ALASKA DEPARTMENT OF FISH AND GAME

DIVISION OF COMMERCIAL FISHERIES

ANNUAL MANAGEMENT REPORT

1985

YUKON AREA

ANCHORAGE AREA OFFICE — 333 Raspberry Road, 99502
Michael F. Geiger (Lower Yukon Area Management Biologist)
Lawrence S. Buklis (Lower Yukon Research Project Leader)
Dave Mesiar (Lower Yukon Research Project Leader)
John A. Wilcock (Yukon Stock Biology Project Leader)

FAIRBANKS AREA OFFICE — 1300 College Road, 99701
Frederick M. Andersen (Upper Yukon Area Management Biologist)
Louis H. Barton (Upper Yukon Research Project Leader)

BETHEL FIELD OFFICE — Box 90, 99559
Daniel J. Bergstrom (Assistant Area Management Biologist)

TABLE OF CONTENTS

Page

LIST OF FIGURES..... i

LIST OF TABLES..... ii

APPENDIX TABLES..... iv

ATTACHMENTS..... vii

PREFACE..... viii

AREA INTRODUCTION..... 1

Description of Area..... 1
Fishery Resources..... 1
Water Quality..... 2
District Boundaries..... 2
Commercial Salmon Fishery History and Description..... 2
Historical Catch Trends and Status of Stocks..... 2
Lower Yukon Area..... 6
Upper Yukon Area..... 8
Subsistence Utilization..... 10
Escapement Enumeration..... 13
Management..... 14
Special Studies..... 16

AREA SALMON REPORT, 1985..... 16

Area Season Summary, 1985..... 16
Commercial Fishery, 1985..... 17
Lower Yukon Area..... 17
King Salmon..... 18
Summer Chum Salmon..... 19
Fall Chum Salmon..... 19
Coho Salmon..... 20
Commercial Fishing Fleet Survey..... 21
Upper Yukon Area..... 22
King Salmon..... 22
Summer Chum Salmon..... 23
Fall Chum and Coho Salmon..... 24
Subsistence Fishery, 1985..... 25
Lower Yukon Area..... 26
Upper Yukon Area..... 26
Escapement, 1985..... 27
Enforcement, 1985..... 30
Lower Yukon Area..... 30
Upper Yukon Area..... 30

TABLE OF CONTENTS (Continued)

Page

OUTLOOK FOR 1986 31

King Salmon 31
Summer Chum Salmon 31
Fall Chum Salmon 31
Coho Salmon 31

CAPE ROMANZOF DISTRICT HERRING FISHERY 122

Commercial Fishery, 1985 122
Subsistence Fishery, 1985 123

COMMERCIAL FRESHWATER FISHERIES 129

LIST OF FIGURES

Figure | Page

Figure 1. Yukon River drainage map..... 33

Figure 2. The lower Yukon River drainage..... 34

Figure 3. The Koyukuk River drainage..... 35

Figure 4. The Tanana River drainage..... 36

Figure 5. The middle Yukon River and Porcupine River drainage..... 37

Figure 6. The upper Yukon River drainage..... 38

Figure 7. Districts 1-6 of Yukon management area..... 39

Figure 8. District 1 of Yukon management area with statistical areas.. 40

Figure 9. District 2 of Yukon management area with statistical areas.. 41

Figure 10. District 3 of Yukon management area with statistical areas. 42

Figures 11 & 12. District 4 of Yukon management area with statistical areas..... 43

Figure 13. District 5 of Yukon management area with statistical areas. 45

Figure 14. District 6 of Yukon management area with statistical areas. 46

Figure 15. Set Net Only Area, District 1 of Yukon Management Area..... 47

Figure 16. Closed waters Acharon Channel, south mouth Yukon River..... 48

Figure 17. Closed waters of Black River mouth..... 49

Figure 18. Closed waters of Apoon Pass mouth..... 50

Figure 19. Closed waters of Andreafsky River mouth..... 51

Figure 20. Closed waters of Anvik River mouth..... 52

Figure 21. Cape Romanzof District..... 124

LIST OF TABLES

Table | Page

Table 1. List of indigenous fishes found in the Yukon Area..... 53

Table 2. Yukon River drainage mileages..... 54

Table 3. Yukon Area processors and associated data, 1985..... 58

Table 4. Commercial salmon catches by fishing season and district, Yukon Area, 1985..... 61

Table 5. Commercial salmon catches by statistical Area, Yukon Area, 1985..... 62

Table 6. Yukon Area CFEC salmon gear permits issued by residence, 1985..... 63

Table 7. Commercial salmon catch and effort data by fishing period, set and drift gill nets combined, District 1, Yukon Area, 1985..... 64

Table 8. Commercial salmon catch and effort data by fishing period, set and drift gill nets combined, District 2, Yukon Area, 1985..... 65

Table 9. Commercial salmon catch and effort data by fishing period, set and drift gill nets combined, District 3, Yukon Area, 1985..... 66

Table 10. Commercial salmon catch and effort data by fishing period, set gill nets and fishwheel gear combined, District 4, Yukon Area, 1985..... 67

Table 11. Commercial salmon catch and effort data by fishing period, set gill nets and fishwheel gear combined, District 5, Yukon Area, 1985..... 68

Table 12. Commercial salmon catch and effort data by fishing period, set gill nets and fishwheel gear combined, District 6, Yukon Area, 1985..... 69

Table 13. Upper Yukon Area commercial salmon catches and roe production, 1985..... 70

Table 14. Yukon River subsistence salmon catch data, 1985..... 71

Table 15. Aerial survey salmon escapement estimates, Yukon River drainage, 1985..... 73

Table 16. Yukon Area (Alaska) escapement index objectives for king and chum salmon..... 78

LIST OF TABLES (Continued)

Page

Table 17. Commercial herring catch and effort data by fishing period, Cape Romanzof District, 1985 125

Table 18. Commercial herring catch and effort by residency, Cape Romanzof District, 1985 126

APPENDIX TABLES

Appendix Table		Page
Appendix Table 1.	Yukon River drainage commercial and subsistence salmon catches, 1903-1985	79
Appendix Table 2.	Commercial salmon catches by species and district, Yukon Area, 1960-1985	82
Appendix Table 3.	Commercial Fisheries Entry Commission salmon permits issued by gear type, Yukon Area, 1976-1985	84
Appendix Table 4.	Actual number of commercial salmon fishing gear operators (vessels) by district, Yukon Area, 1971-1985	85
Appendix Table 5.	Commercial king salmon catches by statistical area, Lower Yukon Area, 1971-1985	86
Appendix Table 6.	Commercial king salmon catches by statistical area, Upper Yukon Area, 1974-1985	87
Appendix Table 7.	Commercial catches of king and summer chum salmon by mesh size, Districts 1 and 2, Yukon Area, 1961-1985	88
Appendix Table 8.	Commercial king salmon catch and effort data, Districts 1 and 2, Yukon Area, 1960-1985	89
Appendix Table 9.	King salmon commercial catch data by fishing period, king salmon season, District 1, Yukon Area, 1972-1985	90
Appendix Table 10.	Commercial salmon catches taken under quotas or guideline harvest ranges, Yukon Area, 1974-1985	91
Appendix Table 11.	Commercial chum salmon catches by statistical area, Lower Yukon Area, 1971-1985	92
Appendix Table 12.	Commercial chum salmon catches by statistical area, Upper Yukon Area, 1974-1985	93
Appendix Table 13.	Summer and fall chum salmon commercial catches, by district, Yukon Area, 1961-1985	94
Appendix Table 14.	Commercial summer chum salmon catch and effort data, Districts 1 and 2, Yukon Area, 1967-1985	96

APPENDIX TABLES (Continued)

Appendix Table		Page
Appendix Table 15.	Commercial coho and chum salmon catch and effort data, for the fall chum season, District 1, Yukon Area, 1961-1985	97
Appendix Table 16.	Fall chum salmon commercial catch data by period, fall season, District 1, Yukon Area, 1969-1985	98
Appendix Table 17.	Commercial fall chum and coho salmon catch and effort in the Set Net Only and Gill Net areas, District 1, Yukon Area, 1983-1985	99
Appendix Table 18.	Commercial salmon pack by species and type of processing, Yukon Area, 1960-1985	100
Appendix Table 19.	Commercial salmon roe sales by subdistrict, upper Yukon Area, 1978-1985	101
Appendix Table 20.	Dollar value estimates of Yukon Area commercial salmon fishery, 1961-1985	102
Appendix Table 21.	Estimated average prices paid to fishermen, Yukon Area, 1961-1985	103
Appendix Table 22.	Average weight of salmon, commercial catch, Yukon Area, 1964-1985	104
Appendix Table 23.	Yukon River comparative subsistence catch and effort data, 1961-1985	105
Appendix Table 24.	Yukon River king salmon subsistence catches by village, 1972-1985	106
Appendix Table 25.	Subsistence and commercial king salmon catches by district, Yukon Area, 1977-1985	108
Appendix Table 26.	Yukon River chum salmon subsistence catches by village, 1972-1985	109
Appendix Table 27.	Subsistence and commercial summer chum salmon catches by district, Yukon Area, 1977-1985	111
Appendix Table 28.	Subsistence and commercial fall chum salmon catches by district, Yukon Area, 1977-1985	112
Appendix Table 29.	Subsistence and commercial coho salmon catches by district, Yukon Area, 1977-1985	113
Appendix Table 30.	Subsistence salmon catches taken under authority of a permit, Upper Yukon Area, 1973-1985	114

APPENDIX TABLES (Continued)

Appendix Table		Page
Appendix Table 31.	Yukon River drainage king salmon escapement estimates, 1972-1985	115
Appendix Table 32.	Estimated potential egg deposition of king salmon in three spawning areas of the Yukon River drainage, 1970-1985	116
Appendix Table 33.	Yukon River drainage summer chum salmon aerial survey escapement estimates, 1974-1985	117
Appendix Table 34.	Yukon River drainage fall chum salmon aerial survey escapement estimates, 1973-1985	118
Appendix Table 35.	Yukon River drainage coho salmon escapement estimates, 1971-1985	119
Appendix Table 36.	Associated environmental and salmon catch data, Yukon River, 1961-1985	120
Appendix Table 37.	Total catch and estimated catch of Western Alaska king salmon taken in Japanese high seas salmon gillnet fisheries and foreign and joint-venture trawl fisheries, 1964-1985	121
Appendix Table 38.	Commercial herring fishery data, Cape Romanzof District, 1980-1985	127
Appendix Table 39.	Subsistence herring catches by village, in the vicinity of Cape Romanzof, 1975-1985	128
Appendix Table 40.	Colville River commercial whitefish catches, 1964-1985	130
Appendix Table 41.	Commercial freshwater fishery catches, Upper Yukon Area, 1972-1985	131
Appendix Table 42.	Commercial freshwater fishery catches, Lower Yukon Area, 1978-1985	132

ATTACHMENTS

Page

Attachments

Attachment 1. List of Yukon Area emergency orders and regulations, 1985 133

Attachment 2. Summary of the 1985 Yukon Area commercial and subsistence fishing regulations promulgated by the Board of Fisheries 137

Attachment 3. Summary of special projects conducted in the Yukon Area, 1985 138

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 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, 1985. 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.

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). Commercial salmon catch Appendix Tables show final fish ticket computer data corrected through 1985 except Appendix Tables 10, 13, 25 and 27-29 which includes equivalent numbers of salmon.

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

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

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

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

AREA INTRODUCTION

Description of Area

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

Fishery Resources

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

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

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

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

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

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

Herring are found in Hooper Bay, Kokechik Bay and Scammon Bay (Figure 21). Spawning populations occur only in the Cape Romanzof area (Kokechik Bay and Scammon Bay) 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. Marys). 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 (except 1971) and regulatory restrictions. In 1975 the king salmon commercial catch of 63,838 was the smallest since 1960. Restrictions placed on the commercial fishery during the 1970's have generally resulted in improved escapements. Above average escapements occurred in most streams during 1977-1984. In 1980 and 1981 record escapements were observed in the majority of the major index areas.

Since 1977, due to above-average runs, commercial catches have increased, averaging 128,382 fish annually (1977-1984). The greatest catch ever made in the area was 158,018 king salmon in 1981.

Revised estimates from a recently completed study indicate that an average of 141,000 king salmon of western Alaska origin have been intercepted yearly by the Japanese mothership and landbased gill net fisheries during 1975-1983. Yukon River kings comprised the majority of western Alaska stocks taken in the Bering Sea mothership catches. This study provided new information that substantial numbers of western Alaska king salmon are intercepted in the Japanese landbased fishery which occurs in the North Pacific Ocean waters. In 1980 a total of 438,000 western Alaska king salmon was estimated to have been taken in these fisheries which exceeded the domestic commercial catch in western Alaska that year. High seas fisheries have captured an average of 26% of the estimated western Alaska return during 1965-1977 and 14% since 1978.

Although reported foreign catches have decreased in recent years, it is believed that high seas fishing mortality including gillnet dropouts (estimated to be 30% of the reported catch in one study) and possible underreporting of catches result in continued losses of western Alaska fish.

The reported king salmon catch made by the Japanese mothership fishery in 1985 was 66,000 fish (Appendix Table 37). This was the smallest catch since 1961 and considerably below the recent five and ten year annual catches of 214,000 and 184,000, respectively.

The incidental harvest of king salmon in foreign and joint-venture travel fisheries has decreased in recent years (Appendix Table 37). A domestic factory trawl fishery has been recently initiated in the southeastern Bering Sea however the incidental salmon catch 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. During the period 1966-1970 subsistence catches decreased, averaging 217,951 chums. As the subsistence fishery declined and regulations were relaxed, coupled with the expansion of the fall chum commercial fishery, the commercial 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 868,819 during the period 1971-1984. 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 10,935 summer chums were taken commercially while in 1978 a record 1,077,987 fish were harvested (Appendix Table 13). Since the recent development of the fishery catches (including equivalent numbers of salmon converted from roe sales) have averaged 827,223 annually (1974-1984). 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, 1981, and 1985. 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 (1969-1984) catches have averaged 252,422 (Appendix Table 13). 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 two districts (Appendix Table 13). The largest fall chum catch occurred in 1981 when 477,736 fish were harvested.

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

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

Run magnitudes, based on comparative catch data and limited escapement data, have fluctuated sharply depending on the brood year strength. Large runs were generally experienced in 1971, 1975, 1979, 1981, and 1985 while small runs occurred in 1973, 1976, 1980 and 1982. Upper Tanana River drainage escapements in general appear more stable and experience less fluctuation than the Porcupine River and Toklat River systems. For example, aerial survey escapement estimates in the Fishing Branch River (Porcupine River drainage) have ranged from 78,600 (1975) to 5,600 (1984) and the Toklat River (upper area) have ranged from 96,600 (1979) to 3,300 (1982).

An overall guideline harvest range of 145,500-320,500 (233,000 midpoint) of fall chum salmon was in effect through 1985. The Board of Fisheries at its December, 1978 meeting replaced the previous quota system with the more flexible guideline harvest range concept. In 1974 the Alaska Board of Fish and Game established quotas of 200,000 chum salmon for the lower three districts (combined) and 50,000 combined chum and coho salmon for the upper three districts.

Yukon River chums, in addition to other western Alaska stocks, are intercepted by the U.S. South Unimak - Shumagin Islands commercial fishery in June as demonstrated by tagging studies. Annual (1970-1979) catches of this interception fishery average 277,000 chums. However in recent years catches have increased sharply: 1980 (528,000), 1981 (575,000), 1982 (1,094,000), 1983 (784,000), 1984 (337,000), and 1985 (428,000).

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 24,473 fish during the period 1971-1984 (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 (1977-1984) fishermen have received approximately 6.6 million dollars annually (Appendix Table 20). The vast majority of all commercial fishermen are Eskimo and Athabascan Indian residents of the Yukon River drainage.

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

The majority of the salmon catch is presently processed as a fresh/frozen product in contrast to earlier years when canning and salting were of greater importance (Appendix Table 18). 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 19). In recent years, 1979-84, the wholesale value of the pack has averaged 18.4 million dollars.

Lower Yukon Area

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

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

Beginning in 1961, when king salmon catch quotas were eliminated for Districts 1 and 2, these fisheries have been regulated by scheduled weekly fishing periods. The "king salmon season" (unrestricted mesh size) in these districts usually 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 elsewhere. 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 1985 a total of 703 CFEC gill net permits were issued (Appendix Table 3).

Since 1971 Districts 1 and 2 commercial king salmon catches have averaged 102,361 fish annually (1971-1984) (Appendix Table 2). In 1981 the Board of Fisheries established a 60,000-120,000 king salmon guideline harvest range for Districts 1 and 2 combined.

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

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

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

Subsistence fishing for summer chums has declined in recent years and the Department has liberalized regulations to provide for an earlier reopening in July to harvest the surplus. Concurrent with an early reopening of the season, a regulation was promulgated in 1973 specifying gill nets of only 6-inch mesh or less may be fished after a specified date in early July in Districts 1 and 2. Use of small mesh gill nets in early July allowed a greater harvest of summer chums and also minimized the king salmon catch (Appendix Table 7). Beginning with the 1976 fishing season a regulation was promulgated which established a flexible range of dates from June 27 to July 5 in Districts 1 and 2 (and July 5-15 in District 3) after which only gill nets of 6-inch or less mesh gill nets may be used. Effective for the 1985 fishing season a regulation was promulgated which eliminated specific dates when the six inch maximum mesh only fishing periods became effective in Districts 1, 2, and 3.

In recent years (1974-84) the lower Yukon area commercial summer chum salmon catch has averaged 579,195 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 201,029 fish annually (1969-84) (Appendix Table 13).

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

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

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

The harvest of coho salmon in the lower Yukon area is dependent upon the duration of the fishing season (usually related to when the chum salmon guideline harvest range is taken). Cohos peak during mid to late August. Lower Yukon coho salmon catches since 1971 have averaged 21,779 annually (1971-84) (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 and Mountain Village. Fresh salmon is transported by aircraft from St. Marys, Marshall, Russian Mission and Paimuit-Holy Cross for further processing. A hard salting operation is located at Black River.

Upper Yukon Area

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Tradition, local fishing conditions, efficiency, and relative ease of operation combine to make fishwheels the primary type of gear for harvesting

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

The last major difference between the two fisheries is their relative size, both in numbers of fishermen and catch. Because of the developing nature of the commercial fishery in Districts 4, 5 and 6 and the absence of major summer chum salmon-producing streams in the upper portion of the drainage, the commercial salmon harvest has averaged approximately 25% of the total area harvest in recent years. During the recent 5-year period, the upper Yukon districts have had an average of 162 participating fishermen or approximately 18% of the Yukon area total (Appendix Table 4). Final implementation of the Limited Entry Program is expected to stabilize year-to-year fishing effort.

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

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

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

Subsistence Utilization

There are approximately 10,000-15,000 Eskimo and Athabascan Indian people in the area, the majority of whom reside in excess of 45 small villages scattered along the coast and major river systems. Nearly all of these native people

are dependent to varying degrees on fish and game resources for their livelihood.

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

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

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

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

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

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

Another very important factor tending to affect subsistence fishing effort

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

Reflecting the above changes in effort and dependency, the subsistence salmon catch has substantially decreased since the early 1960's. Comparing catches from villages surveyed each year ("equivalent catches") the chum salmon harvest averaged 399,001 during 1961-1965. During the period 1966-1973 catches averaged 191,507, a decrease of 54 percent (Appendix Table 22). However, during 1974-1983, the subsistence chum salmon catches, utilized mainly for dog food, have increased, averaging 319,242. This increase can be attributed to above-average size runs, especially summer chums, subsistence roe sales (legal 1974-1977) and increasing numbers of recreational sled dog teams.

Subsistence catches of king salmon, which are utilized mainly for human consumption, remained relatively constant during the period 1961-1977, generally averaging 15-25,000 per year. Since 1978 king salmon catches have increased substantially, averaging 43,378 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 24-28 which show that the majority of the subsistence salmon catches are taken in the upper Yukon River area.

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

Subsistence fisheries which target on non-salmon species such as pike, sheefish and whitefish are inadequately documented and their overall significance is not well known. It is thought, however, that residents of the

upper Yukon area are much less dependent on these miscellaneous species than are their downriver counterparts.

Escapement Enumeration

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

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

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

- provide information for use in forecasting returns.

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

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

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

Variability in aerial survey accuracy is dependent upon a number of factors such as weather and water conditions (turbidity), timing of surveys with respect to peak spawning, type of aircraft, survey altitude, experience of both pilot and observer, and species of salmon being enumerated. It is generally recognized that aerial estimates are lower than actual stream abundance due to these factors. Further, peak spawning abundance measured by aerial survey methods is significantly lower than total season abundance due

to the die-off of early spawners and arrival of late fish. Also, aerial estimates in a given stream may demonstate a wide range in the proportion of fish being enumerated from year to year. Peak aerial counts, however, can serve either as indices of relative abundance for examination of annual trends in escapement or estimation of total escapement from base year data or established expansion factors, or they may be used to apportion tributary spawning distribution to a mainstem total escapement estimate obtained from sonar or tower counts.

Aerial escapement estimates are made of as many spawning streams as possible within the confines of fiscal, manpower, and weather restraints. Representative selected spawning streams or "index areas" have been identified and receive highest priority. Index areas have been designated due to their importance as spawning areas and for use in annual comparison with other unsurveyed streams in the general area. Escapement estimates of index streams not only provide yearly escapement trends but also allow for post-season evaluation of management strategies. Preliminary escapement objectives which represent the number of spawners considered necessary to maintain the reproductive potential of each stock are presented in Table 16.

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. Subsistence fishing has been designated by the Alaska State Legislature and the Board of Fisheries as the highest priority use, although, where the dependence upon subsistence fishing has declined, the Department has liberalized regulations to allow development of commercial fisheries.

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

Due to the turbid water conditions of the main river (and some of its tributaries) and the vast size of the Yukon River drainage, accurate in-season assessment of the escapement immediately past the intensive downriver fishery is very difficult with the present available technology and funding. Also, in-season management of the runs (often mixed species) is hampered by the variable run timing and pattern of entry into the lower river fishery which causes difficulties when attempting to analyze catch data. The usefulness of

commercial 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.). Also the commercial fishery has changed due to regulatory restrictions (delayed season openings, reduced fishing time and maximum mesh size regulations). Greater dependence has been placed on Department test fishing projects in recent years for assessing run timing and abundance.

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 1985 is presented in Attachment 1. Also presented are 1985 regulation changes promulgated by the Board of Fisheries during its November, 1984 meeting (Attachment 2).

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

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

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

3. Main River Sonar. BioSonics hydroacoustic equipment 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 microcomputer at the Emmonak field office, was utilized for in-season management purposes.

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). In addition fall chum salmon foot surveys were initiated in the Tanana River drainage.

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

Operating funds allocated for the Yukon area salmon management and research program from July 1, 1984 through June 30, 1985 were $500,100. An additional $24,600 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. 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 1985 and includes a summary of objectives, procedures and results for each.

AREA SALMON REPORT, 1985

Area Season Summary, 1985

In 1985 the Yukon River salmon runs were overall judged average to above average in magnitude, based on comparable catch and escapement data.

In 1985 there were 146,188 kings, 57,672 cohos, and 784,741 chums, totaling 988,601 salmon taken commercially. The harvest for all species combined was below the previous 5 year average (1980-1984) of 1,218,733 (Appendix Table 2). Tables 4 and 5 present 1985 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 and Appendix Tables 10, 13, 25, and 27-29.

The 1985 data presented in this section does not include commercial catches by Canadian fishermen in the Yukon Territory (Appendix Table 1).

In 1985 the commercial king salmon catch was above the previous five year average of 140,692 (Appendix Table 2).

The 1985 commercial chum salmon catch was below the previous five year average of 1,218,733 (Appendix Table 2). The 1985 equivalent catch was composed of 765,622 summer and 270,269 fall chums (Appendix Table 13). The summer and fall chum salmon equivalent catch was below the previous five year average catch of 905,728 and 303,880, respectively.

In 1985 the commercial coho salmon catch was the second largest on record and exceeded the previous five year average of 32,972 fish (Appendix Table 2).

Subsistence harvests in 1985 in the Yukon area (excluding Yukon Territory) were estimated at 39,771 king and 503,564 chum and coho salmon combined (Appendix Table 1).

In 1985 a total of 771 Commercial Fisheries Entry Commission (CFEC) gill net permits and 151 fishwheel permits (not including transfers) were issued in the area. Table 6 shows the residency of all persons issued CFEC permits for 1985. 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. Production of salmon roe totaled 476,024 pounds in 1985, including 251,150 pounds of salmon roe purchased from commercial fishermen in the upper Yukon area. Commercial salmon production data is presented in Appendix Tables 18 and 19. All buyers and processors operating in the Yukon area during 1985 are listed in Table 3.

Yukon area commercial fishermen received $7,031,600 for their catches in 1985. The first wholesale value of the 1985 pack was estimated at $17,579,000 (Appendix Table 20).

Average prices paid to fishermen and average salmon weights are presented in Appendix Tables 21 and 22, respectively.

Commercial Fishery, 1985

Lower Yukon Area

The 1985 lower Yukon area (Districts 1, 2 and 3) commercial salmon catch

totaled 798,915 fish which was comprised of 140,964 king, 612,979 chum, 437,377 summer and 175,602 fall chums, and 44,972 coho salmon (Appendix Tables 2 and 13).

Fishing effort, in terms of the actual number of participating fishermen (gear permit holders), is presented in Appendix Table 4. In 1985 a total of 703 CFEC gillnet permits were issued for the lower Yukon area (Appendix Table 3). A total of 666 permit holders fished at least once in the lower three districts during 1985.

King Salmon: The timing of the king salmon migration in the lower Yukon was late as anticipated by the cold temperatures and late breakup of river ice. The mean April Nome air temperature was 1.4°F (17.5°F lower than normal) (Appendix Table 36). The lower river was generally free of ice by 5 June. The first king salmon was reported caught on 14 June at Alakanuk by a subsistence fisherman. The first king salmon caught in the Department's test fishing nets occurred on 15 June at Big Eddy and 21 June at the middle mouth. Significant test fishing and subsistence catches occurred 18 June and increased sharply in the south mouth prior to the opening of the commercial fishery.

The commercial fishery was opened by emergency order after subsistence and test fishing catches indicated that the early portion of the king salmon run had passed through the lower river. In accordance with the Yukon Area Salmon Management Plan the fishing season in each district was opened on a staggered basis: 24 June in District 1, 26 June in District 2, and 1 July in District 3. These were the latest opening dates in the history of the fishery. A fishing schedule of two-24 hour fishing periods per week was established by emergency order.

Commercial and test fishing catch data indicated the king salmon run to be above average in magnitude. The management plan provides for the upper end of the 60,000 to 120,000 king salmon guideline harvest range for Districts 1 and 2 to be taken if the run is of average magnitude. As of 2 July, the inseason estimated harvest in Districts 1 and 2 was approximately 92,000 king salmon which were captured primarily with large mesh size gill nets. At this time the "king salmon season" was closed (fishing with unrestricted mesh size), and fishing was allowed only with gill nets of 6 inch or smaller mesh size effective 3 and 5 July for Districts 1 and 2, respectively. This allowed one more unrestricted mesh size fishing period in District 2, and it was also anticipated that an additional 10-20,000 king salmon would be harvested with 6 inch or smaller mesh gill nets. Both Districts 1 and 2 had three fishing periods each during the "king salmon season," the least amount of fishing time in the history of the fishery. During the "king salmon season" a total of 114,300 kings was taken in Districts 1 and 2. An additional 24,076 kings were taken with 6 inch or smaller mesh size gill nets. The total season harvest of king salmon was 90,011 and 48,365 in Districts 1 and 2, respectively. In District 3, which is managed under a 1,800 to 2,200 guideline harvest range, a total of 2,588 king salmon was taken. The total lower Yukon area king salmon harvest was 140,964 and above the recent 5-year average of 133,665.

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

The majority of the king salmon run entered the south and middle mouth areas with most of the District 1 catch taken in these two mouths and the Head of Passes-Ten Mile area.

The age composition of the commercial catch in District 1 during the "king salmon season" was 1.5% 4-year-olds, 7.8% 5-year-olds, 80.1% 6-year-olds, and 10.6% year-olds. Jacks were prevalent during the later portion of the run. The average weight of king salmon in the commercial catch was 20.3 lb.

Summer Chum Salmon: Similar to king salmon, the summer chum salmon migration was very late. The first summer chum salmon was caught on 15 June by a subsistence fisherman near Emmonak. Department test fishing set gill nets caught summer chum salmon beginning on 16 and 17 June at Big Eddy and Middle Mouth, respectively. As in 1984, the summer chum run peaked during the "king salmon season." Daily test net catches during the last week of June were usually over 200 chum salmon in two Big Eddy 5 1/2 inch mesh test nets. Although the summer chum salmon migration was very strong, only 437,377 were harvested in the lower Yukon Area, well below the previous 5-year average of 667,748. The catch by district was 247,486 (District 1), 188,099 (District 2), and 1,792 (District 3). There appeared to be very low effort with small mesh gear targeted at summer chum salmon during periods allowing unrestricted mesh size gill nets. The majority of the harvest was taken when gill nets were restricted to 6 inch maximum mesh size.

In District 2 a special 6-hour period with 6 inch or smaller mesh size gill nets was allowed on 2 July. This management strategy of allowing use of 6 inch or smaller mesh gear during the "king salmon season" was endorsed by the Board of Fisheries in November 1984 in an attempt to utilize surplus summer chum salmon during very large runs. The opening worked well as a total of 39,997 summer chum salmon was taken compared to 1,557 king salmon.

Fishing time during the "summer chum salmon season" (early mid-July) in Districts 1 and 2 was two-24-hour periods per week. Due to a lack of markets, no summer chum salmon were taken in District 3 after the "king salmon season." Commercial summer chum salmon catch and effort data is presented in Appendix Tables 13 and 14.

