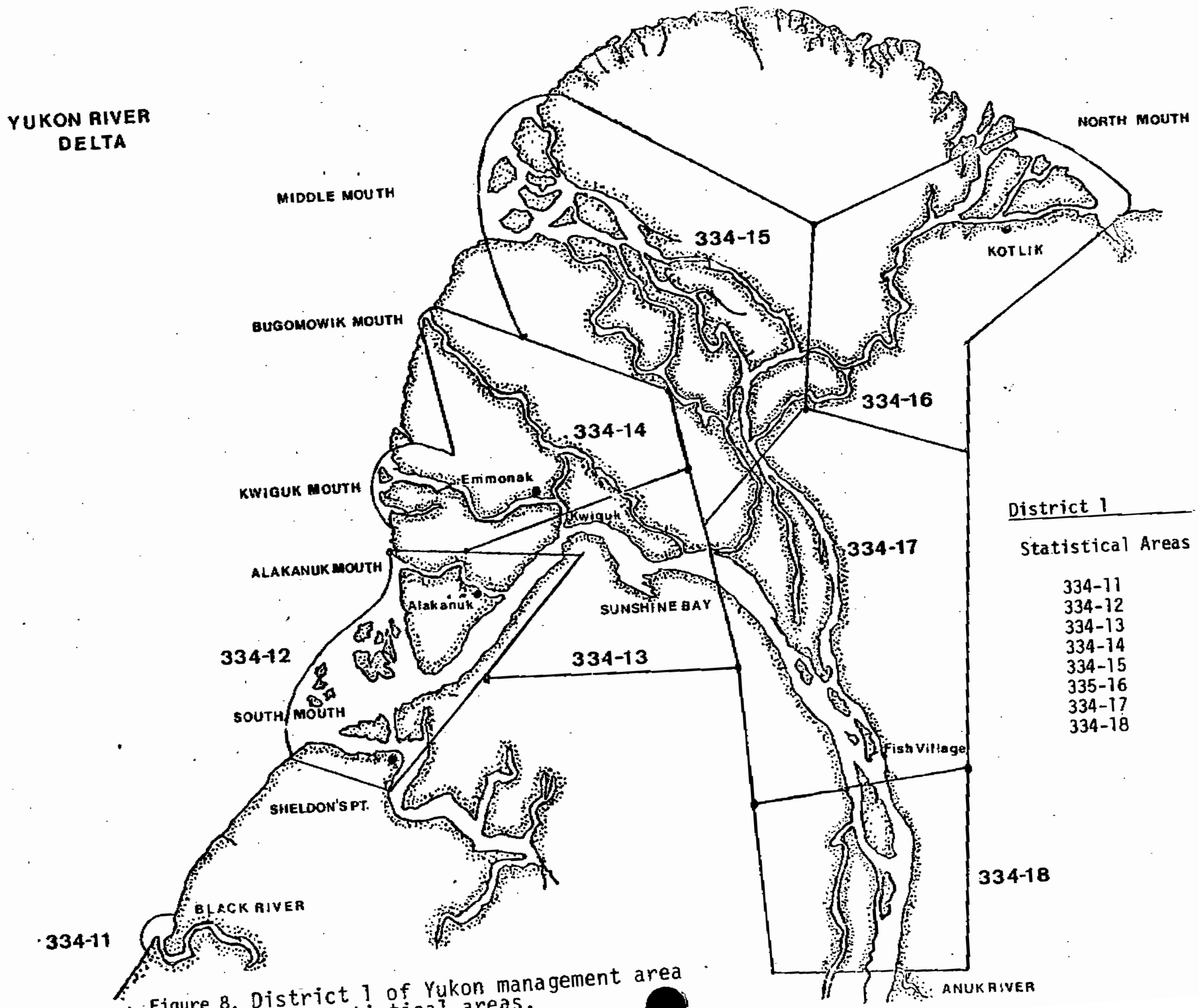


Figure 8. District 1 of Yukon management area with statistical areas.

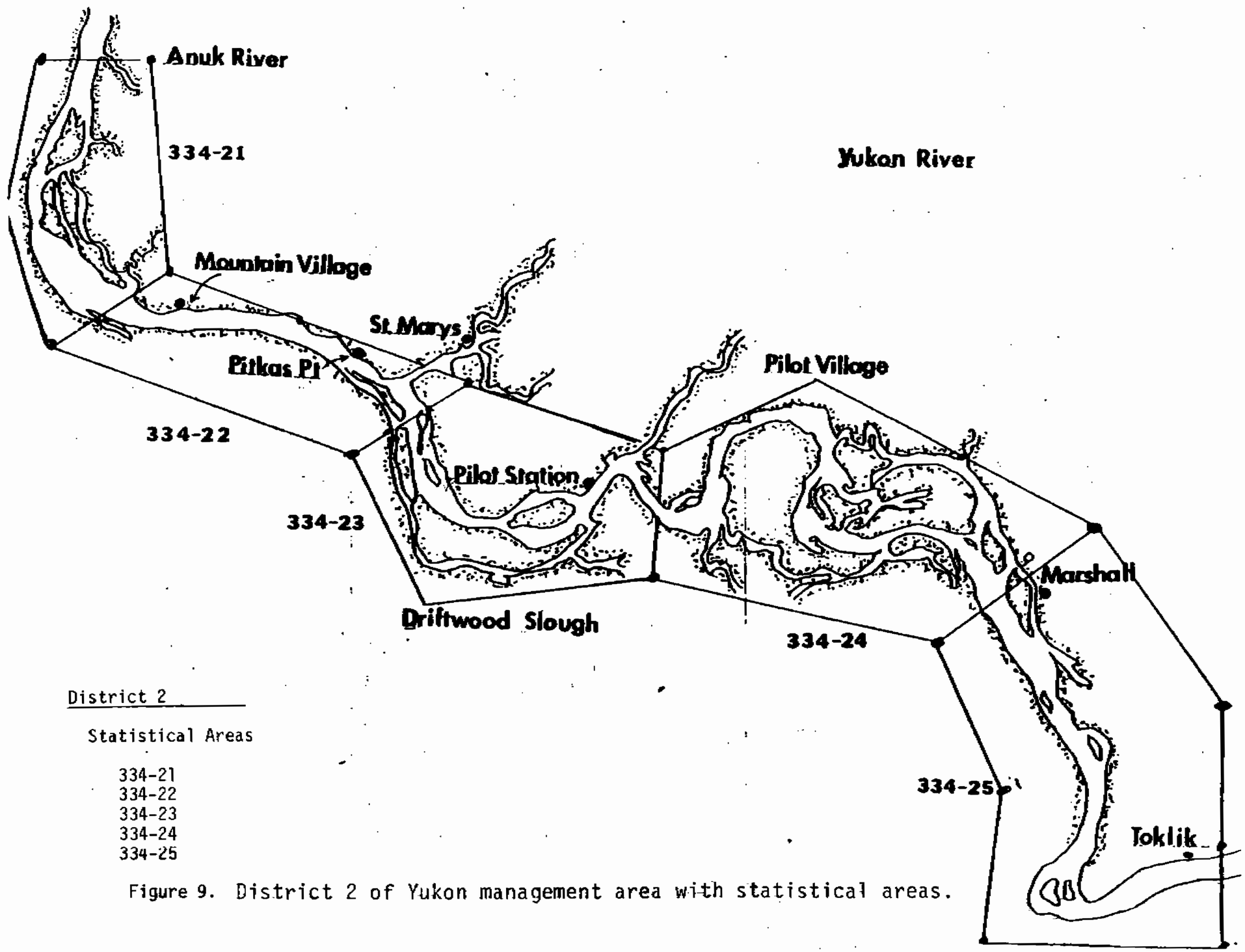


Figure 9. District 2 of Yukon management area with statistical areas.

District 3

Statistical Areas

334-31
334-32

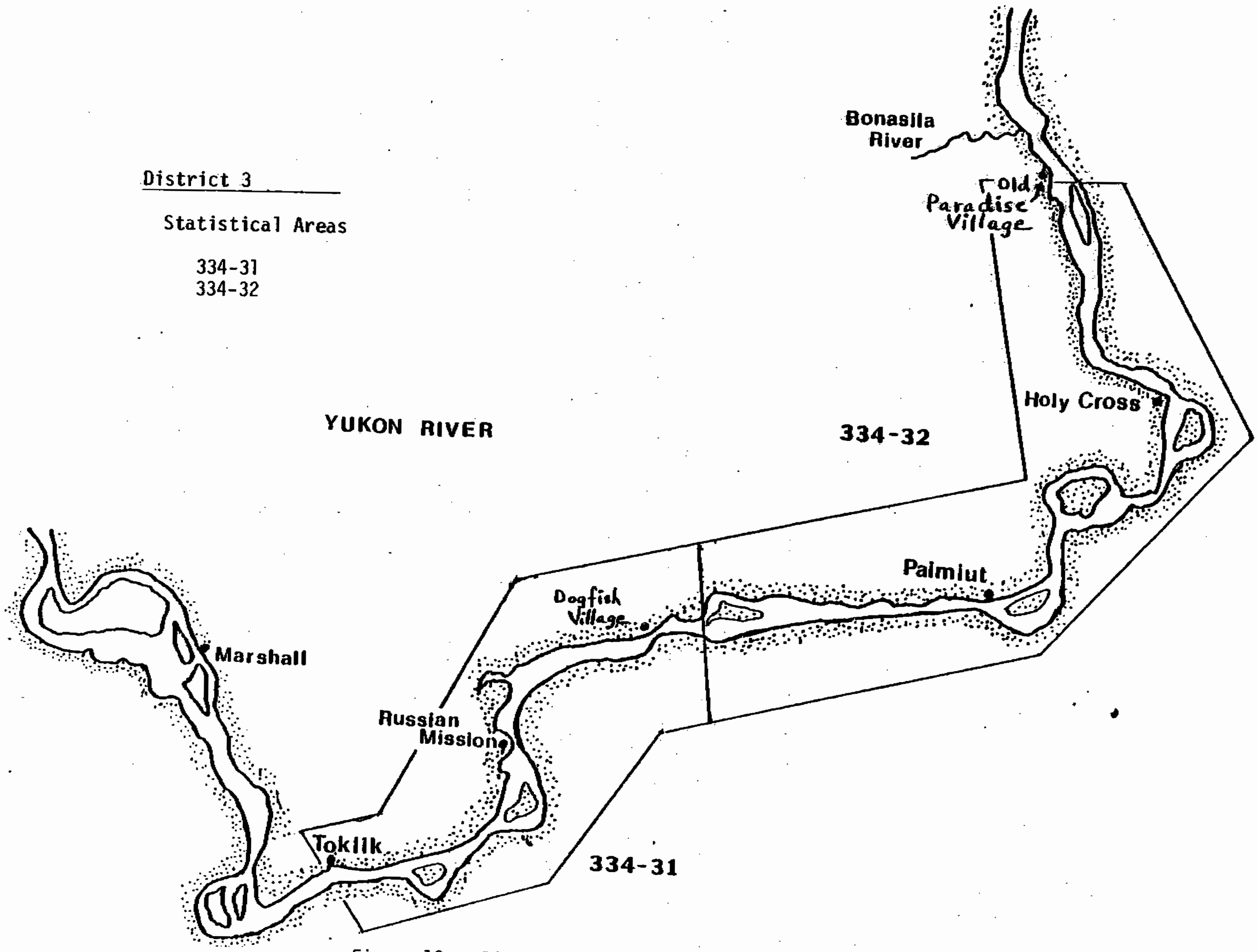


Figure 10. District 3 of Yukon management area with statistical areas.

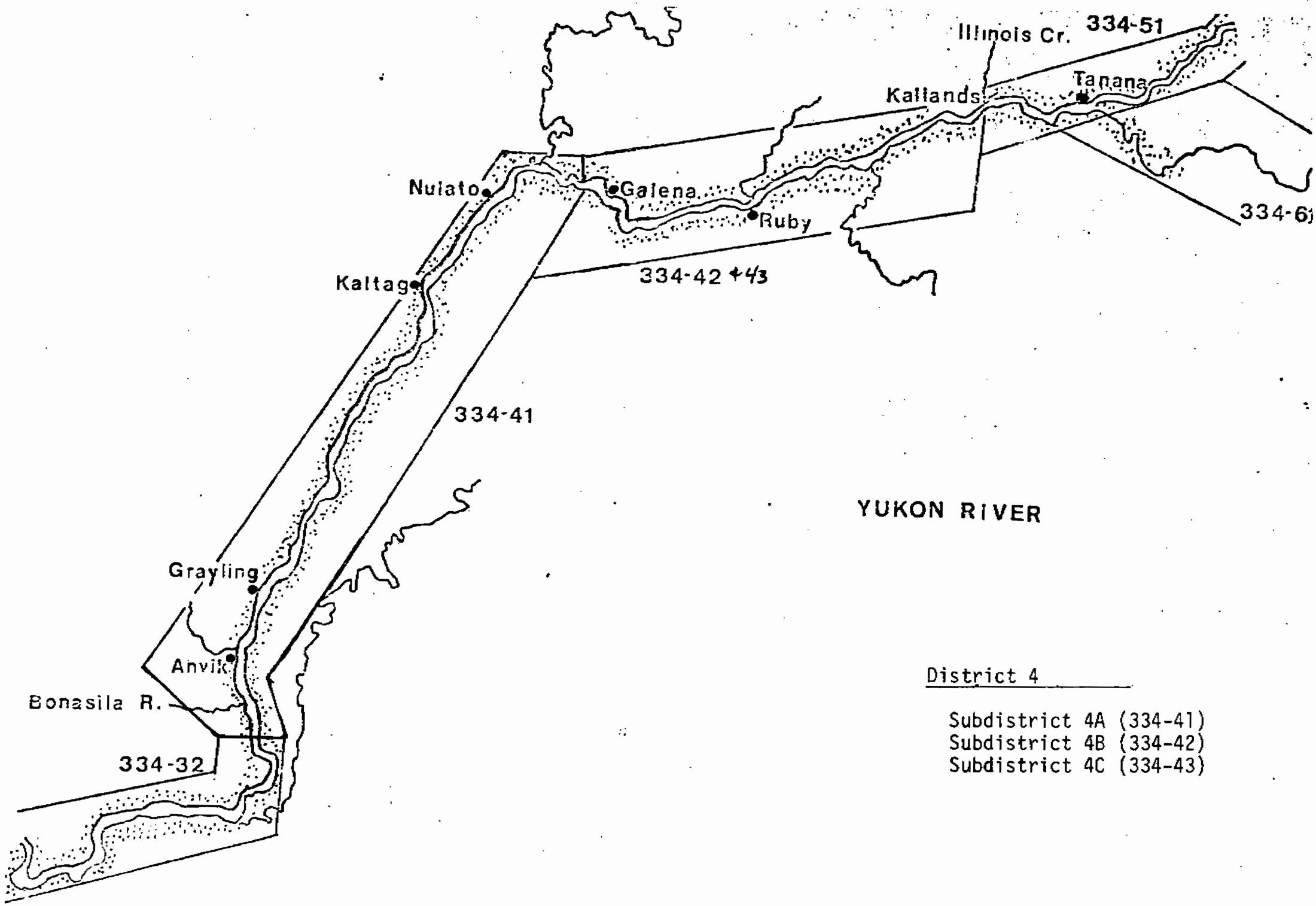
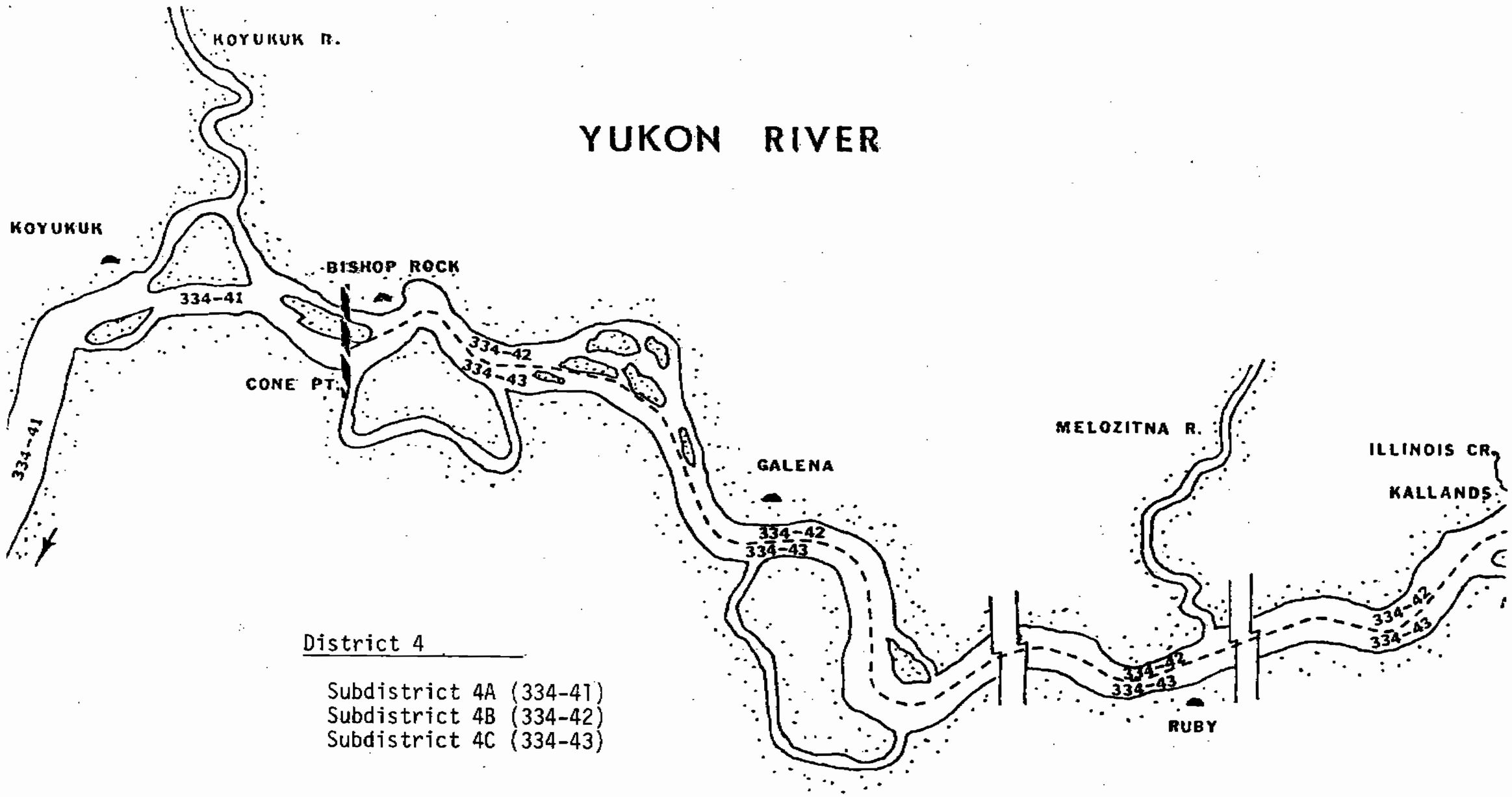


Figure 11. District 4 of Yukon management area with statistical areas.



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)

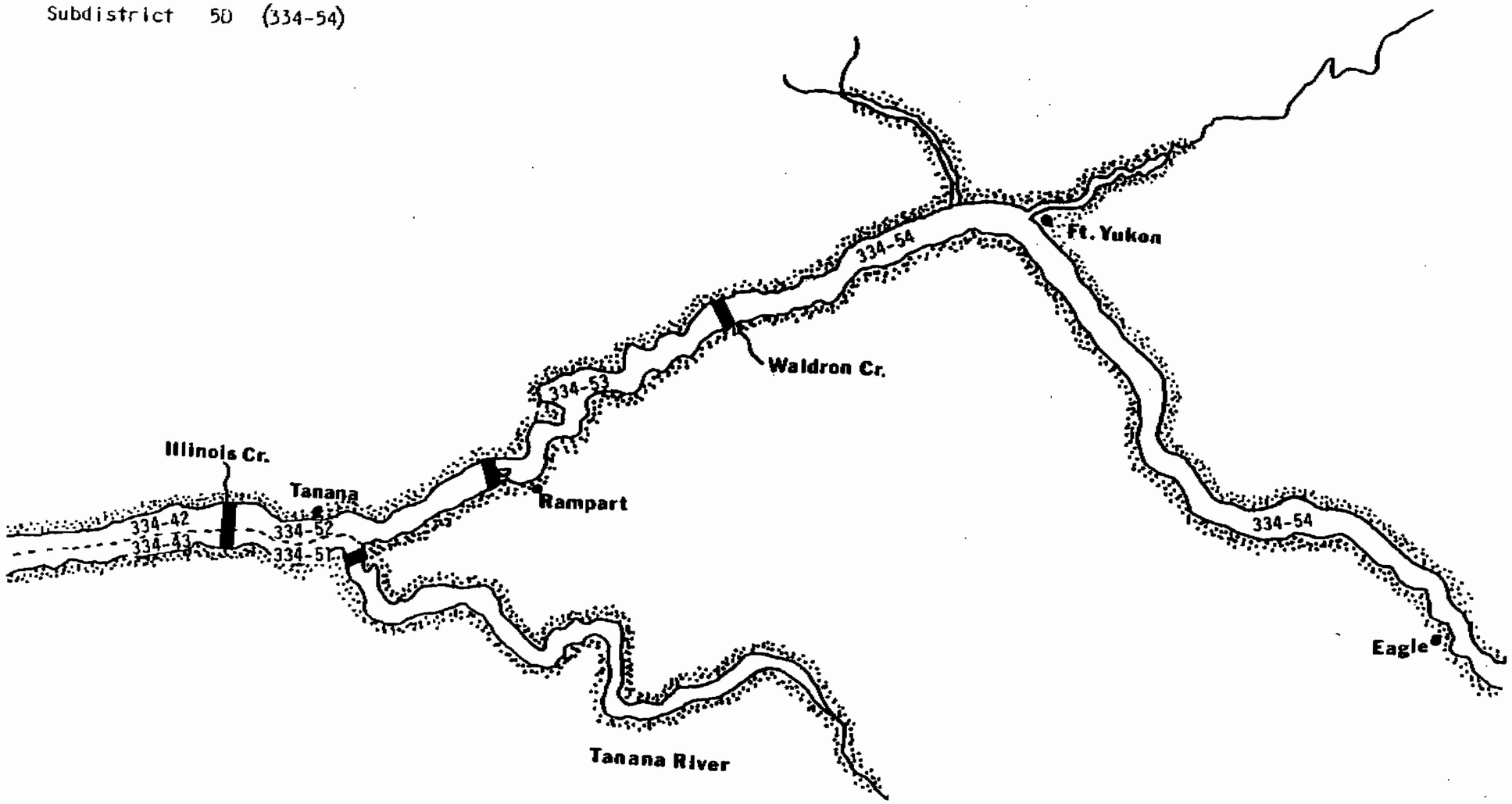
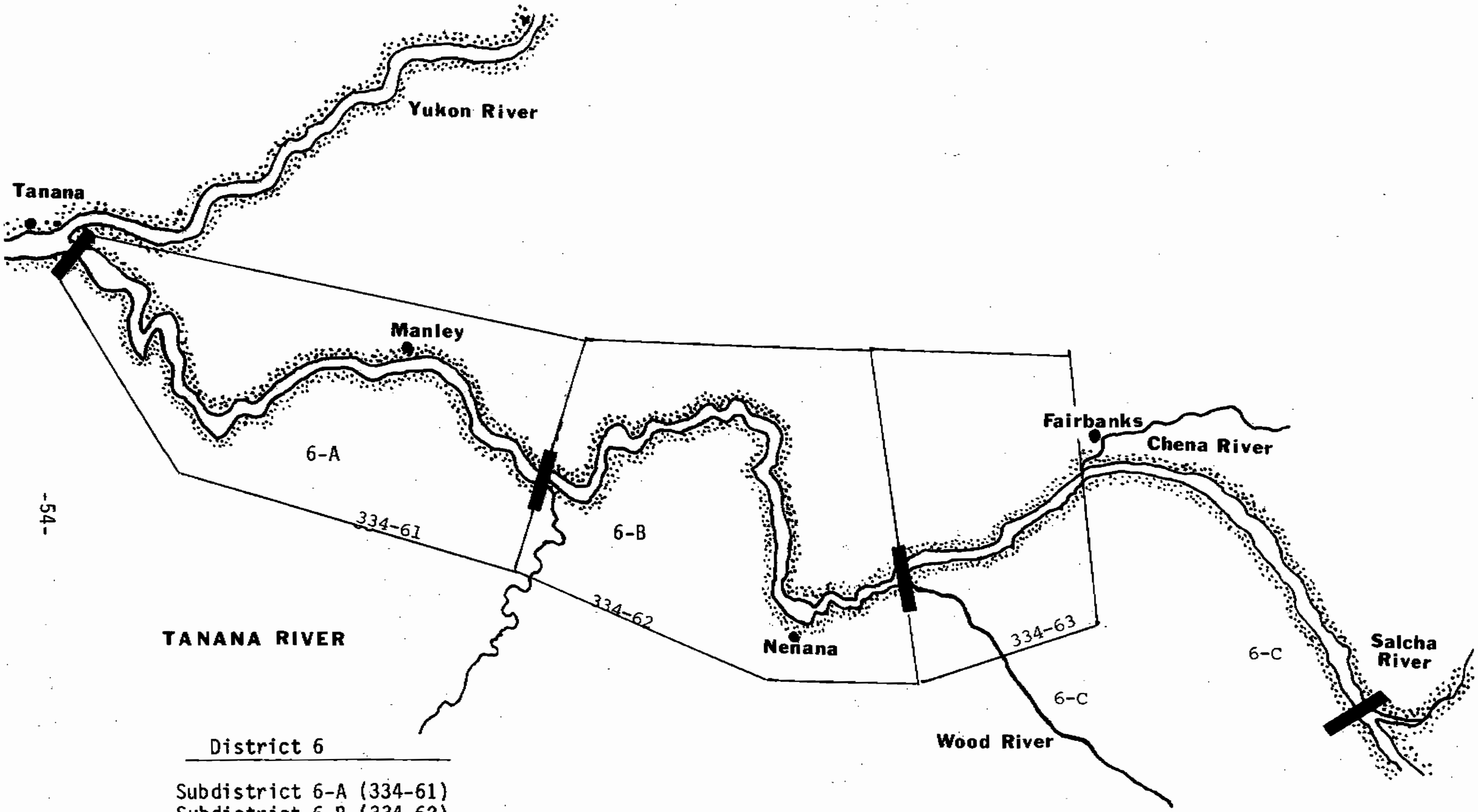


Figure 13. District 5 of Yukon management area with statistical areas.



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.

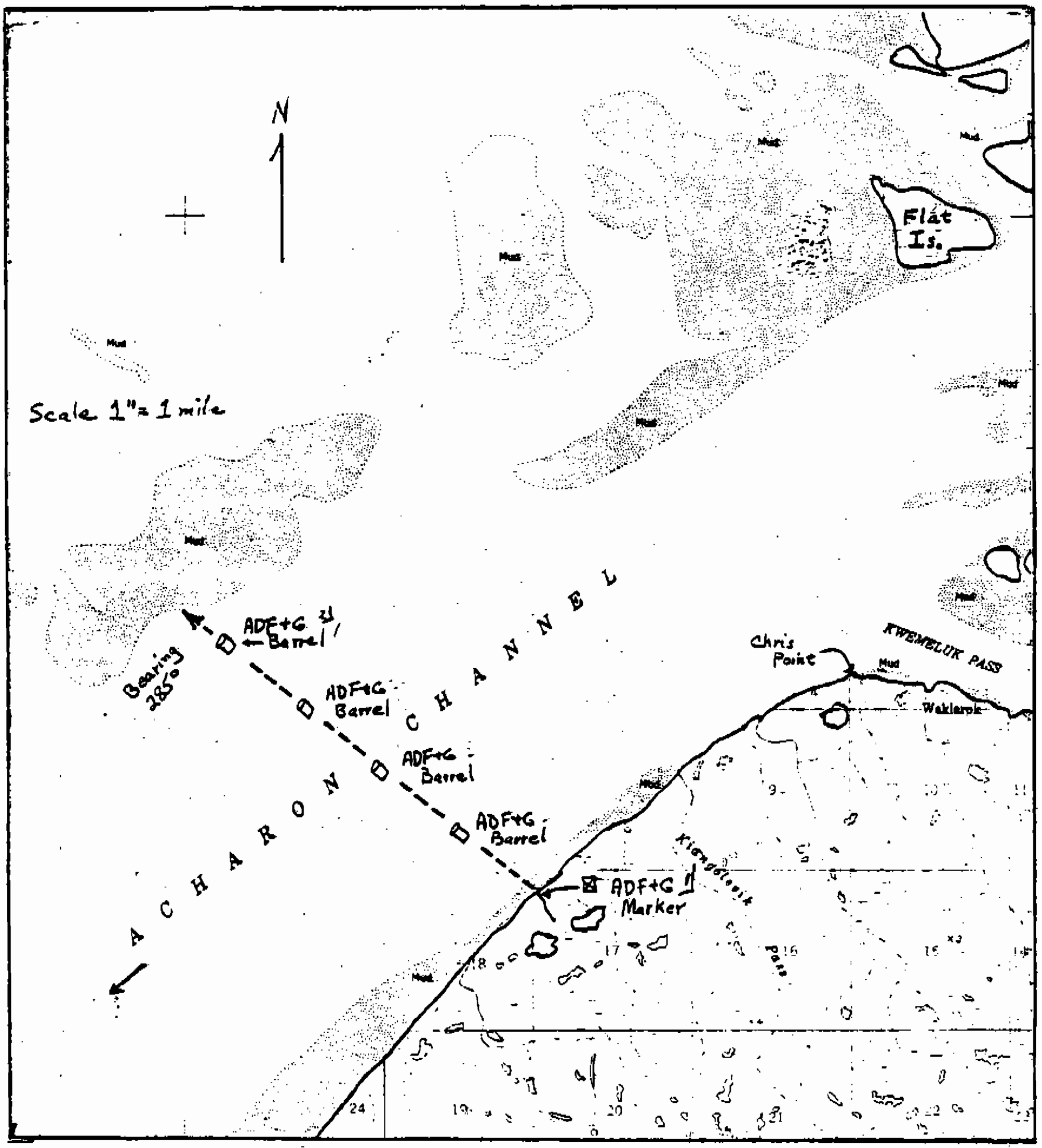


Figure 15. Closed waters Acharon Channel, south mouth Yukon River. (5AAC 05.350. CLOSED WATERS. (1) Acharon Channel of the south mouth area of the Yukon River west of a 2-1/2 nautical mile long line bearing 285° from an ADF&G regulatory marker located below Chris Point to the opposite side of the channel; 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.

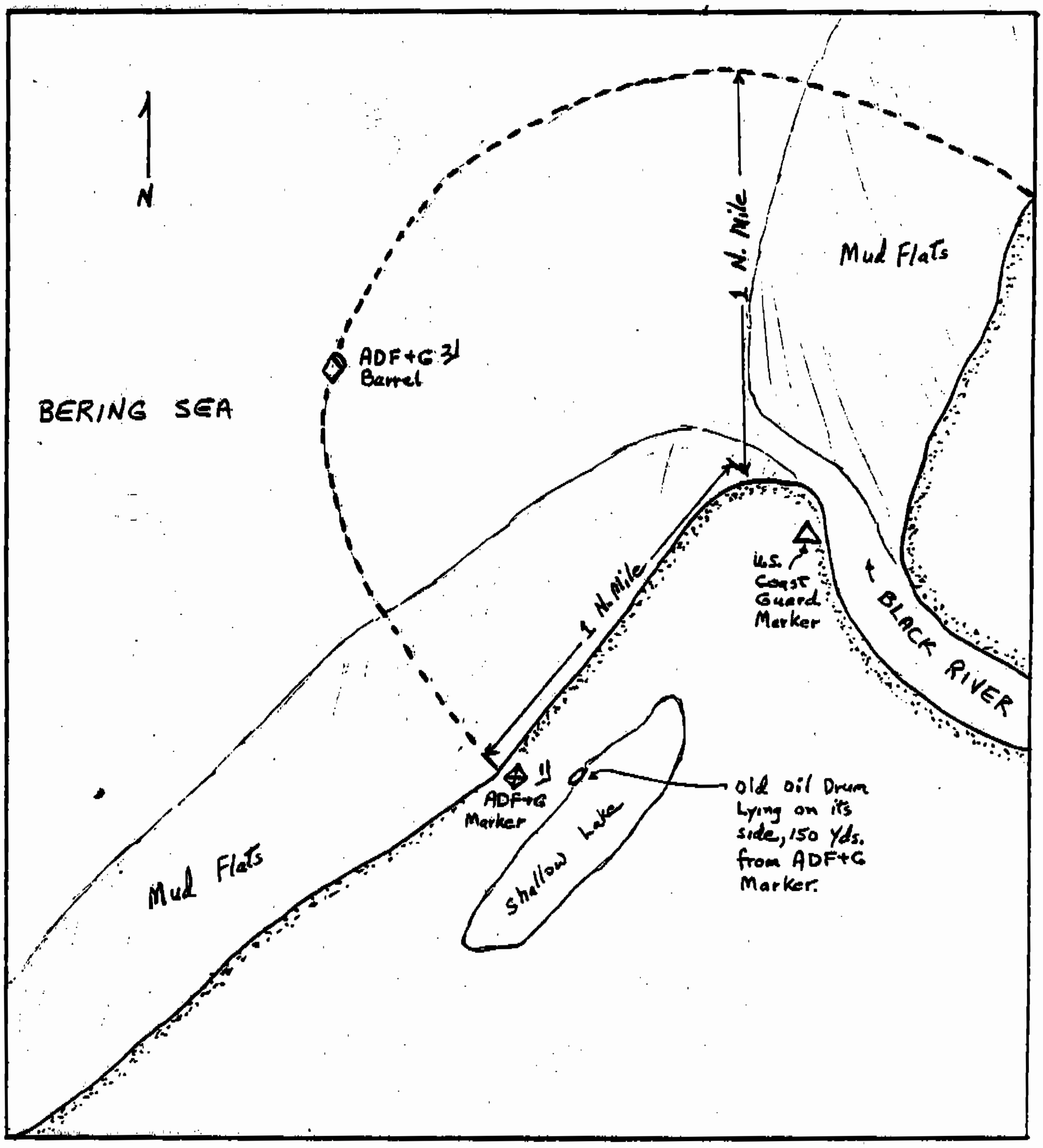


Figure 16. Closed waters of Black River mouth. (5AAC 05.350. CLOSED WATERS. (3) waters west of a one nautical mile radius from the mouth of Black River).

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.

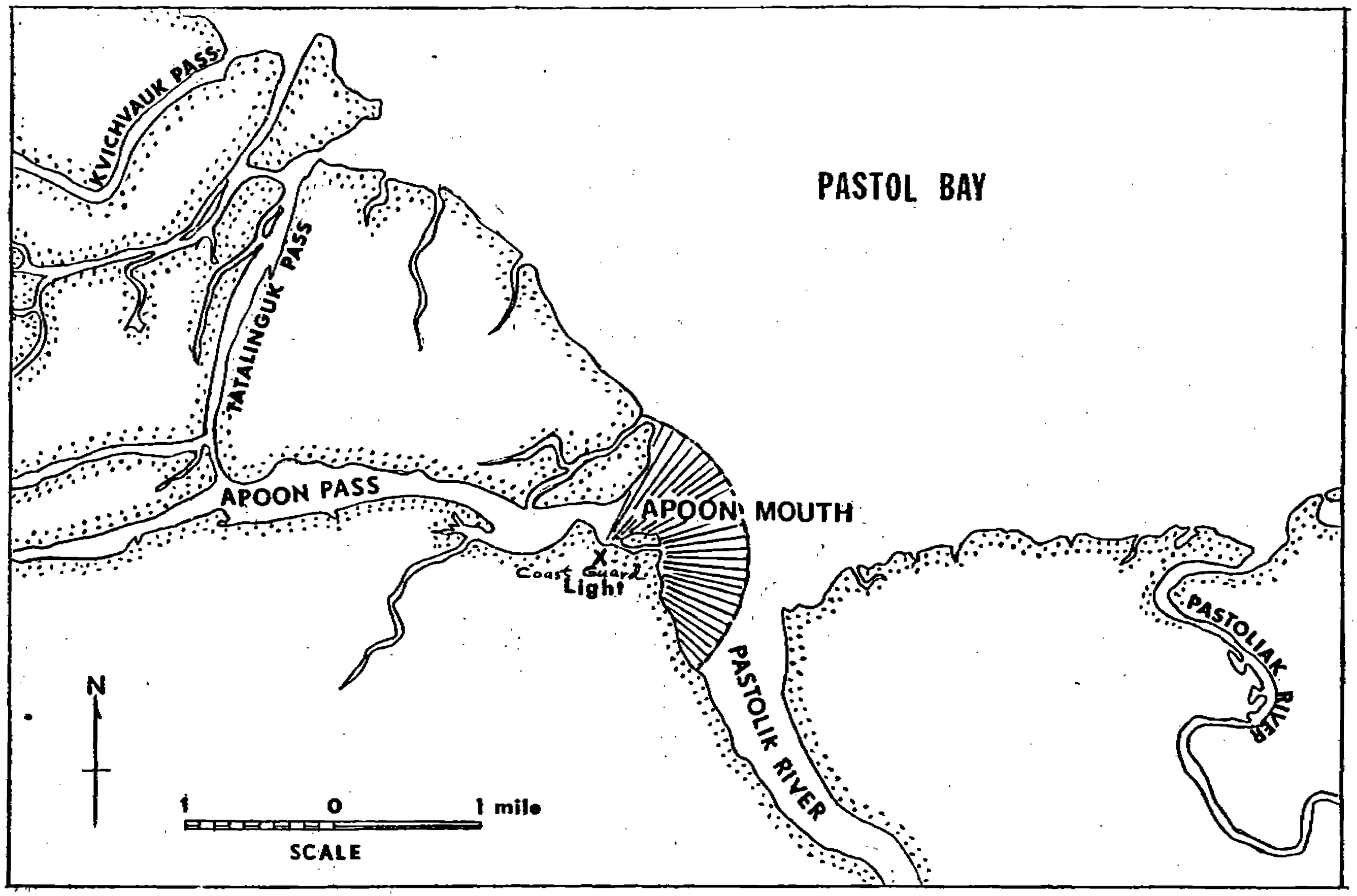


Figure 17. Closed waters of Apoon Mouth, Yukon River (5 AAC 05.350. CLOSED WATERS. (9) Waters east of a one nautical mile radius from a U.S. Coast Guard light at the mouth of Apoon Pass).

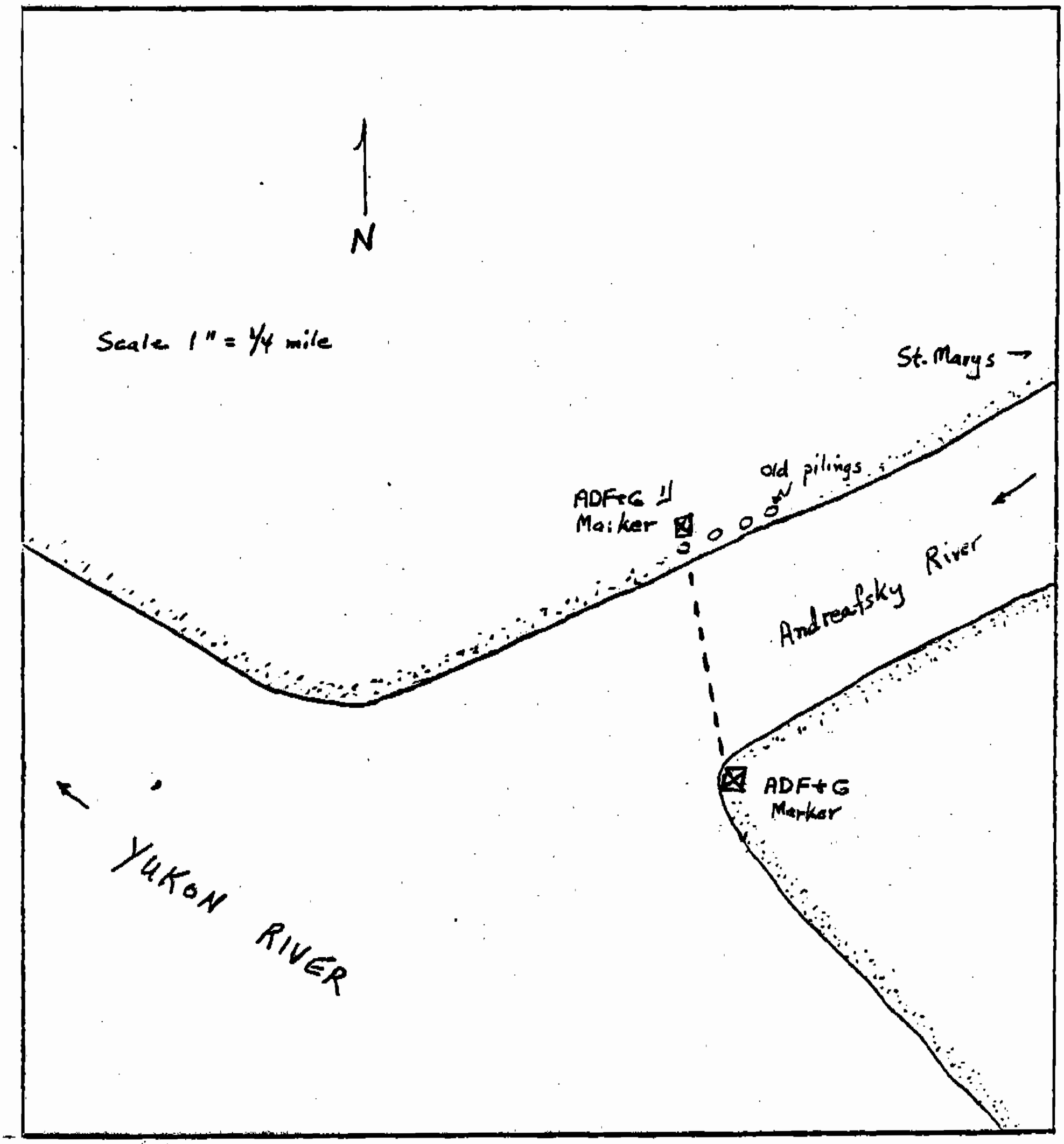


Figure 18. Closed waters of Andreafsky River mouth. (5AAC 05.350. CLOSED WATERS. (4) waters of the Andreafsky River upstream of a line from Department regulatory markers placed on each side of the river at its mouth).