The summer chum salmon commercial catch in District 1 was composed of 70.2% 4-year-olds and 28.7% 5-year-olds. The average weight of summer chum salmon in the lower Yukon Area was 6.7 lb.

Fall Chum Salmon: The percentage of fall chum salmon in the Big Eddy and Middle mouth test net catches increased steadily after mid-July, and by 25 July essentially all were fall chum salmon. Effective after 15 July in District 1 and 18 July in District 2, all chum salmon taken were considered fall chum salmon and counted against the 120,000 to 220,000 guideline harvest range. The fishing season was closed effective 19 July in District 1 and 22 July in District 2 to afford protection for the early fall chum salmon run. A total of 14,154 fall chum slamon was caught toward the guideline harvest range when the season closed.

The commercial fishery season was reopened effective 1 August in District 1, 4 August in District 2, and 5 August in District 3. Fishing was allowed for two-24 hour periods per week in the "Set net Only Area" (along the coast) in

District 1. In the remainder of District 1 and in District 2, fishing was allowed for two-12-hour periods per week. After the reopening of the fishing season both commercial and test fishing data indicated average run strength. The fishery was closed effective 13 August in District 1, 11 August in District 2, and 13 August in District 3. At the time of the closure a total of 166,183 fall chum salmon had been harvested of which 65,337 were caught during the last period in District 1.

After the closure the fall chum salmon run continued at a moderate rate, as indicated by test fishing data. Since the coho salmon run was judged above average in magnitude, a 6-hour fishing period was allowed in District 2 on 22 August in an effort to utilize surplus coho salmon. During this last period a total of 9,567 coho and 9,419 fall chum salmon was taken. This brought the total fall chum salmon harvest to 175,602 for the lower Yukon Area (129,948 in District 1, 40,490 in District 2, and 5,164 in District 3). The harvest was below the recent 5-year average of 224,377 fall chum salmon.

Commercial fall chum catch and effort data are presented in Appendix Tables 15 and 16.

In 1983 the Board of Fisheries adopted regulations establishing a "Set Net Only Area" in the lower portion of the delta area of District 1 for the fall chum salmon fishery (after 19 July). This special "area" was created to provide additional fishing time for setnet fishermen whose fishing effectiveness is influenced by the tides. Fishermen must register for this area, operate only set gill nets, and once registered cannot fish elsewhere in the remainder of District 1 ("Gill Net Area") or in Districts 2 or 3. Overall, fishermen in the "Set Net Only" area did better than their counterparts in the gillnet area. The fall chum and coho salmon catch for the "Set Net Only" and "Gill Net" areas of District 1 is presented in Appendix Table 17.

The District 1 commercial fall chum salmon catch was composed of predominantly 4-year-olds (85.3%) and 5-year-olds (13.4%). Average weight of fall chum salmon was 7.7 lb in the lower Yukon area.

Coho Salmon: the first coho salmon was caught in the District 1 commercial fishery during 11-12 July. Test fishing data indicted a strong run. The lower Yukon area coho salmon catch of 44,972 was the second largest in history. The coho salmon catch by district was as follows: District 1 (27,676), District 2 (17,125), and District 3 (171).

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

The District 1 commercial catch of coho salmon was composed of 11.9% 3-year-olds, 76.8% 4-year-olds, and 11.3% 5-year-olds. The average weight in the commercial catch was 7.4 lb.

A total of 11 processors operated in the lower Yukon area in 1985. Five processors bought fish in more than one district. Nearly all of the commercial salmon catch were shipped to fresh or fresh-frozen markets. One processor in District 1 hard-salted 22,900 lbs. of slamon. For the first time in the history of the fishery there was no canning in the Yukon area.

Commercial Fishing Fleet Survey

A survey of District 2 fishermen was conducted in 1985 to examine changes that have occurred in recent years in effort and efficiency of the commercial fishing fleet. In 1983 a similar survey was completed in District 1. A questionnaire was used during personal interviews with fishermen to document fishermen's residence; type of vessel construction, length and special equipment; fishing gear specifications; fishing locations; type of gear operated and number of fishing periods fished. Key findings are listed below:

1. A total of 78 fishermen, representing 32% of the 247 fishermen that made deliveries in District 2 during 1985, was interviewed. The majority of fishermen were local residents. Two fishermen were from outside the Yukon River delta region. Information regarding residency may be biased due to the survey method, however, it is commonly accepted that participation by nonlocal fishermen is concentrated in District 1.

2. The majority of fishermen operated boats constructed from wood (69%), while the remainder used aluminum (30%) or fiberglass (1%). These results are similar to those obtained from the commercial fishing fleet survey conducted in District 1 during 1983. Clearly there has been a trend toward increased use of aluminum boats since 1978 when 82% of the lower Yukon area commercial fishing fleet consisted of wood boats.

3. Only 1 fisherman (1%) used net rollers on his boat. Seven fishermen (9%) utilized fathometers. A total of 52 fishermen (67%) had CB or VHF radios on their boats, which is double the percentage documented by the 1983 fleet survey in District 1.

4. The mesh size of king salmon gill nets ranged from 8 to 9 inch stretched measure with 8 1/2 inch being most common. The depth of king salmon gill nets ranged from 28 to 50 meshes with 35 to 45 meshes deep being the most common. The mesh size of chum salmon gill nets ranged from 5 1/4 to 6 inch stretched measure with 5 3/4 and 6 inch being most common. The depth of chum salmon gill nets ranged from 25 to 60 meshes deep with 35 to 45 meshes deep being the most common. The results of the 1983 fleet survey indicated that king and chum salmon gill nets were typically 25 to 40 meshes deep in District 1. Nine fishermen (12%) indicated that they used chum gear during some portion of the king salmon season (unrestricted mesh size).

5. Most fishermen fished in only one statistical area. Generally, fishermen in District 2 tended to fish near their home village or fishing camp. There were a number of fishermen from St. Marys and Mt. Village that commercially fished in District 1.

6. Drifting is much more prevalent in District 2 than in District 1. In District 1, 49% of the fishermen interviewed in 1983 exclusively operated set nets. Of the fishermen surveyed in District 2, 3% exclusively operated set nets, 83% exclusively operated drift gill nets and 14% operated both gear types. Set nets were used most often in statistical area 334-22.

7. The majority of fishermen did not fish during every commercial fishery

opening. There was a total of 37 fishermen interviewed after the commercial fishing season and they fished an average of 9.4 commercial fishing openings out of a total of 13. There are a number of reasons for this such as poor market conditions during the late portion of the summer chum salmon run and some fishermen fished in District 1 during the king salmon season.

8. Overall, the survey indicated that the efficiency of the commercial fishing fleet is increasing due to the trend toward larger, better equipped boats and increased fishing with drift gill nets.

Upper Yukon Area

During the 1985 season the combined upper Yukon commercial salmon harvest totaled 5,224 king salmon, 171,762 chum salmon, and 12,700 coho salmon (Appendix Table 2). Of the total chum catch, 79,620 were summer run chums and 94,142 were fall chums. In addition, 251,150 pounds of chum salmon roe (unprocessed weight) were produced in Districts 4, 5, and 6. Salmon roe production data, as in past years, were converted to "equivalent" numbers of fish and are expressed as such in Tables 4-5 and 10-13. On average, female chum salmon from the middle and upriver districts produce approximately one pound of roe per individual; each pound of chum roe then is converted to one "equivalent" chum salmon. Table 13 presents actual numbers of salmon and pounds of salmon produced by districts and statistical area during 1985.

Upper Yukon commercial fishermen received an estimated (per round weight pound) average of $0.86 for kings, $0.23 for summer chums, $0.25 for fall chums, $0.33 for cohos, and $1.94 for salmon roe (Appendix Table 21). The approximate (ex-vessel) value of the 1985 harvest was $880,700 which includes an estimated $487,200 (55%) paid to fishermen for salmon roe sales. During the course of the season, 157 upper Yukon fishermen participated in the commercial fishery, (making at least one delivery) and average per-fisherman earnings were approximately $5,600.

A total of 16 buyer/processors and 13 catcher-sellers reported deliveries during 1985.

King Salmon: Unusually cold spring temperatures resulted in a late ice breakup in the lower Yukon River and delayed arrival of salmon runs throughout the river. King salmon were first reported taken by subsistence fishermen in Grayling on June 22; at Kaltag on June 28; near Tanana on July 5; and in Nenana on July 10. Observations of king salmon in the Chena River were first made on July 5 by Division of Sport Fisheries personnel.

No commercial landings of king salmon in Subdistrict 4-A were recorded in 1985. The total combined commercial harvest, of 664 kings (318 kings in Subdistrict 4-B and 346 king salmon in Subdistrict 4-C) was 68% below the 1980-84 average for those areas. This is thought to be both a function of diminished overall run strength from previous years and the continued lack of a fresh fish market in this are. Run timing, as evidenced by landings was late and peaked in the north bank Subdistrict (4-B) during the July 10-12 period and in the south bank Subdistrict

(4-C) during the period July 17-19.

Run strength in the lower portion of District 5, as indicated by commercial catches, was of only average magnitude. For this reason, an emergency order was issued on July 20, which closed the fishery. At that time, the documented commercial catch in subdistricts 5-A, 5-B, and 5-C was estimated to be 2,100 king salmon and it was thought that allowing one additional 24-hour period would result in a cumulative harvest of approximately 2,700 kings. Actual catch for those subdistricts totaled 2,984 king salmon. Based on reported landings, the peak of the king salmon run in these subdistricts occurred during the period July 16-18. Subdistrict 5-D is managed independently of the lower portion of the district and the season in that area was closed on August 20; total catch for this subdistrict was 434 king salmon.

In the Tanana River (District 6), a total of 1,142 king salmon was harvested commercially of the total, only 15 fish were landed in Subdistrict 6-A and the balance in the Nenana and Fairbanks areas (Table 5). Widely circulated reports indicate that king salmon from the Tanana River area routinely sold without fish ticket documentation. It is possible then that the reported harvest may understate officially reported landings.

Summer Chum Salmon: The 1985 commercial harvest of 328,245 "equivalent summer chum salmon" was second only to the 1978 harvest of 429,651 chums taken in 1978 and was 38% above the recent five-year average (Appendix Table 13).

Since 1980, buyers and processors operating in District 4 have had very limited markets for summer run chum salmon; as a result, salmon roe has become the primary fisheries product exported from the area. During 1985, an approximate total of 247,000 pounds of chum roe was produced in District 4, roughly 90% of which originated in Subdistrict 4-A. Only 12,007 summer chums (in the round) were sold in this district and the majority of these were taken in the Anvik and Grayling areas during the early portion of the run.

A total of 74 commercial fishermen made landings during the 1985 summer season which approximates the 1979-83 average but is considerably higher than the number (54) who participated in the 1984 District 4 fishery when a price dispute idled many local fishmen.

In District 5, summer chums are sold only incidentally to the king salmon fishery in the district; a total of 700 chums was commercially harvested during the 1985 season.

A record harvest of 68,453 "equivalent summer chum salmon" was made in District 6. This fishery is located on the road system and buyers in this area do not have the high freight costs associated with shipping fish from more remote locations such as Galena or Grayling. Primarily for this reason, Tanana River summer chums are marketed in the round and relatively few "roe only" deliveries are made. During 1985, for example, only 1,540 lb. of roe were purchased from fishermen which represents only 2% of the "equivalent chum" production; this contrasts

with the situation in District 4 in which approximately 95% of the "equivalent chum" production occurred in the form of salmon roe only.

The first deliveries of summer chums in District 6 did not occur until July 20 and catches peaked during the period August 2-4. This year's harvest exceeded the 1984 record catch of 56,000 by 19% and is nearly double the 1980-84 average.

Fall Chum and Coho Salmon: During the 1985 season a total of 92,142 fall chum salmon and 2,525 lb. of fall chum salmon roe was sold in Districts 4, 5, and 6 (Table 13). Roe sales occurred only in Subdistricts 4-B and 4-C.

The harvest of 24,452 fall run chums and 2,525 lb. of roe was the largest District 4 harvest since 1980. Based on deliveries, the run peaked during the last fishing period in August (August 28-30) when 5,400 chums were delivered by 17 participating fishermen. Taken incidentally to fall chum were 938 coho salmon; of these, nearly 800 originated in Subdistrict 4-C (the south bank subdistict).

Subdistricts 5-A, 5-B, and 5-C in District 5 were opened by emergency order on August 24 for one 24 hour period. The harvest for that period was 10,736 and a decision was made to have one additional period 36 hours in length from 6:00 p.m. August 27 until 6:00 a.m. August 29. An additional 12,424 fish were taken during this second period. This harvest level approximates the midpoint of the guideline harvest range for these subdistricts, and the fishery remained closed.

Based on north bank test fishwheel catches in the Ruby area and on numerous reports from fishermen, a large number of fall chums entered the lower portion of District 5 in early September and continued for approximately 12 days. It is clear that at least a portion of these fish (based on Sheenjek River sonar counts) were bound for the (lower) Porcupine drainage, and as of September 30 approximately 111,000 chums had been counted by sonar in the lower Sheenjek River. Reports from fishermen in Eagle indicate a strong mainstem surge of fish as well, and Canadian fisheries officials expected a record catch from the Dawson area commercial fishery.

Catches from Subdistrict 5-D, which are managed on the basis of a separate guideline harvest range, were 2,178. The fall fishery in this area was opened by emergency order on September 13 and closed by regulation on September 30; only one fisherman participated in the harvest.

Reports of subsistence catches in the Nenana, Fairbanks, and Manley areas of District 6 during early to mid-September indicated Tanana River fall chum and coho runs to be above average in size. These indicators were supported by catches at the south bank test fish site near Ruby. Between August 15 and September 13 catches during the 1985 run were more than double the cumulative average catches for the 1982-84 period.

An emergency order issued on September 11 provided for two 24-hour fishing periods in District 6. Catch for the first period (6:00 p.m.

September 15 until 6:00 p.m. September 16) was 14,056 chum and 4,321 coho. The second period (6:00 p.m. September 17 until 6:00 p.m. September 18) produced 10,331 chum and 3,037 coho. Comparative catch data for previous years indicated this to be a very strong run, and for this reason, a third 24-hour period was allowed on September 24-25. The rationale behind delaying the third period for several days was to attempt to meet escapement and subsistence fishing requirements in the Tanana River drainage, and it was thought that the delay would allow a large harvest from an apparently strong coho salmon run. Expectations of harvesting a majority of coho salmon in the third and final fishing period were not realized as the total chum catch for the opener was 17,965 chums and 4,402 coho salmon. Total District 6 harvest during the fall season was 42,352 chum and 11,760 coho salmon, record catches of each species.

Subsistence Fishery, 1985

Subsistence salmon catch data have been collected through the use of personal interviews and catch calendars on which fishermen record daily catches, since 1961. Because of budgetary shortfalls in 1983 and 1984 the Department has been unable to send survey crews to all villages to interview fishermen. However, in 1985 after receiving a special appropriation, personal interviews were conducted in most villages. Catch calendars were not distributed in 1984 or 1985 because the low percentage of calendars returned in recent years did not justify the cost. In the lower Yukon Area during 1985, interviews with fishermen were conducted in all villages in Districts 1, 2 and 3 except Holy Cross.

In Holy Cross where subsistence catch data was collected by mail, the total number of families who participated in the fishry could not be determined; average numbers of families were derived using average values for the previous five-year period. In other lower Yukon area villages catch data from fishermen who were known to have fished for subsistence purposes but who were unavailable for interview or did not return the questionnaire were derived by averaging the total known catch (by species) for that village and assigning those values to households not contacted. Information regarding numbers of dogs and type and amount of fishing gear was determined in a similar manner.

During 1985, interviews were conducted in Grayling, Kaltag, Nulato, Koyukuk, Galena, Ruby, Tanana, Rampart, Stevens Village, Fort Yukon, Eagle, Hughes, Huslia, and Allakaket. Catch data for the remaining villages were collected by questionnaires sent through the mail. For villages in which fishermen were not personally interviewed, the number of fishermen was estimated by using 1978-1982 averages. Data for fishermen not interviewed or who did not respond to questionnaires were derived in the same manner as for the lower Yukon.

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

who made extremely large catches, may understate the actual harvest for that village.

During 1985, there were too few questionnaires received from Anvik and Beaver to develop a reasonable estimate of total catch. For this reason, average values for the 1980-84 period were used. No estimate was made for the village of Venetie.

Table 14 presents 1985 catch estimates by village and Appendix Tables 23-29 show long-term comparative catch data.

The estimated total king salmon subsistence harvest of 46,199 fish is the fourth highest on record and was exceeded only in 1980, 1983, and 1984 (Table 14, Appendix Table 1). The estimated (combined) chum and coho salmon harvest of 509,333 was the largest recorded since 1940 and is 13% above the recent five-year average and 32% above the recent ten-year average.

Lower Yukon Area

During 1985, an estimated 9,881 king, 47,831 summer chums; 27,109 fall chums and 8,456 coho salmon were harvested by fishermen representing 445 households for subsistence purposed in the lower Yukon Area (Table 14). Catches of king and coho salmon were below the recent five year average. Summer and fall chum salmon catches were slightly above the recent five year average. The historical subsistence catch and effort data indicate a fairly stable trend in fall chum salmon catches, while catches of the other species appear to be increasing over the past seven years. The lower king salmon take this year can be attributed to poor fishing conditions early in the season due to high water levels, debris and poor weather conditions. In addition many fish camps had to be reconstructed due to flood damage. Fall chum and coho salmon catches were probably higher than reported because some fishing occurred after the interviews were completed.

In all villages, most of the king and summer chum salmon were caught prior to the opening of commercial fishing. Most fall chum salmon were caught after the commercial fishing season. Approximately one third of the fishermen that were contacted fished during at least one special subsistence only fishing period in Districts 1 or 2. About one third of the fishermen fished for subsistence only and did not have commercial permits.

Upper Yukon Area

Exclusive of catches made in the Canadian portion of the drainage, the 1985 upper Yukon area subsistence salmon catch was estimated to be 450,058 fish. Of these were an estimated 29,890 kings, 216,997 summer chums, 179,363 fall chums, and 23,808 coho. These estimates represent an overall increase of 16% (combined species) from the 1980-1984 averages.

The possibility of overestimating the summer chum salmon subsistence harvest in District 4 has been discussed in previous annual management

reports. As was discussed in a previous section of this report, commercial fishermen in District 4 have only a very limited market for chum salmon. As a result, fishermen extract roe and sell from their catch and retain the carcasses for personal use. During the 1980-1985 period, it is likely that many fishermen have reported this portion of their commercial harvest as subsistence fish. In fact, it is probable that the unmarketable commercial product have simply replaced a large portion of the subsistence harvest in this area. During 1985, Division of Subsistence personnel conducted the catch surveys in Kaltag and Nulato. Questions regarding summer chum harvest were posed in such a way as to eliminate reporting of "surplus" commercially caught fish as subsistence. For this reason, summer chum catches from these villages is much lower than in previous years.

Subsistence fishing permits are required in three areas within the upper Yukon drainage: (1) the Tanana River drainage upstream of the Wood River confluence; (2) the Yukon River between Hess Creek and Dall River; and (3) the Yukon River between the upstream mouth of Twenty-two Mile Slough and the U.S./Canada border. Data from these fisheries are presented in Table 14 and Appendix Table 30.

Escapement, 1985

Comprehensive escapement enumeration studies in 1985 were conducted on the East Fork Andreafsky, Anvik, Sheenjek, and Delta Rivers in the Alaska portion of the Yukon River drainage and on the Fishing Branch River, Big Salmon River, and at the Whitehorse fishway in Yukon Territory, Canada. Studies at each of these locations were designed to enumerate or estimate more completely the total population of spawners. Side-scanning sonar techniques were employed on the first three rivers while intensive (replicate) ground surveys were conducted on the Delta River. The Canadian Department of Fisheries and Oceans operated a weir on the Fishing Branch and Big Salmon rivers while an enumeration window and passage gate was operated at the Whitehorse fishway. Remaining escapement enumeration throughout the Yukon River drainage was obtained primarily by aerial surveys and occasional ground surveys. Results obtained in 1985 are shown in Table 15 while Figures 2 through 6 show major Yukon River tributary systems.

Aerial coverage of the Alaska portion of the drainage was expanded and intensified in 1985 with assistance from and coordination with the United States Fish and Wildlife Service (USFWS). The Department not only continued coverage of all major index spawning streams, but also extended coverage early in the season to include selected tributaries in the upper Yukon River between Circle, Alaska and the U.S./Canadian border. The USFWS extended aerial coverage to include selected Yukon River tributaries between Tanana and Circle as well as the Porcupine River drainage during the early season and the upper Koyukuk River drainage during the latter part of the season; areas which have historically received little coverage during those periods. As a result of this concerted effort by the two agencies, 20 streams underwent review for change or inclusion in the Department's anadromous fish stream catalog as follows:

Five new anadromous fish streams identified:

1. Hadweezic River - summer chum salmon.
2. Dall River - summer chum salmon.
3. Christian River - fall chum and king salmon.
4. Grayling Fork, Black River (Porcupine River) - chum salmon.
5. Coleen River (Porcupine River) - fall chum and king salmon.

New species added to nine existing anadromous streams:

1. King salmon - Black River (Porcupine River).
2. King salmon - Salmon Fork, Black River (Porcupine River).
3. King salmon - Sheenjek River (Porcupine River).
4. King salmon - Nation River.
5. King salmon - Kanuti Kilolitna River (Koyukuk River).
6. King salmon - Hogatza River (Koyukuk River).
7. Fall chum salmon - South Fork Koyukuk River.
8. Fall chum salmon - Jim River (Koyukuk River).
9. Summer chum salmon - North Fork Koyukuk River.

Changes in the range of king or chum salmon spawning or migration were also updated for six other streams.

Appendix Tables 31 and 31 present historic king salmon escapement data for selected streams during the 1971-1985 period. Favorable weather conditions throughout the lower and middle portions of the Yukon River drainage allowed for adequate aerial survey coverage of king (and summer chum) salmon in 1985. Only in the upper portion (Yukon Territory) of the drainage were king salmon surveys severely hindered by inclement weather. Survey conditions were the worst encountered in this region during the past six years. Continued low pressure systems or high/low pressure troughs passed through the survey area during late August (peak spawning period) allowing only one or two days for making fair-to-good survey observations.

King salmon escapement in the Alaskan portion of the Yukon River drainage were good in 1985. Minimum and optimum king salmon escapement goals have been established for five streams in the Alaskan portion of the drainage: East (1,100-1,600) and West Fork (700-1,000) Andreafsky, Anvik (300-500), Chena (1,000-1,700), and Salcha (1,500-3,500) rivers. The optimum goal was achieved in all but the Salcha River in which the minimum goal was achieved. In addition, king salmon escapements in the North and South Fork Nulato River were more than two-fold the single objective set for each of these streams

(500 kings). Further indications of good king salmon escapements to the Koyukuk River drainage are reflected in aerial counts made in the Gisasa River (735 kings), Henshaw Creek (393 kings), Middle Fork Koyukuk River (113 kings), and South Fork Koyukuk River (351 kings). The 1985 king salmon counts are among the highest documented in these streams.

Based upon results obtained from key index streams in the Yukon Territory, king salmon escapements in that portion of the drainage were most similar to those observed in 1978. The 1978 escapements were the lowest during the past eight years. Peak counts in 1985 were 255 kings in the Little Salmon River and 801 and 615 kings in index areas in the Big Salmon and Nisutlin rivers, respectively. The Whitehorse fishway count was 508 which includes 98 kings removed for hatchery brood stock. Escapements to the Pelly River and upper Teslin River drainage were also low.

Comparative summer and fall chum escapements since the mid-1970's for selected streams are shown in Appendix Tables 33 and 34. Magnitude of summer chum salmon escapements in 1985 appeared slightly below average to most streams. Counts of 66,146 and 52,750 chums in the East and West Forks of the Andreafsky River, respectively each fell approximately 10,000 short of the minimum escapement objective to each stream. Likewise, a count of 17,895 chums was well below the minimum goal (37,000) for the North Fork Nulato River. Only in the Anvik River and Hogatza River (Koyukuk drainage) were escapement objectives met. The Anvik River sonar estimate (1,080,243 chums) was more than double the optimum goal for that river, while counts of 14,494 and 8,072 chums in Caribou and Clear creeks, respectively (Hogatza River) exceeded optimum escapement goals.

Summer chum salmon escapement to the Tanana River drainage was also slightly below average based on escapement observations made to the Salcha River. An estimate of 3,178 summer chums was made for this stream, falling just short of an escapement goal of 3,500.

Observed escapements of fall chum salmon showed a marked improvement to most index areas in 1985 as opposed to the preceding three years, particularly in the Porcupine and upper Yukon River drainage (Yukon Territory). Escapements in the Porcupine River are reflected by observations made for the Sheenjek and Fishing Branch rivers. A sonar-estimated escapement of 152,768 chums in the Sheenjek River was the largest since sonar operations began in 1981 and was five times greater than sonar-estimated escapements in 1982 and 1984; two of the poorest years on record. Likewise, chum salmon escapement in the Fishing Branch River (56,016) was the largest observed since 1979. A similar increase in chum escapements was apparent to tributaries of the mainstem Yukon River in the Yukon Territory. A total of 10,760 chums were observed in the mainstem Yukon River between Fort Selkirk and Carmacks while 8,899 were observed in the White River system.

Only a slight improvement in fall chum escapements to the Tanana River drainage from those in 1984 was realized in 1985 based upon observations at selected major spawning areas. However, 1985 escapements were much improved to these areas from those documented in 1982; the lowest year on record. A total of 21,824 chums were documented in the upper Toklat River index area while 22,365 were observed in index areas in the upper Tanana River drainage. A population estimate of 17,276 chums was made for the Delta River based upon

replicate foot surveys and exceeded the escapement goal for this stream. Only 2,655 chums were observed in Bluff Cabin Slough and fell short of the escapement goal of 5,200 to this area.

Tanana River drainage coho salmon escapements appeared to be about average to those index areas examined in 1985 (Appendix Table 35).

Enforcement, 1985

Lower Yukon Area

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

Upper Yukon Area

In most portions of the upper Yukon districts, compliance with commercial and subsistence fishing regulations was good. Violations of regulations dealing with the sale of subsistence-caught salmon and roe from those salmon, however, occur with regularity in certain areas. Enforcement of these regulations is difficult and has been largely ineffective to date. In addition, wastage of commercially caught salmon in those areas where markets exist only for salmon roe may be more common than was previously thought.

OUTLOOK FOR 1986

King Salmon

In most years, the dominant age class returning is 6 year-old-fish; however, 5-and-7 year old fish also contribute to the run. The 1980 brood year run (6-year-olds in 1986) was judged above average in abundance as indicated by comparative catch and escapement data. However, the return of 5-year-olds in 1985 was below average indicating possible low survival of progeny from the 1980 escapement. Consequently, the return of 6-year-olds in 1986 may be less than previously indicated by parent year escapement levels. The return of 5-year-olds (1981 brood year) is expected to be significant, based on above average run strength in 1981. Seven-year-olds are expected to contribute significantly to the run in 1985, based on the average return of 6-year-olds in 1985. In summary, it is expected that the 1986 Yukon River king salmon run will be average in magnitude. For an average size run the harvest objective is 98,000 king salmon, the midpoint of the combined guideline harvest ranges. The commercial catch in Alaska is expected to total between 83,000 to 114,000 king salmon.

Summer Chum Salmon

Normally, Yukon River summer chum salmon runs are predominately 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 1986 will be dependent on the strength of the 1982 brood year and the survival of the resulting offspring. Based on the available catch and escapement data, the magnitude of the 1982 summer chum salmon run was judged below average to average in abundance. The return of 4-year-olds in 1986 is expected to be of similar magnitude. The return of 5-year-olds is expected to be significant based on the above average return of 4-year-olds in 1985. In summary, based on evaluation of brood year run size data and assuming average survival, the magnitude of the Yukon River summer chum salmon run in 1986 is expected to be average. The commercial harvest is expected to total 600,000 - 900,000 fish.

Fall Chum Salmon

Similar to the summer run, the majority of the fall chum salmon returning each year is 4-year-old fish. The magnitude of the 1982 run was judged very poor based on comparative catch and escapements which were the lowest ever recorded in some streams. The return in 1986 is expected to be of similar magnitude. The return of 5-year-olds (1981 brood year) may contribute significantly to the run based on the apparent average to above average return of 4-year-olds in 1985. In summary, based on evaluation of the 1982 brood year escapements and assuming average survival, a very poor return is expected in 1986. If the actual return is weak, no or very limited commercial fishing for fall chums can be expected in order to achieve minimum escapement objectives.

Coho Salmon

Four-year-old fish (1982 brood year) are the dominant age class. Adequate escapement information for coho salmon is lacking, but escapement surveys in the Tanana River system indicated above average run strength in 1982. The

harvest in 1986 is expected to total 20,000 - 40,000 fish, depending on the amount of fishing effort directed on the fall chum run and duration of the fishing season.