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

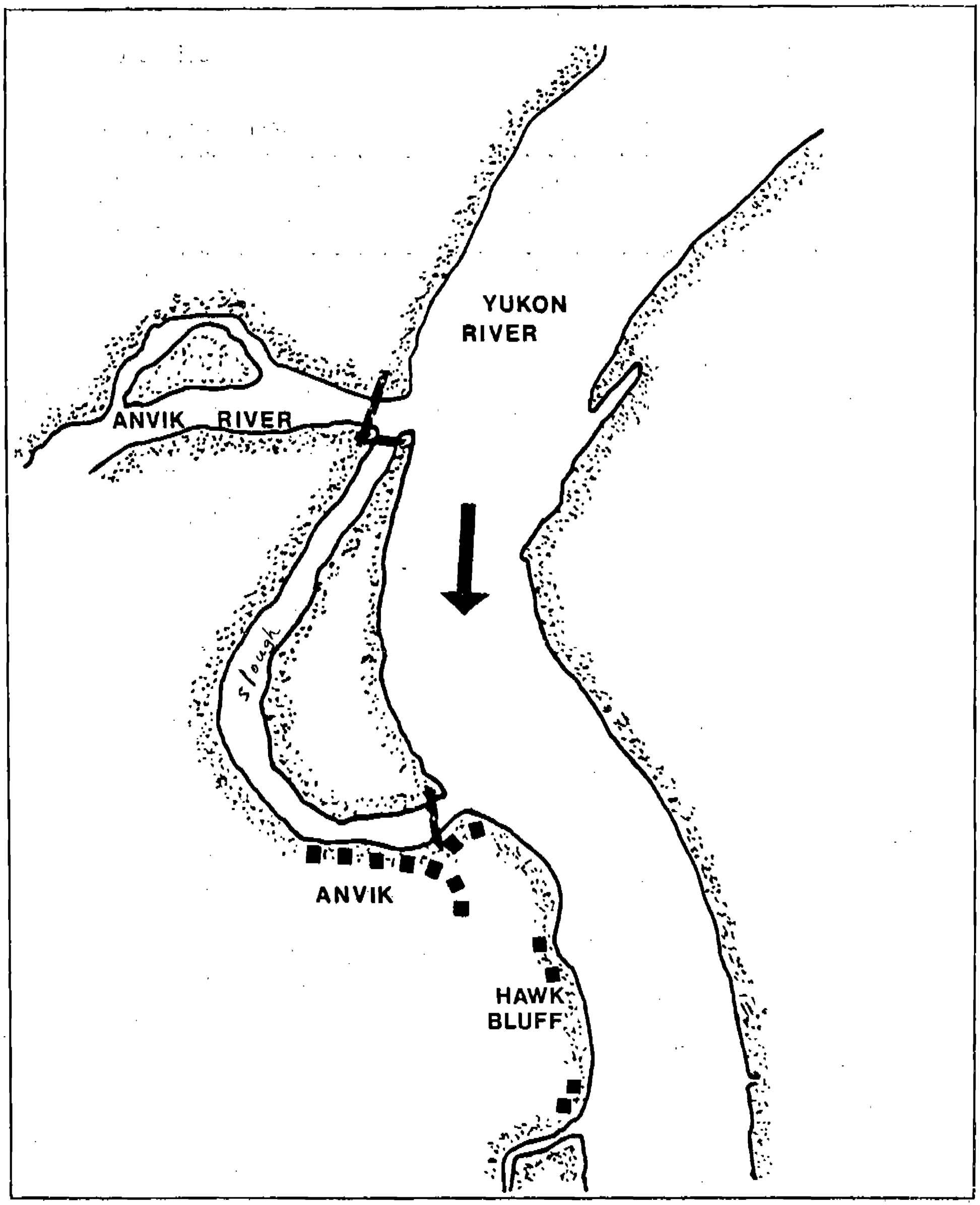


Figure 19. Closed waters of Anvik River mouth. (5AAC 05.350. (CLOSED WATERS.(8) waters of the Anvik River upstream of a line between department regulatory markers placed on each side of the river at its mouth). Markers (6) placed north and south banks of the Anvik River mouth and at upstream and downstream mouths of slough (Old Anvik River Channel).

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, 1983.

Commercial Operator (Processing location/buying station)	Product	District
Sea Roe Fisheries 1959 N.W. Dock Place Seattle, WA 98109 (M/V Lafayette, M/V Pribilof, M/V Northwind and M/V Arctic Fisher)	Sac Roe Herring (Frozen)	Cape Romanzof
Comeau International Sales Ltd. 180 Nickerson St. Suite 209 Seattle, WA 98109 (M/V Clipperton, M/V Donald E and M/V Nicole N)	Sac Roe Herring (Frozen)	Cape Romanzof
Teddy Company Box 2733 Kodiak, AK 99615 (M/V Teddy)	Sac Roe Herring (Frozen)	Cape Romanzof
Yukon Delta Fish Marketing Co-op Inc. Emmonak, Alaska 99581 (Emmonak)	Frozen Salmon Kings Cohos Chums Salmon Roe	1 and 2
Amukon Trading Post Scammon Bay, Alaska 99662 (Black River)	Hard salt Kings Chums	1
Bering Sea Fisheries, Inc. 19849 8th N.W. Seattle, WA 98177 (Lamont Slough)	Frozen salmon and canned (#1 talls) Kings Cohos Chums Salmon roe	1 and 2
Whitney Fidalgo Seafoods (Mokuhona Fisheries) Box C99308 2360 Commodore Way Seattle, WA 98199 (Kwiguk Pass)	Frozen Salmon Kings Chums Salmon roe	1 and 2
Schenk Seafood Sales, Inc. 734-8514 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, 1983, continued.

Commercial Operator (Processing location/buying station)	Product	District
Azachorak Corp., DBA The Village Cannery Mountain Village, Alaska 99632 (Mt. Village)	Frozen salmon Kings Chums Cohos Salmon roe	1 and 2
Boreal Fisheries 24320 - 70th Ave. E. Graham, WA 98338 (Old Andreafsky)	Fresh salmon Kings Chums Salmon roe	1 and 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, Alaska 99607 (St. Marys and Russian Mission)	Fresh salmon Kings Chums Cohos Salmon roe	1, 2 and 3
Fish Products Limited (Chet Clark) Box 19 Aniak, Alaska 99557 (Paimuit/Holy Cross)	Fresh salmon Kings Chums Salmon roe	3
Kotzebue-Norton Sound Development Corp., Inc. 520 Northern Federal Building 386 Wehaska St. Paul, Minnesota 55102 (Unalakleet)	Salmon Roe	4
Nyquist Investments P.O. Box 10497 Fairbanks, AK 99701 (Fairbanks)	Fresh salmon Chums	4 and 5
Yutana Fisheries P.O. Box 82445 College, AK 99708 (Manley)	Fresh salmon Kings Chum Coho	5 and 6

Table 3. Yukon area processors and associated data, 1983, continued.

Commercial Operator (Processing location/buying station)	Product	District
Stevens Fisheries Box 38 Nenana, AK 99760 (Nenana)	Fresh salmon King Chum	6
Lord's Nenana Reefer P.O. Box 374 Nenana, AK 99760 (Nenana)	Fresh salmon King Chum Coho Salmon roe	6
Bastien Bros. Interior Fisheries 200 Williams Rd. Fairbanks, AK 99701 (Fairbanks)	Fresh Salmon King Chum Salmon Roe	4, 5 and 6
Kyokko Suisan Alaska Inc. 424 East Manor Anchorage, AK 99501 (Galena)	Fresh Salmon Chum Salmon Roe	4
Kaltag Fishermen's Association General Delivery Kaltag, AK 99748 (Kaltag)	Salmon Roe	4
Grayling Air Service Grayling, AK 99590 (Grayling)	Salmon Roe	4
Walton Co., Inc. General Delivery Anvik, AK 99558 (Anvik)	Salmon Roe	4

Table 4. Commercial salmon catches by species and district, Yukon area, 1983.

District	Kings	Summer Chums	Fall Chums	Total Chums	Cohos	Total All Species
District 1						
King salmon season (6/9-6/21)	76,280	79,348	0	79,348	1	155,629
Summer chum salmon season (6/23-7/15)	18,778	371,816	0	371,816	34	390,628
Fall chum salmon season (7/18-8/12)	399	0	124,371	124,371	4,560	129,330
Subtotal	95,457	451,164	124,371	575,535	4,595	675,587
District 2						
King salmon season (6/12-6/23)	30,798	42,579	0	42,579	0	73,377
Summer chum salmon season (6/26-7/18)	12,224	205,513	0	205,513	2	217,739
Fall chum salmon season (7/20-8/14)	207	0	85,645	85,645	2,555	88,407
Subtotal	43,229	248,092	85,645	333,737	2,557	379,523
District 3						
King salmon season (6/16-6/24)	3,318	1,484	0	1,484	0	4,802
Summer chum salmon season (7/7-7/16)	788	13,116	0	13,116	0	13,904
Fall chum salmon season (8/1-8/16)	0	0	10,018	10,018	0	10,018
Subtotal	4,106	14,600	10,018	24,618	0	28,724
TOTAL LOWER YUKON	142,792	713,856	220,034	933,890	7,152	1,083,834
District 4 a/	Kings	Summer Chums	Fall Chums	Total Chums	Cohos	Total All Species
King salmon season (6/15-8/12)	601	154,797	0	154,797	0	155,398
Fall chum salmon season (8/14-9/16)	0	0	6,445	6,445	0	6,445
Subtotal	601	154,797	6,445	161,242	0	161,843
District 5 a/						
King salmon season (6/24-7/31)	3,606	1,898	0	1,898	0	5,504
Fall chum salmon season (8/30-9/22)	0	0	43,993	43,993	0	43,993
Subtotal	3,606	1,898	43,993	45,891	0	49,497
District 6 a/						
King salmon season (6/27-8/10)	911	24,327	0	24,327	0	25,238
Fall chum salmon season (9/13-9/20)	0	0	37,190	37,190	6,168	43,358
Subtotal	911	24,327	37,190	61,517	6,168	68,596
TOTAL UPPER YUKON	5,118	181,022	87,628	268,650	6,168	279,936
GRAND TOTAL YUKON AREA	147,910	894,878	307,662	1,202,540	13,320	1,363,770

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

Table 5. Yukon area commercial salmon catches by statistical area, 1983.

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	6,179	11,894	1,733	30,271	0	7	135	16	7,919	42,300	16
12	20,485	30,326	2,959	81,748	2	79	10,300	565	23,523	122,274	567
13	6,686	11,065	1,473	26,911	0	2	2,224	86	8,161	40,200	86
14	12,650	6,034	2,287	58,522	1	24	10,460	462	14,961	75,016	463
15	7,788	1,516	1,589	28,325	26	39	35,824	1,097	9,416	65,665	1,123
16	3,590	896	1,601	22,022	0	106	19,985	56	5,297	42,903	56
17	14,236	13,541	4,824	82,971	6	112	24,816	1,526	19,172	121,328	1,532
18	4,666	4,076	2,312	41,046	0	30	20,627	752	7,008	65,749	752
Subtotal District 1	76,280	79,348	18,778	371,816	35	399	124,371	4,560	95,457	575,535	4,595
334-21	9,807	5,675	2,609	52,065	1	17	17,245	1,548	12,433	74,985	1,549
22	6,709	19,170	3,672	52,651	1	43	4,673	139	10,424	76,494	140
23	4,545	8,039	3,137	48,460	0	97	24,132	715	7,779	80,631	715
24	4,920	5,099	1,313	25,928	0	27	22,072	114	6,260	53,099	114
25	4,817	4,596	1,493	26,409	0	23	17,523	39	6,333	48,528	39
Subtotal District 2	30,798	42,579	12,224	205,513	2	207	85,645	2,555	43,229	333,737	2,557
334-31	1,201	540	134	2,566	0	0	4,607	0	1,335	7,713	-
32	2,117	944	654	10,550	0	0	5,411	0	2,771	16,905	-
Subtotal District 3	3,318	1,484	788	13,116	0	0	10,018	0	4,106	24,618	-
TOTAL LOWER YUKON	110,396	123,411	31,790	509,445	37	606	220,034	7,115	142,792	933,890	7,152

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
334-41 4/	0	133,420	0	0	0	0	0	0	0	133,420	0
42	382	20,814	0	0	0	0	5,272	0	382	26,086	0
43	219	563	0	0	0	0	1,173	0	219	1,736	0
Subtotal District 4	601	154,797	0	0	0	0	6,445	0	601	161,242	0
334-51	0	242	0	0	0	0	3,143	0	0	3,385	0
52	632	306	0	0	0	0	19,771	0	632	20,077	0
53	2,738	1,350	0	0	0	0	17,987	0	2,738	19,337	0
54	236	0	0	0	0	0	3,092	0	236	3,092	0
Subtotal District 5	3,606	1,898	0	0	0	0	43,993	0	3,606	45,891	0
334-61	249	1,923	0	0	0	0	3,526	745	249	5,449	745
62	364	21,664	0	0	0	0	26,105	5,048	364	47,769	5,048
63	298	740	0	0	0	0	7,559	375	298	8,299	375
Subtotal District 6	911	24,327	0	0	0	0	37,190	6,168	911	61,517	6,168
TOTAL UPPER YUKON 5/	5,118	181,022	0	0	0	0	87,628	6,168	5,118	268,650	6,168
GRAND TOTAL YUKON AREA	115,514	304,433	31,790	590,445	37	606	307,662	13,283	147,910	1,202,540	13,320

1/King Salmon Season

District 1 6/9-6/21
District 2 6/12-6/23
District 3 6/16-6/24
District 4 6/15-8/12
District 5 6/24-7/31
District 6 6/27-8/10

2/Summer Chum Salmon Season

District 1 6/23-7/15
District 2 6/26-7/18
District 3 7/7-7/16

3/Fall Chum Salmon Season

District 1 7/18-8/12
District 2 7/20-8/14
District 3 8/1-8/16
District 4 8/14-9/16
District 5 8/30-9/5
District 6 9/13-9/20

4/Season closes 8/1 in 334-41

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, 1983.

District	Residence	Gillnet Permits	Fishwheel Permits
1, 2 and 3	Emmonak	103	
	Mountain Village	94	
	Alakanuk	89	
	Kotlik	76	
	St. Marys	66	
	Pilot Station	48	
	Marshall	47	
	Scammon Bay	39	
	Sheldons Point	29	
	Russian Mission	17	
	Anchorage	17	
	Holy Cross	14	
	Bethel	11	
	Unalakleet	10	
	Stebbins	8	
	Fairbanks	7	
	Shaktoolik	3	
	Kodiak	2	
	Eagle River	2	
	Chuloonawik	1	
	Pitkas Point	1	
	Galena	1	
	Tanana	1	
	Central	1	
	Delta Junction	1	
	Manley Hot Springs	1	
	Hooper Bay	1	
	St. Michael	1	
	Elim	1	
	Nome	1	
	Aniak	1	
	Togiak	1	
	Paxson	1	
	Big Lake	1	
	Wasilla	1	
	Trapper Creek	1	
	Palmer	1	
	Kenai	1	
	Seward	1	
	Ketchikan	1	
	Everett, WA	1	
	Redmond, WA	1	
	Tacoma, WA	1	
TOTAL LOWER YUKON		706 1/	
4	Anvik	5	5
	Grayling	3	8
	Kaltag	4	12
	Nulato	1	19
	Koyukuk	0	3
	Galena	6	25
	Ruby	3	13
	Anchorage	2	3
	Nenana	1	0
	Wasilla	1	0
Subtotal		26	88
5	Tanana	9	21
	Rampart	4	4
	Stevens Village	1	3
	Circle	1	1
	Ft. Yukon	0	1
	Fairbanks	19	15
	Nenana	2	1
	Chugiak	1	0
	College	0	1
	Manley	0	2
	Kennan Wi.	0	1
Subtotal		37	50
6	Manley	1	1
	Minto	0	1
	Nenana	6	21
	Fairbanks	2	11
Subtotal		9	34
TOTAL UPPER YUKON AREA		72	172
GRAND TOTAL YUKON AREA		778	172

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, 1983.

	Period Dates	Hours Fished	No. of Fishermen	Period Catch and Catch Per Unit Effort						Cumulative Catch and Catch Per Unit Effort					
				King	CPUE	Cohos	CPUE	Chums	CPUE	King	CPUE	Cohos	CPUE	Chums	CPUE
1	6/09-6/10	24	380	22,292	2.44	0	0.00	12,591	1.38	22,292	2.44	0	0.00	12,591	1.38
2	6/13-6/14	24	387	12,678	1.36	0	0.00	14,449	1.56	34,970	1.90	0	0.00	27,040	1.47
3	6/16-6/17	24	431	28,669	2.77	0	0.00	26,113	2.52	63,639	2.21	0	0.00	53,153	1.85
4	6/20-6/21	24	404	12,641	1.30	1	0.00	26,195	2.70	76,280	1.98	1	0.00	79,348	2.06
Subtotal a.)		96	444	76,280	1.98	1	0.00	79,348	2.06						
5	6/23-6/24	24	356	4,698	0.55	1	0.00	54,593	6.39	4,698	0.55	2	0.00	133,941	2.85
6	6/27-6/28	24	389	4,821	0.52	8	0.00	76,736	8.22	9,519	0.53	10	0.00	210,677	3.74
7	6/30-7/01	24	391	4,690	0.50	11	0.00	106,034	11.30	14,209	0.52	21	0.00	316,711	4.82
8	7/04-7/05	24	275	1,310	0.20	10	0.00	16,137	2.44	15,519	0.46	31	0.00	332,848	4.60
9	7/07-7/08	24	312	1,256	0.17	1	0.00	28,365	3.79	16,775	0.41	32	0.00	361,213	4.53
10	7/11-7/12	24	338	1,371	0.17	1	0.00	49,022	6.04	18,146	0.37	33	0.00	410,235	4.67
11	7/14-7/15	24	292	632	0.09	2	0.00	40,929	5.84	18,778	0.33	35	0.00	451,164	4.75
Subtotal b.)		264	455	18,778	0.33	35	0.00	451,164	4.75						
12	7/18-7/19	24	263	239	0.04	3	0.00	16,139	2.56	19,017	0.30	38	0.00	16,139	2.56
13	7/28-7/29	24	149	69	0.02	32	0.01	2,971	0.83	19,086	0.29	70	0.00	19,110	1.93
14	8/01-8/02	24	245	16	0.00	212	0.04	18,521	3.15	19,102	0.26	282	0.00	37,631	2.39
15	8/04-8/05	24	237	22	0.00	719	0.13	23,649	4.16	19,124	0.25	1,001	0.01	61,280	2.86
16	8/08-8/09	24	241	18	0.00	1,319	0.23	44,034	7.61	19,142	0.23	2,320	0.02	105,314	3.87
17	8/11-8/12	24	236	35	0.01	2,275	0.40	19,057	3.36	19,177	0.21	4,595	0.04	124,371	3.78
Subtotal c.)		144	312	19,177	0.21	4,595	0.14	124,371	3.78						
Season Total		408	458	95,457		4,595		575,535							

a.) King salmon season (6/09 to 6/21), no mesh size restrictions.
b.) Summer chum salmon season (6/09 to 7/15). Note, the 6 inch maximum mesh size restriction in effect after 6/21, king salmon subtotal represents catch after mesh size change.
c.) Fall chum salmon season, (7/18 to 8/12). Note, C.P.U.E. after 7/19 is calculated assuming 24 hour fishing periods, while the district was actually divided into a Set Net (24 hour) area and a Gillnet (12 hour) area.