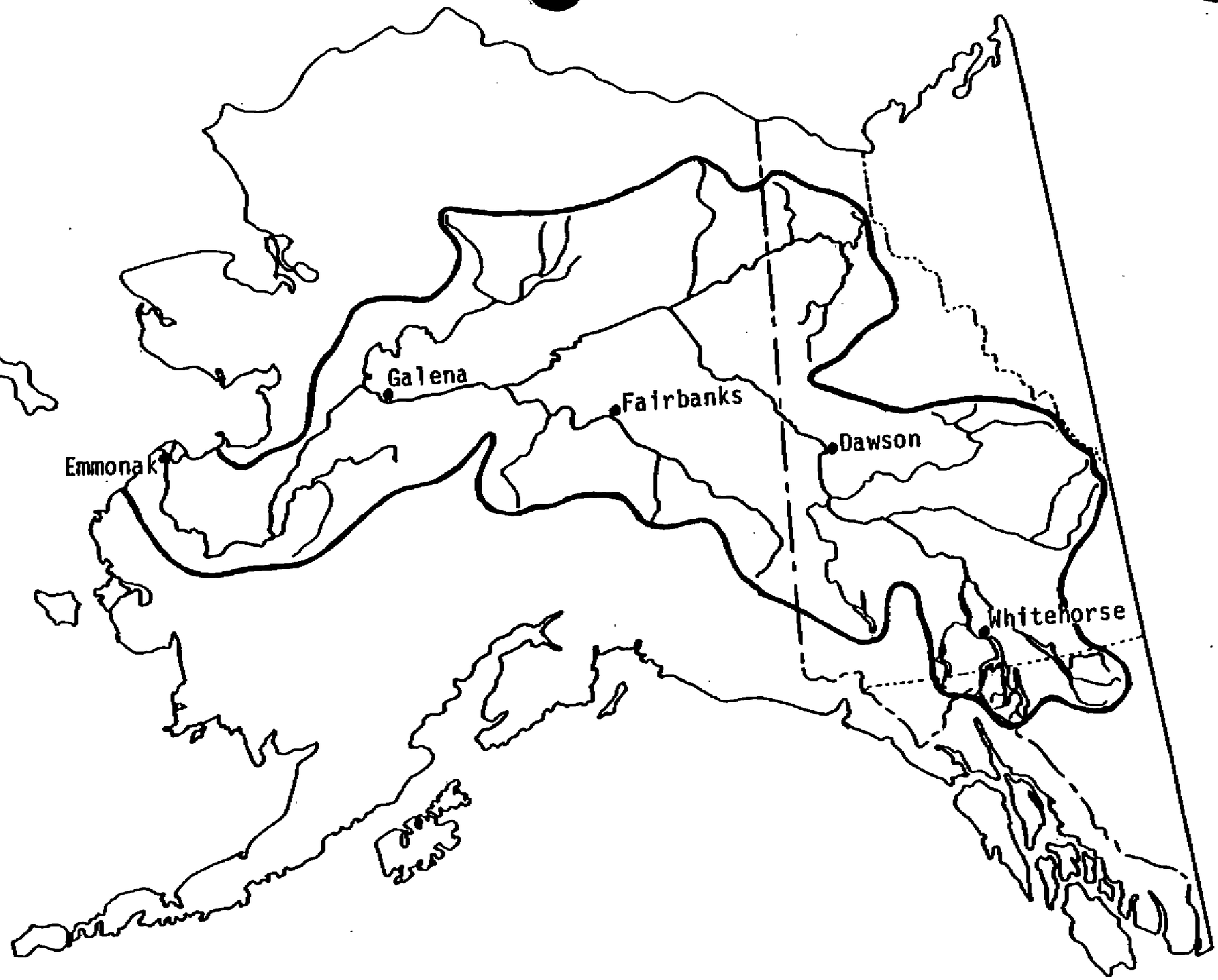


Figure 1. The Yukon River drainage, 330,000 square miles.

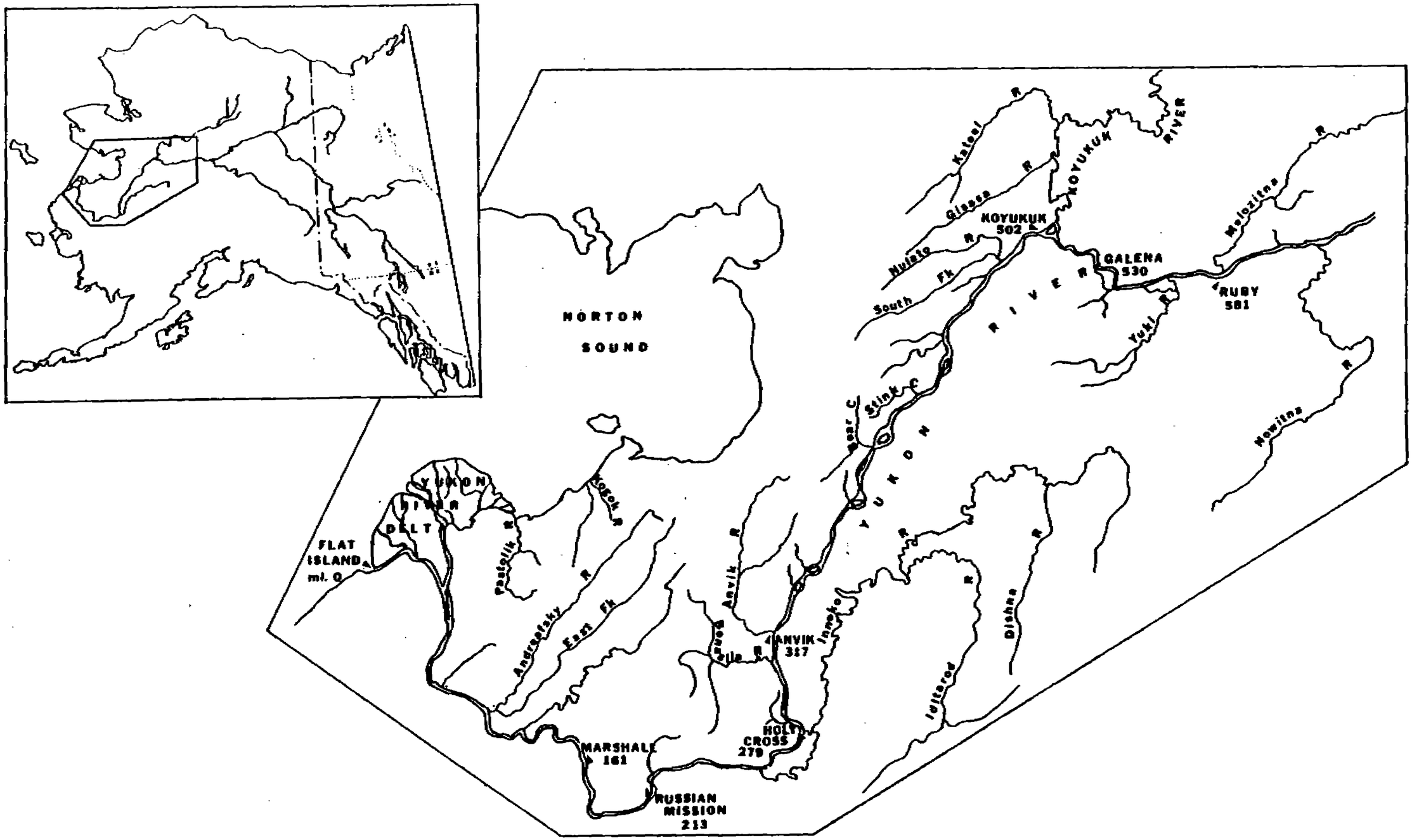


Figure 2. The lower Yukon River drainage.

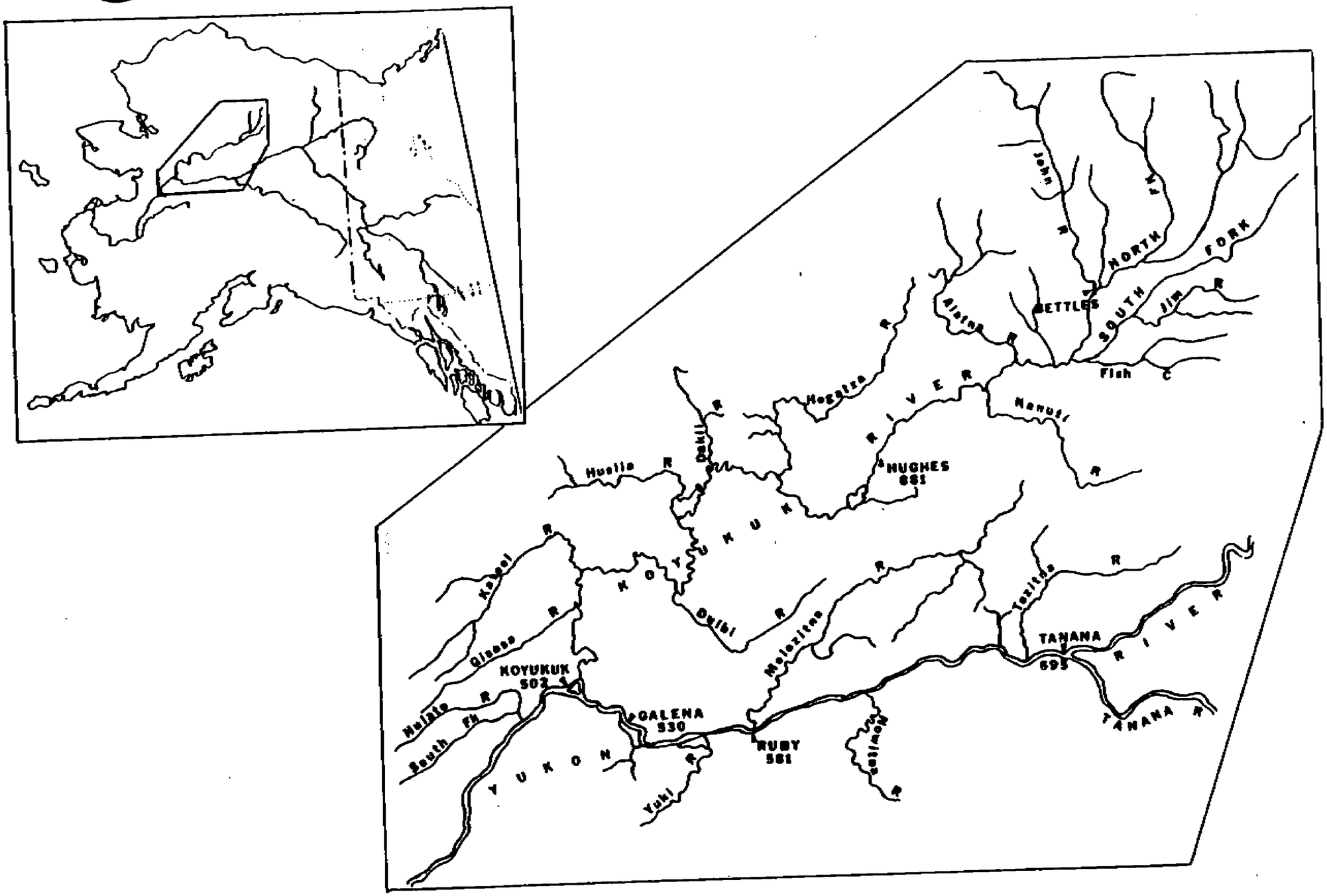


Figure 3. The Koyukuk River drainage.

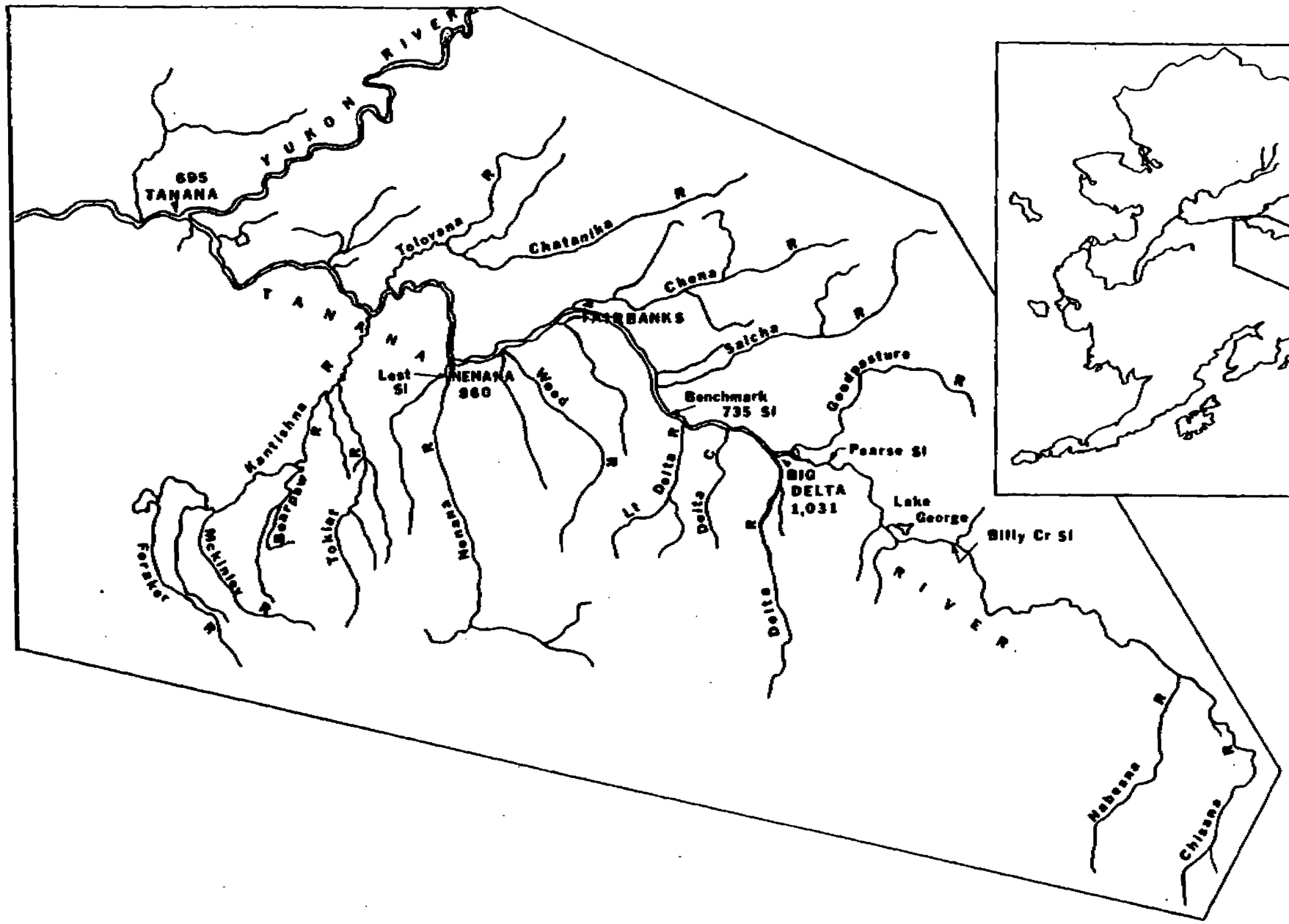


Figure 4. The Tanana River drainage.

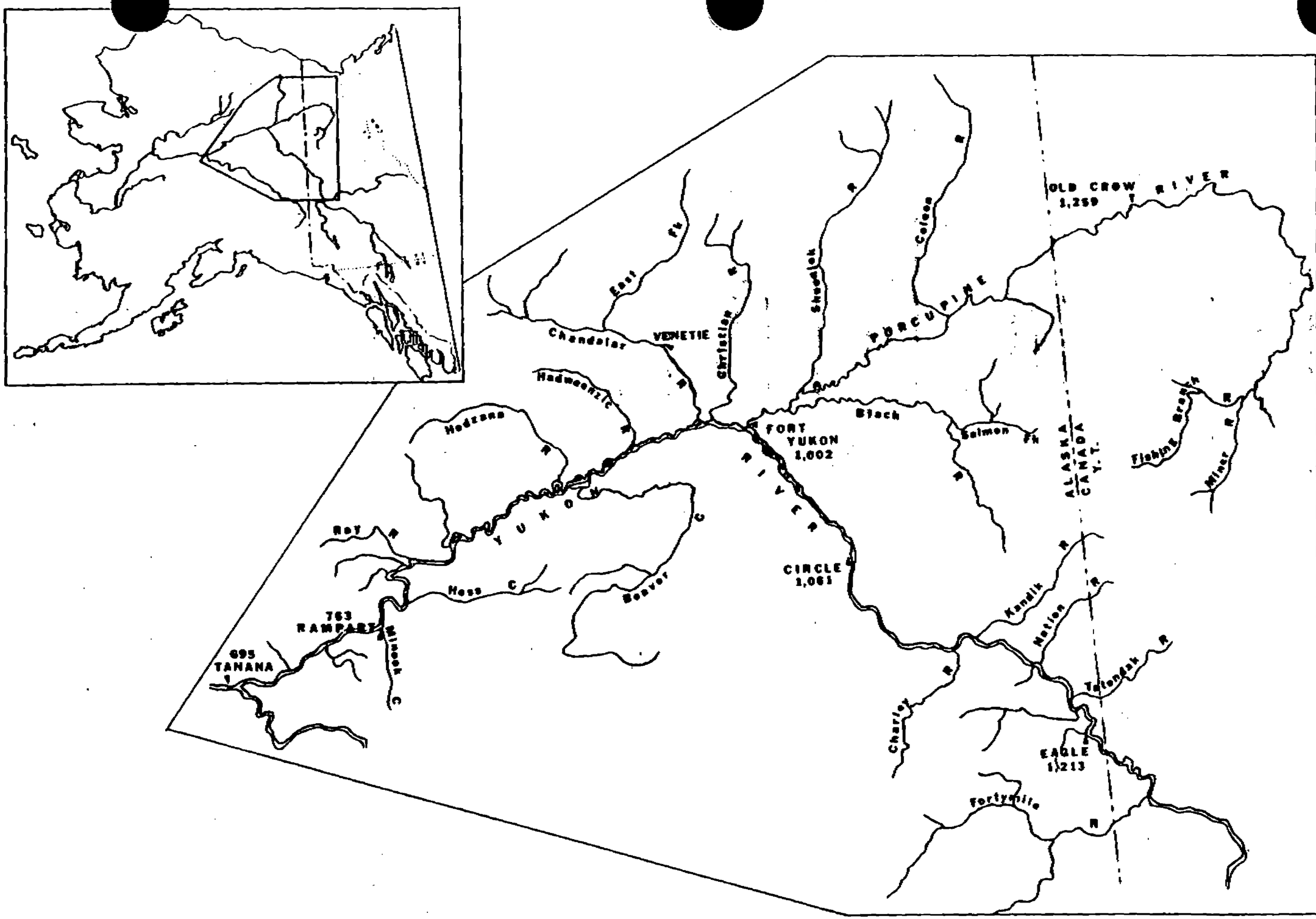


Figure 5. The middle Yukon River and Porcupine River drainage.

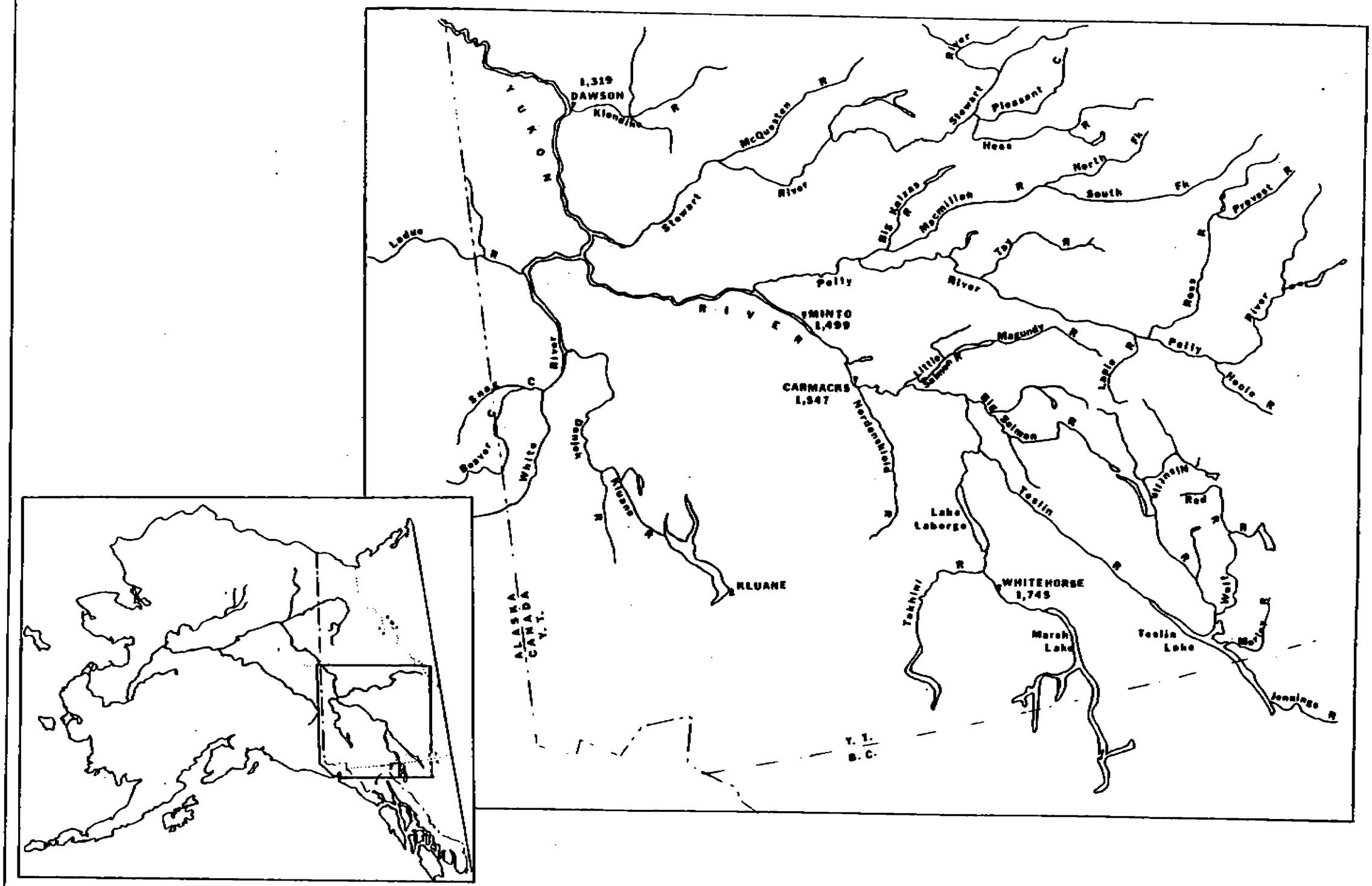
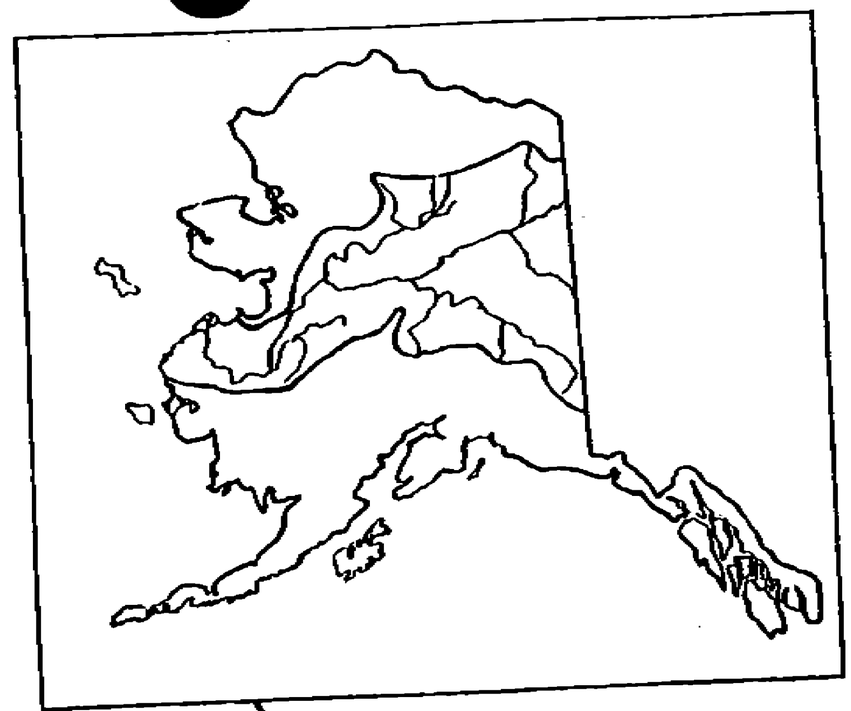


Figure 6. The upper Yukon River drainage.



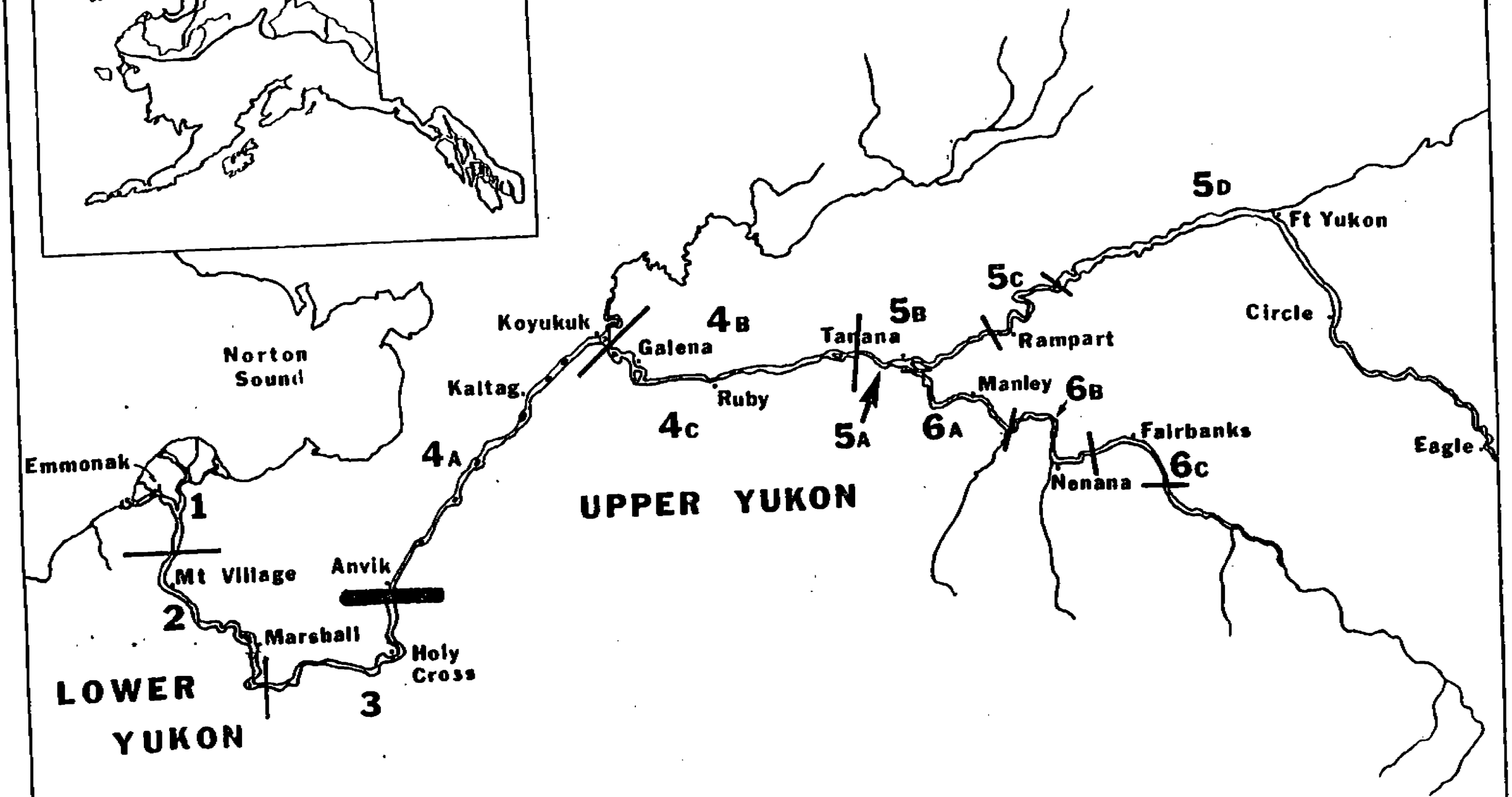


Figure 7. Districts 1-6 of Yukon management area.

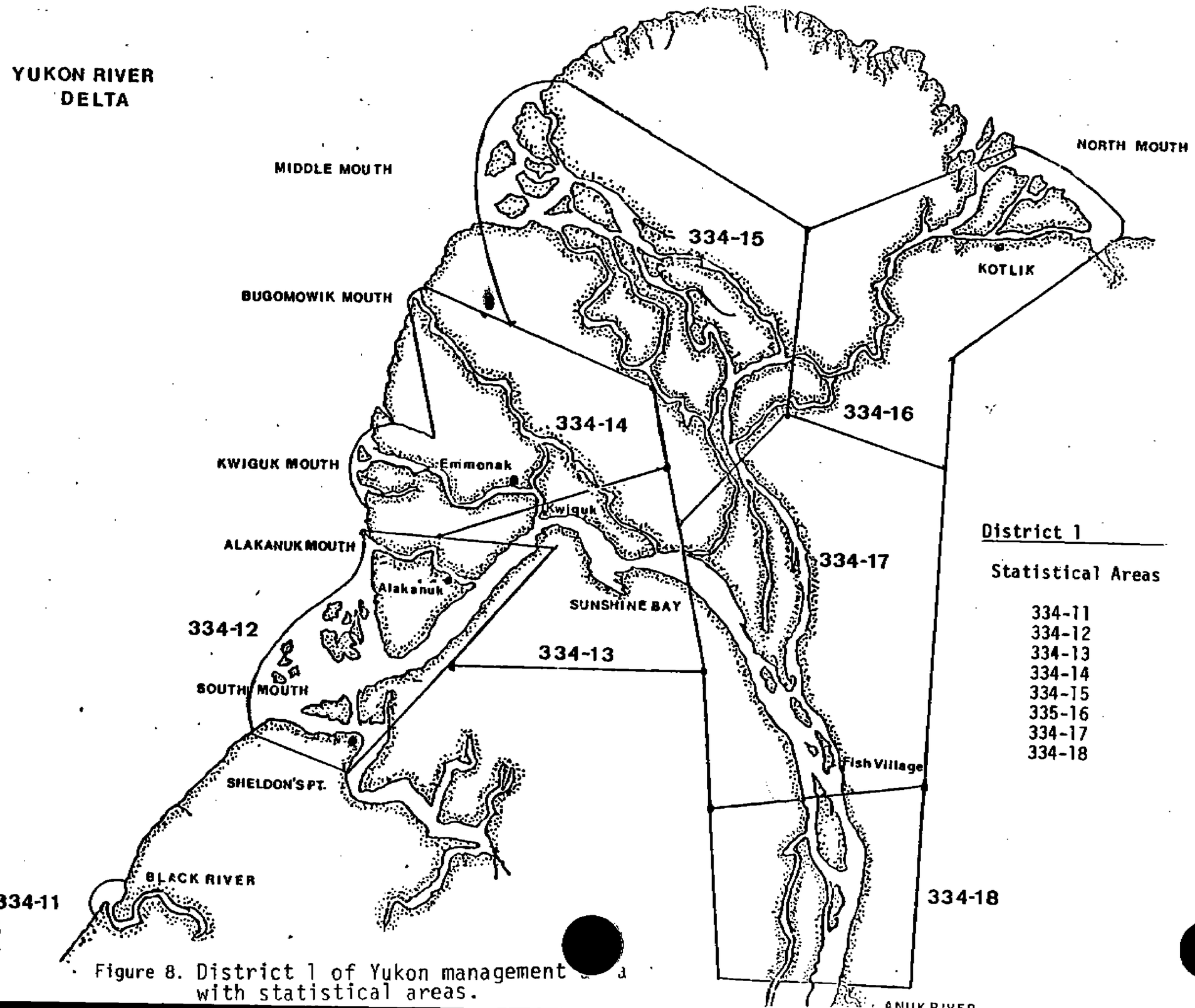
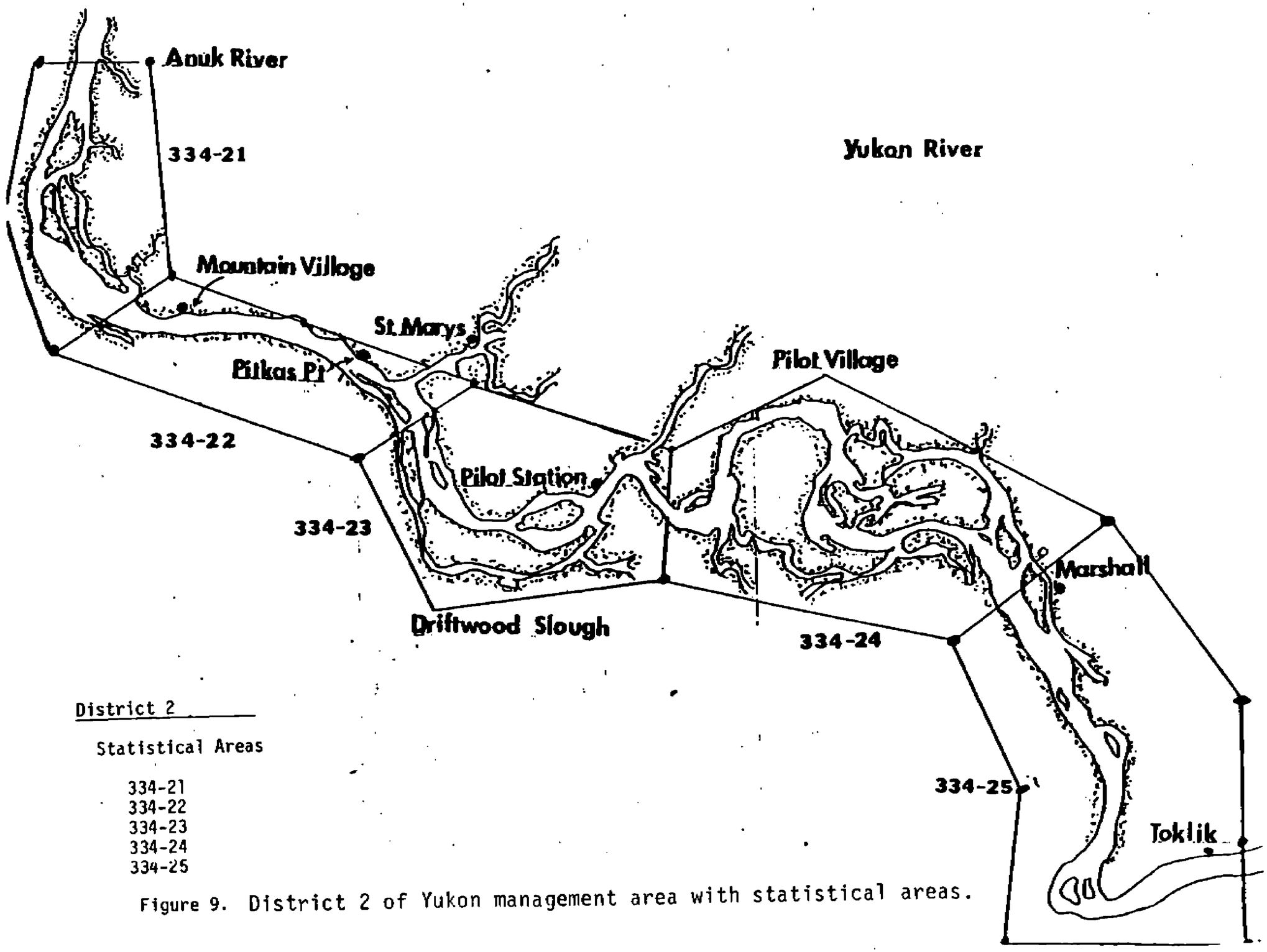


Figure 8. District 1 of Yukon management area with statistical areas.



District 2

Statistical Areas

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

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

District 3

Statistical Areas

334-31
334-32

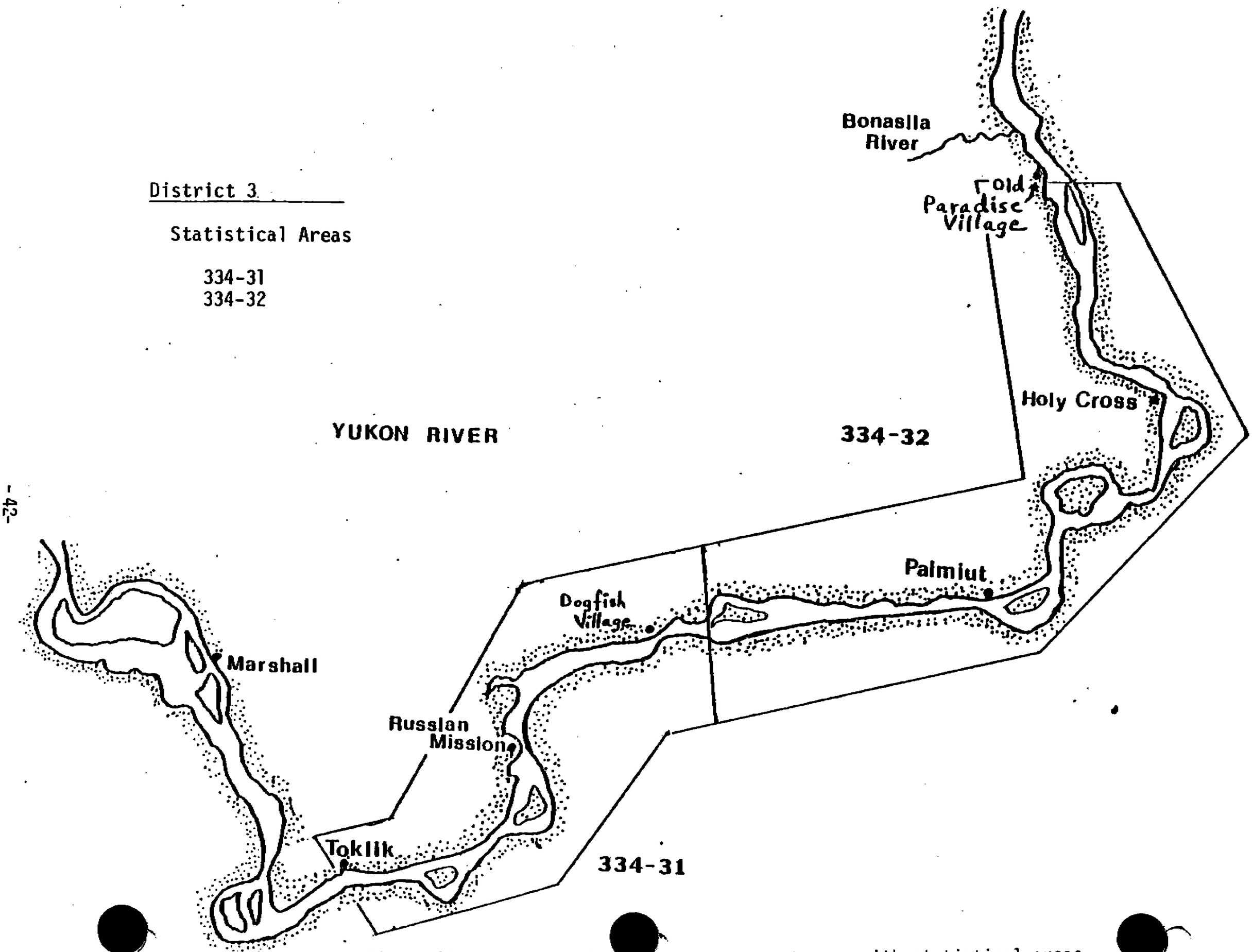


Figure 10. District 3 of Yukon management area with statistical areas.

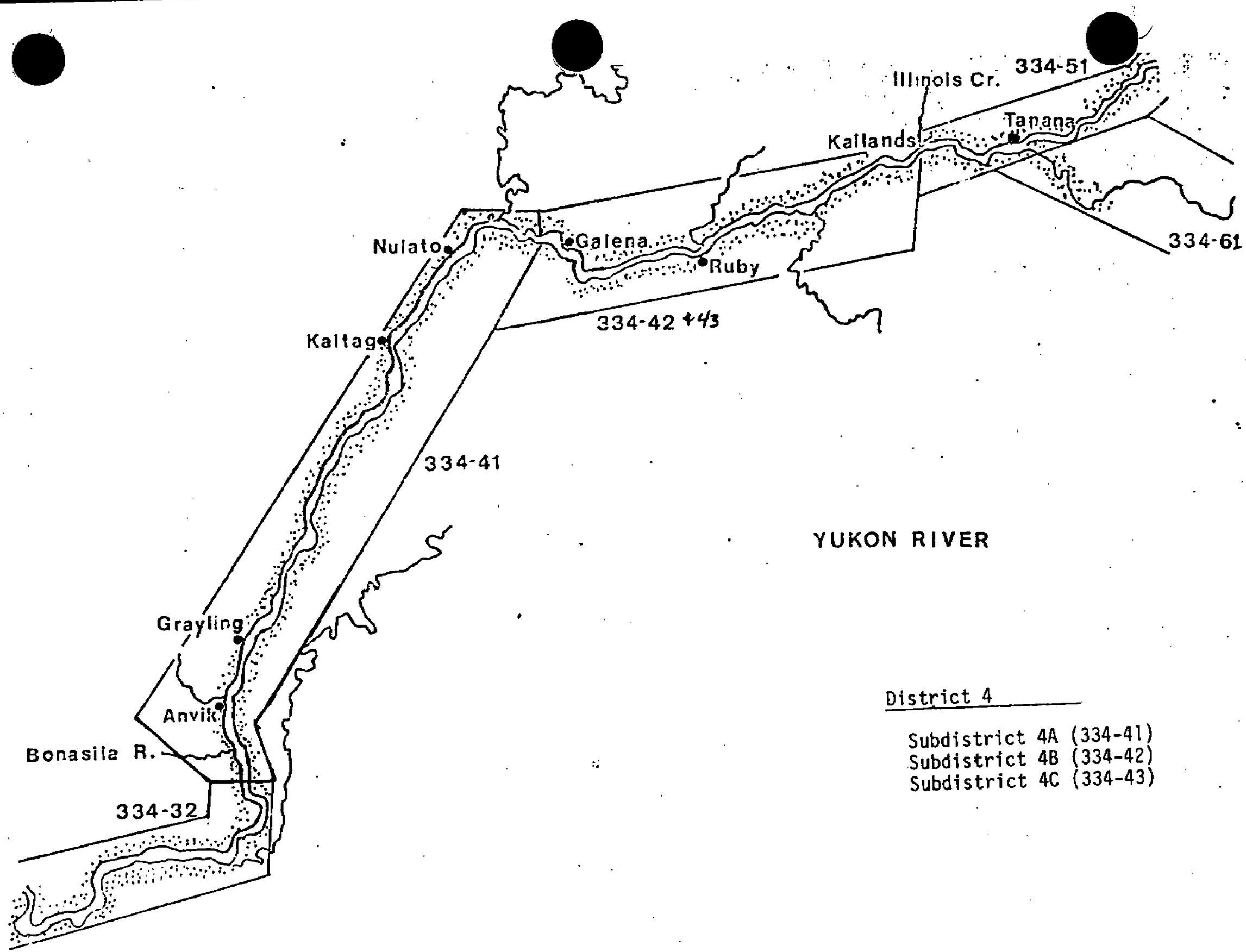
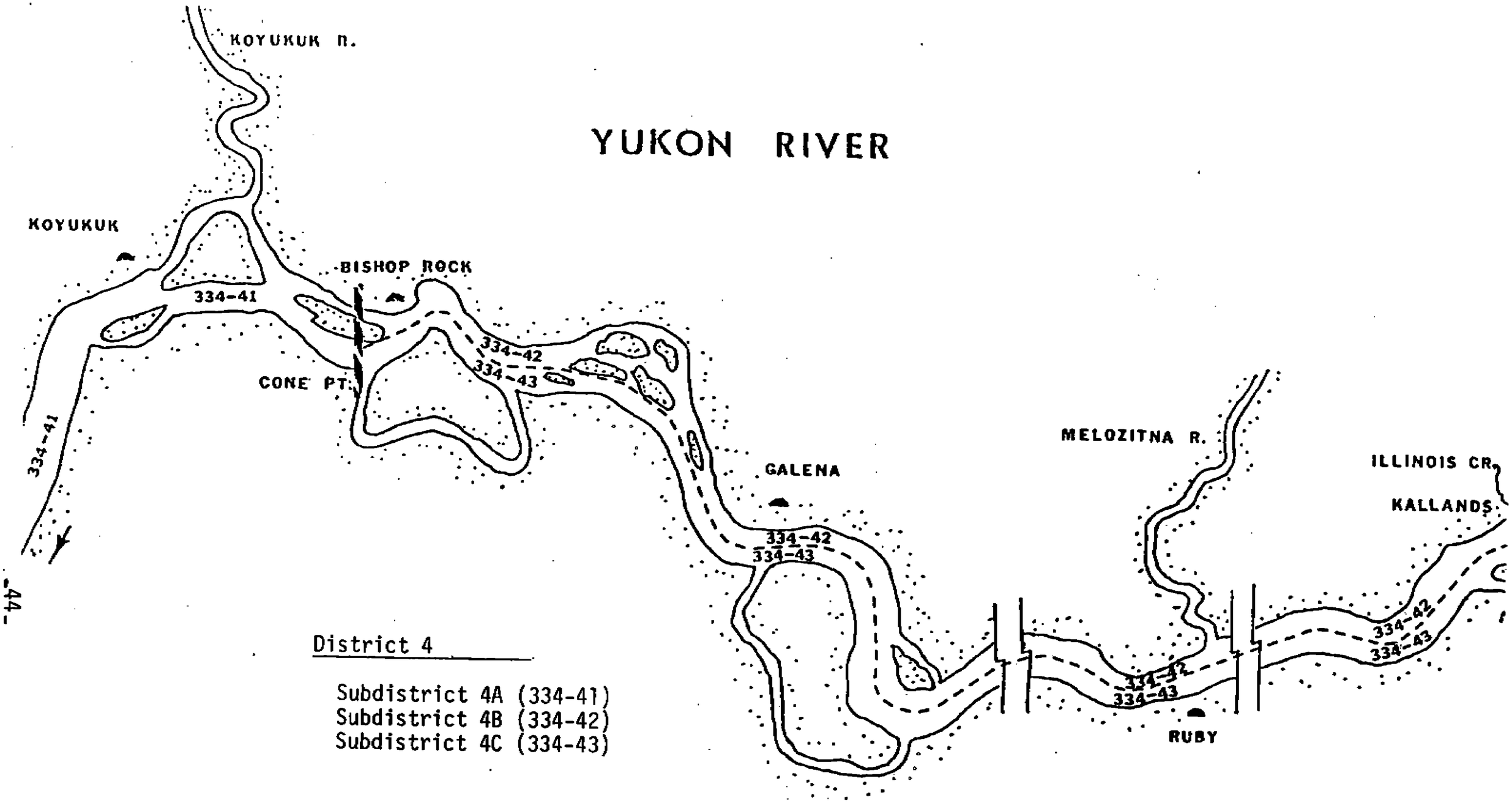


Figure 11. District 4 of Yukon management area with statistical areas.



District 4

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

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

District 5:

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

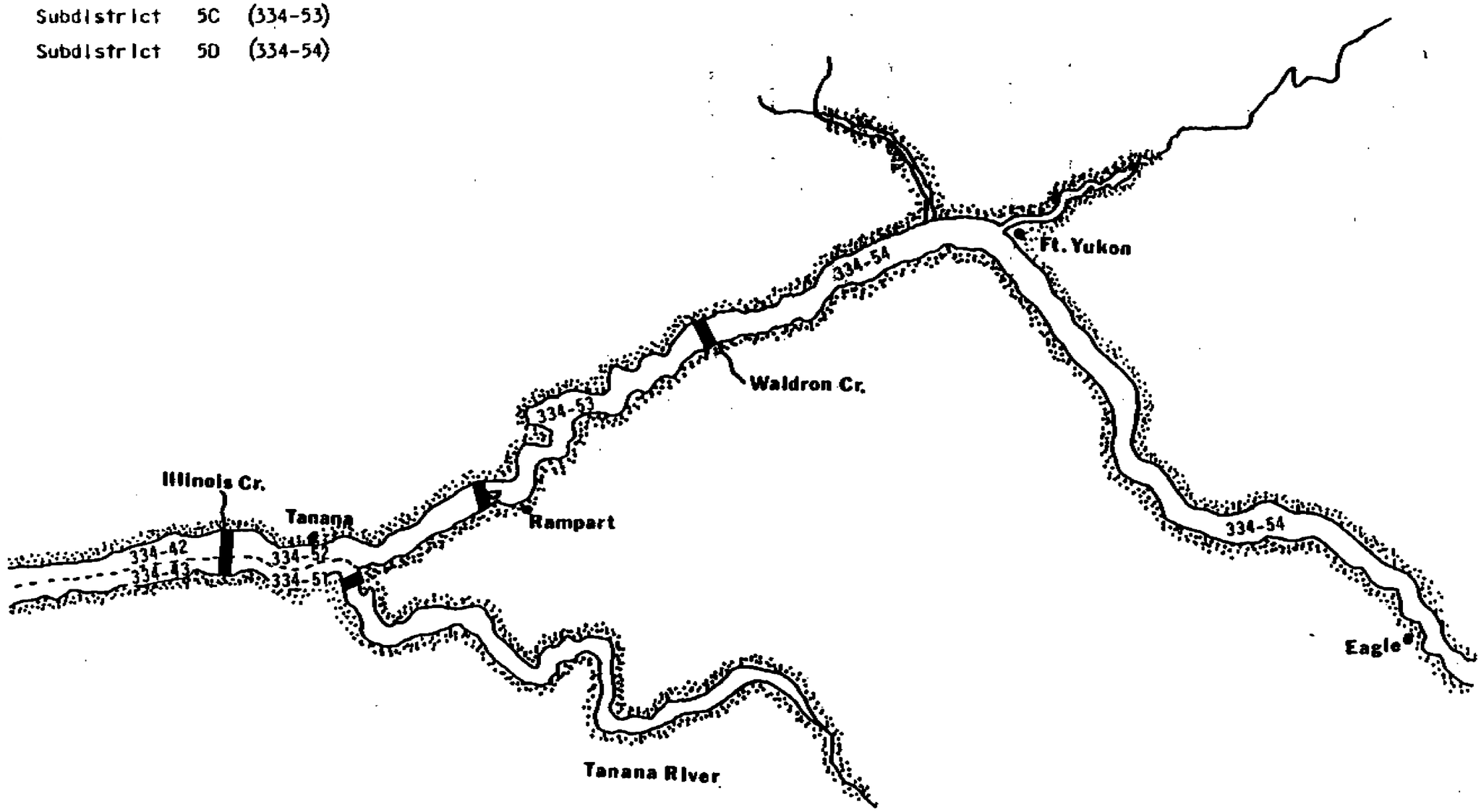
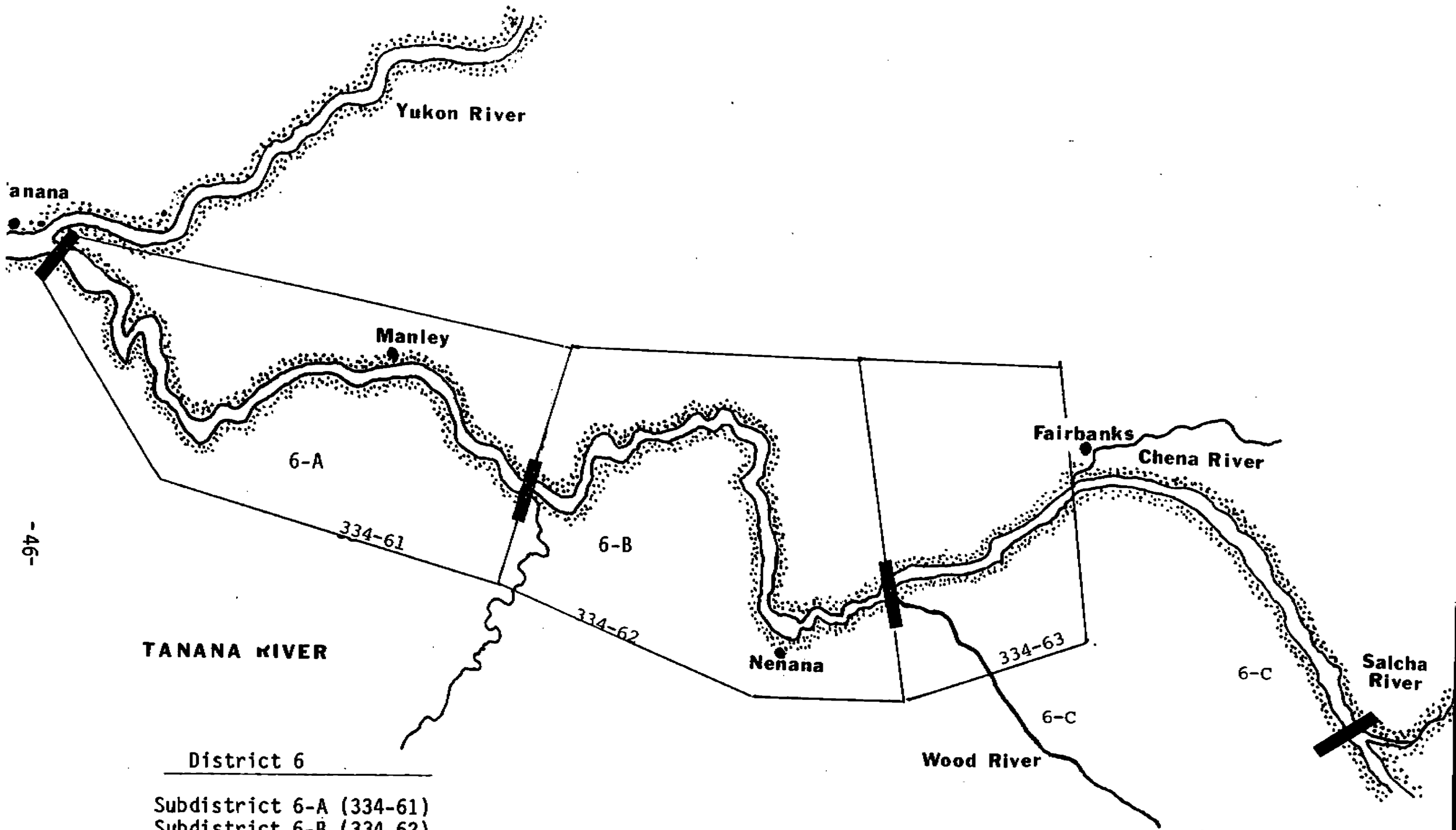


Figure 13. District 5 of Yukon management area with statistical areas.



District 6

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

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

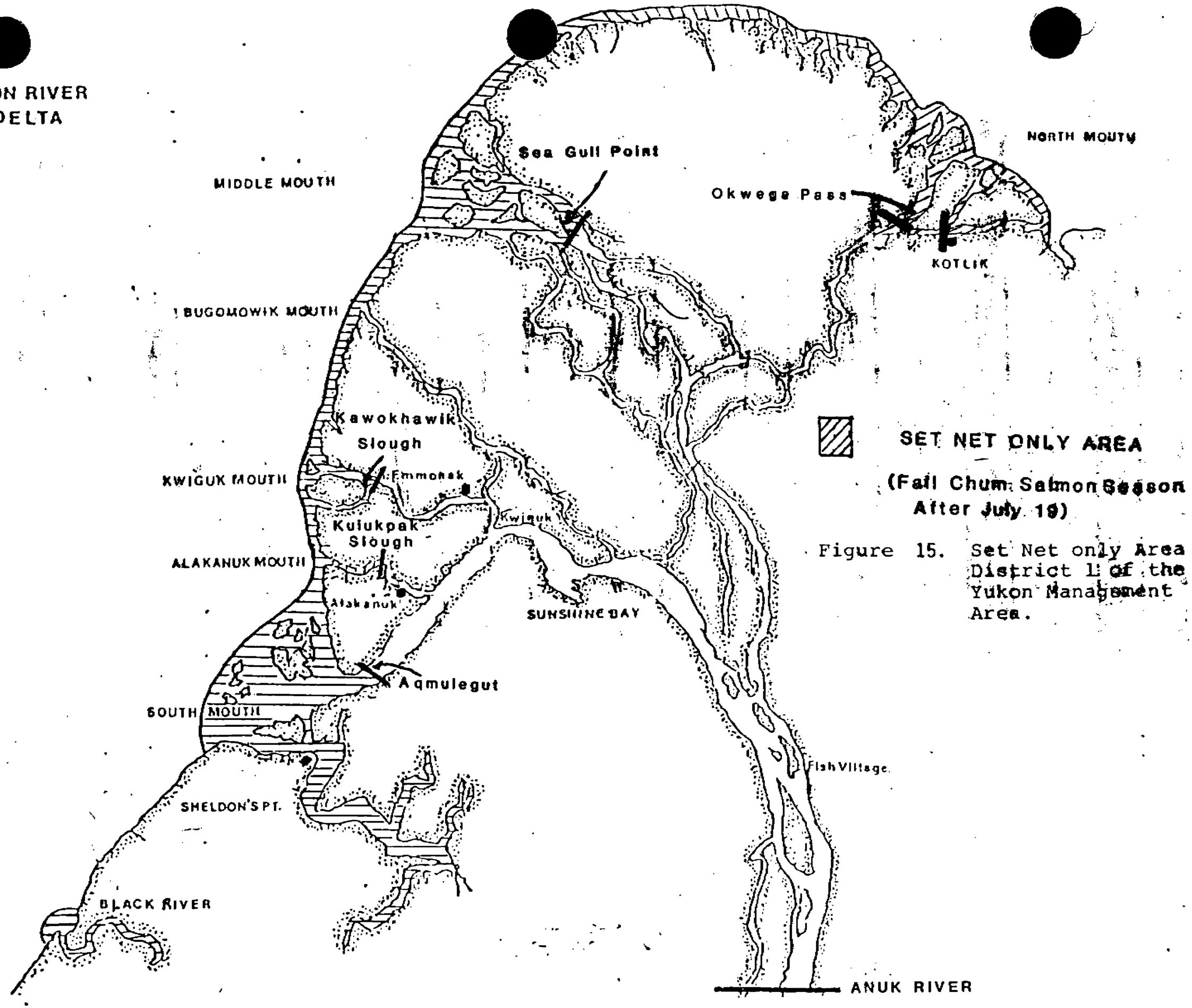


Figure 15. Set Net only Area District 1 of the Yukon Management Area.