Table 8. Commercial salmon catch and effort data by fishing period, set and drift gill nets combined, district 2, Yukon area, 1983.

	Period Dates	Hours Fished	No. of Fishermen	Period Catch and Catch Per Unit Effort						Cumulative Catch and Catch Per Unit Effort					
				King	CPUE	Cohos	CPUE	Chums	CPUE	King	CPUE	Cohos	CPUE	Chums	CPUE
1	6/12-6/13	24	191	5,964	1.30	0	0.00	3,742	0.82	5,964	1.30	0	0.00	3,742	0.82
2	6/15-6/16	24	192	7,319	1.59	0	0.00	6,872	1.49	13,283	1.45	0	0.00	10,614	1.15
3	6/19-6/20	24	198	10,586	2.23	0	0.00	14,334	3.02	23,869	1.71	0	0.00	24,948	1.79
4	6/22-6/23	24	198	6,929	1.46	0	0.00	17,631	3.71	30,798	1.65	0	0.00	42,579	2.28
Subtotal a.)		96	212	30,798	1.65	0	0.00	42,579	2.28						
5	6/26-6/27	24	182	3,607	0.83	0	0.00	35,829	8.20	3,607	0.83	0	0.00	78,408	3.40
6	6/29-6/30	24	187	2,767	0.62	0	0.00	56,995	12.70	6,374	0.72	0	0.00	135,403	4.91
7	7/03-7/04	24	182	3,214	0.74	0	0.00	43,798	10.03	9,588	0.73	0	0.00	179,201	5.61
8	7/06-7/07	24	132	1,438	0.45	0	0.00	20,014	6.32	11,026	0.67	0	0.00	199,215	5.68
9	7/10-7/11	24	141	540	0.16	0	0.00	13,932	4.12	11,566	0.58	0	0.00	213,147	5.54
10	7/13-7/14	24	119	319	0.11	1	0.00	17,108	5.99	11,885	0.53	1	0.00	230,255	5.57
11	7/17-7/18	24	141	339	0.10	1	0.00	17,837	5.27	12,224	0.47	2	0.00	248,092	5.55
Subtotal b.)		264	225	12,224	0.47	2	0.00	248,092	5.55						
12	7/20-7/21	24	128	159	0.05	1	0.00	9,737	3.17	12,383	0.43	3	0.00	9,737	3.17
13	7/31-7/31	12	96	11	0.01	20	0.02	6,602	5.73	12,394	0.41	23	0.00	16,339	3.87
14	8/03-8/03	12	122	14	0.01	79	0.05	10,461	7.15	12,408	0.39	102	0.00	26,800	4.71
15	8/07-8/07	12	119	10	0.01	220	0.15	14,596	10.22	12,418	0.37	322	0.01	41,396	5.82
16	8/10-8/10	12	140	11	0.01	471	0.28	15,676	9.33	12,429	0.36	793	0.01	57,072	6.49
17	8/14-8/14	12	159	2	0.00	1,764	0.92	28,573	14.98	12,431	0.34	2,557	0.05	85,645	8.00
Subtotal c.)		84	224	12,431	0.34	2,557	0.24	85,645	8.00						
Season Total		348	235	43,229		2,557		333,737							

a.) King salmon season (6/12 to 6/23), no mesh size restrictions.
b.) Summer chum salmon season (6/12 to 7/18). Note, the 6 inch maximum mesh size restriction in effect after 6/23, king salmon subtotal represents catch after mesh size change.
c.) Fall chum salmon season, (7/20 to 8/14).

Table 9. Commercial salmon catch and effort data by fishing period, set and drift gill nets combined, district 3, Yukon area, 1983.

	Period Dates	Hours Fished	No. of Fishermen	Period Catch and Catch Per Unit Effort						Cumulative Catch and Catch Per Unit Effort					
				King	CPUE	Cohos	CPUE	Chums	CPUE	King	CPUE	Cohos	CPUE	Chums	CPUE
1	6/16-6/17	24	15	713	1.98	0	0.00	176	0.49	713	1.98	0	0.00	176	0.49
2	6/20-6/21	24	15	1,673	4.65	0	0.00	394	1.09	2,386	3.31	0	0.00	570	0.79
3	6/23-6/24	24	19	932	2.04	0	0.00	914	2.00	3,318	2.82	0	0.00	1,484	1.26
Subtotal a.)		72	19	3,318	2.82	0	0.00	1,484	1.26						
4	7/07-7/09	36	16	530	0.92	0	0.00	9,131	15.85	530	0.92	0	0.00	10,615	6.06
5	7/11-7/13	36	11	209	0.53	0	0.00	3,218	8.13	739	0.76	0	0.00	13,833	6.44
6	7/14-7/16	36	6	49	0.23	0	0.00	767	3.55	788	0.66	0	0.00	14,600	6.18
Subtotal b.)		180	20	788	0.66	0	0.00	14,600	6.18						
7	8/01-8/02	24	1	0	0.00	0	0.00	489	20.38	788	0.65	0	0.00	489	20.38
8	8/04-8/05	24	0	0	0.00	0	0.00	0	0.00	788	0.65	0	0.00	489	20.38
9	8/08-8/09	24	10	0	0.00	0	0.00	1,278	5.33	788	0.54	0	0.00	1,767	6.69
10	8/11-8/12	24	12	0	0.00	0	0.00	1,959	6.80	788	0.45	0	0.00	3,726	6.75
11	8/15-8/16	24	16	0	0.00	0	0.00	6,292	16.39	788	0.37	0	0.00	10,018	10.70
Subtotal c.)		120	18	788	0.37	0	0.00	10,018	10.70						
Season Total		300	26	4,106		0		24,618							

a.) King salmon season (6/16 to 6/24), no mesh size restrictions.
b.) Summer chum salmon season (6/16 to 7/16). Note, the 6 inch maximum mesh size restriction in effect after 6/24, king salmon subtotal represents catch after mesh size change.
c.) Fall chum salmon season, (8/01 to 8/16).

19177
12431

Table 10. Commercial salmon catch and effort by fishing period, district 4, Yukon area, set gill net and fishwheel catches combined, 1983.

Period Dates	No. of Fishermen	King	Chum c/
6/15-6/17	2	8	96
6/19-6/21	12	12	1,999
6/22-6/24	26	24	6,682
6/26-6/28	51	54	18,854
6/29-7/1	63	12	25,229
7/3-7/5	63	93	18,687
7/6-7/8	64	100	19,003
7/10-7/12	62	108	24,202
7/13-7/15	60	143	20,115
7/17-7/19	50	29	10,452
7/20-7/22	44	14	5,569
7/24-7/26	25	4	2,375
7/27-7/29	16	0	908
8/7-8/9	1	0	145
8/10-8/12	1	0	481
subtotal a/	77	601	154,797
8/14-8/16	8	0	582
8/17-8/19	7	0	612
8/21-8/23	1	0	517
8/24-8/26	4	0	1,525
8/28-8/30	10	0	1,618
8/31-9/2	5	0	773
9/7-9/9	1	0	189
9/11-9/13	2	0	486
9/14-9/16	1	0	163
subtotal b/	13	0	6,445
Total	79	601	161,242

a/ King salmon season 6/15-8/12.
b/ Fall season 8/14-9/16.
c/ Includes "equivalent numbers" of salmon converted from roe sales.

Table 11. Commercial salmon catch and effort by fishing period, district 5, Yukon area, set gill net and fishwheel catches combined, 1983.

Period Dates	No. of Fishermen	Kings	Chums c/
6/24-6/26	4	37	0
6/28-6/30	5	69	0
7/01-7/03	17	496	1
7/05-7/07	12	452	44
7/08-7/10	14	378	209
7/12-7/14	13	673	0
7/15-7/17	18	524	618
7/19-7/21	11	344	0
7/22-7/24	16	367	954
7/26-7/28	8	216	72
7/29-7/31 a/	1	50	0
subtotal	34	3,606	1,898
8/30-9/01	24	0	15,150
9/02-9/04	24	0	26,291
9/11-9/17 b/	1	0	1,451
9/18-9/22 b/	1	0	1,101
subtotal	29	0	43,993
Total	47	3,606	45,891

a/ King salmon season in subdistricts 5-A, 5-B and 5-C closed on 7/31.
b/ Season in subdistricts 5-A, 5-B and 5-C closed on 9/5; subdistict 5-D closed by regulation on 9/30.
c/ Includes "equivalent number" of salmon converted from roe sales.

Table 12. Commercial salmon catch and effort by fishing period, district 6, Yukon area set gill net and fishwheel catches combined, 1983.

Period Dates	No. of Fishermen	Kings	Chums c/	Coho
6/27-6/29	3	8	0	0
7/01-7/03	6	47	0	0
7/04-7/06	7	122	34	0
7/08-7/10	5	83	19	0
7/11-7/13	6	163	52	0
7/15-7/17	8	182	882	0
7/18-7/20	12	184	1,991	0
7/22-7/24	14	56	5,601	0
7/25-7/27	15	45	5,598	0
7/29-7/31	18	17	5,667	0
8/20-8/04	10	0	1,624	0
8/05-8/07	11	4	1,607	0
8/08-8/10	6	0	1,252	0
subtotal a/	25	911	24,327	0
9/13-9/14	20	0	15,144	2,167
9/16-9/17	22	0	11,501	2,078
9/19-9/20	20	0	10,545	1,923
subtotal b/	23	0	37,190	6,168
Total	31	911	61,517	6,168

a/ King salmon season 6/27-8/10.
b/ Fall season 9/13-9/20.
c/ Includes "equivalent numbers" of salmon converted from roe sales.

Table 13. Upper Yukon area commercial salmon catch and roe production, 1983. 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	58	0	3,407	130,013	133,420	0	0	0	0
4-B	21	382	3,265	17,549	20,814	3,681	1,591	5,272	0
4-C	4	219	0	563	563	801	372	1,173	0
Subtotal District 4	79	601	6,672	148,125	154,797	4,482	1,963	6,445	0
5-A	4	0	0	242	242	3,143	0	3,143	0
5-B	16	632	37	269	306	19,771	0	19,771	0
5-C	24	2,738	5	1,345	1,350	17,987	0	17,987	0
5-D	3	236	0	0	0	3,092	0	3,092	0
Subtotal District 5	47	3,606	42	1,856	1,898	43,993	0	43,993	0
6-A	5	249	1,923	0	1,923	3,526	0	3,526	745
6-B	18	364	21,646	18	21,664	23,096	3,009	26,105	5,048
6-C	7	298	740	0	740	7,467	92	7,559	375
Subtotal District 6	30	911	24,309	18	24,327	34,089	3,101	37,190	6,168
Total	156	5,118	31,023	149,999	181,022	82,564	5,064	87,628	6,168

a/ All figures in pounds of unprocessed product.
b/ May include small amounts of king salmon roe.
c/ Includes some coho salmon roe.

Table 14. Yukon River subsistence salmon catch data, 1983.[a/]

Village	Survey date	Fishing families	Dogs[b/]	Kings	Summer[c/] chums	Fall chums	Cohos	Subtotal chums & cohos	Total salmon	Whitefish/ sheefish	8" nets	6" nets	Fishwheels
Sheldons Pt.	8/24	17	38	1,021	1,690	233	170	2,093	3,114	24/244			
Alakanuk	8/27	69	114	1,582	9,347	903	438	10,688	12,270	221/164			
Emmonak	8/27	87	80	2,436	8,401	2,715	1,290	12,406	14,842	230/56			
Kotlik	8/28	53	168	1,224	5,241	4,387	1,692	11,320	12,544	198/188			
Subtotal		226	400	6,263	24,679	8,238	3,590	36,507	42,770	673/652			
Mt. Village	9/4	73	141	1,875	10,183	4,065	2,500	16,748	18,623	298/272			
Pitkas Pt.	9/2	14	23	254	982	342	481	1,805	2,059	0/62			
St. Marys	9/3	56	166	2,178	7,587	2,796	1,048	11,431	13,609	249/771			
Pilot Station	9/5	50	120	2,703	4,683	1,302	638	6,623	9,326	698/419			
Marshall	9/6	46	201	2,055	3,961	1,836	1,405	7,202	9,257	459/326			
Subtotal		239	651	9,065	27,396	10,341	6,072	43,809	52,874	1,704/1,850			
Russian Mission	9/7	26	101	2,634	1,576	773	540	2,889	5,523	23/81			
Holy Cross	d/	22	71	2,276	3,033	2,090	377	5,500	7,776	60/39			
Subtotal		48	172	4,910	4,609	2,863	917	8,389	13,299	83/120			
Lower Yukon Totals		513	1,223	20,238	56,684	21,442	10,579	88,705	108,943	2,460/2,622			
Anvik	d/	16	112	744	20,592	902	250	21,744	22,488	1,578/668	16	14	6
Grayling	d/	23	169	951	22,958	3,847	1,275	28,080	29,031	680/454	17	23	8
Kaltag	Jul, Oct	15	*	652	27,674	2,833	0	30,507	31,159	*	*	*	14
Nulato	Jul, Oct	17	*	1,135	11,130	3,159	0	14,289	15,424	*	*	*	13
Koyukuk	d/	12	86	966	14,440	1,120	40	15,600	16,566	640/100	6	6	4
Galena	11/30	21	241	1,477	5,789	4,259	759	10,807	12,284	4,179/152	12	7	11
Ruby	11/29	18	295	2,346	8,804	12,319	1,122	22,245	24,591	2,754/118	1	5	12
Subtotal		122	903	8,271	111,387	28,439	3,446	143,272	151,543	9,831/1,492	52	55	68
Tanana	10/27-28	33	652	5,547	5,552	41,630	2,312	49,494	55,041	6,310/896	32	6	30
Rampart		12	153	1,070	3,698	5,627	47	9,372	10,442	841/796	11	7	8
Fbks. Fishcamp[e/]	d/	41[f/]	*	2,672	2,194	12,865	78	15,137	17,809	3,151/370	*	*	9
Stevens Village	d/	22	112	2,531	5,051	3,502	0	8,553	11,084	375/82	14	9	3
Beaver	d/	6	18	220	100	6,004	0	6,104	6,324	0/10	2	0	2
Ft. Yukon	Oct	24	169	1,887	7,142	3,967	11	11,120	13,007	2,097/150	0	16	12
Circle	d/	11	33	648	73	3,687	0	3,762	4,410	28/15	10	12	1
Eagle	10/17-18	46	245	2,183	133	20,021	0	20,154	22,337	79/10	36	26	5
Subtotal		195	1,382	16,758	23,943	97,303	2,448	123,696	140,454	12,881/1,729	105	76	70
Main River Totals		830	3,508	45,267	192,014	147,186	16,473	355,673	400,940	25,172/5,843	157	131	138

Table 14. Yukon River subsistence salmon catch data, 1983.[a] (cont.)

Village	Survey date	Fishing families	Dogs[b]	Kings	Summer[c] chums	Fall chums	Cohos	Subtotal chums & cohos	Total salmon	Whitefish/ sheefish	8" nets	6" nets	Fishwheels
Huslia		19	149	459	18,588	3,528	475	22,591	23,050	3,483/450	13	38	0
Hughes		12	60	318	1,905	327	0	2,232	2,550	780/129	4	12	0
Alatna		1	5	6	325	86	25	436	442	65/91	0	2	0
Allakaket		20	137	700	3,840	1,829	0	5,669	6,369	1,149/698	11	24	0
Koyukuk River Totals		52	351	1,483	24,658	5,770	500	30,928	32,411	5,477/1,368	28	76	0
Venetie		8	72	22	0	7,800	0	7,800	7,822	0/0	0	10	0
Chandalar River Totals		8	72	22	0	7,800	0	7,800	7,822	0/0	0	10	0
Manley		15	260	990	7,245	11,400	1,350	19,995	20,985	600/72	12	9	3
Minto		9	141	275	7,414	6,489	0	13,903	14,178	90/32	3	18	4
Nenana		26	261	966	6,779	11,685	4,352	22,806	23,772	1,504/74	22	30	17
Fairbanks[g]		147[h]	*	475	2,276	2,600	1,230	6,106	6,581	30/7	*	*	8
Tanana River Totals		197	602	2,706	23,714	32,174	~~6,922~~ 6932	62,810	65,516	2,224/185	37	57	32
Subtotals Upper Yukon (Alaska)		574	3,370	29,240	183,702	171,488	~~13,316~~ 13326	368,506	397,746	30,413/4,774	222	274	170
Totals Yukon River Drainage (Alaska)		1,087	4,593	49,478	240,386	192,930	23,895 23,905	457,211	506,689	32,873/7,396	222	274	170
Yukon Territory[i] Dawson[j]				5,400		3,100		5,400	8,500				
Grand Total Yukon River Drainage				54,878	240,386	196,030	23,895 23905	460,311	515,189				

* Information not sought.
a Catch data expanded.
b Data from fishing families only.
c Includes small numbers of pinks upstream to Kaltag.
e Data from fishermen who fished between Hess Creek and Dall River.
d ~~f~~ Survey conducted by mail, November-January.
f 68 permits issued: 17 permittees did not fish, 5 did not report; catches by Stevens Village residents shown under Stevens Village.
g Data from fishermen who fished on the Tanana River between Wood River and Salcha River.
h 259 permits issued; 88 permittees did not fish or fished unsuccessfully, and 24 did not report.
i Data from Environment Canada Fisheries Service (Whitehorse).
j Includes catches from Mayo, Pelly, Carmacks, Dawson, Ross River, Teslin, Burwash Landing, Steward River, Pelly River, and Lake Laberge.

Table 15. Aerial survey salmon escapement estimates, Yukon River drainage, 1983.[a]

Stream (drainage)	Date	Survey rating	Kings	Cohos	Summer chums	Fall chums
Andreafsky River						
East Fork sonar count[b]	6/15-7/20		2,720	-	110,608	-
Anvik River	7/23	poor	653	-	-	-
Sonar count[b]	6/21-7/23		-	-	362,912	-
Subtotal			653	-	362,912	-
Nulato River						
Below forks	7/14, 7/29	fair-good	1	-	2,363	-
South fork	7/14, 7/29	fair-good	480	-	1,268	-
North fork	7/14, 7/29	fair-good	525	-	17,199	-
Subtotal			1,006	-	20,830	-
Koyukuk River Drainage						
Gisasa River	7/14, 7/29	poor-fair	572	-	2,356	-
Dakli River	7/13	good	-	-	4,313	-
Wheeler Creek	7/13	good	-	-	8,120	-
Subtotal			-	-	12,433	-
Hogatza River						
Caribou Creek	7/13	good	-	-	14,090	-
Clear Creek	7/13	good	-	-	14,051	-
Subtotal			-	-	28,141	-
Indian River	7/13	good	93	-	836	-
Henshaw Creek	7/28	good	283	-	1,484	-
South Fork Koyukuk	7/28	good	307	-	726	-
Jim River	7/28	good	282	-	431	-
Prospect Creek	7/28	good	1	-	-	-
Subtotal			590	-	1,157	-
Total Koyukuk River Drainage			1,538	-	46,407	-
Melozitna River Drainage						
Melozi Hot Springs Creek	7/29	poor-fair	11	-	(776)	-
Sonar count[b,c]	6/29-7/23		-	-	20,126	-
Subtotal			11	-	20,126	-
Tozitna River	7/29, 9/20	good	388	5[d,e]	1,604	9[d,e]
Tanana River Drainage						
Kantishna River Drainage						
Toklat River						
Barton Creek	7/21	fair	561	-	-	-
Geiger Creek[f]	10/18	good	-	42	-	4,219
Sushana River[f]	10/18	good	-	3	-	3,442
Toklat-Roadhouse[f]	10/18	good	-	-	-	7,444
Subtotal			561	45	-	15,105
Clear Creek	8/2	fair	57	-	-	-
Bearpaw River	7/21, 10/17	poor	24	-	-	287
Moose Creek	10/17		-	-	-	218
Subtotal			24	-	-	505

Table 15. (continued) Aerial survey salmon escapement estimates, Yukon River drainage, 1983. a/

Stream (drainage)	Date	Survey rating	Kings	Cohos	Summer chums	Fall chums
Nenana River Drainage						
Seventeenmile Slough	10/17	good	-	103	-	2,169
Julius Creek						
Wood Creek[g]	9/12-10/30		-	1,044	-	327
Lost Slough	10/17	good	-	766	-	69
Subtotal			-	1,913	-	665
Chatanika River	7/26, 8/10	poor	27	-	12	-
Chena River	7/22, 7/29	good	2,560	-	-	-
	8/10	good	-	-	1,097	-
Subtotal			2,560	-	1,097	
Salcha River	7/26	fair	1,961	-	716	-
Upper Tanana River Drainage						
Unnamed slough near Eielson	10/27	fair	-	-	-	313
Richardson Clearwater Ri	10/27	fair	-	88	-	8
Andersen Slough	10/27	fair	-	-	-	551
Delta River	11/1	fair	-	-	-	7,230[f]
Goodpaster River	7/29	good	150	-	60	-
South Bank Tanana	10/27	poor	-	-	-	1,350
Bluff Cabin Slough	11/1	fair	-	-	-	12,715[f]
Clearwater Lk Outlet Sl	10/27	poor-fair	-	-	-	2,380
Clearwater Lk Outlet	10/27	fair	-	253	-	-
Onemile Slough	10/27	poor	-	5	-	1,115
Delta Clearwater Ri[d,e,h]	10/25		-	8,019	-	-
Subtotal			150	8,365	60	25,662
TOTAL TANANA RIVER DRAINAGE			5,340	10,323	1,885	41,937
Hodzana River[e,i]	7/29		-	-	31	-
Porcupine River Drainage						
Sheenjek River	9/21	fair	-	-	-	(22,230)
Sonar Count[b]	8/29-9/24		-	-	-	45,733
Fishing Branch River[j]	10/7	good	-	-	-	10,000
Total Porcupine River			-	-	-	55,733
Yukon Territory Streams						
Nisling River[j]	8/30	poor	2	-	-	-
Kluane River[e,j]	10/18-21		-	-	-	8,578
Tincup Creek	8/17	fair	54	-	-	-
Mainstem Yukon[e,j,k]	8/10-25; 10/9-24		232	-	-	7,560
Tatchun Creek[f,j]	8/25		264	-	-	-
Little Salmon River	8/14	poor	101	-	-	-
Big Salmon River[f,j]	8/18-26		640	-	-	-
Lower Teslin River[j]	8/26	poor	25	-	-	-
Nisutlin River	8/15	fair	1,015	-	-	-
Wolf River	8/15	fair	252	-	-	-
Fish Lk Outlet[j]	8/24	good	25	-	-	-
Morley River	8/15	poor	90	-	-	-
Swift River	8/16	fair	173	-	-	-
Jennings River	8/16	fair	37	-	-	-
Upper Teslin River	8/16	poor	125	-	-	-
Gladys River[j]	8/27	fair	2	-	-	-
Takhini River[j]	9/1		105	-	-	-

Table 15. (continued) Aerial survey salmon escapement estimates, Yukon River drainage. 1983.[a]

Stream (drainage)	Date	Survey rating	Kings	Cohos	Summer chums	Fall chums
Whitehorse Fishway	8/1-31		905	-	-	-
Mitchie Creek[f]	9/18		40	-	-	-
Pelly River Drainage						
Ross River[j]	8/29	poor-fair	31	-	-	-
Lewis Lk Outlet[j]	8/20	poor-fair	12	-	-	-
Pelly Lks Outlet[j]	8/20	fair	5	-	-	-
Riddell River[j]	8/20	fair-good	3	-	-	-
Earn River[j]	8/21	fair	23	-	-	-
McQuesten River[j]	8/6	fair-good	8	-	-	-
Subtotal			4,169	-	-	16,138
YUKON RIVER DRAINAGE TOTALS			15,825	10,328	564,403	113,817

a Only peak estimates listed, carcasses included (data in parentheses not included in subtotals).
b Side-scan sonar estimates.
c Sonar count includes a few king salmon.
d Surveyed by Sport Fish Division.
e Boat survey.
f Foot survey.
g FRED weir count. All chums sacrificed, and 205 coho artificially spawned for Clear Hatchery.
h Population estimate.
i Surveyed by U.S. Fish and Wildlife Service.
j Survey by Environment Canada Fisheries Service (Yukon Territory).
k Mainstem Yukon River from Yukon Crossing to Fort Selkirk.

Appendix Table 1. Yukon River drainage commercial and subsistence salmon catches, 1903-1983.

	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/	1,871	2,228	4,099	77,224	36,641	519,827	633,793
1974	98,089	16,777	879,668	994,534	2,214	3,010	5,224	100,303	16,777	882,678	999,758
1975	63,838	2,546	985,304	1,051,796 5/	3,000	2,500	5,500	66,838	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	4,620	3,990	8,610	101,377	38,863	796,851	937,091
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	11,158	19,798	132,284	37,176	696,769	866,229
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

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	1,674	8,000	9,647	21,868	151,008	172,876
1973	24,317	214,682	238,999	2,116	6,938	9,054	26,433	221,620	248,053
1974	19,964	321,587	341,551	3,379	8,636	12,015	23,343	330,223	353,566
1975	13,045	298,479	311,524	3,000	18,100	21,100	15,645	311,979	327,624
1976	17,806	259,199	277,005	1,523	3,425	4,948	19,329	262,624	281,953
1977	17,581	258,606	276,187	2,807	8,521	11,328	20,388	267,127	287,515
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	15,500	14,500	30,000	58,224	479,713	537,937
1981	29,690	418,037	447,727	8,844	7,329	16,173	38,534	425,366	463,900
1982	28,158	429,760	457,918	8,227	3,459	11,686	36,385	433,219	469,604
1983	49,478	457,211	506,689	5,400	3,100	8,500	54,878	460,311	515,189

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	3,426	10,532	13,958	116,524	464,617	581,141
1973	99,670	769,023	868,693	3,987	9,166	13,153	103,657	778,189	881,846
1974	118,053	1,218,032	1,336,085	5,593	11,646	17,239	123,646	1,229,678	1,353,324
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	5,000	4,425	9,425	111,582	1,026,133	1,137,715
1977	114,338	1,090,330	1,204,668	7,427	12,511	19,938	121,765	1,102,841	1,224,606
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	25,000	23,500	48,500	221,709	1,719,497	1,941,206
1981	187,708	1,915,106	2,102,814	17,437	22,589	40,026	205,145	1,937,695	2,142,840
1982	151,802	1,152,547	1,304,349	16,867	14,617	31,484	168,669	1,167,164	1,335,833
1983	197,388	1,518,008	1,715,396	18,427	29,090	47,517	215,815	1,547,098	1,762,913

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, 1961-1983.

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

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

Appendix Table 2. Commercial salmon catches by species and districts, Yukon area, 1961-1983, (continued)

CHUM SALMON

Year	Lower Yukon Area Dist. 1	Dist. 2	Dist. 3	Subtotals	Upper Yukon Area 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	317,663	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

TOTAL SALMON

Year	Lower Yukon Area Dist. 1	Dist. 2	Dist. 3	Subtotals	Upper Yukon Area 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

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, 1976-1983.

	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	70	777
1983	706	72	778

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

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 tranfers.

Appendix Table 4. Actual number of commercial salmon fishing gear operators (vessels) by district, Yukon area, 1971-1983. 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

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

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

1/ Actual number of gear operators which made at least one delivery. Data presentsented 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 1971-1983.

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

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

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

Appendix Table 6. Commercial king salmon catches by statistical area, upper Yukon area, 1974-1983.

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

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

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

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

Appendix Table 7. Compartive commercial catches of king and summer chum salmon by mesh size, lower Yukon area, 1961-1983.

	No Mesh Size Restrictions 1/		5-1/2 - 6 inch Mesh Size 2/	
	Districts 1, 2 and 3		Districts 1, 2 and 3	
	Kings	Summer Chums	Kings	Summer Chums
1961	117,860	-	-	-
1962	93,983	-	-	-
1963	116,191	-	-	-
1964	92,506	-	-	-
1965	116,235	-	-	-
1966	91,322	-	-	-
1967	128,242	10,976	-	-
1968	105,385	14,470	-	-
1969	88,964	41,418	97	19,151
1970	77,315	104,705	119	32,663
1971	107,113	42,239	1,176	57,851
1972	89,217	79,225	2,254	56,443
(Avg. 1961-72)	(102,028)	(48,839)	(912)	(41,527)
1973 3/	68,473	89,304	5,168	196,540
1974	90,334	351,363	1,631	227,507
1975	54,791	148,919	4,247	376,557
1976	75,758	275,986	7,563	123,457
1977	85,011	161,368	4,907	227,038
1978	84,727	278,259	8,010	374,741
1979	98,210	137,083	24,153	477,518
1980	124,808	96,042	21,164	654,281
1981	128,918	165,017	19,281	748,709
1982	109,007	229,192	7,184	217,555
1983	110,396	123,411	31,790	590,445
(Avg. 1973-83)	(93,676)	(186,904)	(12,282)	(383,122)

1/ Primarily 8-8-1/2 inch mesh size used during early June - early July.
2/ Catch through July 15-19, 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. Comparative commercial king salmon catch data, Disticts 1 and 2, 1961-1983. 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

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)

1/ King salmon season (June & early July).

Appendix Table 9. Comparative king salmon commercial catch date by fishing period, king salmon season, Distict 1, Yukon area, 1972-1983.

	Cumulative catch 1/ (Cumulative catch /boat hour) 2/											
Date	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
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)		
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)	
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)							
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)	
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, 1974-1983.

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 (3,000)	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)

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)

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, 1971-1983.

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

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

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

Appendix Table 12. Commercial chum salmon catches by statistical area, upper Yukon area, 1974-1983. 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)

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)

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)

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. Comparative summer and fall chum salmon commercial catches, Yukon area, 1961-1983.

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	774,879

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

Apendix Table 14. Comparative commercial summer chum salmon catch data, districts 1 and 2, Yukon area, 1967-1983.

	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)

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

Appendix Table 15. Comparative commercial coho and chum salmon catch data for the fall season, district 1, Yukon area, 1961-1983.

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)

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. Comparative fall chum salmon commercial catch data by date, fall season, district 1, Yukon area, 1969-1983.

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

Appendix Table 17. Commercial salmon pack by species and type of processing, Yukon area, 1960-1983. 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

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, 1978-1983. 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)

	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)

	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)

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 fishery, 1961-1983. 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

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.

Appendix Table 20. Estimated average prices paid to fishermen, Yukon area, 1961-1983.

	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

	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

a/ Data not available.

Appendix Table 21. Average weight of salmon, commercial catch, Yukon area, area, 1964-1983.

	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

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

Appendix Table 22. Yukon River comparative subsistence catch and effort data, 1961-1983 (numbers per fishing family are in parentheses).

Year	Total Catch		Equivalent Catch 1/		Mean Equivalent Catch Per Family 1/	
	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

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

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. Comparative Yukon River king salmon subsistence catches by village, 1972-1983. 1/

Village	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Mouth to Anuk River												
Sheldons Point	462	165	283	108	122	302	546	91	427	163	79	1,021
Alakanuk	647	461	569	130	363	213	1,125	893	1,595	423	336	1,582
Emmonak-Kwiguk	300	1,071	208	55	398	62	2,738	1,362	1,175	1,021	1,328	2,436
Aproka Pass & vicinity	37	106	5	-	-	-	64	-	-	-	-	-
Kotlik-Hamilton	342	1,008	394	204	472	173	773	533	472	675	568	1,224
Subtotal	1,788	2,811	1,459	497	1,355	750	5,246	2,879	3,669	2,282	2,311	6,263
Anuk River to Owl Slough												
Mountain Village	932	912	460	394	397	172	817	1,025	843	811	218	1,875
Pitkas Point-St. Marys	1,517	1,270	878	438	1,273	576	1,314	1,718	1,297	1,380	985	2,432
Pilot Station	1,558	1,508	517	107	502	556	1,027	804	433	399	428	2,703
Marshall	713	1,163	1,068	436	694	364	806	721	1,101	990	478	2,055
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
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
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
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
Bonasila R. to Illinois Cr.	9842	12,759	7868	6762	7041	4,977	13112	19410	12126	9,863	7779	20,238
Anvik	72	67	111	83	84	67	180	261	161	191	354	744
Grayling	185	516	547	100	117 2/	149	292	391	3,664	222	294	951
Kaltag	83	148	616	192	57	216	127	435	694	179	344	652
Nulato	364	307	1,161	1,119	968	1,531	1,354	1,245	2,297	1,117	811	1,135
Koyukuk	417	564	604	50	437	752	518	495	699	541	493	966
Galena	608	510	706	1,294	435	1,155	945	1,591	1,205	570	735	1,477
Ruby-Kokrines	2,076	2,418	2,899	912	1,959	735	1,539	2,221	1,736	964	1,168	2,346
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
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
Rampart	1,457	2,614	452	517	581	1,194	987	1,820	1,169	488	887	1,070
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/
Beaver	241	358	34	168	188	299	558	394	506	552	250	220
Fort Yukon	520	536	1,030	215	1,158	1,061	2,642	1,922	2,527	2,794	1,894	1,887
Circle	345	225	406	16	528	304	212	1,175	769	728	969	648
Eagle	353	421	66	20	633	1,171	963	2,888	2,880	3,782	2,864	2,183
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

Appendix Table 23. (Continued)

Village	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
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
Hughes	27	32	10	25	155	72	216	180	226	402	479	318
Alatna	3	1	17	0	0	1	7	2	20	0	6	6
Allakaket	25	73	138	151	231	172	239	236	197	185	268	700
Subtotal	56	141	234	199	407	295	594	564	597	648	878	1,483
Tanana River												
Minto-Manley Hot Spr.	99	58	176	213	326	752	298	269	764	711	797	1,265
Nenana	887	683	1,431	533	864	742	807	800	771	974	1,195	966
Fairbanks	190	26	38	32	31	67	126	264	291	400	451	475
Subtotal	1,176	767	1,645	778	1,221	1,561	1,231	1,333	1,826	2,085	2,443	2,706
Chandalar River												
Venetie	-	-	-	-	-	-	9	-	160	52	20	22
Subtotal	-	-	-	-	-	-	9	-	160	52	20	22
Porcupine River												
Canyon Village	-	-	-	-	-	-	-	-	-	-	-	-
Chalkysi & Kevinjik R. Fish Camp	-	-	-	-	-	-	-	-	-	-	-	-
Old Crow, Y.T.	-	20	100	100	23	29	-	-	2,000	100	-	-
Subtotal	-	20	100	100	23	29	-	-	2,000	100	-	
Yukon Terr.Villages 5/												
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	1,647	2,096	3,279	2,900 6/	1,500	2,778	2,906	4,200	13,500	8,844	8,227	5,400
Total	21,905	26,459	23,137	15,866	19,329	20,374	30,297	35,205	58,224	38,634	36,385	54,878

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 sumation of village catches may not equal subtotal.
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. Comparative Yukon River chum salmon subsistence catches by village, 1972-1983. 1/

Village	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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/	23,6905/
Beaver	3,157	1,372	1,583	1,270	517	716	1,717	1,826	458	881	2,412	6,104
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
Circle	752	592	1,266	1,283	153	203	859	3,541	1,785	7,228	290	3,762
Eagle	587	2,109	66	1,825	1,141	7,432	5,027	27,048	16,773	31,105	15,142	20,154
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
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
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
Alatna	490	27	3,510	950	650	210	681	104	370	304	438	436
Allakaket	867	2,465	7,034	5,609	4,215	3,686	9,833	8,505	12,204	8,964	8,289	5,669
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

Appendix Table 24. (Continued)

Village	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
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
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
Fairbanks	8,608	1,657	2,958	1,615	2,826	725	3,917	6,043	7,849	9,009	7,229	6,106
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
Chandalar River												
Venetie	50	410	-	2,401	508	1,660	2,606	3,943	2,730	6,400	850	7,800
Subtotal	50	410	-	2,401	508	1,660	2,606	3,943	2,730	6,400	850	7,800
Porcupine River												
Canyon Village	-	-	-	-	-	-	-	-	-	-	-	-
Chalkytsik	-	-	-	-	-	600	-	-	-	-	-	-
Old Crow, Y.T.	5,000	5,827	7,000	11,600	3,125	5,592	5,000	11,000	7,500	3,000	-	-
Subtotal	5,000	5,827	7,000	11,600	3,125	6,192	5,000	11,000	7,500	3,000	-	-
Yukon Terr. Villages 4/												
Dawson	-	-	-	-	-	-	728	2,000	7,000	1,792	-	-
Stewart River	-	-	-	-	-	-	-	-	-	-	-	-
Mayo-Stewart Crossing	-	-	-	-	-	-	-	-	-	-	-	-
Fraser Falls	-	-	-	-	-	-	-	-	-	-	-	-
Burwash-Kluane R.	-	199	32	-	-	-	-	-	-	-	500	-
Fort Selkirk	2,000	-	-	-	-	-	-	-	-	-	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	3,000	1,111	1,636	6,500 6/	300	2,929	1,210	2,000	7,000	3,829	3,459	3,100 6/
Total	151,008	219,275	323,834	300,379	262,622	267,127	299,791	452,328	479,713	425,366	433,219	460,311

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.
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, 1973-1983.

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

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

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	-

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	-

1/ Information not available.

Appendix
Table 26. Comparative Yukon River king salmon aerial escapement estimates, 1972-1983.[a]

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Andreafsky River												
East Fork	798	825		993	818	2,008	2,487	1,180	958[b]	2,146[f]	1,274	2,720[g]
West Fork	582[b]	788	285	301	643	1,499	1,062	1,134	1,500	231[b]	851	-
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]
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	236	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]
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
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
Tatchun Creek	97	99	192	175	52	150	200	150	222	133[e]	73	264[e]
Little Salmon River	126	27[b]				171	330	489[b]	286[b]	670	403	101[b]
Big Salmon River												
Big Salmon Lake-Scurvey Cr	112	23[b]		153				555	470	930	174	189
Scurvey Cr - vicinity Souch Cr	448	52[b]						77	1,098	1,481	583	351
Total	560	75[b]	70[b]	153[b]	86[b]	316[b]	524	632	1,568	2,411	757	540
Nisutlin River Drainage												
Sidney Cr - 100 Mile Cr	237	36[b]		239	102	77	375	713	975	1,626	578	701
McNeil Ri - Nisutlin Lake	46	6[b]		84	50		109		400	168	97	107
Wolf Ri (Wolf Lake-Red Ri)	13			40[b]				183	477	395	104	95
Total	296	42[b]	150[b]	363[b]	152[b]	77[b]	484[b]	896[b]	1,852	2,189	779	903
Whitehorse Dam (Fishway Counts)	391	224	273	313	121	277	725	1,184	1,383	1,539	473	905

a Data obtained from aerial surveys unless otherwise indicated. Only peak estimates 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.

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), 1970-1983.

	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

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, 1974-1983.[a]

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
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]
West Fork	33,578	235,954	118,420	63,120	57,321	43,391	115,457		7,267	--
Total	--	459,439	223,767	175,842	184,371	109,862	152,280	--	--	--
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	262,754	251,339	280,537[c]	492,676[c]	1,479,582[c]	444,581[c]	362,912[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
Salcha River	8,040[e]	7,573	6,474	677	5,405	3,060	4,140	8,500	3,756	716

[a] Only peak estimates are presented.
[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.