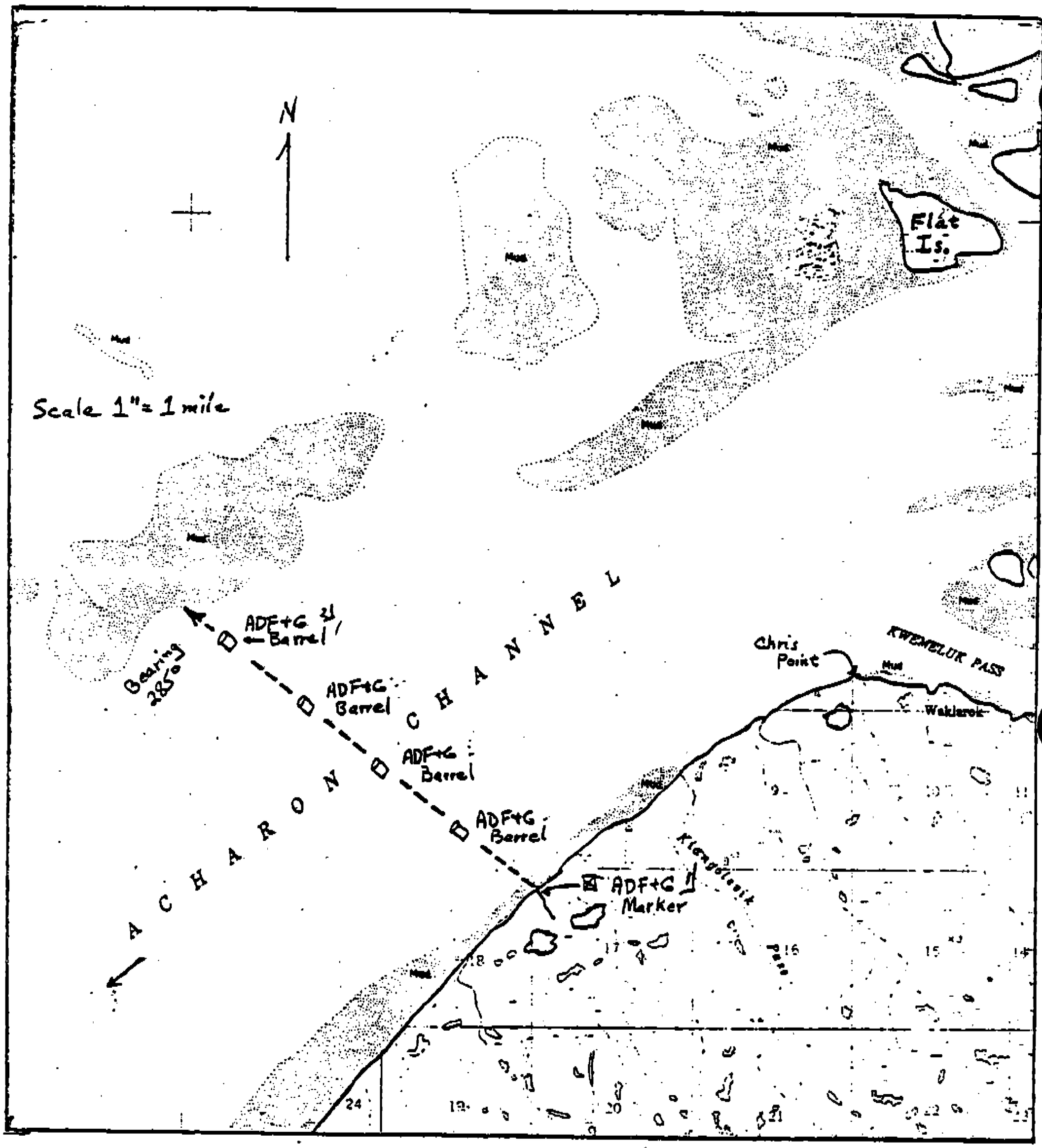


Figure 16. Closed waters Acharon Channel, south mouth Yukon River. (5AAC 05.350. CLOSED WATERS. (1) Acharon Channel of the south mouth area of the Yukon River west of a 2-1/2 nautical mile long line bearing 285° from an ADF&G regulatory marker located below Chris Point to the opposite side of the channel;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

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

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

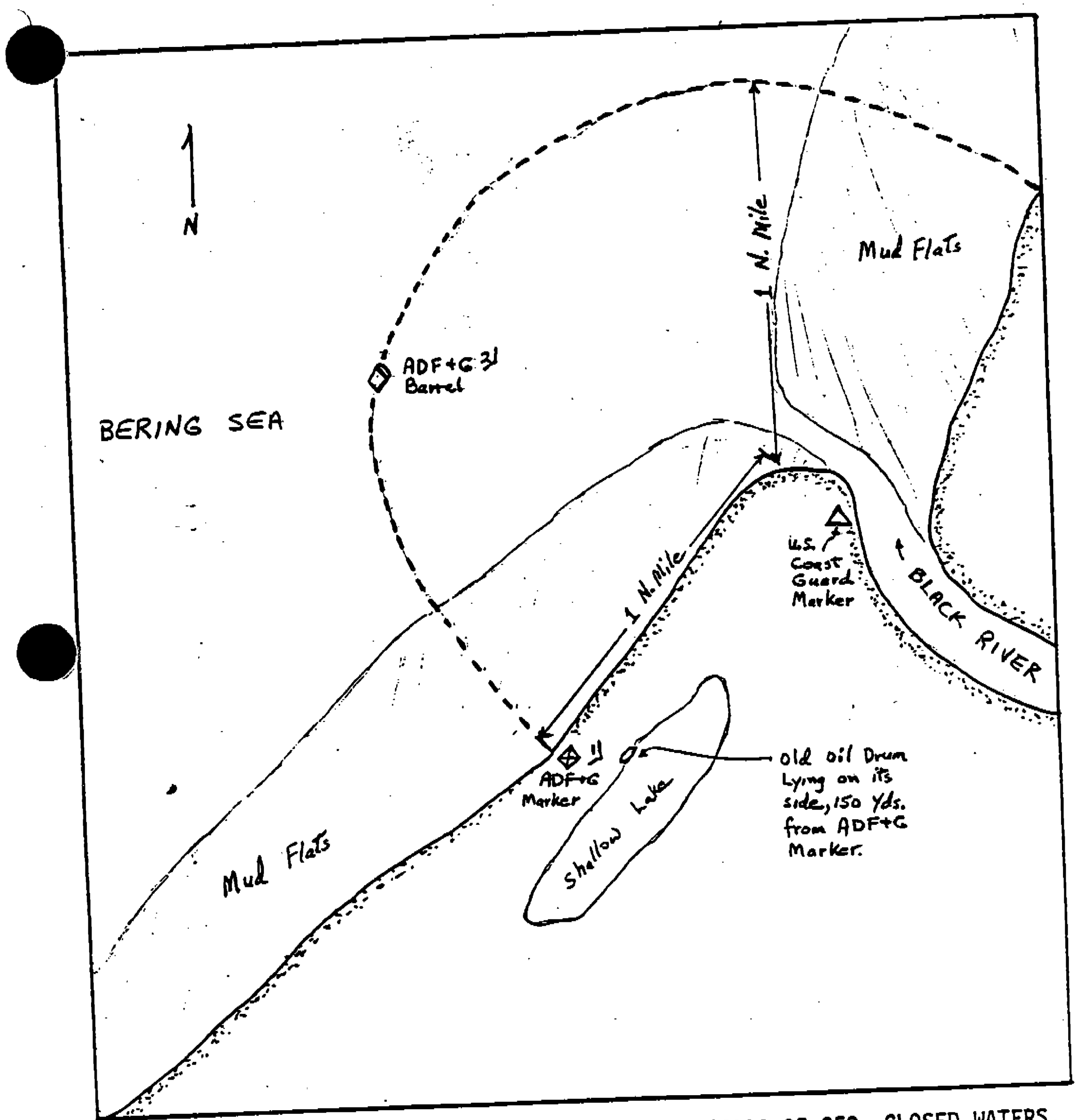


Figure 17. Closed waters of Black River mouth. (5AAC 05.350. CLOSED WATERS. (3) waters west of a one nautical mile radius from the mouth of Black River).

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

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

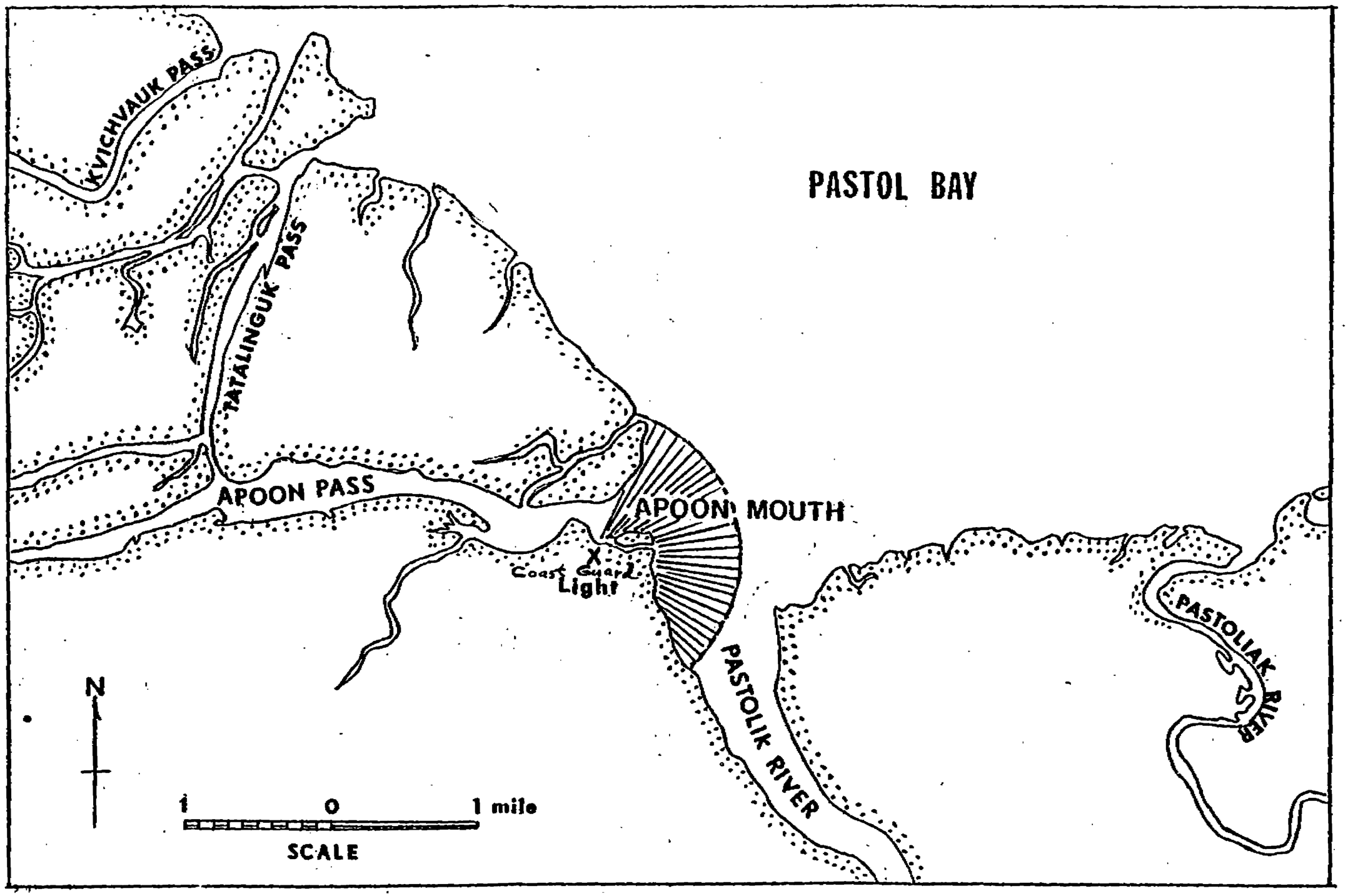


Figure 18. Closed waters of Apoon Mouth, Yukon River (5 AAC 05.350. CLOSED WATERS. (9) Waters east of a one nautical mile radius from a U.S. Coast Guard light at the mouth of Apoon Pass).

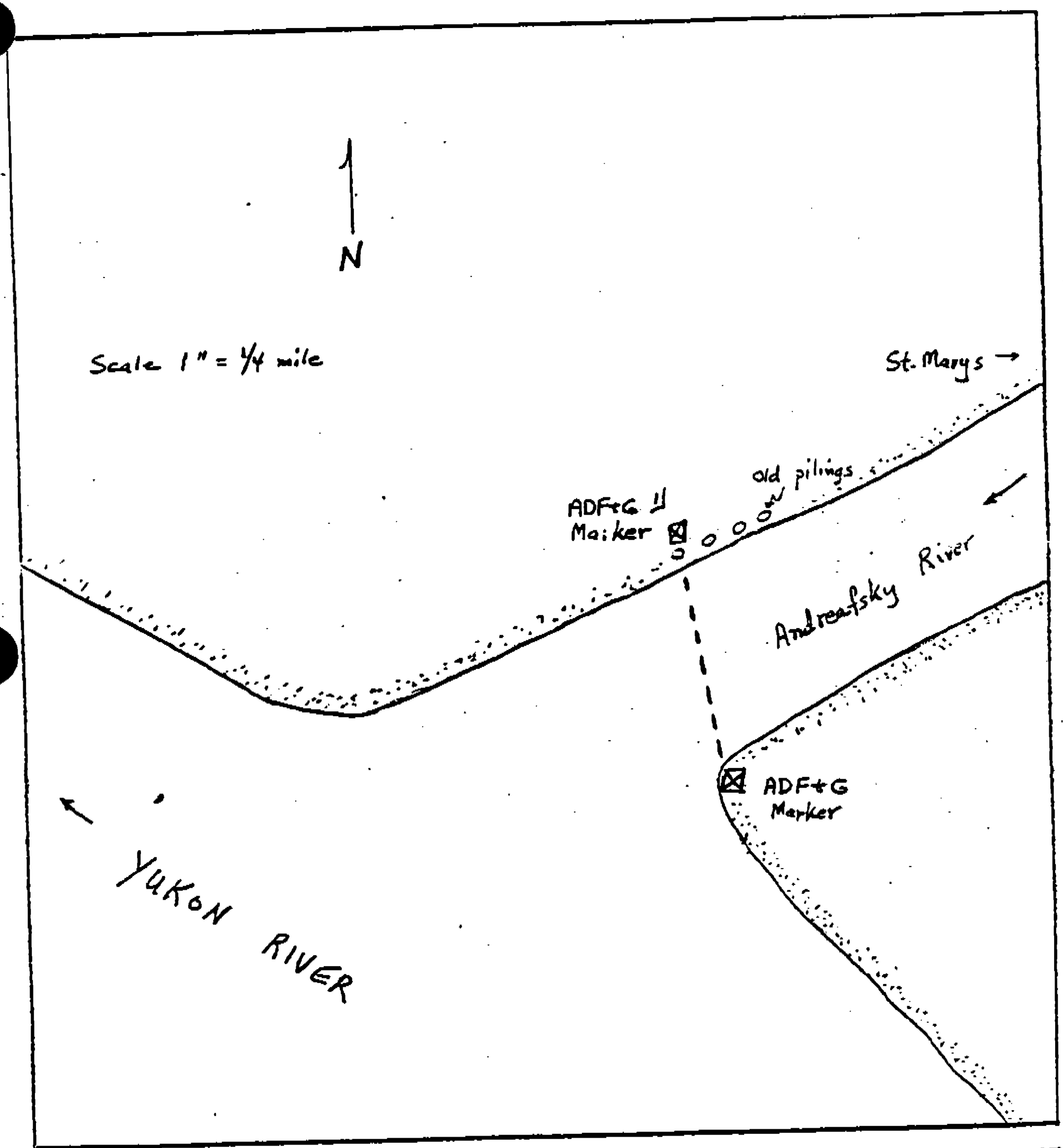


Figure 19. Closed waters of Andreafsky River mouth. (5AAC 05.350. CLOSED WATERS. (4) waters of the Andreafsky River upstream of a line from Department regulatory markers placed on each side of the river at its mouth).

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

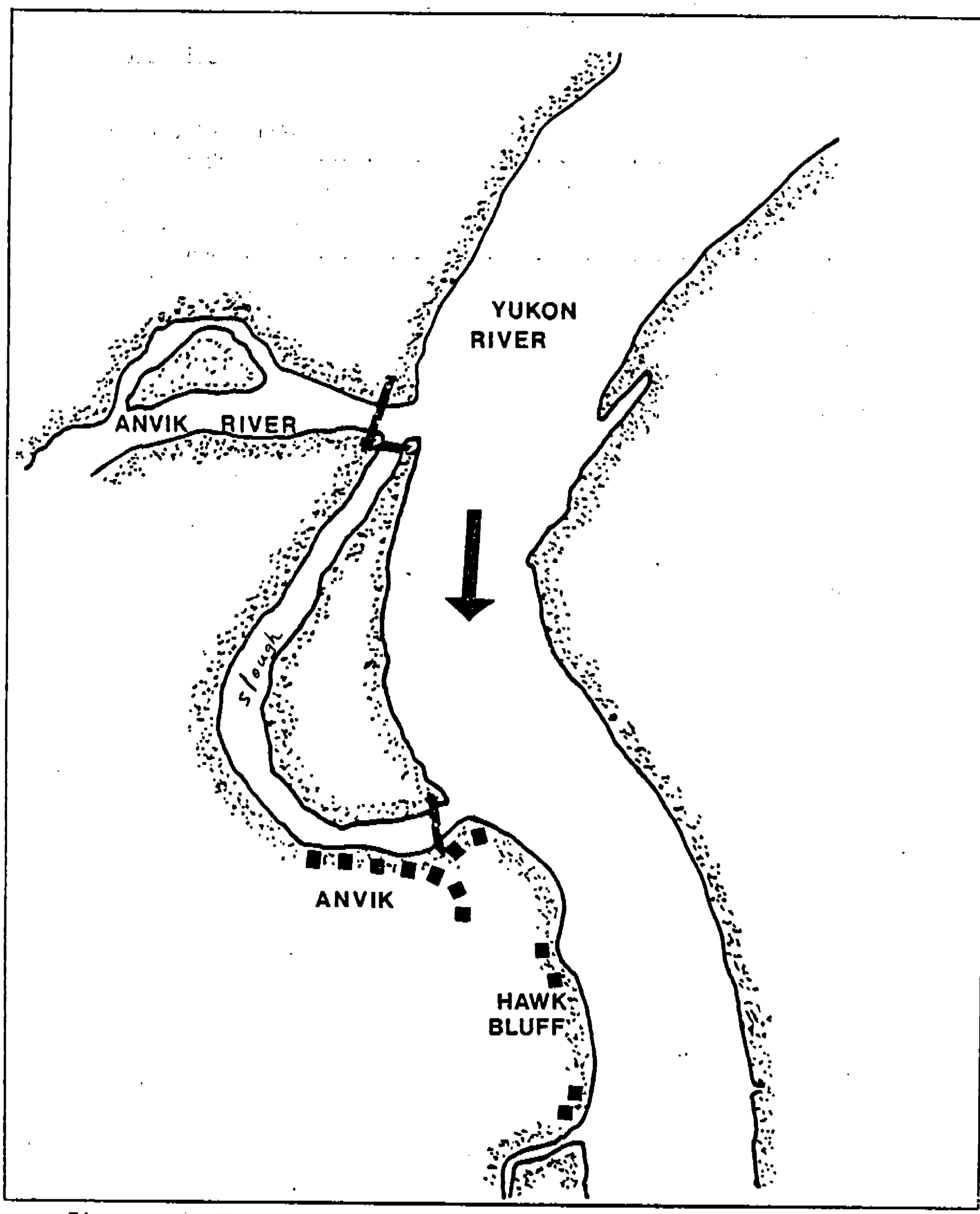


Figure 20. Closed waters of Anvik River mouth. (5AAC 05.350. (CLOSED WATERS waters of the Anvik River upstream of a line between department regulatory markers placed on each side of the river at its mouth). Markers (6) placed north and south banks of the Anvik River mouth and at upstream and downstream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

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

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

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

Table 2 . Yukon River Drainage Mileages

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

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

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

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

Table 3. Yukon Area processors and associated data, 1985.

Commercial operation (Processing location/ buying station)	Product	District
Sea Roe Fisheries 3837 13th Ave. West #104 Seattle, WA 98119 (M/V Lafayette, M/V Pribilof, M/V Pankof, M/V Echo and M/V Misty Blue)	Sac Roe Herring (frozen)	Cape Romanzof
Bristol Monarch 121 South River St. Seattle, WA 98108 (M/V Bristol Monarch, M/V Midnight Sun, and M/V Arctic Sun)	Sac Roe Herring (frozen)	Cape Romanzof
Yukon Delta Fish Marketing Co-op Inc. Emmonak, AK 99581 (Emmonak)	Frozen Salmon Kings Cohos Chums Salmon Roe	1 and 2
Amukon Trading Post Scammon Bay, AK 99662 (Black River)	Hard Salt Kings Chums Cohos	1
Bering Sea Fisheries, Inc. 4413 83rd Ave. S.E. Everett, WA 98205 (Lamont Slough)	Frozen Salmon and Kings Cohos Chums Salmon Roe	1
A.N.P.A.C. Inc. 1304 Laona Circle Anchorage, AK 99502 (Emmonak)	Fresh Salmon Kings Chums	1
Schenk Seafood Sales, Inc. P.O. Box 984 Bellingham, WA 98227 (Mountain Village)	Frozen Salmon Kings Cohos Chums Salmon Roe	1 and 2
Boreal Fisheries Box 561 Graham, WA 98338 (Old Andreafsky)	Frozen Salmon Kings Chums Cohos	1 and 2

Table 3. Yukon Area processors and associated data, 1985. (Continued)

Commercial operation (Processing location/ buying station)	Product	District
Nakamura & Associates 811 First Avenue, #400 Seattle, WA 98104 (Marshall)	Fresh Salmon Kings Chums Cohos Salmon Roe	2 and 3
Y-K Fisheries Box 213 Mc Grath, AK 99627 (St. Marys)	Fresh Salmon Kings Chums Cohos Salmon Roe	2 and 3
Fish Products Limited (Chet Clark) Box 19 Aniak, AK 99557 (Paimuit/Holy Cross)	Fresh Salmon Kings Chums Salmon Roe	3
W/P Limited Box 33621 Seattle, WA 98133 (Aniak)	Fresh Salmon Chums Cohos	3
Walker Co. Box 183 Holy Cross, AK 99602 (Holy Cross)	Fresh Salmon Kings Chums Salmon Roe	3
Bonanaza Company 9730 Arlene Anchorage, AK 99515 (Galena/Nenana)	Fresh Salmon Kings Chums Cohos	4,5,6
Bastien Bros. Interior Fisheries Fargo, N.D.	Frozen Salmon Kings Chums	5
Fisherman's Catch P.O. Box 83618 Fairbanks, AK 99708 (Fairbanks)	Frozen Salmon Kings Chums Cohos	6
Walton Seafoods P.O. Box 258 McGrath, AK 99827 (Anvik)	Salmon Roe	4

Table 3. Yukon Area processors and associated data, 1985. (Continued)

Commercial operation (Processing location/ buying station)	Product	District
Umphenour and Marshall International 878 Lynnwood Way North Pole, AK 99705 (North Pole)	Frozen Salmon Kings Chums Cohos Salmon Roe	6
The Chase Company General Delivery Grayling, AK 99590 (Grayling)	Salmon Roe	4
Yutana Fisheries P.O. Box 82445 College, AK 99708 (Manley)	Frozen Salmon Kings Chums Cobo	5 or 6
Nyquist Investments P.O. Box 10497 Fairbanks, AK 99701	Fresh Salmon Chums	5
George Attla 2906 Whitman Rd. North Pole, AK 99705 (Yukon River Bridge)	Frozen Salmon Kings	5
Kyokko Suisan Alaska, Inc. 424 East Manor Anchorage, AK 99501 (Galena/Kaltag)	Frozen Salmon Chums Cohos Salmon Roe	4
Ludeckey Fish Co. 4.5 Mile Chena Pump Rd. Fairbanks, AK 99701	Frozen Salmon Kings Chums Cohos	6
Reinhard Rupprecht Box 51 Nenana, AK 99760 (Kallands)	Frozen Salmon Kings Chums Cohos	4
Stevens Fisheries Box 38 Nenana, AK 99760 (Nenana)	Frozen Salmon Kings Chums Cohos	6
T.J. Clark and Sons Rt. 2 Nenana, AK 99760 (Nenana)	Frozen Salmon Kings Chums Coho Salmon Roe	6
Circle Fish Co. Box 14 Circle, AK 99733 (Circle)	Frozen Salmon Kings Chums	5
American Salmon Co. P.O. Box 102996 Anchorage, AK 99510	Fresh Salmon Chums Cohos	6

Table 4. Commercial salmon catches by fishing season and district, Yukon Area, 1985.

District	Kings	Summer Chums	Fall Chums	Total Chums	Cohos	Total All Species
District 1						
King salmon season (6/24-7/2)	76,106	84,680	0	84,680	0	160,786
Summer chum salmon season (7/4-7/15)	12,545	162,806	0	162,806	1	175,352
Fall chum salmon season (7/16-8/13)	1,360	0	129,948	129,948	27,675	158,983
Subtotal	90,011	247,486	129,948	377,434	27,676	495,121
District 2						
King salmon season (6/26-7/4)	38,194	85,665	0	85,665	0	123,859
Summer chum salmon season (7/2 and 7/7-7/18)	9,900	102,434	0	102,434	0	112,334
Fall chum salmon season (7/21-8/22)	271	0	40,490	40,490	17,125	57,886
Subtotal	48,365	188,099	40,490	228,589	17,125	294,079
District 3						
King salmon season (7/1-7/5)	2,583	1,792	0	1,792	0	4,375
Summer chum salmon season (7/15-7/16)	0	0	0	0	0	0
Fall chum salmon season (8/5-8/13)	5	0	5,164	5,164	171	5,340
Subtotal	2,588	1,792	5,164	6,956	171	9,715
TOTAL LOWER YUKON	140,964	437,377	175,602	612,979	44,972	798,915
District 4 a/						
King salmon season (6/30-8/13)	653	259,092	0	259,092	0	259,745
Fall chum salmon season (8/14-9/13)	11	0	26,977	26,977	938	27,926
Subtotal	664	259,092	26,977	286,069	938	287,671
District 5						
King salmon season (7/9-8/12)	3,418	700	0	700	0	4,118
Fall chum salmon season (8/24-9/28)	0	0	25,338	25,338	0	25,338
Subtotal	3,418	700	25,338	26,038	0	29,456
District 6 a/						
King salmon season (7/15-8/18)	1,142	68,453	0	68,453	2	69,597
Fall chum salmon season (9/15-9/25)	0	0	42,352	42,352	11,760	54,112
Subtotal	1,142	68,453	42,352	110,805	11,762	123,709
TOTAL UPPER YUKON	5,224	328,245	94,667	422,912	12,700	440,836
GRAND TOTAL YUKON AREA	146,188	765,622	270,269	1,035,891	57,672	1,239,751

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

Table 5. Yukon Area commercial salmon catches by statistical area, 1985.

Statistical Area	King Salmon Season 1/ King	King Salmon Season 1/ Chum	King Salmon Season 1/ Coho	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	3,854	7,025	0	338	6,671	0	41	594	585	4,233	14,290	585
12	20,435	25,606	0	1,571	27,934	0	690	34,332	6,187	22,696	87,872	6,187
13	11,090	11,258	0	981	14,869	0	89	6,035	1,673	12,160	32,162	1,673
14	2,110	2,852	0	304	7,195	0	78	36,885	8,320	2,492	46,932	8,320
15	10,003	9,123	0	2,574	24,010	1	229	43,022	5,304	12,806	76,155	5,305
16	2,431	2,326	0	1,492	8,055	0	32	1,485	936	3,955	11,866	936
17	20,604	16,521	0	4,391	57,427	0	149	5,898	2,153	25,144	79,846	2,153
18	5,579	9,969	0	894	16,645	0	52	1,697	2,517	6,525	28,311	2,517
Subtotal District 1	76,106	84,680	0	12,545	162,806	1	1,360	129,948	27,675	90,011	377,434	27,676
334-21	10,111	9,415	0	1,649	23,496	0	83	9,131	3,369	11,843	42,042	3,369
22	12,062	42,546	0	6,414	45,141	0	108	10,607	5,052	18,584	98,294	5,052
23	3,779	10,474	0	1,036	14,509	0	62	3,530	4,394	4,877	28,513	4,394
24	4,078	7,723	0	524	11,188	0	11	5,859	1,077	4,613	24,770	1,077
25	8,164	15,507	0	277	8,100	0	7	11,363	3,233	8,448	34,970	3,233
Subtotal District 2	38,194	85,665	0	9,900	102,434	0	271	40,490	17,125	48,365	228,589	17,125
334-31	849	872	0	0	0	0	5	4,173	171	854	5,045	171
32	1,734	920	0	0	0	0	0	991	0	1,734	1,911	0
Subtotal District 3	2,583	1,792	0	0	0	0	5	5,164	171	2,588	6,956	171
TOTAL LOWER YUKON	116,883	172,137	0	22,445	265,240	1	1,636	175,602	44,971	140,964	612,979	44,972
334-41 4/	0	227,279	0	0	0	0	0	0	0	0	227,279	[illegible]
42	310	21,091	0	0	0	0	8	15,359	153	318	36,450	[illegible]
43	343	10,722	0	0	0	0	3	11,618	785	346	22,340	[illegible]
Subtotal District 4 5/	653	259,092	0	0	0	0	11	26,977	938	664	286,069	938
334-51	0	0	0	0	0	0	0	565	0	0	565	0
52	1,142	700	0	0	0	0	0	9,263	0	1,142	9,963	0
53	1,842	0	0	0	0	0	0	13,332	0	1,842	13,332	0
54	434	0	0	0	0	0	0	2,178	0	434	2,178	0
Subtotal District 5	3,418	700	0	0	0	0	0	25,338	0	3,418	26,038	0
334-61	15	809	2	0	0	0	0	1,462	432	15	2,271	434
62	560	51,274	0	0	0	0	0	34,663	9,626	560	85,937	9,626
63	567	16,370	0	0	0	0	0	6,227	1,702	567	22,597	1,702
Subtotal District 6 5/	1,142	68,453	2	0	0	0	0	42,352	11,760	1,142	110,805	11,762
TOTAL UPPER YUKON	5,213	328,245	2	0	0	0	11	94,667	12,698	5,224	422,912	12,700
GRAND TOTAL YUKON AREA	122,096	500,382	2	22,445	265,240	1	1,647	270,269	57,669	146,188	1,035,891	57,672

1/King Salmon Season

District 1 6/24-7/02
District 2 6/26-7/04
District 3 7/01-7/05
District 4 6/30-8/13
District 5 7/9-8/12
District 6 7/15-8/18

2/Summer Chum Salmon Season

District 1 7/04-7/15
District 2 7/02 and 7/07-7/18

3/Fall Chum Salmon Season

District 1 7/16-8/13
District 2 7/21-8/22
District 3 8/05-8/13
District 4 8/14-9/13
District 5 8/24-9/28
District 6 7/15-9/25

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, 1985.