Appendix Table 29. Comparative Yukon River drainage fall chum aerial escapement estimates, 1973-1983. [a]

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
TANANA RIVER DRAINAGE											
Bear Paw River	1,530	2,996	1,657	--	--	--	--	--	--	--	505[i]
Toklat River drainage											
Upper Toklat River[b]	6,957	34,310	42,418[d]	35,190	21,800[d]	35,000	96,550[d]	23,054	13,907	3,309[e]	15,105[e]
Lower Toklat River	--	--	35,867[d]	2,000[c,d]	--	--	64,540	2,140	--	--	--
Subtotal Toklat R. drainage	6,957[d]	34,310[d]	78,285[d]	37,190	21,800[d]	35,000[d]	161,090	25,194	13,907[d]	3,309[d]	15,105[d]
Upper Tanana River drainage											
Benchmark #735 Slough	127[d]	1,450	--	336	1,270	1,705[d]	2,714	1,900[e]	168[d]	--	--
Delta River	7,971	4,010	3,089[e]	5,498	17,925	10,051	8,125	4,637	22,375[e]	3,433[e]	7,230[e]
Upper Tanana River[f]	5,635	4,567	--	4,979	3,797	5,700	20,820	3,444	7,063	--	1,350[d]
Bluff Cabin Slough	3,450	4,840	5,000[c,e]	3,197	6,491	5,340	6,875	3,190	6,120	1,156[e]	12,715[e]
Delta Clearwater Slough (Onemile Slough)	1,720	1,235	745[c]	1,552	1,900	475	3,850[d]	885[d]	632	--	1,115[d]
Subtotal Upper Tanana R. drainage	18,903	16,102	8,834[d]	15,562	31,383	23,271	42,384	14,056	36,358	4,589[d]	22,410[d]
SUBTOTAL TANANA R. DRAINAGE	27,390	53,408	88,776	52,752	53,183	58,271	203,474	39,250	50,265	7,898	38,020
PORCUPINE RIVER DRAINAGE											
Sheenjek River	1,175[d]	40,507	78,060	11,866	20,506	14,610[d]	41,140	13,027	69,043[g]	29,093[g]	45,7339
Black River drainage			50								
Salmon Fork River	--	444	1,517	0[d]	--	--	--	--	--	--	--
Kevenjik Creek	--	1,625	532	7[d]	--	--	--	--	--	--	--
Fishhole Creek	--	--	--	--	200[d]	--	--	31[d]	--	--	--
Subtotal Black R. drainage	--	2,069	2,149	7	200			31	--	--	--
Salmon-Trout River	--	6	350	20	--	--	--	--	--	--	--
Fishing Branch River (YT)	15,987[h]	32,525[h]	353,282[h]	13,450	32,500	15,000	44,080	20,319[d]	10,549[d]	5,846	10,000
SUBTOTAL PORCUPINE R. DRAINAGE	17,162	75,107	433,841	25,343	53,206	29,610	85,220	33,377	79,592	34,939	55,733

a All surveys rated fair-good unless rated otherwise. Only peak estimates listed.
b Includes following areas: Toklat River in vicinity of roadhouse, Shushana River, and Geiger Creek.
c Combined aerial and ground survey estimates.
d Poor or incomplete survey; very minimal and/or rough estimate.
e Foot survey.
f Richardson Highway bridge to Blue Creek.
g Sonar count.
h Weir count.
i Includes Moose Creek counts.

Appendix Table 30. Comparative Yukon River drainage coho salmon aerial escapement estimates, 1972-1983. [a]

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Nenana River												
Lost Slough	--	--	1,388	943	113	524	350	227	499	274	--	766
Clear Creek	--	--	--	--	13	--	--	--	--	--	--	--
Wood Creek	--	--	--	--	--	310[b,c]	300[b,c]	--	1,603[b,c]	849[b,h]	1,436[b,h]	1,044[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
Delta Clearwater River	632[d,e]	3,322[d]	3,954[d,e]	5,100[d,e]	1,920[d,e]	4,793[d,e]	4,798[d,e]	8,970[d,e]	3,946[d,e]	8,563[d,e,f]	8,365[d,e,f]	8,019[f]
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
Richardson Clearwater River	454[g]	375[d]	652[d]	4[g]	80[g]	327	--	372	611	550	--	88

a Peak estimates presented only.
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 fishery, foreign groundfish fisheries and U.S. commercial and subsistence fisheries. (also presented are Japanese landbased drift gillnet king salmon catches; estimated western Alaska interceptions unknown). 1/

Year	Japanese Mothership 2/	Foreign Ground-Fish 3/	Sub-Total	Western Alaska Commercial	Western Alaska Subsistence	Western Alaska Sub-total	Total	(Japanese Landbased Drift Gillnet)
1956	55.4 (137)	-	-	132.7	-	-	-	(18)
1957	15.2 (31)	-	-	158.4	-	-	-	(33)
1958	5.4 (46)	-	-	181.9	-	-	-	(45)
1959	27.8 (68)	-	-	195.1	-	-	-	(42)
1960	135.0 (180)	-	-	195.7	-	-	-	(113)
1961	13.9 (31)	-	-	243.1	-	-	-	(79)
1962	29.7 (122)	-	-	213.1	-	-	-	(124)
1963	40.8 (87)	-	-	208.1	66.2	274.3	315.1	(102)
1964	252.9 (410)	-	-	260.0	50.5	310.5	563.4	(195)
1965	105.5 (185)	-	-	263.0	52.9	315.8	421.3	(93)
1966	111.5 (208)	-	-	207.5	69.5	277.0	388.5	(112)
1967	69.8 (128)	-	-	284.0	81.9	365.9	435.7	(110)
1968	226.3 (362)	-	-	259.0	54.2	313.2	539.5	(88)
1969	435.2 (554)	-	-	287.6	65.2	352.9	788.1	(83)
1970	344.8 (437)	-	-	290.8	95.1	386.0	730.8	(101)
1971	143.6 (206)	-	-	283.2	73.8	357.1	500.7	(134)
1972	169.5 (261)	-	-	224.1	66.7	290.8	460.3	(103)
1973	47.0 (119)	-	-	177.4	69.7	247.1	294.1	(162)
1974	286.8 (361)	-	-	180.2	57.3	237.6	524.4	(186)
1975	109.2 (162)	-	-	126.2	77.2	203.3	312.5	(135)
1976	167.7 (283)	-	-	241.5	84.0	325.6	493.3	(201)
1977	64.5 (93)	43.5	108.0	296.1	84.1	380.2	488.2	(146)
1978	31.3 (105)	39.1	70.4	380.0	74.6	454.6	525.0	(210)
1979	65.0 (126)	100.4	165.4	429.0	99.3	528.3	693.7	(161)
1980	388.0 (704)	111.6	499.6	332.6	113.3	445.9	945.5	(160)
1981	26.0 (88)	44.0	70.0	510.0	130.0	640.0	710.0	(190)
1982	42.7 (107)	21.4	64.1	506.1	111.2	617.3	681.4	(165)
1983 4/	23.9 (87)	5/		494.1	140.2	643.3		(178)

1/ Data from INPFC documents.
2/ Estimates do not include dropouts; (Total catch in parenthesis).
3/ Assumed 100% of the catch is of western Alaska and Candian Yukon origin.
4/ Preliminary estimates.
5/ Information not available.

Attachment 1. List of Yukon Area emergency orders issued, 1983.

E.O. No.	Effective Date	Action Taken	Comments
3-Y-1-83	May 16	Establish a 24 hour fishing period 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-2-83	May 17	Extend previous fishing period an additional 12 hours for the Cape Romanzof district commercial herring fishery.	Only 10 boats fished the previous period. Commercial catch rates, test fishing data and spawn deposition surveys indicate that the early run of herring is strong.
3-Y-3-83	May 18	Establish a 24 hour fishing period for the commercial herring fishery in the Cape Romanzof district.	Test fishing and spawning ground surveys indicate a very high abundance of herring.
3-Y-4-83	May 20	Establish a 24 hour fishing period for the commercial herring fishery in the Cape Romanzof district.	Test fishing and spawing ground surveys indicate a continued high abundance of herring.
3-Y-5-83	May 21	Extend previous fishing period an additional 24 hours for the Cape Romanzof District commercial herring fishery.	Adverse weather conditions have limited fishing effort.
3-Y-6-83	May 24	Establish a 24 hour fishing period for the Cape Romanzof district herring fishery.	Commercial and subsistence fishery catch rates, test fishing data and spawn deposition observations indicate continued high abundance of herring.
3-Y-7-83	May 26	Establish a 12 hour fishing period for the Cape Romanzof district herring fishery.	Total harvest of 731 m.t. of herring have been taken. Biological and catch data indicate a strong run. Fishing effort has declined and a final 12 hour period will result in a total seasonal harvest of approximately 750 m.t.
3-Y-8-83	June 9	Open the commercial salmon fishing season and establish two-24 hour fishing periods a week in districts 1 and 2.	Monitoring of subsistence and test fishing catch data indicate a strong early run of king salmon and escapements from this portion of the run should be good.

3-Y-9-83	June 16	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 escapements.
3-Y-10-83	June 18	Establish a 24 hour subsistence fishing period during June 18-19 in district 1.	Special subsistence fishing period announced by emergency order in keeping with the intent of Board of Fisheries to provide for increased subsistence salmon fishing opprotunities.
3-Y-11-83	June 24	Establish a 24 hour subsistence fishing period during June 24-25 in district 2.	Special subsistence fishing period announced by emergency order in keeping with the intent of Board of Fisheries to provide for increased subsistence salmon fishing opportunities.
3-Y-12-83	June 23	Allow the taking of salmon for commercial purposes with gill nets of six-inch or smaller mesh size in districts 1 and 2.	Action taken to allow harvest of more abundant summer chums and to minimize catch of late portion of the king salmon run.
3-Y-13-83	June 23	Specify that only gill nets of six-inch or smaller mesh 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-14-83	June 25	Close the commercial salmon fishing season in district 3.	The 1,800-2,200 king salmon guideline harvest range was exceeded.
3-Y-15-83	July 2	Establish a subsistence fishing schedule of one-24 hour fishing period every other weekend through July 19 in districts 1 and 2.	Special subsistence fishing periods establish by emergency order in accordance with recently adopted Board of Fisheries regulations.
3-Y-16-83	July 7	Reopen the commercial salmon fishing season and specify that only gill nets of six-inch or smaller mesh size may be operated in district 3.	The majority of the king salmon run has passed through the district. Reopening of the commercial salmon fishing season is warranted to harvest the summer chum salmon run.
3-Y-17-83	July 7	Specify that only gill nets of six-inch or smaller mesh size may be operated by commercial fishermen for subsistence purposes in district 3.	Action taken to prevent king salmon taken under the guise of subsistence fishing from entering commercial channels.
3-Y-18-83	July 16	Close the commercial salmon fishing season on July 19 in district 1, July 21 in district 2 and July 16 in district 3.	Action taken to provide for a closure of approximately one week to allow for increased escapements of the early fall chum salmon run.

3-Y-19-83	July 28	Reopen the commercial salmon fishing season in district 1 and establish a weekly fishing schedule of two-12 hour periods except in the set net only area in the lower portion of district 1 where two-24 hour periods were established.	Since the season closure test fishing data indicate at least an average run magnitude of the early run segment of fall chums.
3-Y-20-83	July 30	Establish a subsistence fishing schedule of one-24 hour fishing period every weekend in district 1 (except in the set net only area) and in district 2.	Special subsistence fishing periods announced by emergency order in keeping with the intent of Board of Fisheries to provide for increased subsistence fishing opportunities.
3-Y-21-83	July 31	Reopen the commercial salmon fishing season in district 2 on July 31 and in district 3 on August 1. Also establish weekly fishing schedule of two-12 hour periods in district 2 and two-24 hour periods in district 3.	Since the season closure test fishing data indicate at least an average run magnitude of the early run segment of fall chums.
3-Y-22-83	July 31	Close the commercial salmon fishing season in subdistricts 5-A, 5-B and 5-C.	The king salmon run is essentially over in lower portion of district 5. Fishing season will reopen in late August for the fall chum salmon run.
3-Y-23-83	Aug. 10	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 salmon run.
3-Y-24-83	Aug. 13	Close the commercial salmon fishing season on August 12 in district 1, on August 14 in disrict 2, and on August 16 in district 3.	The upper end of the 120,000 to 220,000 fall chum salmon guideline harvest range for districts 1, 2 and 3 combined was taken.
3-Y-25-83	Aug. 30	Reopen the commercial salmon fishing season in subdistricts 5-A, 5-B and 5-C.	Test fishing and subsistence catches indicate a strong showing of upper Yukon fall chums.
3-Y-26-83	Sept. 5	Close the commercial salmon fishing season in subdistricts 5-A, 5-B and 5-C.	The upper end of the 8,000 to 36,000 fall chum salmon guideline harvest range for subdistricts 5-A, 5-B and 5-C has been exceeded.
3-Y-27-83	Sept. 13	Reopen the commercial salmon fishing season in district 6.	Substitute catches indicate that the fall chum salmon run is well distributed in the lower and middle reaches of the Tanana River.

3-Y-28-83	Sept. 13	Close the commercial salmon fishing season in subdistricts 4-B and 4-C.	The majority of the fall chum and coho salmon have passed through subdistricts 4-B and 4-C. Closure of the commercial salmon fishing season will allow for increased subsistence fishing time.
3-Y-29-83	Sept. 19	Establish 24 hour commercial salmon fishing periods in district 6.	Corrected error in E.O. 3-Y-27-83 which did not specify a fishing period schedule.
3-Y-30-83	Sept. 21	Close the commercial salmon fishing season in district 6.	A record catch of 42,000 fall chum and coho salmon was taken and additional harvest is not warranted.

Attachment 2. Summary of 1983 Yukon area commercial and subsistence fishing regulations promulgated by the Board of Fisheries during Anchorage meetings, December 1982 and April 1983.

Section	Action Taken
5AAC 27.931.(b) GILL NET SPECIFICATIONS AND OPERATION.	Specified that not more than 100 fathoms of herring gill net may be operated by an interim-use or permit holder in the Cape Romanzof district.
5AAC 27.985.(a)(b)(c)(d) EXCLUSIVE USE AREAS.	Established an exclusive use area for herring entry or interim-use permit holders and fishing vessels in the Cape Romanzof district.
5AAC 01.210.(b)(1)(A) FISHING SEASONS AND WEEKLY FISHING PERIODS.	Established special subsistence fishing periods announced by emergency order every other weekend through July 19 in districts 1 and 2.
5AAC 01.210.(b)(1)(B) FISHING SEASONS AND WEEKLY FISHING PERIODS.	Established special 24 hour subsistence fishing periods announced by emergency order every weekend after July 19 in districts 1 and 2.
5AAC 01.210.(b)(2)(A)(B) FISHING SEASONS AND WEEKLY FISHING PERIODS.	Established 6:00 p.m. opening and closing times for subsistence fishing periods during the commercial salmon fishing season in district 4.
5AAC 01.210.(c)(2) FISHING SEASONS AND WEEKLY FISHING PERIODS.	Established 6:00 p.m. opening and closing times for subsistence fishing periods during the closure of the commercial salmon fishing season in district 4.
5AAC 01.220.(e) LAWFUL GEAR AND GEAR SPECIFICATIONS.	Specified that king salmon may be taken with drift gill nets from June 21 through July 7 and that chum salmon may be taken with drift gill nets after August 2 for subsistence purposes upstream from Stink Creek is subdistrict 4-A.
5AAC 01.220.(g) LAWFUL GEAR AND GEAR SPECIFICATIONS.	Specified that salmon may be taken only by set gill nets in those locations described in 5AAC 05.330.(a)(1)--(8) (after July 19 in the "set net only area" of district 1).
5AAC 01.245.(a) RESTRICTIONS ON COMMERCIAL FISHERMEN.	Specified that a C.F.E.C. salmon permit holder registered for the set net only locations described in 5AAC 05.330.(a)(1)--(8) may not use drift gill nets for the subsistence taking of salmon in districts 1, 2 and 3.
5AAC 01.245.(b) RESTRICTIONS ON COMMERCIAL FISHERMEN.	Specified that a commercial salmon fisherman whose vessel is registered for districts 1, 2 or 3 may not take salmon for subsistence purposes in any other district located downstream from Old Paradise Village.

5AAC 05.310.(1)(A) FISHING SEASONS.	Specified that the early season will close by emergency order between July 19 and July 25 in districts 1, 2 and 3.
5AAC 05.310.(1)(B) FISHING SEASONS.	Specified that the late season will open by emergency order between July 26 and August 1 in districts 1, 2 and 3.
5AAC 05.320.(1),(2),(3)(B) WEEKLY FISHING PERIODS.	Established fishing periods by emergency order after July 15 in districts 1 and 2 and after July 24 in district 3.
5AAC 05.320.(4)(A)(B) WEEKLY FISHING PERIODS.	Established 6:00 p.m. opening and closing times for commercial fishing periods in district 4.
5AAC 05.330.(a)(1)--(8) GEAR.	Specified that only set gill nets may be operated in specific locations after July 19 in the lower portion of district 1.
5AAC 05.379.(h) REGISTRATION AND REREGISTRATION.	Established initial salmon fishing vessel district registration as indicated on the fish ticket for the first delivery of the season in the Yukon area.
5AAC 05.370.(i) REGISTRATION AND REREGISTRATION.	Specified that a C.F.E.C. salmon permit holder may not take salmon in the set net only locations described in 5AAC 05.330(a)(1)--(8) after July 19 unless he is registered for those locations before the opening of the late season. A C.F.E.C. salmon permit holder registered for the set net only locations may not take or attempt to take salmon in any other locations in district 1, or in districts 2 and 3 for the remainder of that calendar year.
5AAC 39.107.(b)(c) OPERATION OF NET GEAR and 5AAC 39.108.(a)(b)(c) OPERATION OF FISHWHEELS.	Specified that stationary commercial salmon fishing gear (set gill nets and fishwheels) may be unattended in the Kotzebue-Northern, Norton Sound-Port Clarence, Yukon and Kuskokwim areas.

CAPE ROMANZOF DISTRICT HERRING FISHERY

Commercial Fishery, 1983

A total of 740 metric tons of herring (100% sac roe) was harvested in 1983 in the Cape Romanzof District. The 1983 harvest was the largest on record in the history of the fishery which dates back to 1980 (Appendix Table). The entire harvest was taken in Kokechik Bay (Statistical Area 334-08) (Figure). Processing and tender vessels belonging to three processors were anchored inside Kokechik Bay near Anikitun Island (Table). The entire catch was frozen in the round. Average roe recovery for the season was 9.0%. Average price paid for 10% roe herring was $450 per short ton with a $45 per 1% point differential. Fishermen operating in the Cape Romanzof District earned an estimated $330,000 for their catch.

During 1983, a total of 63 fishermen (C.F.E.C. interim-use permit holders) made at least one delivery and operated out of 57 boats. Fishing effort was down slightly from 1982. A total of 92% and 91% of the fishermen and boats, respectively, were from the local area (the villages of Hooper Bay, Chevak and Scammon Bay). An estimated 88% (651 mt) of the harvest was made by local fishermen and was attributed to improved offloading techniques (additional vacuum pumps and tenderboat service) and better commerical gear. Catch and effort data by resident status is presented in Table .

Only five "non-local" fishermen made deliveries in 1983. This reduction in fishing effort of non-local fishermen is primairly 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 on 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 16 when a 24 hour fishing period was established by emergency order. Only 10 permit holders fished the first period. A 12 hour extension was allowed as test fishing catches and spawning deposition surveys indicated that the early portion of the herring run was strong. Subsequent fishing periods of 24 or 12 hour duration were established by emergency order. Catch and effort data by fishing period is shown in Table .

During fishing period closures spawning ground surveys and test fishing with variable mesh gill net was conducted to assess stock conditions. Due to turbid water it is not possible to make aerial biomass estimates. Since 1978, the Department has conducted spawn deposition observations and test fishing. Data obtained in 1983 indicate that the magnitude of the herring run was probably the largest documented. The majority of the herring in 1983 were composed of age 4, 5 and 6 year old fish indicating a run of large magnitude in 1984.

Subsistence Fishery, 1983

In 1983, a total subsistence harvest of 8.3 mt (18,306 lbs) of herring were reported taken by 37 fishing families from Hooper Bay, Chevak and Scammon Bay. Subsistence fishing effort and participation were probably decreased from previous years for some of these villages as several persons went commercial fishing in the Cape Romanzof District. Comparative subsistence catch and effort data is presented in Appendix Table .