District	Residence	Gillnet Permits	Fishwheel Permits
1, 2 and 3	Emmonak	100	
	Mountain Village	95	
	Alakanuk	83	
	Kotlik	76	
	St. Marys	64	
	Pilot Station	48	
	Marshall	47	
	Scammon Bay	38	
	Sheldon Point	24	
	Russian Mission	18	
	Bethel	16	
	Anchorage	16	
	Holy Cross	14	
	Fairbanks	12	
	Stebbins	10	
	Unalakleet	8	
	Shaktoolik	4	
	Wasilla	4	
	Pitkas Point	2	
	St. Michael	2	
	Nome	2	
	Hooper Bay	1	
	Manley Hot Springs	1	
	Fort Yukon	1	
	Elim	1	
	Kotzebue	1	
	Red Devil	1	
	Dillingham	1	
	Iliamna	1	
	Togiak	1	
	Palmer	1	
	Big Lake	1	
	Trapper Creek	1	
	Seward	1	
	Kodiak	1	
	Douglas	1	
	Bellingham, WA	1	
	Everett, WA	1	
	Redmond, WA	1	
	Gig Harbor, WA	1	
	Troy, MT	1	
TOTAL LOWER YUKON		703 1/	
4, 5 and 6	Holy Cross	2	0
	Anvik	2	5
	Grayling	3	7
	Kaltag	4	11
	Nulato	1	18
	Koyukuk	0	2
	Galena	6	19
	Ruby	2	11
	Tanana	9	20
	Rampart	2	3
	Stevens Village	1	2
	Ft. Yukon	0	1
	Circle	1	1
	Minto	0	1
	Manley Hot Springs	2	3
	Nenana	6	19
	Fairbanks	20	22
	North Pole	1	2
	College	0	1
	Anchorage	4	1
	Cantwell	0	1
	Kodiak	1	0
	Los Angeles, CA	1	0
	Kernan, WI	0	1
TOTAL UPPER YUKON		68	151
GRAND TOTAL YUKON AREA		771	151

1/ Does not include transfers.

Table 7. Commercial salmon catch and effort data by fishing period, set and drift gill nets combined, District 1, Yukon area, 1985.

	Period Dates	Hours Fished	No. of Fishermen	Period Catch and Catch Per Unit Effort						Cumulative Catch and Catch Per Unit Effort					
				King	CPUE	Coho	CPUE	Chum	CPUE	King	CPUE	Coho	CPUE	Chum	CPUE
1	6/24-6/25	24	389	23,593	2.53	0	0.00	34,051	3.65	23,593	2.53	0	0.00	34,051	3.65
2	6/27-6/28	24	390	33,689	3.60	0	0.00	30,101	3.22	57,282	3.06	0	0.00	64,152	3.43
3	7/01-7/02	24	395	18,824	1.99	0	0.00	20,528	2.17	76,106	2.70	0	0.00	84,680	3.01
Subtotal a.)		72	421	76,106	2.70	0	0.00	84,680	3.01						
4	7/04-7/05	24	323	5,014	0.65	0	0.00	57,241	7.38	5,014	0.65	0	0.00	141,921	3.95
5	7/08-7/09	24	361	5,439	0.63	0	0.00	86,347	9.97	10,453	0.64	0	0.00	228,268	5.12
6	7/11-7/12	24	302	1,965	0.27	1	0.00	18,450	2.55	12,418	0.52	1	0.00	246,718	4.76
7	7/15	6	41	127	0.52	0	0.00	768	3.12	12,545	0.52	1	0.00	247,486	4.75
Subtotal b.)		150	425	12,545	0.52	1	0.00	247,486	4.75						
7	7/16	18	179	676	0.21	1	0.00	5,147	1.60	13,221	0.48	2	0.00	5,147	1.60
8	7/18-7/19	24	181	610	0.14	1	0.00	6,269	1.44	13,831	0.44	3	0.00	11,416	1.51
9	8/01-8/02	24	175	32	0.01	1,147	0.27	2,222	0.53	13,863	0.39	1,150	0.10	13,638	1.16
10	8/05-8/06	24	169	14	0.00	4,386	1.08	15,203	3.75	13,877	0.35	5,536	0.35	28,841	1.82
11	8/08-8/09	24	263	16	0.00	9,619	1.52	35,770	5.67	13,893	0.30	15,155	0.80	64,611	2.92
12	8/12-8/13	24	268	12	0.00	12,521	1.95	65,337	10.16	13,905	0.27	27,676	0.97	129,948	4.55
Subtotal c.)		138	345	13,905	0.27	27,676	0.97	129,948	4.55						
Season Total		288	434	90,011		27,676		377,434							

a.) King salmon season (6/24 to 7/02), no mesh size restrictions.

b.) Summer chum salmon season (6/24 to 7/15). Six inch maximum mesh size restriction in effect after 7/02, king salmon subtotal represents catch after mesh size change. Chum salmon caught during period 7 on 7/15 were considered summer chum salmon.

c.) Fall chum salmon season (7/16 to 8/13). Chum salmon caught after 7/15 were considered fall chum salmon and were counted against the guideline harvest range. Note, C.P.U.E. after 7/19 was calculated assuming 24 hour fishing periods, however, the district was actually divided into Set Net (24 hour) and Gill Net (12 hour) areas.

Table 8. Commercial salmon catch and effort data by fishing period, set and drift gill nets combined, District 2, Yukon area, 1985.

	Period Dates	Hours Fished	No. of Fishermen	Period Catch and Catch Per Unit Effort: King	CPUE	Coho	CPUE	Chum	CPUE	Cumulative Catch and Catch Per Unit Effort: King	CPUE	Coho	CPUE	Chum	CPUE
1	6/26-6/27	24	205	6,977	1.42	0	0.00	24,401	4.96	6,977	1.42	0	0.00	24,401	4.96
2	6/30-7/01	24	209	18,298	3.65	0	0.00	34,518	6.88	25,275	2.54	0	0.00	58,919	5.93
4	7/03-7/04	24	204	12,919	2.64	0	0.00	26,746	5.46	38,194	2.58	0	0.00	85,665	5.78
Subtotal a.)		72	219	38,194	2.58	0	0.00	85,665	5.78						
3	7/02	6	159	1,557	1.63	0	0.00	39,997	41.93	1,557	1.63	0	0.00	125,662	7.96
5	7/07-7/08	24	162	3,052	0.78	0	0.00	25,497	6.56	4,609	0.95	0	0.00	151,159	7.68
6	7/10-7/11	24	150	2,935	0.82	0	0.00	26,399	7.33	7,544	0.89	0	0.00	177,558	7.63
7	7/14-7/15	24	128	1,955	0.64	0	0.00	7,968	2.59	9,499	0.83	0	0.00	185,526	7.04
8	7/17-7/18	24	62	401	0.27	0	0.00	2,573	1.73	9,900	0.76	0	0.00	188,099	6.76
Subtotal b.)		174	223	9,900	0.76	0	0.00	188,099	6.76						
9	7/21-7/22	24	56	205	0.15	0	0.00	2,738	2.04	10,105	0.70	0	0.00	2,738	2.04
10	8/04-8/04	12	122	42	0.03	763	0.52	7,392	5.05	10,147	0.64	763	0.52	10,130	3.61
11	8/07-8/07	12	61	10	0.01	405	0.55	1,546	2.11	10,157	0.61	1,168	0.53	11,676	3.30
12	8/11-8/11	12	194	13	0.01	6,390	2.74	19,395	8.33	10,170	0.54	7,558	1.67	31,071	5.29
13	8/22-8/22	6	179	1	0.00	9,567	8.91	9,419	8.77	10,171	0.51	17,125	3.06	40,490	5.83
Subtotal c.)		66	222	10,171	0.51	17,125	3.06	40,490	5.83						
Season Total		240	247	48,365		17,125		228,589							

a.) King salmon season (6/26 to 7/01 and 7/03 to 7/04), no mesh size restrictions.
b.) Summer chum salmon season (6/26 to 7/18). Six inch maximum mesh size restriction in effect 7/02 and after 7/04. King salmon subtotal represents catch after mesh size change.
c.) Fall chum salmon season (7/21 to 8/22).

Table 9. Commercial salmon catch and effort data by fishing period, set and drift gill nets combined, District 3, Yukon area, 1985.

	Period Dates	Hours Fished	No. of Fishermen	Period Catch and Catch Per Unit Effort						Cumulative Catch and Catch Per Unit Effort					
				King	CPUE	Coho	CPUE	Chum	CPUE	King	CPUE	Coho	CPUE	Chum	CPUE
1	7/01-7/02	24	17	1,378	3.38	0	0.00	1,526	3.74	1,378	3.38	0	0.00	1,526	3.74
2	7/04-7/05	24	12	1,205	4.18	0	0.00	266	0.92	2,583	3.71	0	0.00	1,792	2.57
Subtotal a.)		48	18	2,583	3.71	0	0.00	1,792	2.57						
3	7/15-7/16	24	0	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	1,792	2.57
Subtotal b.)		72	18	0	0.00	0	0.00	1,792	2.57						
4	8/05-8/06	24	12	4	0.01	23	0.08	3,321	11.53	4	0.01	23	0.08	3,321	11.53
5	8/08-8/09	24	0	0	0.00	0	0.00	0	0.00	4	0.01	23	0.08	3,321	11.53
6	8/12-8/13	24	11	1	0.00	148	0.56	1,843	6.98	5	0.01	171	0.31	5,164	9.36
Subtotal c.)		72	13	5	0.01	171	0.31	5,164	9.36						
Season Total		144	24	2,588		171		6,956							

a.) King salmon season (7/01 to 7/05), no mesh size restrictions.
b.) Summer chum salmon season (7/01 to 7/16). Six inch maximum mesh size restriction in effect after 7/05. King salmon subtotal represents catch after mesh size change.
c.) Fall chum salmon season (8/05 to 8/13).

Table 10. Commercial salmon catch and effort by fishing period, District 4, Yukon Area, set gill net and fishwheel catch combined, 1985. a/

Period Dates	Number of Fishermen	Kings	Chum	Coho
6/30-7/2	18	0	10,530	0
7/3-7/5	36	16	21,508	0
7/7-7/09	53	73	53,411	0
7/10-7/12	67	128	61,571	0
7/14-7/16	63	143	50,180	0
7/17-7/19	62	142	27,498	0
7/21-7/23	60	83	16,536	0
7/24-7/26	53	68	11,425	0
7/28-7/30	31	0	4,056	0
7/31-8/2	4	0	985	0
8/4-8/6	3	0	438	0
8/7-8/9	2	0	572	0
8/11-8/13	2	0	382	0
Subtotal b/	74	653	259,092	0
8/14-8/16	3	0	681	0
8/18-8/20	15	2	2,369	26
8/21-8/23	11	3	1,686	3
8/25-8/27	18	2	4,333	101
8/28-8/30	17	3	5,547	233
9/01-9/3	15	0	4,273	72
9/4-9/6	16	1	4,829	278
9/8-9/10	10	0	2,338	168
9/11-9/13	4	0	921	57
Subtotal c/	22	11	26,977	938
Total	76	664	286,069	938

a/ Includes "equivalent numbers" of salmon.
b/ King salmon season 6/30-8/13.
c/ Fall chum salmon season 8/14-9/13.

Table 11. Commercial salmon catch and effort by fishing period, District 5, Yukon Area, set gill net and fishwheel catches combined, 1985.

Period Dates	Number of Fishermen	Kings	Chum	Coho
7/9-7/11	18	464	0	0
7/12-7/14	21	650	94	0
7/16-7/18	25	1,162	372	0
7/19-7/20	26	731	234	0
7/21-7/27 a/	1	116	0	0
7/28-8/3 a/	1	110	0	0
8/4-8/10 a/	1	162	0	0
8/11-8/12 a/	1	23	0	0
Subtotal b/	32	3,418	700	0
8/24-8/25	34	0	10,736	0
8/27-8/29	27	0	12,424	0
9/13-9/14 c/	1	0	238	0
9/15-9/21 c/	1	0	878	0
9/22-9/28 c/	1	0	1,062	0
Subtotal d/	39	0	25,338	0
Total	48	3,418	26,038	0

a/ Subdistrict 5-D only.
b/ King salmon season 7/9-8/12.
c/ Subdistrict 5-D only.
d/ Fall chum salmon season 8/24-9/28.

Table 12. Commercial salmon catch and effort by fishing period, District 6, Yukon Area, set gill net and fishwheel catches, combined. 1985 a/

Period Dates	Number of Fishermen	Kings	Chum	Coho
7/15-7/17	4	87	0	0
7/19-7/21	9	343	778	0
7/22-7/24	11	307	4,301	0
7/26-7/28	18	191	11,707	0
7/29-7/31	15	141	13,760	0
8/2-8/4	19	53	15,013	0
8/6-8/7	20	10	10,019	0
8/9-8/11	16	10	6,582	0
8/12-8/14	13	0	3,885	0
8/16-8/18	8	0	2,408	2
Subtotal b/	27	1,142	68,453	2
9/15-9/16	18	0	14,056	4,321
9/17-9/18	21	0	10,331	3,037
9/24-9/25	18	0	17,965	4,402
Subtotal c/	25	0	42,352	11,760
Total	33	1,142	110,805	11,762

a/ Includes "equivalent numbers" of salmon.
b/ King salmon season 7/15-8/18.
c/ Fall chum salmon season.

Table 13. Upper Yukon area commercial salmon catch and salmon roe production data[a/] 1985.

Statistical area	Number of fishermen[b/]	Kings	Summer chum	Chum roe[c/]	Equiv. chum	Fall chum	Chum roe[d/]	Equiv. chum	Coho
334-41	55	0	5,130	222,149	227,279	0	0	0	0
334-42	18	318	1,785	19,306	21,091	14,468	891	15,359	153
334-43	15	346	5,092	5,630	10,722	9,984	1,634	11,618	785
Subtotal	76	664	12,007	247,085	259,092	24,452	2,525	26,977	938
334-51	6	0	0	0	0	565	0	565	0
334-52	14	1,142	700	0	700	9,263	0	9,263	0
334-53	28	1,842	0	0	0	13,332	0	13,332	0
334-54	1	434	0	0	0	2,178	0	2,178	0
Subtotal	48	3,418	700	0	700	25,338	0	25,338	0
334-61	4	15	809	0	809	1,462	0	1,462	432
334-62	21	560	51,132	142	51,274	34,663	0	34,663	9,626
334-63	8	567	14,972	1,398	16,370	6,227	0	6,227	1,702
Subtotal	33	1,142	66,913	1,540	68,453	42,352	0	42,352	11,760
Totals	157	5,224	79,620	248,625	328,245	92,142	2,525	94,667	12,698

a/ Roe data in pounds of unprocessed product.
b/ Subtotals are correct, transfers between subdistricts account for apparent discrepancies.
c/ May include small amounts of king salmon roe.
d/ May include small amounts of coho salmon roe.

Table 14. Yukon River subsistence salmon catch data 1985.[a/]

Village	Survey date	Fishing families	Dogs[b/]	Kings	Summer chums[c/]	Fall chums	Coho	Subtotal chums & coho	Total salmon	Whitefish/ sheefish	8" Nets	6" Nets	Fish-wheels
Sheldon's Pt.	8/26	20	74	143	1,717	713	49	2,479	2,622	46/60	26	37	0
Alakanuk	8/22-29	69	157	517	7,702	2,603	894	11,199	11,716	202/147	75	102	0
Emmonak	8/26-30	72	105	1,382	8,742	4,539	1,552	14,833	16,215	185/236	46	55	0
Kotlik	8/23-27	51	214	1,029	6,188	5,420	751	12,359	13,388	96/124	42	62	0
Subtotal Y-1		212	550	3,071	24,349	13,275	3,246	40,870	43,941	529/567	189	256	0
Mt. Village	9/6	62	153	672	6,745	3,591	1,527	11,863	12,535	366/196	62	74	0
Pitka's Pt.	9/6	9	65	83	945	621	175	1,741	1,824	173/153	9	12	0
St. Mary's	9/7	47	190	695	6,611	2,694	938	10,243	10,938	323/476	37	59	0
Pilot Station	8/18-25	36	103	896	3,133	1,957	710	5,800	6,696	866/348	24	38	0
Marshall	9/3	37	224	1,122	2,361	2,681	1,484	6,526	7,648	37/136	48	48	0
Subtotal Y-2		191	735	3,468	19,795	11,544	4,834	36,173	39,641	1,765/1,309	180	231	0
Russian Mission	9/4	20	77	974	1,817	1,266	276	3,359	4,333	18/137			0
Holy Cross	Oct	22	88	2,368	1,870	1,024	100	2,994	5,362	g/	g/	g/	0
Subtotal Y-3		42	165	3,342	3,687	2,290	376	6,353	9,695	18/137	g/	g/	0
Subtotal Lower Yukon		445	1,450	9,881	47,831	27,109	8,456	83,396	93,277	2,312/2,013	369	515	0
Anvik[d/]		16	111	405	24,950	2,125	272	27,347	27,752	707/248	8	9	6
Grayling	Oct/Nov	19	42	903	23,937	3,106	0	27,043	27,946	g/	g/	g/	g/
Kaltag	July-Oct	21	161	669	26,965	1,570	0	28,535	29,204	g/	g/	g/	13
Nulato	10/10	25	207	1,063	16,315	4,240	510	21,065	22,128	920/188	12	16	7
Koyukuk	10/9	12	49	194	9,666	798	120	10,584	10,778	234/20	6	10	1
Galena	10/8	20	180	1,329	16,212	4,476	1,072	21,760	23,089	10,080/204	13	11	13
Ruby	10/11	20	259	1,657	13,556	6,717	1,719	21,992	23,649	5,329/170	7	9	16
Subtotal Y-4		133	1,009	6,220	131,601	23,032	3,693	158,326	164,546	17,270/830	46	55	56
Tanana	10/29	33	556	1,248	11,148	28,113	7,384	46,645	47,893	15,149/649	15	13	27
Rampart	10/31	11	240	1,302	5,133	19,619	513	25,265	26,567	4,492/271	13	0	8
Fbks. Fish Camp[e/]	Oct-Dec	35[f/]	g/	1,865	2,027	13,874	13	15,914	17,779	1,669/82	g/	g/	8
Stevens Village	10/31	25	154	2,763	3,046	11,679	182	14,907	17,670	629/154	8	11	7
Beaver[d/]		6	26	506	263	1,761	1	2,025	2,531	307/43	4	2	1
Ft. Yukon	11/5	25	268	2,900	4,410	12,719	3	17,132	20,032	2,430/490	16	6	18
Circle	Nov	10	50	2,259	930	4,096	0	5,026	7,285	50/38	16	6	4
Eagle	Oct-Dec	49	142	2,247	39	25,264	2	25,305	27,552	468/12	31	59	5
Subtotal Y-5		194	1,436	15,090	26,996	117,125	8,098	152,219	167,309	25,194/1,739	103	97	78
Main River Totals		772	3,895	31,191	206,428	167,266	20,247	393,941	425,132	44,776/4,582	518	487	134

Table 14. Yukon River Subsistence Salmon Catch Data 1985.[a/] - continued -

Village	Survey date	Fishing families	Dogs[b/]	Kings	Summer chums[c/]	Fall chums	Coho	Subtotal chums & coho	Total salmon	Whitefish/ sheefish	8" Nets	6" Nets	Fish-wheels
Manley	Nov	8	110	744	856	6,560	1,926	9,342	10,086	0/160	8	5	2
Minto	Nov	11[i/]	179	1,386	5,291	4,642	1,144	11,077	12,463	242/216	4	7	4
Nenana	Nov	27[i/]	363	4,919	15,825	22,901	7,614	46,340	51,259	1,245/192	15	21	30
Fairbanks[h/]	Sept-Dec	155[j/]	g/	326	2,646	2,860	1,077	6,583	6,909	77/14	g/	g/	6
Subtotal Tanana River		201	652	7,375	24,618	36,963	11,761	73,342	80,717	1,564/582	27	33	42
Huslia	10/9	16	119	144	13,430	276	0	13,706	13,850	1,822/237	6	23	0
Hughes	10/12	15	96	778	12,788	1,260	138	14,186	14,964	2,994/30	2	18	0
Allakaket	10/12	15	149	283	7,564	707	118	8,389	8,672	4,021/500	2	6	0
Subtotals Koyukuk River		46	364	1,205	33,782	2,243	256	36,281	37,486	8,837/767	10	47	0
Subtotals Upper Yukon (Alaska)		574	3,461	29,890	216,997	179,363	23,808	420,168	450,058	52,865/4,622	186	232	176
Totals Yukon River drainage (Alaska)		1,019	4,911	39,771	264,828	206,472	32,264	503,564	543,335	55,177/5,931	555	747	176
Old Crow[k/]		g/	g/	150	g/	3,500	250	2,750	3,900	g/	g/	g/	g/
Yukon Territory Totals[k/]		g/	g/	6,428	g/	5,519	250	5,769	12,197	g/	g/	g/	g/
Grand Total Yukon River drainage		1,019	4,911	46,199	264,828	211,991	32,514	509,333	555,532	55,177/5,931	555	747	176

a/ Catch data expanded.
b/ Data from fishing families only.
c/ Includes small numbers of pinks upstream to Nulato.
d/ Village not surveyed, data are averages from 1980-1984.
e/ Data from fishermen who fished between Hess Creek and Dall River.
f/ 54 permits issued, 8 did not fish, 11 did not report catches; catches by Stevens Village residents shown under Stevens Village.
g/ Data not collected.
h/ Data from fishermen who fished on the Tanana River between the mouth of the Wood River and the mouth of the Salcha River.
i/ Total number of fishing families not known, 1980-84 average value was used.
j/ 291 permits issued, 95 did not fish or fished unsuccessfully, 41 did not report.
k/ Data from Department of Fisheries & Oceans, Whitehorse, YT.

Table 15. Salmon spawning escapement estimates obtained by aerial surveys in the Yukon River drainage, 1985.[a]

Stream (drainage)	Date	Survey rating	Kings	Summer chums	Fall chums	Coho
Mountain Village Stream	7/20	fair	54	505	--	--
Andreafsky River						
East Fork Sonar Count[b]	6/26-7/28		--	(12,992)	--	--
East Fork Aerial	7/23	fair	1,617	66,146	--	--
West Fork Aerial	7/23	fair	2,248	52,750	--	--
	Subtotal		3,865	118,896	--	--
Atchuelinguk (Chulinak) River	7/25	fair	904	55,022	--	--
Nageethluk River	7/30	fair	56	1,241	--	--
	Subtotal		960	56,263	--	--
Yukon River (Pilot Station)						
Main River Sonar[c,d]			(73,848)	(2,391,460)	(259,242)	(117,016)
Bonasila River	7/30	poor	43	1,925	--	--
Stuyahok River	7/30	poor	74	375	--	--
	Subtotal		117	2,300	--	--
Anvik River						
Aerial Counts						
Mainstem River	7/23	fair-poor	993	(304,570)	--	--
Beaver Creek	7/23	good	29	(47,700)	--	--
Canyon Creek	7/23	fair	8	(7,900)	--	--
Otter Creek	7/23	good	17	(27,175)	--	--
Swift River	7/23	good	0	(33,750)	--	--
Yellow River	7/23	poor	4	(5,100)	--	--
Sonar Count[b]	7/5-28		--	1,080,243	--	--
	Subtotal		1,051	1,080,243	--	--
Rodo River	7/23	good	224	24,576	--	--
Nulato River						
Below Forks	7/31	fair	6	1,449	--	--
South Fork	7/23,31	good	1,180	10,494	--	--
North Fork	7/23,31	good	1,594	17,895	--	--
	Subtotal		2,780	29,838	--	--
Koyukuk River Drainage						
Gisasa River	7/23	good	735	13,232	--	--
Hogatza River						
Caribou Creek	7/30	good	1	14,494	--	--
Clear Creek	7/30	good	--	8,072	--	--
	Subtotal		1	22,566	--	--
Kanuti Kilolitna River[e]	7/26		8	--	--	--
Henshaw Creek	7/30	good	393	3,724	--	--
South Fork Koyukuk River	7/29,9/25[e]	good	351	677	954	--
Fish Creek	7/29	fair	4	11	--	--
Bonanza Creek	7/29	fair	2	--	--	--
Jim River	7/29,9/25[e]	good	184	265	15	--
	Subtotal		541	953	969	--

(continued)

Table 15. Salmon spawning escapement estimates obtained by aerial surveys in the Yukon River drainage, 1985.[a] (continued)

Stream (drainage)	Date	Survey rating	Kings	Summer chums	Fall chums	Coho
North Fork Koyukuk River	7/30	good	23	23	--	--
Middle Fork Koyukuk River	7/30	good	113	2	--	--
Total Koyukuk River Drainage			1,814	40,500	969	--
Melozitna River						
Mainstem	7/23	poor	--	328	--	--
Unnamed Tributary	7/23	fair	--	101	--	--
Fox Creek	7/23	fair	--	388	--	--
Turnaround Creek	7/23	poor	--	440	--	--
Blacksand Creek	7/23	fair	--	800	--	--
Melozi Hot Springs Creek	7/22	fair-poor	--	4,376	--	--
	Subtotal		--	6,433	--	--
Tozitna River	7/22	good	86	1,030	--	--
Lower Tanana River Drainage						
Kantishna River Drainage						
Toklat River						
Barton Creek	8/9	poor	128	--	--	--
Geiger Creek	10/27	fair	--	--	1,687	42
Sushana River[f]	10/27	good	--	--	5,118	29
Toklat R. (vic Rdhse)[f]	10/27	good	--	--	15,019	28
	Subtotal		128	--	21,824	99
Clear Creek	8/9	poor	12	--	--	--
Bearpaw River (mainstem)	8/9	fair	64	77	--	--
Moose Creek	8/9	fair	14	--	--	--
	Subtotal		78	77	--	--
Nenana River Drainage						
Lost Slough	10/21	good	--	--	--	1,584
Seventeen Mile Slough	8/9,10/21	good,fair	57	50	--	2,081
Julius Creek						
Clear Cr Weir Counts[g]	7/11-8/4		444	--	--	--
Wood Creek Weir Counts[g]	9/12-10/27		--	--	(2,096)[h]	3,775
	Subtotal		501	50	(2,096)[h]	7,440
Chena River	8/1	good	2,553	1,005	--	--
Salcha River	8/6	fair	2,035	3,178	--	--
Total Lower Tanana River			5,307	4,310	21,824	7,539
Upper Tanana River Drainage						
Benchmark #735 Slough	10/26	fair	--	--	1,093	--
Delta River						
Aerial Counts	10/26	good	--	--	(12,225)	--
Ground Counts	11/1	good	--	--	(16,158)	24
Population Estimate[i]	9/27-12/5		--	--	17,276	--
South Bank Tanana River	10/26	poor	--	--	975	--
Blue Creek	10/26	good	--	--	--	26
Bluff Cabin Slough	10/26	good	--	--	2,655	--
Bluff Cabin Spring	10/26	good	--	--	--	110
Clearwater Lake Outlet Sl	10/26	fair	--	--	1,372	--
Clearwater Lake and Outlet	10/26	fair	--	--	--	750

(continued)

Table 15. Salmon spawning escapement estimates obtained by aerial surveys in the Yukon River drainage, 1985.[a] (continued)

Stream (drainage)	Date	Survey rating	Kings	Summer chums	Fall chums	Coho
Upper Tanana River Drainage (continued)						
Delta Clearwater River[j]	11/12-13	fair	--	--	--	5,358
Onemile Slough	10/26	poor	--	--	366	--
Remmington Estates Spg[f]	10/16	good	--	--	--	79
Goodpaster River	8/16	fair-poor	132	--	--	--
Total Upper Tanana River			132	--	23,737	6,347
Total Tanana River			5,439	4,310	45,561	13,886
Dall River[e]	7/30	fair	--	5	--	--
Hodzana River[e]	7/30,9/25	good,fair	--	94	11	--
Beaver Creek[e]	7/29,8/14	good	3	--	--	--
Hadweenzic River[e]	7/30	fair	--	10	--	--
Chandalar River[e]						
Between E. & Middle Forks[k]	8/14	fair	13	10	--	--
East Fork	7/30	fair	1	--	--	--
Below East Fork	8/14,9/26	fair,fair	49	--	2,535	--
	Subtotal		63	10	2,535	--
Christian River[e,k]	8/19	good	1	4	--	--
Porcupine River Drainage						
Black River (mainstem)[e]	7/30	fair	--	200	--	--
Salmon Fork[e]	7/30,8/19	poor,fair	1	791	--	--
Kevinjik Creek[e,l]	9/26	fair	--	--	550	--
Tetthajik Creek[e]	9/26	fair	--	--	4	--
Crayling Fork[e]	7/29	good	--	80	--	--
	Subtotal		1	1,071	554	--
Sheenjek River (aerial)[e]	8/14,9/25	good,poor	45	--	(14,200)	--
Sonar Counts[b]	9/2-29		--	--	152,768	--
	Subtotal		45	--	152,768	--
Coleen River[e,k]	7/29,8/19	poor,good	10	4	438	--
Fishing Branch R (weir)[m,n]	9/6-10/20		--	--	56,016	--
Aerial[m]	10/16	good	--	--	(53,812)	--
Miner River[m]	9/17	poor	--	--	500	--
Total Porcupine River			56	1,075	210,276	--
Kandik River	8/19	poor	1	--	--	--
Charlie River	8/19	fair	1	--	--	--
Nation River	8/19	poor	5	--	--	--

(continued)

Table 15. Salmon spawning escapement estimates obtained by aerial surveys in the Yukon River drainage, 1985.[a] (continued)

Stream (drainage)	Date	Survey rating	Kings	Summer chums	Fall chums	Coho
Yukon Territory Streams						
Chandindu River[m]	8/6	good	5	--	--	--
Klondike River[m]	8/16	poor	5	--	--	--
Stewart River						
McQuesten River[m]	9/6	fair-good	6	--	--	--
Beaver Creek[m]	9/5	good	43	--	--	--
Mayo River[m]	9/5	fair	6	--	--	--
Pleasant Creek[m]	9/6	poor	2	--	--	--
	Subtotal		57	--	--	--
White River[m]	10/21		--	--	158	--
Donjek River[m]	10/21		--	--	8	--
Kluane River[m]	10/21	fair-good	--	--	7,538	--
Tincup Creek[o]	8/26	poor	70	--	--	--
Koidern River[m]	10/21	good	--	--	1,195	--
	Subtotal		70	--	8,899	--
Pelly River						
Big Kalzas River[m]	9/5	poor	22	--	--	--
Little Kalzas River[m]	9/5	poor	2	--	--	--
Earn River[m]	8/31	good	102	--	--	--
Glenlyon River[m]	8/31	fair	25	--	--	--
Ross River[m]	9/7	poor	23	--	--	--
Hoole River	8/24	poor	23	--	--	--
	Subtotal		197	--	--	--
Tatchun Creek[m,f]	8/31	good	190	--	--	--
Nordenskiold River[m]	8/29	poor	500	--	--	--
Little Salmon River[m]	8/31	fair	255	--	--	--
Big Salmon River						
North Big Salmon River[m]	8/29	good	76	--	--	--
Northern Lake Outlet[m]	8/29	fair	11	--	--	--
Mainstem (above S. Big Salmon R.)						
DFO Weir[m]	8/17-9/9		(456)	--	--	--
ADF&G Aerial Counts	8/25	poor-good	866	--	--	--
	Subtotal		953	--	--	--
Teslin River (mainstem)[m]	10/28	fair	--	--	356	--
Nisutlin River	8/25	fair	656	--	--	--
Wolf River	8/23-25	fair	226	--	--	--
Swift River[m]	9/6	poor	100	--	--	--
Morley River	8/23	poor	11	--	--	--
Gladys River[m]	9/6	fair	25	--	--	--
Jennings River[m]	9/6	fair	25	--	--	--
	Subtotal		1,043	--	356	--
Takhini River[m]	9/10	fair	157	--	--	--
Whitehorse Fishway Counts[m,p]	8/9-9/9		508	--	--	--

(continued)

Table 15. Salmon spawning escapement estimates obtained by aerial surveys in the Yukon River drainage, 1985.[a] (continued)

Stream (drainage)	Date	Survey rating	Kings	Summer chums	Fall chums	Coho
Yukon Territory Streams (continued)						
Mainstem Yukon River[m]						
Vicinity Fort Selkirk-Carmacks[q]	10/18	fair	--	--	10,760	--
Carmacks-Hootalinqua[r]	10/28	poor	--	--	143	--
Hootalinqua-Whitehorse[s]	10/28	poor	--	--	8	--
Population Estimates[m,t]			(29,881)	--	(99,775)	--
	Subtotal		--	--	10,911	--
Yukon River Drainage Totals			20,460	1,366,092	279,518	13,886

[a] Only peak estimates listed; carcass counts included. Data in parentheses not included in totals or subtotals.
[b] Bendix side-scan sonar counts.
[c] Biosonics sonar estimates.
[d] Preliminary estimates. An additional 103,153 was attributed to other species (whitefish, burbot, pink salmon, and sheefish).
[e] Surveys by USFWS.
[f] Foot surveys.
[g] FRED Division counts.
[h] None allowed to spawn wild.
[i] Population estimates based upon replicate foot counts.
[j] Boat survey by Sport Fish Division.
[k] Summer or fall chums.
[l] Includes Fish Hole Creek.
[m] Surveys conducted by Canadian Department of Fisheries and Oceans.
[n] An additional number of chums may have escaped through the weir on three days of high water early in the season.
[o] Partial survey.
[p] Includes 98 taken for hatchery brood stock.
[q] Largest concentrations noted in vicinity of Ingersol Islands.
[r] The majority of these fish seen approximately two miles downstream of Claire Creek.
[s] Fish carcasses seen in vicinity of Hootalinqua.
[t] Tag-recapture Canadian population estimates for Yukon Territory streams excluding the Fishing Branch River.