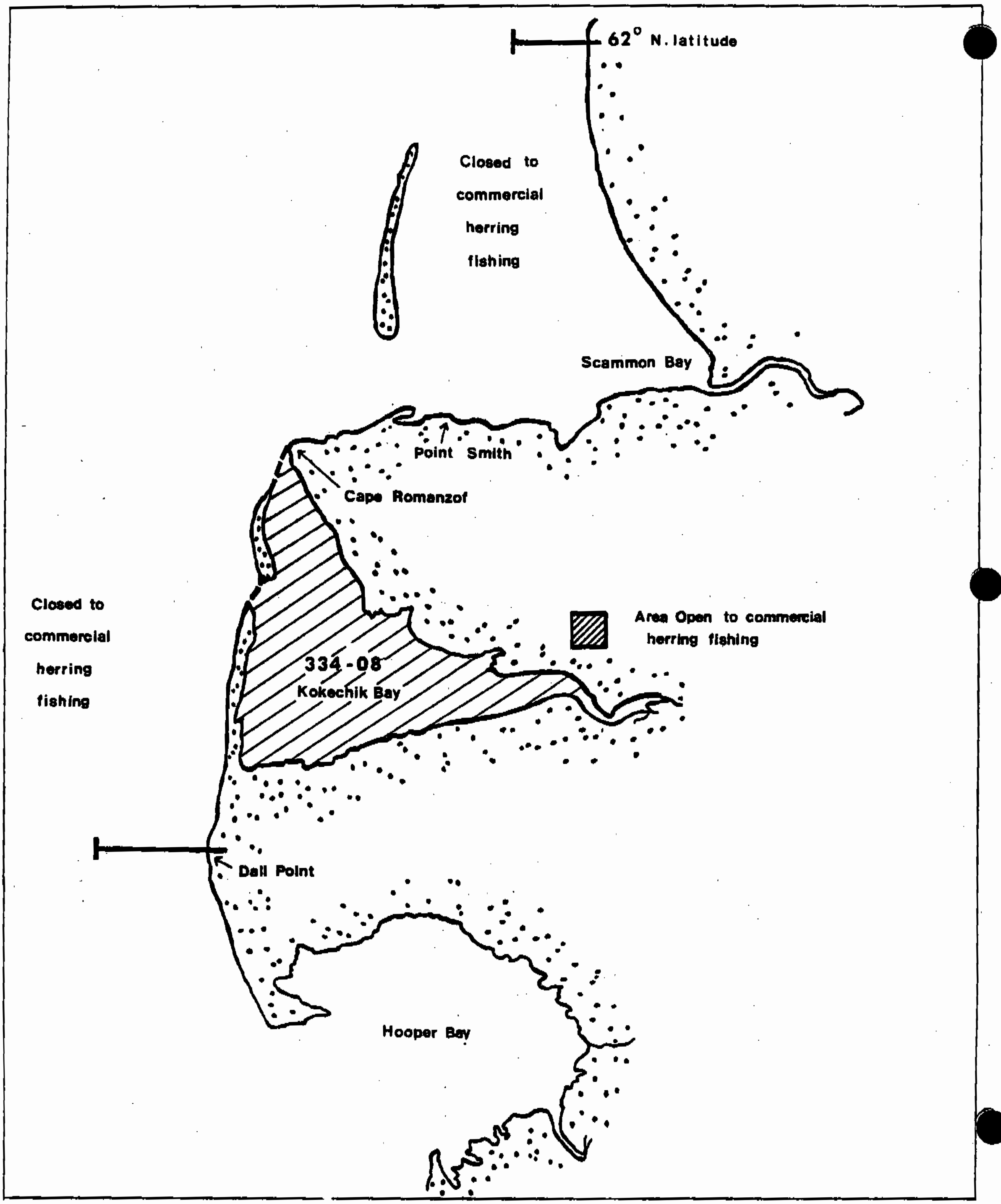


Figure 20. Cape Romanzof herring district and statistical reporting area.

Table 16. Cape Romanzof District. Comparative Herring Catch (mt) and Effort (Permit Holders) by Date, 1987.

Date		Locals 1/	Non-Locals	Residents	Non-Residents
5/16	Effort	12	0	12	0
	Catch	22.9	0	22.9	0
5/17	Effort	17	1	18	0
	Catch	89.7	10.1	99.8	0
5/18	Effort	22	2	24	0
	Catch	50.3	11.3	61.6	0
5/19	Effort	45	2	47	0
	Catch	160.9	17.3	178.2	0
5/20	Effort	0	0	0	0
	Catch	0	0	0	0
5/21	Effort	49	3	51	1
	Catch	136.3	25.9	154.8	7.4
5/22	Effort	52	2	53	1
	Catch	163.9	22.4	173.4	12.9
5/24	Effort	40	3	43	0
	Catch	22.7	5.0	27.7	0
5/26	Effort	2	0	2	0
	Catch	0.9	0	0.9	0
Total	Effort	58(92%)	5(8%)	62(98.4%)	1(1.6%)
	Catch	647.6(87.6%)	92.0(12.4%)	719.3(97.3%)	20.3(2.7%)

1/ Residents of Scammon Bay, Chevak and Hooper Bay Villages.

Table 17. Commercial Herring Catch Data, Cape Romanzof District, 1983.

Date	Hrs.	#Deliveries	#Permit Holders	#Boats	Sac Roe(mt)	Commulative To Date	Ave. Roe%
5/16	6	13	12	11	22.9	22.9	7.9
5/17	24	59	18	17	99.8	122.7	8.2
5/18**	6	*1	*1	*1	24.2	146.9	
Subtotal	36				146.9		
5/18**	6	*1	*1	*1	37.4	184.3	
5/19	18	132	47	43	178.2	362.5	9.4
Subtotal	24				215.6		
5/20	6	0	0	0	0	362.5	0
5/21	24	135	52	47	162.2	524.7	9.4
5/22	18	112	54	48	186.3	711.0	8.6
Subtotal	48	247			348.5		9.0
5/24	12	48	43	43	27.7	738.7	9.2
Subtotal	12	48			27.7		
5/26	12	2	2	2	0.9	739.6	6.5
Subtotal	12	2			0.9		
Total	132	568	63	57	739.6	739.6	9.0

*1 Information Not Available
** 43 Deliveries Total For 5/18

Appendix Table 32. Commercial herring fishery data, Cape Romanzof District, 1980-1983.

	1980	1981	1982	1983
Catch	554 m.t.	653 m.t.	596 m.t.	740 m.t.
Roe Recovery	9.8%	8.0%	9.3%	9.0%
Estimated Value 1/	$110,000	$212,000	$218,000	$330,000
Number of Buyers	2	4	2	3
Number of Fishermen 2/	69	111	75	63

1/ Value to fishermen.
2/ Interim use CFEC permit holders.

Appendix Table 33. Subsistence herring catches village, Yukon area, 1975-1983.

	Catches in Pounds (No. Fishing Families)								
	1975	1976	1977	1978	1979	1980	1981	1982	1983
Scammon Bay	- 1/	1,390(4)	- 1/	1,300	12,000(21)	6,270(18)	15,400(16)	7,750(15)	5,050 (14)
Chevak	- 1/	1,400(9)	300(2)	- 1/	4,600(21)	7,100(20)	4,264(10)	3,860(10)	2,900 (5)
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)
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)

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, 1964-1983.

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 availale			
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

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 whitefish catches, upper Yukon area, 1972-1983.

Healy Lake			Lake Minichumina		
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				

Appendix Table 36. Commercial freshwater fishery catches, lower Yukon area, 1978-1983.

	Sheefish		Whitefish		Blackfish	Burbot		Pike
Year	Number	Pounds	Number	Pounds	Pounds	Number	Pounds	Pounds
1978	-	-	19	87	-	-	-	-
1979	5	39	23	55	-	-	-	-
1980	283	2,265	78	250	293	-	-	-
1981	299	2,812	779	2,875	-	-	-	9
1982	754	6,161	1,633	6,214	-	102	482	-
1983	395	2,692	163	648	-	-	-	-

Attachment 3. Summary of special projects conducted in the Yukon area by the Division of Commercial Fisheries, 1983.

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).

3) Fish Village Experimental Drift Test Fishing Project: Heads of Passes area of the Yukon River delta).

b) Objectives:

1) Big Eddy and Middle Mouth Projects: To determine the run timing, distribution and relative abundance of king, summer chum, fall chum and coho salmon in the lower Yukon River using set gillnets.

2) Fish Village Experimental Drift: To determine the feasibility of using drift gillnets to determine run timing and relative abundance of summer chum salmon in the lower Yukon River.

c) Results:

1) Big Eddy Test Fishing Project:

KING AND SUMMER CHUM: Index set nets for king and summer chum salmon were operated continuously from May 26 to July 15. A total of 1,499 king and 1,485 summer chum salmon were captured. The king catch increased significantly from 1982 levels but was below the 1981 level. 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 15, an early year. The mean date for summer chum salmon was on June 14. Summer chum salmon mean dates from set net data are based on only one test net and are considered to be less reliable than king salmon mean dates.

FALL CHUM AND COHO: Index set nets for fall chum and coho salmon were operated from July 16 until August 30. A total of 1,172 fall chums and 423 cohos were taken. Fall chum catches increased significantly from 1982 levels. The test fishing data indicated mean dates of July 28 and August 18 for fall chum and coho salmon, respectively.

2) Middle Mouth Test Fishing Project:

KING AND SUMMER CHUM: Index set nets for king and summer chum salmon were operated from May 28 until July 15. A total of 1,706 king and 955 summer chum salmon were captured. King catches were up from 1982. The mean date of

All Yukon River chinook salmon scale samples, including samples collected from District 4 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 in along with 1983 chum and coho salmon age, sex, size data in a separate catch and escapement report.

Scale samples collected from the spawning escapements will be digitized and scale measurements used to build a stock identification model 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-scan sonar. Collect chum and king salmon beach seine and carcass samples for age, sex and size data.

c) Results: Escapement to the East Fork Andreafsky River in 1983 was estimated by side-scan sonar to be 110,608 summer chum salmon and 2,720 king salmon. Sonar counts were apportioned to the two species based on visual counts. No aerial surveys were flown due to poor weather conditions. Chum salmon age composition was 65% age 5, 33% age 4, and females accounted for 56% of the fish sampled. King salmon were 46% age 6, 38% Age 5, and only 29% of the pooled beach seine and carcass sample was female. This was the second year of low female returns to the Andreafsky River, and may result in weak king salmon returns for these brood years.

The summer chum salmon escapement was slightly below the 11 year average (1972-1982) of 117,362 fish, but within the range of the 1978 and 1979 parent year escapements. Mean date of passage occurred on 4 July, earlier than for either 1981 (5 July) or 1982 (9 July). Problems encountered during the previous two years of sonar enumeration may have affected the calculated mean date based on sonar counts, so that the three mean dates may not be directly comparable.

7. ANVIK RIVER ESCAPEMENT STUDY

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

b. Objectives: Enumerate summer chum and king salmon escapement to the Anvik River using side-scan 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 1983 was estimated by side scan sonar to be 362,912 summer chum salmon. Age composition was 57% age 4, 41% age 5, and females accounted for 56% of the fish sampled. An aerial survey was flown under poor conditions and a minimal count of 653 king salmon was obtained. Ages 6 (45%) and 5 (36%) dominated king salmon carcass samples, and 44% were female. Very few pink salmon were seen, as opposed to the strong escapement in 1982.

The summer chum salmon escapement was below the 11 year average (1972-1982) of 535,800 fish, but was better than escapements in the parent years of 1978 and 1979. Mean date of passage occurred on 6 July, which is in the middle of the range of dates for the five years of sonar count data.

8. MAIN RIVER SONAR

a) Location: Pilot Station, North Bank

b) Objectives: 1) To determine profiles and areas of ensonified zones of the river cross-section; 2)determine species composition, determine useful ranges and the probability of detecting adult salmon for each transducer; 3) determine temporal and spatial distribution of salmon relative to surface, midwater, bottom, nearshore and offshore; 4) determine target strength distribution of fish for each transducer so that the probability of detection may be more fully understood; 5) determine fish swimming speeds; 6) determine a method for providing estimates of adult salmon by species composition; 7)collect meteorological and hydrological data.

c) Results: The sonar unit was operated from 12 June to 15 July. Profiles and arrays of ensonified zones were determined by fathometer and sextant. Surface flow velocities were also taken in these zones at each profile point. A continuous record of water level measurements was maintained. Species composition was determined by set gill net. A 2°, 6° and 10° transducer were used.

Best results were obtained with the 2° and 6° transducers. The maximum distance offshore that a fish target was recorded was 370 feet. Essentially 100% of fish were seen within 400 feet of shore, 98% were within 237 feet, 86% were within 183 feet and 305 were within 129 feet from shore. There is some suggestion that high negative correlations in diel distribution may be associated with near surface swimming fish, and high positive correlations associated with near bottom swimming fish. Mean target strength of fish for the 10° transducer was determined to be -25.85 decilels (dBv); -32.24 dBv for the 6° transducer and -20.74 dBv for the 2° transducer. Angles that fish crossed the acoustic axis ranged from 25° to 85.5°. Mean swimming speed of fish (kings and chums) was 4.3 feet per second. Daily abundance estimates by transducer/beam configuration are being analyzed.

9. MELOZITNA RIVER ESCAPEMENT STUDY

a. Location: River mile 4 of the Melozitna River.

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

c. Results: An estimated total escapement of 20,126 summer chum salmon was counted with two side-scanning sonar units in 1983. A small but unknown percentage of the sonar estimate was attributed to king salmon. Based upon date of 50% run passage (July 9), run timing in 1983 was 5 days earlier than in 1982 and at least 5 days later than in 1981. The 1983 Melozitna River escapement was similar in magnitude to that in 1982. Based upon salmon distribution past the sonar site in 1982 and 1983, the 1981 escapement estimate was expanded to 96,000 summer chums.

Extremely low river water levels prevented successful test fishing in the Melozitna River, with a subsequent loss of age-sex-size information on salmon escapement.

10. SHEENJEK RIVER ESCAPEMENT STUDY

a. Location: River mile 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-estimated escapement of 45,773 fall chum salmon was made for the Sheenjek River in 1983. Peak daily passage was on Septemeber 22, although date of 50% run passage was the same as in 1982, occurring on September 14.

Test gillnetting showed the chum salmon sex composition to be 55% males and 45% females. Escapement was dominated by age 4_1 (87%) fish. Age 31 and 51 fish each represented 6.5% of the gillnet samples.

11. CAPE ROMANZOF HERRING PROJECT

a. Location: Kokechik Bay and Scammon Bay.

b. Objectives: Determine distribution, timing and relative abundance of spawing herring and collect information on spawn deposition and mortality. Collect age, sex and size composition data and maturity information on herring from test fishing and commercial catches.

c. Results: A total of 5,798 herring were caught in test nets (variable mesh gillnets) during the period May 13-30. Initial spawning occurred on or before May 12. The magnitude of the run was considerably larger than previous years based on test fishing catches and spawning ground surveys. In general, spawn deposition appeared much more extensive and heavier than in past years. Observed spawn mortality was in excess of 80% in some areas. The majority of the sampled herring were age 4, 5 and 6.

YUKON AREA COMMERCIAL AND SUBSISTENCE SALMON FISHERIES
1983 MANAGEMENT PLAN
Attachment 4

Alaska Department of Fish and Game
Division of Commercial Fisheries
Arctic-Yukon-Kuskokwim Region

Mike Geiger
Yukon Area Biologist
333 Raspberry Road
Anchorage, AK 99502
Phone 344-0541

Fred Andersen
Upper Yukon Area Biologist
1300 College Road
Fairbanks, AK 99701
Phone 452-1531

James Brady
Lower Yukon Asst. Area Biologist
Box 195
St. Marys, AK 99658
Phone 438-2410

INTRODUCTION

This management plan was developed to inform fishermen, processors and other interested persons about the status of the 1983 Yukon river salmon runs and Department strategies that may be used to regulate the various fisheries. Statements made concerning anticipated run magnitudes and management strategies are based on the best information presently available.

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 Yukon area. The overall objective of the Department's research and management programs is to manage the various salmon runs for optimum sustained yield. The commercial fishery is regulated on the assumption that a harvestable salmon surplus, after providing for spawning and subsistence utilization requirements, is available.

Subsistence has been designated by the Legislature (State Law 151) as the highest priority among beneficial users of the fish and game resources. Except in areas where intensive commercial fisheries occur, the subsistence fishery is subject to few restrictions in order to give preference to subsistence users. In the major commercial fishing areas the majority of the fishermen usually take salmon for both commercial and subsistence purposes. Therefore, in order to enforce commercial fishing regulations, it is necessary to place some restrictions on the subsistence fishery.

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 commercial fisheries have only developed or expanded in recent years, there is a lack of adequate escapement and return data on which to fully evaluate the effects of increased commercial harvests. The various fisheries scattered over 1,400 river miles harvest mixed stocks usually several weeks and hundreds of miles from their spawning grounds. Because the Yukon River commercial fishery is essentially a "cape fishery" (fishing on mixed stocks), some tributary populations may be under or overharvested in relation to their actual abundance. For example, 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 the vast size of the drainage (330,000 square miles), one-third of which is in Canada, accurate in-season assessment of the escapement immediately past the intensive downriver fishery is very difficult with the present available technology and funding. Management is also hampered by the variable run timing and pattern of entry into the lower fishery. Comparison of commercial catch and catch per unit effort data for estimating run abundance between years is of limited usefulness due to rapid changes in the fishery (increased effort and efficiency). Greater dependence is placed on test fishing information, however there is a limited data base since most projects were initiated only since 1980.

New research projects are underway and other programs are planned, once additional funding becomes available, to obtain the biological information necessary for better management of the salmon runs. For example, king salmon stock separation studies using scale analysis techniques were begun in 1980.

If major stocks can be identified from this program then the fishery may be more effectively regulated in order to achieve the proper balance between catch and escapement. Other recent studies initiated include expansion of the test fishing program, sonar assessment of run strength in the main river and upgrading escapement documentation in tributary streams (additional side scanning sonar projects and increased aerial survey coverage).

As a result of the difficulty in obtaining the necessary biological information, the mixed stock situation, increased effort and efficiency of the commercial fishery, allocation problems and the need to provide for subsistence, the management of the Yukon River salmon runs must take a conservative approach. This is achieved by establishing harvest range guidelines, mesh size restrictions and weekly fishing period and season closures. If it becomes apparent during the fishing season that the run is substantially smaller or larger than needed for escapement and subsistence requirements, the commercial harvest rates will be adjusted through the use of the emergency order. In most cases in-season restrictions (reductions in fishing time or season closures) will be necessary for conservation purposes.

MAJOR REGULATION CHANGES

At its December, 1982 and March, 1983 meetings the Board of Fisheries adopted the following major regulation changes for the Yukon area:

1. Initial fishing vessel district registration is accomplished by indicating on the fish ticket the district in which the the vessel was first used to take salmon.
2. Established 24 hour subsistence only fishing periods by emergency order announcement during the commercial fishing closures in districts 1 and 2.
3. Fall chum and coho salmon fishery: Established an approximate one week closure of the commercial fishing season and provided for emergency order announcement of weekly fishing periods in districts 1, 2 and 3. A set net only area was established in the lower portion of district 1. Guideline harvest levels for all districts remained unchanged (refer to Management Strategy sections for further explanation).

STATUS OF STOCKS AND FISHERY

King Salmon: The Yukon River commercial salmon fishery in Alaska dates back to 1918. Since 1961 king salmon commercial catches have ranged from 63,700 to 157,600 fish and the recent 5 year average (1978-82) is 132,600. The majority of the commercial harvest occurs in districts 1 and 2. In addition to the Alaskan catch, the commercial fishery at Dawson (Yukon Territory) harvests an average of 7,200 kings annually (5 year average). Throughout the Yukon River drainage an average of 36,500 kings are taken annually (5 year average) for subsistence use.

Spawning populations of king salmon are widely distributed throughout the drainage and have been documented in the Archuelinguk River located 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. Major spawning streams in Alaska include the Andreafsky, Anvik, Nulato, Gisasa, Salcha and Chena Rivers. In the Canadian portion of drainage,

fishery, Yukon River fall chum may be particularly vulnerable. During the past three years chum salmon catches taken during the June fishery have increased sharply: 1980 (528,000), 1981 (575,000) and 1982 (1,015,000) compared to previous 10 year average, 1970-1979 (277,000).

Coho Salmon: This species is of minor importance in both the commercial and subsistence fisheries. The commercial catch since 1961 has ranged from 350 to 38,000 and the recent 5 year average (1978-82) is 22,500 fish. The commercial harvest of cohos is dependent upon fishing effort exerted on the more numerous fall chums. Annual subsistence catches are approximately 19,400 (1978-82 average).

Cohos first enter the lower Yukon River about one week later than fall chums and the run peaks during late August. Spawning occurs discontinuously throughout the drainage with the largest spawning concentrations documented in the tributaries of the upper Tanana River drainage.

OUTLOOK FOR 1983

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 1977 brood year run (6 year olds in 1983) was judged average in abundance as indicated by comparative catch and escapement data. The return of 5-year-olds (1978 brood year) is expected to be substantial based on above-average run strength in 1978. Seven-year-olds are not expected to contribute substantially to the run in 1983 based on below-average to average run strength of 6-year-olds in 1982. In summary, based on evaluation of brood year run size data, it is expected that the 1983 Yukon River king salmon run will be average in magnitude. The expected commercial harvest is expected to total 90,000-120,000 fish.

Summer Chum Salmon: Normally the Yukon River summer chum salmon runs are composed of predominantly 4-year-old fish, although in some years 5-year-old fish are present in large numbers. The return of 4-year-olds in 1983 will be dependent on the strength of the 1979 brood year and the survival of the resulting offspring. Based on the available catch and escapement data, the 1979 summer chum run was considered below average to average in magnitude, and the return of 4-year-olds in 1983 is expected to be of similar magnitude. The return of 5-year-olds is not expected to be substantial based on the average return of 4-year-olds in 1982. In summary, the magnitude of the Yukon River summer chum salmon run in 1983 is expected to be below average to 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 1979 brood year (4-year-olds) was considered above average in magnitude. The return of 5-year-olds (1978 brood year) is not expected to be substantial because of the weak return of 4-year-old fish in 1982. In summary, the 1983 Yukon River fall chum salmon run is expected to be average to above average in magnitude. The expected commercial harvest should approximate 145,500 to 233,000 fish. If the run is of very large magnitude a larger catch may be taken; however, the upper end (320,500) of the guideline harvest range should not be exceeded.