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

	Escapement Objective 1/	
KING SALMON	Minimum	Optimum
Andreafsky River		
East Fork	1,100	1,600
West Fork	700	1,000
Anvik River		
(Mainstem Yellow River to McDonald Creek)	300	500
Nulato River		
North Fork		500
South Fork		500
Gisasa River		650
Chena River	1,000	1,700
(Flood Control Dam to middle Fork)		
Salcha River	1,500	3,500
SUMMER CHUM SALMON		
Andreafsky River		
East Fork	76,000	109,000
West Fork	62,000	116,000
Anvik River		
(Mainstem Goblet Creek to McDonald Cr.)	209,000	356,000
Sonar		487,000 2/
Nulato River		
North Fork	37,000	53,000
Hogatza River		
Clear Creek	5,000	8,000
Caribou Creek	5,000	9,000
Salcha River		3,500
FALL CHUM SALMON		
Upper Tanana River Drainage		
Delta River	15,800 3/	
Bluff Cabin Slough	10,400 3/	
Upper Toklat River	44,000 3/	
Sheenjek River	40,500 3/	

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

2/ Optimim number calculated from escapement-return relationships.

3/ Total season escapement objective (expanded peak aerial survey estimates).

Appendix Table 1. Yukon River drainage commercial and subsistence salmon catches, 1903-1985.

	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							[illegible]				
1928											
1929											
1930											
1931											
1932	4,739			4,739							
1933	8,829			8,829							
1934	25,365			25,365							
1935	7,265			7,265							
1936	20,963			20,963							
1937	6,226			6,226							
1938	13,727			13,727							
1939	9,987			9,987							
1940	18,053			18,053							
1941	29,905			29,905							
1942	22,487			22,487							
1943	27,650			27,650							
1944	14,232			14,232							
1945	19,727			19,727							
1946	22,782			22,782							
1947	54,026			54,026							
1948	33,842			33,842							
1949	36,379			36,379							
1950	41,808			41,808							
1951 3/	56,278			56,278							
1952	38,637	10,868		49,505							
1953	58,859		5,977	64,836							
1954	64,545		14,375 4/	78,290							
1955	55,925			55,925							
1956	62,208	1	10,742 5/	72,951			[illegible]		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	4,058	5,493	9,551	71,655		5,493	77,148
1961	119,664	2,855	42,461	165,096 5/	3,446	3,276	6,722	123,110	2,855	45,737	171,818
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	2,196	4,479	119,331	5,572	2,196	127,102
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	95,257	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	453	2,665	108,738	13,303	67,828	189,869
1969	91,027	15,093	193,276	299,396	1,640	2,279	3,919	92,667	15,093	195,555	303,315
1970	79,145	13,188	346,601	439,189 5/	2,611	2,479	5,090	81,756	13,188	349,080	444,279
1971	110,507	12,203	289,684	412,395 5/	3,178	1,761	4,939	113,685	12,203	291,445	417,334
1972	92,840	22,233	287,844	402,917	1,769	2,532	4,301	94,609	22,233	290,376	407,218
1973	75,353	36,641	517,599	629,694 5/	2,199	2,806	5,005	77,552	36,641	520,405	634,699
1974	98,089	16,777	879,668	994,534	1,808	2,544	4,352	99,897	16,777	882,212	998,886
1975	63,838	2,546	985,304	1,051,796 5/	3,000	2,500	5,500	66,838	2,546	987,804	1,057,298
1976	87,776	5,184	757,284	850,285 5/	3,500	1,000	4,500	91,276	5,184	758,284	854,785
1977	96,757	38,863	792,861	928,481	4,720	3,990	8,710	101,477	38,863	796,851	937,191
1978	99,168	26,152	1,288,609	1,413,930 5/	2,975	3,356	6,331	102,143	26,152	1,291,965	1,420,261
1979	127,673	17,165	1,139,262	1,284,107 5/	6,175	9,084	15,259	133,848	17,165	1,148,346	1,299,366
1980	153,985	8,745	1,222,039	1,384,769	9,500	9,000	18,500	163,485	8,745	1,231,039	1,403,269
1981	158,018	23,680	1,473,389	1,655,087	8,593	15,260	23,853	166,611	23,680	1,488,649	1,678,940
1982	123,644	37,176	685,611	846,431	8,640	11,312	19,952	132,284	37,176	696,923	866,383
1983	147,910	13,320	1,047,477	1,208,707	13,027	25,990	39,017	160,937	13,320	1,073,467	1,247,724
1984	119,904	81,940	796,829	998,673	9,885	22,932	32,817	129,789	81,940	819,761	1,031,490
1985	146,188	57,672	784,741	988,601	12,573	35,746	48,319	158,761	57,672	820,487	1,036,920

Appendix Table 1. (Continued)

	Subsistence Catch								
	Alaska 1/			Yukon Territory 10/			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	5,957	2,000	7,957
1960				5,595	10,115	15,710	5,595	10,115	15,710
1961	21,488	407,089	428,577	9,800	5,800	15,600	31,288	412,889	444,177
1962	11,110	349,141	360,251	9,900	8,500	18,400	21,010	357,641	378,651
1963	24,862	396,125	420,987	7,794	25,500	33,294	32,656	421,625	454,281
1964	16,231	481,440	497,671	4,200	10,258	14,458	20,431	491,698	512,129
1965	16,608	449,131	465,739	3,115	9,718	12,833	19,723	458,849	478,572
1966	11,572	206,011	217,583	2,510	10,035	12,545	14,082	216,046	230,128
1967	16,448	274,977	291,425	2,963	13,618	16,581	19,411	288,595	308,006
1968	12,106	178,507	190,613	2,830	11,180	14,010	14,936	189,687	204,623
1969	14,000	208,254	222,254	984	5,497	6,481	14,984	213,751	228,735
1970	13,874	222,005	235,879	2,052	1,232	3,284	15,926	223,237	239,163
1971	25,684	228,649	254,333	3,269	15,150	18,419	28,953	243,799	272,752
1972	20,258	144,008	164,266	3,960	5,000	8,960	24,218	149,008	173,226
1973	24,317	214,682	238,999	2,323	7,329	9,652	26,640	222,011	248,651
1974	19,964	321,587	341,551	3,823	9,102	12,925	23,787	330,689	354,476
1975	13,045	298,479	311,524	3,000	18,100	21,100	16,045	316,579	332,624
1976	17,806	259,199	277,005	1,525	4,200	5,725	19,331	263,399	282,730
1977	17,581	258,606	276,187	2,807	8,489	11,296	20,388	267,095	287,483
1978	30,297	299,791	330,088	2,906	6,210	9,116	33,203	306,001	339,204
1979	31,005	439,328	470,333	4,200	13,000	17,200	35,205	452,328	487,533
1980	42,724	465,213	507,937	13,046	13,218	26,264	55,770	478,431	534,201
1981	29,690	418,037	447,727	9,216	7,021	16,237	38,906	425,058	463,964
1982	28,158	429,760	457,918	8,268	4,779	13,047	36,426	434,539	470,965
1983	49,478	457,211	506,689	5,625	3,500	9,125	55,103	460,711	515,814
1984	42,428	454,590	497,018	6,610	6,335	12,945	49,038	460,925	509,963
1985	39,771	503,564	543,335	6,428	5,769	12,197	46,199	509,333	555,532
1986								492,767	

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	1,094,122			12,000	78,467	1,015,655	1,106,122
1921	69,646	112,098	181,744			10,840	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	9,653	15,608	25,261	77,250	15,608	92,858
1961	141,152	452,521	593,673	13,246	9,076	22,322	154,398	461,597	615,955
1962	105,844	425,277	531,071	13,937	9,436	23,373	119,781	434,663	554,444
1963	141,910	401,700	543,610	10,077	27,696	37,773	151,987	429,396	581,383
1964	109,818	492,233	602,051	7,408	12,187	19,595	117,226	504,420	621,646
1965	134,706	472,798	607,504	5,380	11,789	17,169	140,086	484,587	624,673
1966	104,887	296,310	401,197	4,452	13,192	17,644	109,339	309,502	418,841
1967	146,104	335,436	481,540	5,150	16,961	22,111	151,254	352,397	503,651
1968	118,632	259,185	377,817	5,042	11,633	16,675	123,674	270,818	394,492
1969	105,027	416,623	521,650	2,624	7,776	10,400	107,651	424,399	532,050
1970	93,019	582,049	675,068	4,663	3,711	8,374	97,682	585,760	683,442
1971	136,191	530,537	666,728	6,447	16,911	23,358	142,638	547,448	690,086
1972	113,098	454,085	567,183	5,729	7,532	13,261	118,827	461,617	580,444
1973	99,670	769,023	868,693	4,522	10,135	14,657	104,192	779,158	883,350
1974	118,053	1,218,032	1,336,085	5,631	11,646	17,277	123,684	1,229,678	1,353,362
1975	76,883	1,286,437	1,363,320	6,000	20,600	26,600	82,883	1,307,037	1,389,920
1976	105,582	1,021,708	1,127,290	5,025	5,200	10,225	110,607	1,026,908	1,137,515
1977	114,338	1,090,330	1,204,668	7,527	12,479	20,006	121,865	1,102,809	1,224,674
1978	129,465	1,614,553	1,744,018	5,881	9,566	15,447	135,346	1,624,119	1,759,465
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	22,546	22,218	44,764	219,255	1,718,215	1,937,470
1981	187,708	1,915,106	2,102,814	17,809	22,281	40,090	205,517	1,937,387	2,142,904
1982	151,802	1,152,547	1,304,349	16,908	16,091	32,099	168,710	1,168,638	1,337,348
1983	197,388	1,518,008	1,715,396	18,652	29,490	48,142	216,040	1,547,498	1,763,538
1984	162,332	1,333,359	1,495,691	16,495	29,267	45,762	178,827	1,362,626	1,541,453
1985	185,959	1,345,977	1,531,936	19,001	41,515	60,516	204,960	1,338,518	1,592,452

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).
10/ Indian food fishery and domestic fishery catches combined.

Appendix Table 2. Commercial salmon catches by species and districts, Yukon Area, 1961-1985.

KING SALMON

	Lower Yukon Area				Upper Yukon Area				
Year	Dist. 1	Dist. 2	Dist. 3	Subtotals	Dist. 4	Dist. 5	Dist. 6	Subtotals	Totals
1961	84,466	29,026	4,368	117,860	-	-	-	1,804 1/	119,664
1962	67,099	22,224	4,687	94,010	-	-	-	724 1/	94,734
1963	85,004	24,221	7,020	116,245	-	-	-	803	117,048
1964	67,555	20,246	4,705	92,506	-	-	-	1,081	93,587
1965	89,268	23,763	3,204	116,235	-	-	-	1,863	118,098
1966	70,788	16,927	3,612	91,327	-	-	-	1,988	93,315
1967	104,350	20,239	3,618	128,207	-	-	-	1,449 1/	129,656
1968	79,465	21,392	4,543	105,400	-	-	-	1,126	106,526
1969	71,688	14,756	3,595	90,039	-	-	-	988	91,027
1970	56,648	17,141	3,705	77,494	-	-	-	1,651	79,145
1971	86,042	19,226	3,490	108,758	-	-	-	1,749	110,507
1972	70,052	17,855	3,841	91,748	-	-	-	1,092	92,840
1973	56,981	13,859	3,204	74,044	-	-	-	1,309	75,353
1974	71,840	17,948	3,480	93,268	685	2,663	1,473	4,821	98,089
1975	44,585	11,315	4,177	60,077	389	2,872	500	3,761	63,838
1976	62,410	16,556	4,148	83,114	409 3/	3,151	1,102	4,662	87,776
1977	69,915	16,722	3,965	90,602	985	4,162	1,008	6,155	96,757
1978	59,006	32,924	2,916	94,846	608	3,079	635	4,322	99,168
1979	75,007	41,498	5,018	121,523	1,989	3,389	772	6,150	127,673
1980	90,382	50,004	5,240	145,626	1,521	4,891	1,947	8,359	153,985
1981	99,506	45,781	4,023	149,310	1,347	6,374	987	8,708	158,018
1982	74,450	39,132	2,609	116,191	1,087	5,385	981	7,453	123,644
1983	95,457	43,229	4,106	142,792	601	3,606	911	5,118	147,910
1984	74,671	36,697	3,039	114,407	961	3,669	867	5,497	119,904
1985	90,011	48,365	2,588	140,964	664	3,418	1,142	5,224	146,188

COHO SALMON

	Lower Yukon Area				Upper Yukon Area				
Year	Dist. 1	Dist. 2	Dist. 3	Subtotals	Dist. 4	Dist. 5	Dist. 6	Subtotals	Totals
1961	2,855	-	-	2,855	-	-	-	-	2,855
1962	22,926	-	-	22,926	-	-	-	-	22,926
1963	5,572	-	-	5,572	-	-	-	-	5,572
1964	2,446	-	-	2,446	-	-	-	-	2,446
1965	350	-	-	350	-	-	-	-	350
1966	19,254	-	-	19,254	-	-	-	-	19,254
1967	9,925	-	1,122	11,047	-	-	-	-	11,047
1968	13,153	-	150	13,303	-	-	-	-	13,303
1969	13,989	-	1,009	14,998	-	-	-	95	15,093
1970	12,632	-	-	12,632	-	-	-	556	13,188
1971	12,165	-	-	12,165	-	-	-	38	12,203
1972	21,705	506	-	22,211	-	-	-	22	22,233
1973	34,860	1,781	-	36,641	-	-	-	-	36,641
1974	13,713	176	-	13,889	-	1,409	1,479	2,888	16,777
1975	2,288	200	-	2,488	-	5	53	58	2,546
1976	4,064	17	-	4,081	-	-	1,103	1,103	5,184
1977	31,720	5,319	538	37,577	-	2	1,284	1,286	38,863
1978	16,460	5,835	758	23,053	32	1	3,066	3,099	26,152
1979	11,369	2,850	-	14,219	155	-	2,791	2,946	17,165
1980	4,829	2,660	-	7,489	30	-	1,226	1,256	8,745
1981	13,129	7,848	419	21,396	-	-	2,284	2,284	23,680
1982	15,115	14,179	87	29,381	15	-	7,780	7,795	37,176
1983	4,595	2,557	-	7,152	-	-	6,168	6,168	13,320
1984	29,472	43,064	621	73,157	1,095	-	7,688	8,783	81,940
1985	27,676	17,125	171	44,972	938	-	11,762	12,700	57,672

Appendix Table 2. Commercial salmon catches by species and districts, Yukon Area, 1961-1985. (continued)

CHUM SALMON

	Lower Yukon Area				Upper Yukon Area				
Year	Dist. 1	Dist. 2	Dist. 3	Subtotals	Dist. 4	Dist. 5	Dist. 6	Subtotals	Totals
1961	42,461	-	-	42,461	-	-	-	-	42,461
1962	53,116	-	-	53,116	-	-	-	-	53,116
1963	-	-	-	-	-	-	-	-	-
1964	8,347	-	-	8,347	-	-	-	-	8,347
1965	22,936	-	-	22,936	-	-	-	381	23,317
1966	69,836	-	1,209	71,045	-	-	-	-	71,045
1967	45,904	1,425	1,880	49,209	-	-	-	-	49,209
1968	62,852	1,407	3,116	67,375	-	-	-	-	67,375
1969	185,752	5,080	1,722	192,554	-	-	-	722	193,276
1970	317,667	24,507	3,285	345,455	-	-	-	1,146	346,601
1971	282,461	6,112	50	288,623	-	-	-	1,061	289,684
1972	250,945	33,805	1,840	286,590	-	-	-	1,254	287,844
1973	395,427	108,706	463	504,596	-	-	-	13,003	517,599
1974	642,040	127,692	2,273	772,005	37,079	30,382	40,202	107,663	879,668
1975	576,506	150,805	5,590	732,901	178,720	40,209	33,474	252,403	985,304
1976	379,055	120,402	14,052	513,509	213,049	6,161	24,565	243,775	757,284
1977	382,410	157,673	19,263	559,346	183,521	27,004	22,990	233,515	792,861
1978	521,732	279,194	38,530	839,456	375,172	25,908	48,073	449,153	1,288,609
1979	479,340	266,880	65,970	812,190	218,329	56,067	52,676	327,072	1,139,262
1980	498,081	392,585	58,301	948,967	175,538	42,227	55,307	273,072	1,222,039
1981	674,992	506,761	73,514	1,255,267	71,800	87,856	58,466	218,122	1,473,389
1982	347,000	278,925	9,901	635,826	7,541	13,827	28,417	49,785	685,611
1983	575,535	333,737	24,618	933,890	11,154	44,035	58,398	113,587	1,047,477
1984	371,427	307,734	7,516	686,677	8,634	24,705	76,813	110,152	796,829
1985	377,434	228,589	6,956	612,979	36,459	26,038	109,265	171,762	784,741

TOTAL SALMON

	Lower Yukon Area				Upper Yukon Area				
Year	Dist. 1	Dist. 2	Dist. 3	Subtotals	Dist. 4	Dist. 5	Dist. 6	Subtotals	Totals
1961	129,898 2/	29,026	4,368	163,292	-	-	-	1,804	165,096
1962	143,185 2/	22,224	4,687	170,096	-	-	-	724	170,820
1963	90,579 2/	24,221	7,020	121,820	-	-	-	803	122,623
1964	78,348	20,246	4,705	103,299	-	-	-	1,081	104,380
1965	112,554	23,763	3,204	139,521	-	-	-	2,244	141,765
1966	159,878	16,927	4,821	181,626	-	-	-	1,988	183,614
1967	160,382 2/	21,664	6,620	188,666	-	-	-	1,449	190,115
1968	155,470	22,799	7,809	186,078	-	-	-	1,126	187,204
1969	271,429	19,836	6,326	297,591	-	-	-	1,805	299,396
1970	387,198 2/	41,648	6,990	435,836	-	-	-	3,353	439,189
1971	380,669 2/	25,338	3,540	409,547	-	-	-	2,848	412,395
1972	342,702	52,166	5,681	400,549	-	-	-	2,368	402,917
1973	487,272 2/	124,443 2/	3,667	615,382	-	-	-	14,312	629,694
1974	727,593	145,816	5,753	879,162	37,764	34,454	43,154	115,372	994,534
1975	623,480 2/	162,327 2/	9,767	795,574	179,109	43,086	34,027	256,222	1,051,796
1976	445,537 2/	137,008 2/	18,200	600,745	213,458	9,312	26,770	249,540	850,285
1977	484,045	179,714	23,766	687,525	184,506	31,168	25,282	240,956	928,481
1978	597,199 2/	317,953	42,204	957,356	375,812	28,988	51,774	456,574	1,413,930
1979	565,723 2/	311,228	70,988	947,939	220,473	59,456	56,239	336,168	1,284,107
1980	593,292	445,249	63,541	1,102,082	177,089	47,118	58,480	282,687	1,384,769
1981	787,627	560,390	77,956	1,425,973	73,147	94,230	61,737	229,114	1,655,087
1982	436,565	332,236	12,597	781,398	8,643	19,212	37,178	65,033	846,431
1983	675,587	379,523	28,724	1,083,834	11,755	47,641	65,477	124,873	1,208,707
1984	475,570	387,495	11,176	874,241	10,690	28,374	85,368	124,432	998,673
1985	495,121	294,079	9,715	798,915	38,061	29,456	122,169	189,686	988,601

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 - 1985. a/

	Lower Yukon Gill Net d/		Upper Yukon Gill Net e/		Upper Yukon Fishwheel	
	Permits Issued f/	Permits Fished	Permits Issued f/	Permits Fished	Permits Issued f/	Permits Fished
1976	678	c/	118	c/	169	c/
1977	700	606	69	44	160	130
1978	699	642	71	47	158	137
1979	708	659	70	50	165	127
1980	709	650	71	49	163	127
1981	711	666	70	45	162	125
1982	710	663	76	45	166	111
1983	708	655	73	40	164	115
1984	708	679	73	39	159	98
1985 b/	703	666	68	c/	151	c/

a/ Information for 1976-1984 obtained from C.F.E.C.
b/ Data Source: ADF&G
c/ Information not available.
d/ Set or drift gill net.
e/ Set gill net only.
f/ Includes permanent and interim-use permits.

Appendix Table 4. Actual number of commercial salmon fishing gear operators (vessels) by district, Yukon Area, 1971-1985. 1/

KING SALMON SEASON

	Lower Yukon Area				Upper Yukon Area				
Year	Dist. 1	Dist. 2	Dist. 3	Subtotals	Dist. 4	Dist. 5	Dist. 6	Subtotals	Total
1971	405	154	33	592	-	-	-	-	-
1972	426	153	35	614	-	-	-	-	-
1973	438	167	38	643	-	-	-	-	-
1974	396	154	42	592	27	31	20	78	670
1975	441	149	37	627	93	52	36	181	808
1976	453	189	42	684	80	46	29	155	839
1977	392	188	46	626	87	41	18	146	772
1978	429	204	22	655	80	45	35	160	815
1979	425	210	22	657	87	34	30	151	808
1980	407	229	21	657	79	35	33	147	804
1981	448	225	23	696	80	43	26	149	845
1982	450	225	21	696	74	44	20	138	834
1983	444	212	19	675	77	34	25	136	811
1984	439	213	20	672	54	31	27	112	784
1985	421	219	18	658	74	32	27	133	791

FALL SEASON

	Lower Yukon Area 2/				Upper Yukon Area 3/				
Year	Dist. 1	Dist. 2	Dist. 3	Subtotals	Dist. 4	Dist. 5	Dist. 6	Subtotals	Total
1971	352	-	-	352	-	-	-	-	-
1972	353	75	3	431	-	-	-	-	-
1973	445	183	-	628	-	-	-	-	-
1974	322	121	6	449	17	23	22	62	511
1975	428	185	12	625	44	33	33	110	735
1976	422	194	28	644	18	36	44	98	742
1977	337	172	37	546	28	34	32	94	640
1978	429	204	28	661	24	43	30	127	788
1979	458	220	32	710	31	44	37	112	822
1980	395	232	23	650	33	43	26	102	752
1981	462	240	21	723	30	50	30	110	833
1982	445	218	15	678	15	24	25	64	742
1983	455	225	20	700	13	29	23	65	765
1984	327	216	12	555	18	39	26	83	638
1985	416	236	13	665	22	39	25	86	751

COMBINED SEASONS

	Lower Yukon Area				Upper Yukon area				
Year	Dist. 1	Dist. 2	Dist. 3	Subtotals	Dist. 4	Dist. 5	Dist. 6	Subtotals	Total
1971	473	154	33	660	-	-	-	27	687
1972	476	153	35	664	-	-	-	-	664
1973	529	205	38	772	-	-	-	47	819
1974	485	190	42	717	28	43	27	98	815
1975	491	197	39	727	95	57	46	198	925
1976	482	220	44	746	96	62	56	214	960
1977	402	208	54	664	96	53	39	188	852
1978	472	221	29	722	82	53	38	173	895
1979	461	230	33	724	90	49	40	179	903
1980	432	247	27	706	88	51	38	177	883
1981	507	257	26	790	94	56	31	186	976
1982	486	244	22	752	76	53	27	156	908
1983	458	235	26	719	79	47	31	157	876
1984	453	238	26	717	58	45	33	136	853
1985	434	247	24	705	76	48	33	157	862

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

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

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

Appendix Table 5. Commercial king salmon catches by statistical area, lower Yukon Area 1971-1985.

District 1

	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	Total
1971	3,038	25,679	7,204	10,576	17,140	3,949	12,446	6,010	86,042
1972	2,845	12,307	3,608	9,403	18,582	5,331	13,469	4,507	70,052
1973	7,475	29,962	4,657	3,647	1,371	276	7,184	2,409	56,981
1974	2,935	30,174	6,984	3,987	12,721	2,048	6,826	6,165	71,840
1975	6,396	15,844	8,763	314	1,720	606	6,879	4,063	44,585
1976	8,333	27,937	7,507	851	5,101	1,415	6,164	5,102	62,410
1977	11,278	16,787	8,866	1,216	15,214	1,550	7,109	7,895	69,915
1978	886	12,237	4,135	4,388	22,019	3,738	7,533	4,070	59,006
1979	1,017	13,152	4,149	5,782	12,839	10,960	18,976	8,202	75,077
1980	464	12,832	3,235	9,224	30,737	12,333	13,654	7,903	90,382
1981	6,639	12,875	2,975	8,976	19,730	15,158	22,251	10,902	99,506
1982	3,439	11,268	2,842	9,038	9,331	7,295	18,185	13,052	74,450
1983	7,919	23,523	8,161	14,961	9,416	5,297	19,172	7,008	95,457
1984	14,385	15,320	2,598	6,297	11,123	1,434	19,089	4,425	74,671
1985	4,233	22,696	12,160	2,492	12,806	3,955	25,144	6,525	90,011

District 2

	334-21	334-22	334-23	334-24	334-25	Total
1971	5,926	7,893	3,061	2,346	-	19,226
1972	1,839	11,216	1,426	3,374	-	17,855
1973	5,959	5,574	1,106	1,220	-	13,859
1974	6,344	5,611	2,624	3,369	-	17,948
1975	3,282	3,045	2,785	2,203	-	11,315
1976	5,083	4,490	3,031	3,952	-	16,556
1977	6,577	4,584	2,110	3,451	-	16,722
1978	9,004	7,953	5,248	8,499	2,220	32,924
1979	10,698	11,214	6,733	7,573	5,280	41,498
1980	11,544	12,903	8,259	9,591	7,707	50,004
1981	12,341	13,275	7,024	5,950	7,191	45,781
1982	10,567	9,236	5,262	8,932	5,135	39,132
1983	12,433	10,424	7,779	6,260	6,333	43,229
1984	9,179	11,573	4,668	5,752	5,525	36,697
1985	11,843	18,584	4,877	4,613	8,448	48,365

District 3

	334-31	334-32	Total
1971	1,352	2,138	3,490
1972	1,783	2,058	3,841
1973	2,264	940	3,204
1974	1,423	2,057	3,480
1975	2,791	1,386	4,177
1976	1,827	2,321	4,148
1977	1,617	2,348	3,965
1978	746	2,170	2,916
1979	2,195	2,823	5,018
1980	2,039	3,201	5,240
1981	1,241	2,782	4,023
1982	896	1,713	2,609
1983	1,335	2,771	4,106
1984	900	2,139	3,039
1985	854	1,734	2,588

Appendix Table 6. Commercial king salmon catches by statistical area, upper Yukon Area, 1974-1985.