Coho Salmon: The coho salmon run annually is much smaller than the fall chum run, and the harvest is dependent on the duration of the fishery for fall chums. The harvest is expected to total 20-30,000 fish for the entire river. A larger harvest may be taken if the fishing season is reopened for cohos in late August - early September after the fall chum run has ended. There are indications that coho returns to the Yukon River and other western Alaska systems are increasing and larger harvests may be warranted without impacting escapements.

MANAGEMENT STRATEGY, LOWER YUKON (DISTRICTS 1, 2 AND 3) FISHERIES

King and Summer Chum Salmon: Sustained yield management of the king and summer (dog) chum salmon runs is complicated by the fact that both species exhibit similar run timing. The harvest of summer chums in the lower river is greatly dependent on the regulations and management strategies employed toward the more intensively managed king salmon fishery. Even if an exceptionally large run of summer chums salmon develops, the harvest of summer chums may not be more than average because of the overriding importance of king salmon, especially if the king run is small and fishing restrictions are required.

The district 1 and 2 king and summer chum salmon fisheries are regulated by weekly fishing periods established by emergency order. The fishing schedule will initially be two 24 hour periods a week. Fishing periods may be further changed by emergency order depending on indicated run strength.

The commercial fishing season in districts 1, 2 and 3 will open by emergency order between June 5-15 (about June 10 if normal run timing). An emergency opening of the fishing season allows more flexible management in order to provide increased escapements from the early portion of the king salmon run which is subjected to intensive fishing effort along the entire length of the river. Prior to opening the fishing season, subsistence and test fishing catches will be closely monitored as indicators of run timing and abundance. An early opening of the commercial fishing season will occur if consistent, increasing subsistence and/or test net catches are occurring over a one week period. The fishing season will be opened on a staggered basis: district 1 followed by district 2 and then district 3.

A guideline harvest range of 60,000-120,000 king salmon for districts 1 and 2 is established by Board of Fisheries regulations. The midpoint (90,000) of this guideline harvest range should be the expected catch if the run is of average magnitude. The expected catch if the run is above average would be 90-120,000 kings. If an exceptionally large run occurred as in 1979-81, then the upper end (120,000) of the guideline harvest range may be exceeded. Fishing time may be reduced in districts 1 and 2 to spread out the harvest over most of the run even if the run is large. With increased fishing efficiency the commercial fishery has the capability to overharvest various run segments or stocks in a very short time.

If the king salmon run is small, fishing time in districts 1 and 2 will be reduced not later than June 20-25 (the peak of normal run timing). Additional reductions in fishing time or an early closure of the season may be necessary if indicated low abundance of kings continues.

A reduction in fishing time (coupled with 6" maximum mesh regulation) because of a poor king run, is favored instead of complete season closure in June as this would prevent any harvest of summer chums. Achievement of an optimum harvest of summer chums while providing protection of king salmon, especially during small king runs, is a complex problem facing management. It should be clearly stated that the Department recognizes the importance of the long established king salmon fishery. The intention of the 6 inch maximum mesh size regulation in the lower two districts is to allow an optimum harvest of chum salmon after a normal harvest of king salmon, consistent with spawning ground and subsistence fishery requirements, has been made.

In districts 1 and 2, after the changeover to gillnets of 6 inch or smaller mesh, fishing time will be at 2 days a week if the summer chum run is of average magnitude in order to provide for upriver escapement and fishery requirements. In recent years with the exception of 1975 and 1981 the summer chum run has become fully exploited, especially with the expansion of the upper Yukon area fishery.

The Board of Fisheries adopted regulations to provide a 24 hour subsistence fishing period every other weekend during the commercial fishing closures through July 19 in districts 1 and 2. These special subsistence only fishing periods will be announced by emergency orders for each district. Since these special subsistence fishing periods represent a drastic departure from previous regulatory framework (where subsistence and commercial fishing periods were coincidental in order to enforce commercial fishing closures), close monitoring of the subsistence fishery will be necessary. If it is apparent that substantial subsistence fishing effort is occurring and that large catches (king salmon) are resulting or if large scale violations are occurring (i.e. salmon taken during subsistence periods are sold), then a reduction in commercial fishing time may be necessary.

In district 3 the king salmon fishery is governed by a 1,800-2,200 guideline harvest range during the "king salmon season" (no mesh size restrictions). The changeover date to gillnets of 6 inch or smaller mesh in district 3 will normally take place after a date between July 5-15 following the closure of the king salmon season. The reopening of the commercial fishing season to primarily harvest chum salmon will be dependent on the timing of the salmon runs in order to minimize the incidental capture of the late run of kings which are traditionally utilized for subsistence in this district. However, during years of high abundance an additional 1-2,000 kings may be taken commercially with small mesh gillnets.

Fall Chum Salmon: In the lower Yukon area where the fall chum salmon commercial fishery has rapidly expanded, in terms of increased fishing effort and efficiency, a more conservative management strategy is necessary to insure that adequate escapements and subsistence requirements are met. Consequently, at its March, 1983 meeting the Board adopted regulations regarding fishing season closures and reduced fishing time and provided direction on guideline harvest range management. These restrictions were required to prevent overharvesting of specific run segments and to distribute the harvest throughout the run. The Board adopted the following changes:

1. Commercial Fishing Season
   Provides for an approximate 7 day closure of the commercial fishing

season for the lower Yukon area during the early portion of the fall chum run (Porcupine River - Upper Yukon stocks). The season closure will be implemented by emergency order on a staggered basis for each district. The following example depicts the probable season closures for each district based on a fall chum run of normal timing:

District 1:	July 19 through July 25
District 2:	July 22 through July 28
District 3:	July 25 through July 31

2. Set Net Only Area

During the fall chum salmon commercial fishing season in district 1, commercial fishermen will be restricted to the operation of set gill nets in a special "Set Net Only" area. Commercial fishermen must register to fish the set net only area and may not fish for commercial purposes in other areas of district 1 or in districts 2 or 3 during the remainder of the commercial fishing season. Commercial fishermen, registered to fish in the set net only area, may not fish for subsistence with drift gillnets in districts 1, and 3. Subsistence fishing with drift gill nets in the set net only area is prohibited during the remainder of the commercial fishing season.

3. Weekly Fishing Periods

Based on emergency order authority, a fishing schedule of two 24 hour periods a week will be allowed in the set net only area. In other areas of district 1 and in district 2 both set and drift gill nets may be operated for two 12 hour fishing periods a week during the commercial fishing season. A daylight fishing schedule for the 12 hour periods (e.g. 6 a.m. to 6 p.m. - same day) will be established for fishermen's safety. In district 3 the fishing schedule will be two-24 hour periods a week.

4. Guideline Harvest Range

The fall chum salmon fishery is governed by a flexible guideline harvest range of 120,000 to 220,000 fish for districts 1, 2 and 3 combined. The Board of Fisheries directed the Department to target toward the lower end of the present guideline harvest range unless the run is of very large magnitude. If the fall chum run is of below average to average magnitude, then the harvest should approximate 120,000-170,000 fish. If the fall chum run is exceptionally large, then a greater harvest may be taken, but the upper end of the guideline harvest range (220,000) should not be exceded.

In district 1 (excluding the Set Net Only Area) and in district 2 the fishing schedule (established by emergency order) during the fall chum run will be two-12 hour periods per week. The reduced commercial fishing periods affect the subsistence fishery since fishing time for both fisheries is coincidental. An additional fishing period (24 hours) each weekend for subsistence will be allowed in district 1 (excluding the set net area) and district 2 after the reopening of the fishing season in late July by emergency order. Continuation of these special subsistence fishing periods during the season will be contingent on minimal violations occurring. Once the commercial fishing season is closed, subsistence fishing will be allowed seven days a week by regulation.

Coho Salmon: Cohos are taken incidentally to the more abundant fall chums and the commercial fishery in the lower Yukon area usually closes by mid-August when the coho run is beginning to peak. Present commercial and subsistence utilization of cohos throughout the drainage is minimal. During years of high coho salmon abundance it is evident that a much larger coho salmon harvest could be taken. A reopening of the lower Yukon area commercial fishing season for coho salmon fishing after August 25 and extending into early September may be allowed. This special coho salmon fishing season will be considered experimental and contingent on an above average coho run occurring coupled with a small incidental catch of late fall chums.

MANAGEMENT STRATEGY, UPPER YUKON (DISTRICTS 4, 5 AND 6) FISHERIES

King and Summer Chum Salmon: As in the lower Yukon Area, the king and summer chum (dog) salmon runs in the Yukon area exhibit similar run timing. The upper Yukon area commercial king salmon fishery is primarily regulated by a combined 5,550-6,950 fish guideline harvest range which is apportioned to the three districts. Presently there are no guideline harest ranges specifying the numbers of summer chums which may be taken. Management of the summer chum fishery is based on in-season assessment of run strength.

In accordance with a Board of Fisheries directive, upper Yukon districts (also including district 3) king salmon catches will be allowed to approach or exceed the upper end of the guideline harvest range if the run is very large. This directive acknowledges the following conditions unique to Yukon salmon management:

1) there are fewer fishermen and smaller guideline harvest levels associated with the upper districts with less risk of overharvesting stocks;

2) usually by the time that the run magnitude can be accurately assessed, most of the fish have moved into the upper districts.

Commercial and subsistence fishing is allowed for two 48 hour fishing periods a week in most areas of the upper Yukon area. These split fishing periods help spread out the harvest over a greater portion of the run and afford additional protection to smaller stocks which are move susceptible to overharvest than the larger, more productive stocks. Also split periods allow the Department additional time to collect and evaluate catch data between periods.

If a weak run of either kings or summer chums develops then the Department would consider various restrictions. These restrictions would probably vary in each distict because of the different types of fisheries and the importance of the species harvested.

Fishermen in district 4 usually retain their kings for subsistence rather than sell them in order to allow the commercial fishing season to remain open for the more abundant and commercially valuable summer chums. However, because of a substantial increase in fishing effort due to the rapid development of the commercial fishery and the increase in the district 4 king salmon guideline harvest range granted by the Board in 1980, the total harvest of kings

(commerical plus subsistence) may exceed traditional harvest levels in this district.

If the king salmon guideline harvest range (2,250-2,850 fish) is taken before July 10 in district 4, the commercial fishing season would be closed by emergency order. The season would be reopened during the period July 10 to July 31 to fishing with gillnets of six inch or smaller mesh and fishwheels. This action would minimize additional harvest of large king salmon and still allow continued commercial fishing for the more abundant summer chums.

In subdistrict 4-A (upstream from Stink Creek), drift netting for subsistence purposes is allowed from June 21 through July 7 and after August 2. The staff will attempt to monitor this fishery in-season and a post-season effort will be made to quantify numbers of fish taken by gear type.

In district 5 kings are of greater importance and are mostly taken with gillnets for both commercial and subsistence purposes. Summer chums are not abundant and are mainly retained for subsistence purposes. There are four subdistricts within the district with several having separate guideline harvest ranges. The overall guideline harvest range for the district is 2,700-3,300 kings. Once the king salmon guideline harvest range is taken, the appropriate subdistrict(s) will be closed until the fall season.

In district 6 (Tanana River drainage) fishwheels are primarily used to harvest king and summer chum salmon for both commercial and subsistence purposes. Once the king salmon guideline harvest range of 600-800 fish has been taken in district 6, the commercial fishing season will be closed. Also, commercial fishing will be closed in subdistrict 6-C by emergency order when the subsistence king salmon quota of 750 fish is met (see Subsistence Fishery Management Plan, subdistrict 6-C).

If subsistence catches of summer chums after the king salmon season closure appear above average in magnitude, a reopening of the commercial season in district 6 would be considered.

Fall Chum and Coho Salmon: In the upper Yukon area, fall chum and coho salmon are normally present from mid-August until late September or early October. The commercial salmon fisheries are regulated by scheduled weekly fishing periods and guideline harvest ranges (25,500-100,500 fall chums and cohos combined for districts 4, 5, and 6). In accordance with policy formulated at the April 1983 meeting of the Board of Fisheries, the Department is directed to manage the fall chum salmon commercial fishery very conservatively. In compliance with those instructions, the Department will manage the fishery for harvests approaching the lower end of the guideline harvest range. A larger harvest may be allowed if the run is exceptionally strong, but in no case will the combined guideline harvest range for the entire river be exceeded.

District 4: Regulations do not provide for the commercial harvest of fall chums in subdistrict 4-A.

Subdistrict 4-B is that area of district 4 along the north bank of the Yukon River from Cone Point to the mouth of Illinois Creek, including nearshore islands. Tagging studies have shown that most fall chums that migrate along the north bank are destined for spawning streams within the Porcupine and

upper Yukon drainages. Those fall chums and cohos traveling along the south bank (subdistrict 4-C) are bound for the Tanana River drainage.

Establishment of differing fishing periods or harvest levels for subdistricts 4-B and 4-C may be required, depending on relative strength of the various stocks. It is expected that in most years these two subdistricts will be managed as one.

In some years (as in 1981) the fall chum salmon run passing through subdistricts 4-B and 4-C are offshore and not available to fishwheels and set gillnets. If this situation occurs again, the Board of Fisheries has directed the Department to optimize the harvest (proportional to run strength) in subdistricts 4-B and 4-C by adjusting fishing time based on analysis of catch data from other districts.

Districts 5 and 6: In districts 5 and 6 the opening of the fall season will be delayed until the strength of the fall chum run has been assessed and the run has been distributed throughout the major fishing areas of both districts. This strategy has been endorsed by the Board of Fisheries and will result in better balanced harvests and escapements and throughout the districts.

As in district 4, separate subdistricts (5-A and 5-B) along the north and south banks of the Yukon River have been established to allow stock-specific management of fall chums. Similar to the management strategy outlined for district 4, differential fishing periods (and harvests) may be applied. However, because of the Department's relative inability to assess run strength in this part of the river, independent management of these subdistricts is unlikely unless unusually large or small runs occur.

A separate fall chum and coho salmon guideline harvest range of 2,000-4,000 fish has been established for subdistrict 5-D of district 5; it is expected that subdistrict season openings within district 5 will be concurrent and that subdistrict closures will occur independently.

In subdistrict 6-C the commerical fishing season will be closed at such time as the subsistence fall chum and coho salmon quota of 5,200 fish (both species combined) has been met (Subsistence Fishery Management Plan, subdistrict 6-C) or when the district-wide commercial guideline harvest range has been achieved.

Subsistence Salmon Fishery Management Plan, Subdistrict 6-C

This management plan was adopted by the Board of Fisheries to insure adequate subsistence salmon harvests and escapements in that portion of the Tanana River upstream of the Wood River.

Subsistence salmon harvest quotas in subdistrict 6-C are 750 king and 5,000 chum salmon taken through August 15 and 5,200 chum and coho salmon combined taken after August 15. When either the king or chum salmon quotas for the period before August 16 has been taken the subsistence salmon fishing season in subdistrict 6-C will close. Also, the commercial fishing season in subdistrict 6-C will be closed by emergency order when either the subsistence king or summer chum salmon quota is taken.

If the subsistence king salmon quota has been attained, the Department may reopen the subsistence fishery in subdistrict 6-C to fishermen using set gillnets of 6 inch or smaller mesh or fishwheels between July 5-25. This would allow harvest of summer chum stocks and minimize the harvest of large king salmon.

A later subsistence fishing season in subdistrict 6-C will be opened after August 15 to allow the taking of the fall chum and coho salmon quota for the period after August 15. If the subsistence chum salmon quota in subdistrict 6-C has not been obtained through August 15, the remaining quota will not be added to the chum salmon harvest quota for the period after August 15. Once the subsistence fall chum and coho salmon quota has been taken, the commercial fishing season will also close in subdistrict 6-C in accordance with regulations adopted by the Board.

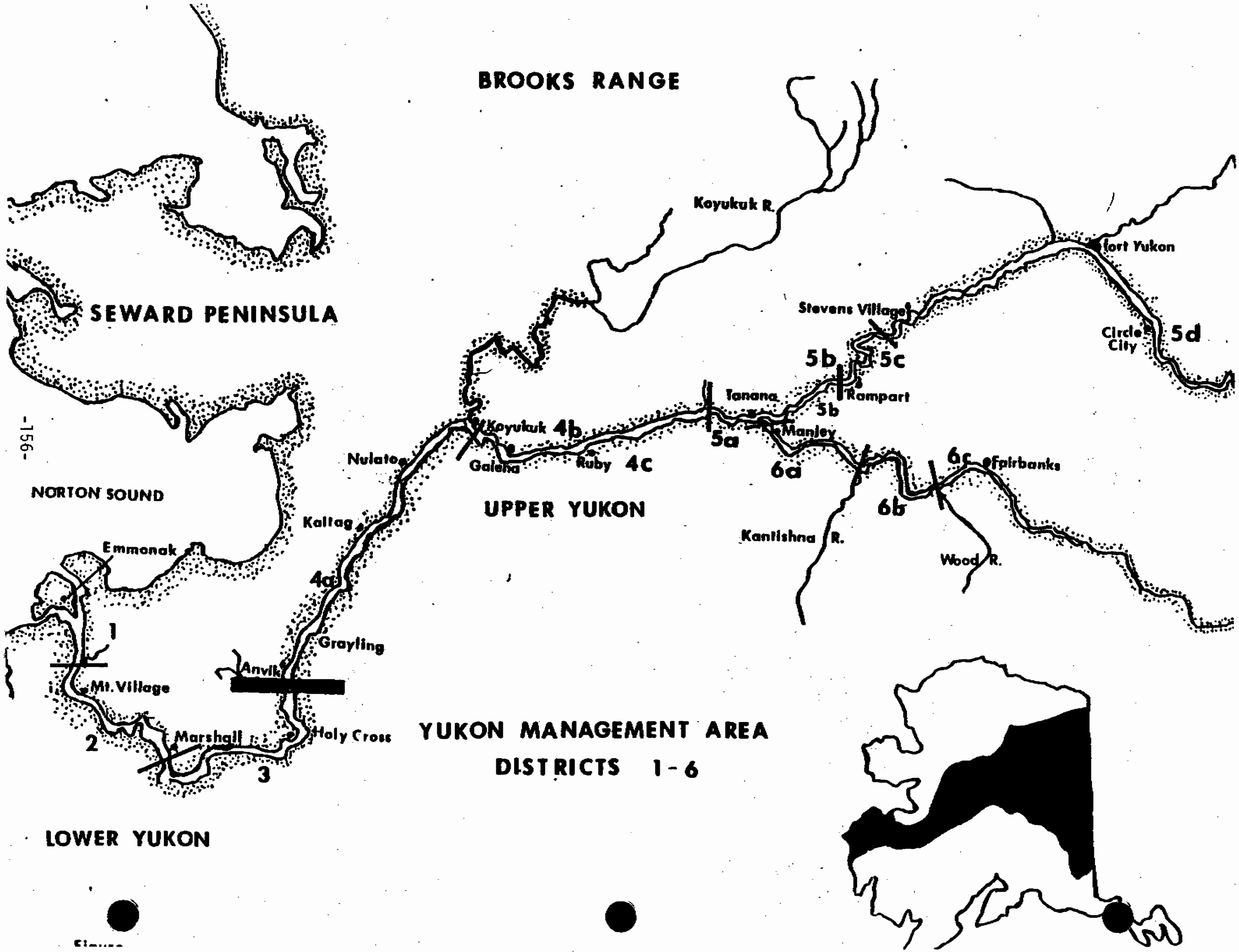
ENFORCEMENT

Major violations continue to be the illegal sales of subsistence caught salmon or their parts including salmon roe. These violations primarily occur in districts 5 and 6.

In district 6, fishermen are required to immediately remove the dorsal fin from subsistence caught salmon. This regulation is necessary for enforcement purposes in order to distinguish between subsistence caught and commercially taken salmon.

Also buyers and processors are prohibited from receiving for commercial purposes, to barter or solicit to barter subsistence taken salmon or their parts. Further restrictions in the bartering of salmon or their parts may be implemented by emergency order for a specific time and area if circumvention of management programs is occurring because of illegal bartering activities.

Fishermen are requested to report any instances of fishery violations to Department of Fish and Game or Division of Fish and Wildlife Protection (Department of Public Safety) personnel in order that follow-up action may be taken.



YUKON MANAGEMENT AREA
DISTRICTS 1-6