District 4

	334-41	334-42	334-43	Total
1974	0	685	-	685
1975	15	374	-	389
1976	44 a/	365	-	409
1977	317	668	-	985
1978	183	425	-	608
1979	785	370	834	1,989
1980	352	549	620	1,521
1981	106	867	374	1,347
1982	78	497	512	1,087
1983	0	382	219	601
1984	2	272	687	961
1985	0	318	346	664

District 5

	334-51	334-52	334-53	334-54	Total
1974	2,284	379	-	-	2,663
1975	2,602	270	-	-	2,872
1976	2,843	308	-	-	3,151
1977	4,013	149	-	-	4,162
1978	2,838	241	-	-	3,079
1979	3,389	0	-	-	3,389
1980	4,554	337	-	-	4,891
1981	97	3,051	2,477	749	6,374
1982	61	2,352	2,277	695	5,385
1983	0	632	2,738	236	3,606
1984	128	1,589	1,568	384	3,669
1985	0	1,142	1,842	434	3,418

District 6

	334-61	334-62	334-63	Total
1974	111	1,102	260	1,473
1975	77	153	270	500
1976	490	320	292	1,102
1977	405	365	238	1,008
1978	34	58	543	635
1979	102	336	334	772
1980	92	1,588	267	1,947
1981	438	366	183	987
1982	414	309	258	981
1983	249	364	298	911
1984	0	375	492	867
1985	15	560	567	1,142

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

Appendix Table 7. Commercial catches of king and summer chum salmon by mesh size, Districts 1 and 2, Yukon Area, 1961-1985.

	Unrestricted Mesh Size 1/ Districts 1 and 2		5-1/2 - 6 inch Mesh Size 2/ Districts 1 and 2	
	Kings	Summer Chums	Kings	Summer Chums
1961	113,434	-	-	-
1962	89,296	-	-	-
1963	109,215	-	-	-
1964	87,801	-	-	-
1965	113,031	-	-	-
1966	87,710	-	-	-
1967	124,574	10,919	-	-
1968	100,857	14,402	-	-
1969	85,387	41,418	97	15,437
1970	73,610	104,705	57	16,623
1971	103,623	42,189	1,176	57,851
1972	85,376	78,698	1,991	37,881
(Avg. 1961-72)	(97,826)	(48,722)	(830)	(31,948)
1973 3/	65,269	89,841	5,168	196,540
1974	86,921	349,758	1,631	227,507
1975	50,614	148,919	4,162	345,472
1976	71,688	267,075	7,631	128,431
1977	81,073	157,909	4,720	205,634
1978	82,070	275,512	7,737	354,603
1979	95,137	136,973	22,136	434,188
1980	120,912	95,876	19,711	605,679
1981	125.698	163,979	18,648	758,767
1982	106,399	225,106	6,887	217,563
1983	107,078	121,927	31,002	590,329
1984	94,456	242,076	16,394	287,531
1985	114,300	170,345	22,445	265,240
(Avg. 1973-85)	(92,432)	(188,100)	(12,944)	(355,191)

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

Appendix Table 8. Commercial king salmon catch and effort data, Districts 1 and 2, Yukon Area, 1961-1985. 1/

Commercial Catch		Dist. 1	Dist. 2	Total
	1961	84,406	29,028	113,434
	1962	67,072	22,224	89,296
	1963	85,004	24,211	109,215
	1964	67,555	20,246	87,801
	1965	89,268	23,763	113,031
	1966	70,783	16,927	87,710
	1967	104,335	20,239	124,574
	1968	79,465	21,392	100,857
	1969	70,588	14,799	85,387
	1970	56,469	17,141	73,610
	1971	84,397	19,226	103,623
	1972	68,059	17,317	85,376
	1973	52,790	12,479	65,269
	1974	69,457	17,464	86,921
	1975	41,550	9,064	50,614
	1976	56,392	15,296	71,688
	1977	65,745	15,328	81,073
	1978	53,198	28,872	82,070
	1979	61,790	33,347	95,137
	1980	78,157	42,755	120,912
	1981	88,038	37,660	125,698
	1982	70,743	35,656	106,399
	1983	76,280	30,798	107,078
	1984	65,101	29,355	94,456
	1985	76,106	38,194	114,300

Boat Hours (Catch per boat hour)		District 1	District 2	Total
	1961	79,224 (1.07)	29,118 (1.00)	108,342 (1.05)
	1962	84,792 (0.79)	38,118 (0.58)	122,910 (0.73)
	1963	72,288 (1.18)	27,672 (0.87)	99,960 (1.09)
	1964	56,736 (1.19)	22,398 (0.91)	79,134 (1.11)
	1965	78,096 (1.14)	31,008 (0.77)	109,104 (1.04)
	1966	69,894 (1.01)	22,380 (0.76)	92,274 (0.95)
	1967	102,456 (1.02)	37,488 (0.54)	139,944 (0.89)
	1968	92,450 (0.86)	32,280 (0.66)	124,730 (0.81)
	1969	84,864 (0.83)	27,828 (0.53)	112,692 (0.76)
	1970	61,260 (0.92)	20,460 (0.84)	81,720 (0.91)
	1971	73,272 (1.15)	19,956 (0.96)	93,228 (1.11)
	1972	79,236 (0.86)	19,872 (0.87)	99,108 (0.86)
	1973	75,036 (0.70)	23,496 (0.63)	98,532 (0.66)
	1974	86,256 (0.80)	29,808 (0.60)	116,064 (0.75)
	1975	49,944 (0.83)	8,376 (1.08)	58,320 (0.67)
	1976	64,572 (0.87)	23,484 (0.65)	88,160 (0.81)
	1977	42,618 (1.54)	15,180 (1.01)	57,798 (1.40)
	1978	57,528 (0.92)	25,524 (1.13)	83,052 (0.99)
	1979	53,040 (1.17)	23,904 (1.39)	76,944 (1.24)
	1980	45,348 (1.73)	20,196 (2.12)	65,544 (1.85)
	1981	43,632 (2.02)	19,536 (1.93)	63,168 (1.99)
	1982	55,416 (1.28)	22,008 (1.62)	77,424 (1.37)
	1983	38,448 (1.98)	18,696 (1.65)	57,144 (1.88)
	1984	38,880 (1.67)	14,568 (2.01)	53,448 (1.77)
	1985	28,176 (2.70)	14,832 (2.58)	43,008 (2.66)

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

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

	Cumulative catch 1/ (Cumulative catch /boat hour) 2/													
Date	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
6/1														
6/2														
6/3														
6/4														
6/5			3.5(0.46)					6.1(0.81)						
6/6		0 3(0.15)												
6/7										11.1(1.49)				
6/8			11.0(0.60)					11.0(0.71)						
6/9		2 8(0.25)					2.5(0.35)			26.7(1.68)				
6/10	0.04(0.08)								6.8(1.01)			22.3(2.44)		
6/11				0.2(0.09)										
6/12			25.7(0.82)					30.5(1.26)		41.2(1.69)				
6/13		9.4(0.44)					8.3(0.56)							
6/14	1.04(0.17)			0.6(0.11)		0.04(0.05)			32.9(1.63)			35.0(1.90)		
6/15			36.8(0.84)								5.6(0.69)			
6/16		21.5(0.59)			0.1(0.06)			39.8(1.08)		59.5(1.75)				
6/17	4.5(0.24)						25.9(0.91)		47.5(1.67)			63.6(2.21)		
6/18				1.7(0.17)		2.6(0.41)					18.0(1.00)			
6/19			55.6(0.99)		3.3(0.27)			56.5(1.23)		88.0(2.02)			13.7(1.53)	
6/20		30.6(0.65)					33.4(0.91)							
6/21	21.5(0.68)			7.4(0.39)		13.0(0.92)			73.7(1.80)			76.3(1.98)		
6/22			58.5(0.96)					61.8(1.17)			38.0(1.41)		32.5(1.72)	
6/23		42.6(0.68)			12.9(0.49)				78.2(1.72)					
6/24	37 8(0.77)						47.8(0.96)							
6/25				24.5(0.75)		39.3(1.50)					45.1(1.24)			23.6(2.53)
6/26			65.7(0.90)		28.3(0.69)								48.6(1.68)	
6/27		52.8(0.70)		34.3(0.83)			53.2(0.92)							
6/28	53.2(0.86)					57.0(1.62)								57.3(3.06)
6/29			69.5(0.80)								63.2(1.38)		65.1(1.67)	
6/30					42.1(0.76)									
7/1	68.1(0.86)			41.6(0.83)		65.7(1.54)								
7/2					56.4(0.87)						70.7(1.28)			76.1(2.70)
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, 1974-1985.

KING SALMON 1/

	Lower Yukon Area		Upper Yukon Area 2/		
	Districts 1 and 2	District 3	District 4	District 5	District 6
1974	-	3,413 (3,000)	685 (1,000)	2,661 (3,000)	1,473 (1,000)
1975	-	4,177 (3,000)	389 (1,000)	2,865 (3,000)	500 (1,000)
1976	-	4,070 (3,000)	902 (1,000)	3,151 (3,000)	1,102 (1,000)
1977	-	3,938 (3,000)	985 (1,000)	4,162 (3,000)	1,008 (1,000)
1978	-	2,657 (2,000)	701 (1,000)	3,115 (3,000)	635 (1,000)
1979 3/	-	3,073 (1,800-2,200)	1,232 (900-1,100)	3,389 (2,700-3,300	772 (900-1,100)
1980	-	3,896 (1,800-2,200)	1,517 (900-1,100)	5,383 (2,700-3,000	2,076 (900-1,100)
1981	145,287 (60,000-120,000)	3,220 (1,800-2,200)	1,347 (2,250-2,850)	6,452 (2,700-3,000)	1,264 (600-800)
1982	113,582 (60,000-120,000)	2,608 (1,800-2,200)	1,087 (2,250-2,850)	5,385 (2,700-3,300)	981 (600-800)
1983	138,686 (60,000-120,000)	3,318 (1,800-2,200)	601 (2,250-2,850)	3,606 (2,700-3,300)	911 (600-800)
1984	111,368 (60,000-120,000)	3,036 (1,800-2,200)	961 (2,250-2,850)	3,669 (2,700-3,300)	867 (600-800)
1985	138,376 (60,000-120,000)	2,587 (1,800-2,200)	664 (2,250-2,850)	3,418 (2,700-3,300)	1,142 (600-800)

FALL CHUM AND COHO SALMON 1/

	Lower Yukon Area 4/	Upper Yukon Area 2/ 5/		
	Districts 1, 2 and 3	District 4 6/	District 5	District 6
1974	230,128 (200,000)	9,213 (10,000)	25,051 (25,000)	26,192 (15,000)
1975	215,439 (200,000)	13,552 (10,000)	27,212 (25,000)	18,735 (15,000)
1976	131,313 (200,000)	1,742 (10,000)	5,387 (25,000)	19,051 (15,000)
1977	199,603 (200,000)	13,996 (10,000)	25,695 (25,000)	19,910 (15,000)
1978	191,120 (200,000)	11,262 (10,000)	21,017 (25,000)	16,325 (15,000)
1979 3/	229,403 (120,000-220,000)	50,375 (10,000-40,000)	51,161 (10,000-40,000)	34,316 (7,500-22,500)
1980	204,229 (120,000-220,000)	32,058 (10,000-40,000)	42,343 (10,000-40,000)	20,746 (7,500-22,500)
1981	341,760 (120,000-220,000)	19,447 (10,000-40,000)	95,844 (10,000-40,000)	29,008 (5,500-20,500)
1982	199,880 (120,000-220,000)	4,076 (10,000-40,000)	13,678 (10,000-40,000)	15,196 (5,500-20,500)
1983	220,034 (120,000-220,000)	6,445 (10,000-40,000)	43,993 (10,000-40,000)	37,190 (5,500-20,500)
1984	155,983 (120,000-220,000)	9,840 (10,000-40,000)	24,117 (10,000-40,000)	20,620 (5,500-20,500)
1985	175,602 (120,000-220,000)	27,915 (10,000-40,000)	25,338 (10,000-40,000)	54,112 (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, 1971-1985.

District 1

	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	Total
1971	834	87,740	24,766	34,891	40,617	8,063	67,635	17,915	282,461
1972	5,186	98,909	12,146	25,943	56,039	4,073	38,274	10,375	250,945
1973	17,259	176,119	39,583	18,608	61,969	6,413	52,770	22,706	395,427
1974	38,322	338,412	116,940	22,011	50,593	5,357	37,724	32,681	642,040
1975	28,970	257,485	103,423	12,078	41,295	5,779	99,232	28,244	576,506
1976	26,277	203,024	52,480	9,338	28,848	2,872	32,093	24,123	379,055
1977	34,312	181,459	54,082	9,872	41,799	1,083	41,026	18,777	382,410
1978	5,072	195,080	67,098	56,995	79,352	4,602	75,090	38,443	521,732
1979	1,791	115,528	38,161	43,263	92,706	46,401	93,777	47,713	479,340
1980	3,840	82,898	16,940	46,164	87,270	98,326	109,005	53,638	498,081
1981	25,569	206,200	26,220	76,591	91,722	51,660	143,747	53,283	674,992
1982	9,908	83,130	17,910	54,795	56,632	20,602	60,263	43,760	347,000
1983	42,300	122,374	40,200	75,016	65,665	42,903	121,328	65,749	575,535
1984	42,579	106,209	17,376	54,519	36,021	12,711	73,710	28,302	371,427
1985	14,290	87,872	32,162	46,932	76,155	11,866	79,846	28,311	377,434

District 2

	334-21	334-22	334-23	334-24	334-25	Total
1971	2,255	3,144	286	427	-	6,112
1972	3,091	22,746	250	7,718	-	33,805
1973	22,207	56,193	6,181	24,125	-	108,706
1974	39,116	52,514	11,191	24,871	-	127,692
1975	20,947	98,986	11,028	19,844	-	150,805
1976	22,282	58,016	18,173	21,931	-	120,402
1977	26,158	75,281	23,789	32,445	-	157,673
1978	48,868	132,002	31,990	60,770	5,564	279,194
1979	73,509	86,020	29,988	33,069	44,294	266,880
1980	80,931	156,962	75,513	47,772	31,407	392,585
1981	76,143	215,346	88,040	78,218	49,014	506,761
1982	60,611	103,689	27,600	61,685	25,340	278,925
1983	74,985	76,494	80,631	53,099	48,528	333,737
1984	57,212	114,732	50,738	55,259	29,793	307,734
1985	42,042	98,294	28,513	24,770	34,970	228,589

District 3

	334-31	334-32	Total
1971	26	24	50
1972	-	1,840	1,840
1973	-	463	463
1974	1,697	576	2,273
1975	-	5,590	5,590
1976	4,450	9,602	14,052
1977	12,839	6,424	19,263
1978	20,028	18,502	38,530
1979	28,272	37,698	65,970
1980	23,646	34,655	58,301
1981	35,597	37,917	73,514
1982	3,896	6,005	9,901
1983	7,713	16,905	24,618
1984	6,876	640	7,516
1985	5,045	1,911	6,956

Appendix Table 12. Commercial chum salmon catches by statistical area, upper Yukon Area, 1974-1985. 1/

District 4

	334-41	334-42	334-43	Total
1974	1,200 (2/)	35,879 (2/)	-	37,079 (9.2)
1975	107,813 (2.2)	70,907 (11.4)	-	178,720 (13.6)
1976	178,510 3/(0.5)	34,539 (1.3)	-	213,049 (1.8)
1977	150,356 (1.9)	33,165 (12.1)	-	183,521 (14.0)
1978	309,086 (-)	66,086 (11.0)	-	375,172 (11.0)
1979	136,324 (-)	62,221 (33.0)	19,784 (15.9)	218,329 (48.9)
1980	119,398 (-)	41,457 (15.3)	14,683 (12.9)	175,538 (27.9)
1981	45,980 (-)	17,647 (5.8)	8,245 (6.3)	71,800 (12.1)
1982	1,032 (-)	2,033 (1.0)	4,476 (2.9)	7,541 (3.9)
1983	3,407 (-)	6,946 (3.7)	801 (0.8)	11,154 (4.5)
1984	51 (-)	3,620 (3.0)	4,963 (4.7)	8,634 (7.6)
1985	5,130 (-)	16,253 (14.5)	15,076 (10.0)	36,459 (24.5)

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)
1984	1,465 (1.4)	10,907 (10.3)	9,415 (9.4)	2,918 (2.9)	24,705 (24.1)
1985	565 (0.6)	9,963 (9.3)	13,332 (13.3)	2,178 (2.2)	26,038 (25.3)

District 6

	334-61	334-62	334-63	Total
1974	11,082 (9.6)	25,883 (15.4)	3,237 (1.9)	40,202 (26.9)
1975	18,811 (13.3)	5,218 (2.8)	9,445 (2.6)	33,474 (18.7)
1976	9,315 (6.4)	9,257 (7.9)	5,993 (3.6)	24,565 (17.9)
1977	5,101 (3.7)	12,457 (11.2)	5,432 (3.9)	22,990 (18.8)
1978	6,874 (4.7)	35,934 (8.0)	5,265 (0.5)	48,073 (13.2)
1979	7,392 (7.1)	36,352 (21.6)	8,932 (5.5)	52,676 (34.2)
1980	11,456 (6.3)	38,192 (27.3)	5,659 (2.2)	55,307 (35.8)
1981	9,541 (4.9)	42,383 (18.9)	6,542 (2.3)	58,466 (26.1)
1982	5,688 (0.7)	17,138 (4.6)	5,591 (1.5)	28,417 (6.8)
1983	5,449 (3.5)	44,742 (23.1)	8,207 (7.5)	58,398 (34.1)
1984	9,386 (5.6)	54,040 (11.8)	13,387 (3.2)	76,813 (20.6)
1985	2,271 (1.5)	85,795 (34.7)	21,199 (6.2)	109,265 (42.5)

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

Appendix Table 13. Summer and fall chum salmon commercial catches, Yukon Area, 1961-1985. a/

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	14,470	-	-	-	-	14,470
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 b/	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	381,104	5,497	43,050	429,651	1,077,987
1979	369,934	172,838	40,015	582,787	204,747	9,617	22,382	236,746	819,533
1980	391,252	308,704	44,782	744,738	283,384	456	39,137	322,977	1,067,715
1981	507,158	351,878	54,471	913,507	246,750	1,285	34,464	282,499	1,196,006
1982	249,516	182,344	4,086	435,946	154,928	234	23,114	178,276	614,222
1983	451,164	248,092	14,600	713,856	154,797	1,898	24,327	181,022	894,878
1984	292,676	236,931	1,087	530,694	167,851	692	56,584	225,127	755,821
1985	247,486	188,099	1,792	437,377	259,092	700	68,453	328,245	765,622

a/ Includes "equivalent numbers" of salmon converted from roe sales.
b/ 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	12,709	26,236	16,946	55,891	247,011
1979	109,406	94,042	25,955	229,403	52,098	55,556	41,355	149,009	378,412
1980	106,829	83,881	13,519	204,229	32,325	42,376	19,520	94,221	298,450
1981	167,834	154,883	19,043	341,760	13,393	93,575	29,008	135,976	477,736
1982	97,484	96,581	5,815	199,880	4,061	13,635	7,416	25,112	224,992
1983	124,371	85,645	10,018	220,034	6,445	43,993	37,190	87,628	307,662
1984	78,751	70,803	6,429	155,983	9,840	24,117	20,620	54,577	210,560
1985	129,948	40,490	5,164	175,602	26,977	25,338	42,352	94,667	270,269

Appendix Table 14. Commercial summer chum salmon catch and effort data, Districts 1 and 2, Yukon Area, 1967-1985.

	District 1					District 2				
Year	Duration	Days Fished	Boat Hours	Catch	(Catch/Boat Hour)	Duration	Days Fished	Boat Hours	Catch	(Catch/Boat Hour)
1967	6/8-6/27	11.0	77,208	9,494	(0.12)	-	-	-	-	-
1968	6/6-7/3	14.0	91,380	12,995	(0.13)	6/13-7/2	10.5	27,600	1,407	(0.05)
1969	6/2-6/28	12.5	84,864	8,840	(0.10)	6/15-7/1	8.0	16,620	5,024	(0.30)
1970	6/11-7/3	10.5	58,056	87,169	(1.50)	6/14-7/3	9.0	15,756	17,536	(1.11)
1971	6/14-7/3	10.5	73,032	36,077	(0.49)	6/20-7/5	8.5	17,832	6,112	(0.34)
1972	6/8-7/1	12.5	79,236	69,658	(0.88)	6/15-7/1	8.5	19,296	9,040	(0.47)
1973 1/	6/7-7/11	14.5	100,284	191,840	(1.91)	6/10-7/14	14.5	36,000	56,481	(1.57)
1974	6/3-7/13	16.5	114,624	461,025	(4.02)	6/5-7/16	15.5	35,316	72,281	(2.05)
1975	6/9-7/16	15.0	86,304	394,447	(4.72)	6/22-7/18	10.5	21,024	99,139	(4.72)
1976	6/14-7/14	12.0	90,658	272,493	(3.00)	6/20-7/16	11.0	32,624	99,190	(3.04)
1977	6/13-7/12	12.0	63,036	232,427	(3.69)	6/19-7/15	10.0	27,048	102,759	(3.80)
1978	6/8-7/15	13.5	100,008	393,785	(3.94)	6/8-7/14	13.5	44,376	218,196	(4.92)
1979	6/4-7/14	13.5	106,680	369,934	(3.47)	6/3-7/13	13.5	44,748	172,838	(3.87)
1980	6/9-7/15	12.8	89,412	391,252	(4.37)	6/8-7/17	12.5	48,060	308,704	(6.42)
1981	6/6-7/14	12.0	94,656	507,158	(5.36)	6/7-7/16	12.0	46,560	351,458	(7.54)
1982	6/14-7/13	9.5	81,240	248,950	(3.07)	6/16-7/16	10.0	37,920	180,321	(4.76)
1983	6/9-7/15	11.0	94,920	451,164	(4.75)	6/12-7/18	11.0	44,712	248,092	(5.55)
1984	6/18-7/13	8.0	67,776	291,966	(4.30)	6/20-7/16	8.0	32,208	234,677	(7.29)
1985	6/24-7/15	6.3	52,116	247,486	(4.75)	6/26-7/18	7.3	27,834	188,099	(6.76)

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

Appendix Table 15. Commercial coho and chum salmon catch and effort data for the fall chum season, District 1, Yukon Area, 1961-1985.

Year	Dates	Days 1/ Fished	Boat Hours	Commercial catch (catch/boat hour) Coho	Commercial catch (catch/boat hour) Chum
1961	8/1-8/31	16	14,772	2,855 (0.2)	42,461 (2.9)
1962	8/1-9/3	21	46,950	22,926 (0.5)	53,116 (1.1)
1963	8/9-9/6	18	2,100	5,572 (2.7)	no purchases
1964	8/3-8/27	17	8,346	2,446 (0.3)	8,347 (1.0)
1965	8/2-8/4	2/	2/	350 (2/)	22,936 (2/)
1966	7/25-9/10	28	41,994	19,254 (0.5)	69,836 (1.7)
1967	7/24-8/27	21	19,272	9,925 (0.5)	36,451 (1.9)
1968	7/22-8/28	22	47,232	13,153 (0.3)	49,857 (1.1)
1969	7/21-8/23	20	39,408	14,041 (0.4)	128,866 (3.3)
1970	7/20-8/26	22	56,160	12,245 (0.2)	200,306 (3.6)
1971	7/22-8/28	22	85,344	11,582 (0.1)	178,744 (2.1)
1972	7/20-8/26	22	81,726	19,655 (0.2)	134,752 (1.6)
1973	7/19-8/25	22	107,136	34,860 (0.3)	173,783 (1.6)
1974	7/18-8/14	12	41,868	13,758 (0.2)	137,235 (3.3)
1975	7/21-8/16	12	52,128	2,240 (0.04)	158,183 (3.0)
1976	7/19-8/13	11	55,026	4,084 (0.07)	91,091 (1.7)
1977	7/18-8/23	11	50,568	30,588 (0.6)	129,486 (2.6)
1978	7/17-8/29	13	56,184	16,262 (0.2)	127,947 (2.3)
1979	7/19-8/14	8	47,352	11,231 (0.2)	101,400 (2.1)
1980	7/17-8/19	7	24,216	4,819 (0.2)	106,829 (4.4)
1981	7/16-8/17	7	35,520	11,174 (0.3)	167,834 (4.7)
1982	7/19-8/13	8	40,944	15,114 (0.4)	91,271 (2.2)
1983 3/	7/18-8/12	6	32,904	4,560 (0.1)	124,371 (3.8)
1984 3/	7/16-8/17	6	26,928	29,472 (1.1)	78,751 (2.9)
1985 3/	7/18-8/13	5	25,344	27,674 (1.1)	124,801 (4.9)

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

Appendix Table 16. Fall chum salmon commercial catch data by period, fall season, District 1, Tukon Area, 1969-1985.

Cumulative Catch 1/ (Cumulative catch/boat hour)

Date	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981 2/	1982	1983 3/ 4/	1984 4/ 5/ 6/	1985 4/ 7/
7/18		16.1 (1.86)			16.4 (1.26)					6.3 (1.70)		4.2 (1.55)					6.3 (1.44)
7/19	3.8 (1.10)			18.6 (1.91)					21.4 (3.72)						18.1(2.56)		
7/20						12.1 (1.57)					6.0 (1.35)			4.3 (0.90)			
7/21			8.2 (1.05)		53.6 (2.03)			(0.73)		11.4 (1.36)			6.0 (1.3)				
7/22		29.6 (1.67)		45.8 (2.23)					23.4 (2.54)			10.8 (1.97)					
7/23	29.7 (3.75)						12.9 (1.51)							32.1 (2.79)			
7/24			31.9 (1.71)			24.7 (1.76)		(0.60)			13.2 (1.31)		7.3 (1.18)				
7/25		30.4 (1.54)			67.4 (1.91)					64.2 (4.14)		21.2 (2.24)					
7/26	44.5 (3.48)			54.8 (1.88)			37.0 (2.33)		33.1 (2.38)								
7/27						59.0 (2.81)					28.0 (1.66)			36.1 (2.31)			
7/28			37.6 (1.38)		112.8 (2.28)			(0.69)		67.0 (3.34)			64.6 (4.93)				
7/29		81.6 (2.95)		63.7 (1.72)					40.8 (2.16)			36.5 (3.07)			19.1(1.93)		
7/30	57.0 (3.24)						55.9 (2.54)							47.8 (2.32)			
7/31			53.5 (1.48)			86.9 (3.16)		(2.24)			37.7 (1.62)	37.9 (2.94)	87.8 (4.58)			18.3(3.60)	
8/1		126.8 (3.57)			122.9 (2.01)					81.4 (3.05)							
8/2	71.8 (3.20)			70.5 (1.62)			86.9 (2.80)		41.7 (1.91)						37.6(2.39)		8.5 (1.00)
8/3						91.8 (2.86)					55.2 (1.82)					35.4(3.19)	
8/4			89.6 (1.94)		127.9 (1.84)			(1.98)		81.8 (2.89)				55.7 (2.16)			
8/5		159.4 (3.67)		73.6 (1.46)					44.9 (1.76)			44.1 (3.16)			61.3(2.86)		
8/6	94.2 (3.45)						112.4 (2.87)							56.9 (1.98)			23.7 (1.88)
8/7			104.3 (1.89)			93.0 (2.73)		(1.85)			93.0 (2.44)	57.6 (3.62)				37.2(2.46)	
8/8		188.4 (3.67)			133.9 (1.72)					83.2 (2.68)							
8/9	108.6 (3.39)			108.6 (1.85)			134.2 (2.90)		94.9 (3.06)						105.3(3.87)		59.5 (3.14)
8/10						94.7 (2.57)					94.3 (2.27)			70.6 (2.06)			
8/11			110.2 (1.74)		164.6 (1.84)			(1.69)		84.8 (2.53)		62.8 (3.61)					
8/12		189.9 (3.47)		123.5 (1.86)					96.4 (2.76)					91.3 (2.53)	124.4(3.78)		
8/13	112.5 (3.21)						134.6 (2.78)	(1.65)					131.6 (5.22)				124.8 (4.92)
8/14			148.3 (2.07)			137.4 (3.31)					101.4 (2.14)	64.6 (3.48)				49.0(2.69)	
8/15		192.2 (3.35)			170.7 (1.77)					86.2 (2.30)							
8/16	120.7 (3.18)			125.1 (1.65)			158.2 (3.04)		113.0 (2.79)								
8/17																59.1(2.75)	
8/18			153.2 (1.95)		177.5 (1.70)					96.4 (2.29)			135.5 (4.64)				
8/19		209.1 (3.45)		146.3 (1.77)								106.8 (4.41)					
8/20	130.4 (3.18)								120.0 (2.65)								
8/21			177.4 (2.10)														
8/22		214.5 (3.39)			185.3 (1.64)					118.3 (2.44)							
8/23	132.6 (3.09)			150.5 (1.79)					125.8 (2.55)								
8/24																	
8/25			185.5 (2.05)		187.5 (1.57)					122.7 (2.29)							
8/26		216.4 (3.34)		153.3 (1.76)													
8/27																	
8/28			187.0 (2.01)														
8/29					189.3 (1.54)					127.9 (2.28)							
8/30				154.6 (1.60)													
8/31																	

1/ Cumulative catch in thousands of fish by period beginning July 18. Fall chum salmon run usually well underway in the lower Yukon River by this date.
2/ Season closed 8/1 - 8/12.
3/ Season closed 7/20 - 7/27.
4/ Cumulative catch per boat hour after 7/19 calculated assuming 24 hour fishing period, while the district was actually divided into a Set Net (24 hour) area and a Gill Net (12 hour) area.
5/ Season closed 7/18-8/1.
6/ Season closed 8/8-8/12.
7/ Season closed 7/20-7/31.

Appendix Table 17. Commercial fall chum and coho salmon catch and effort in the Set Net Only and Gill Net areas, District 1, Yukon Area, 1983-1985.

1983

	SET NET ONLY AREA					GILL NET AREA				
Period	Fishermen	Chum	(CPF)	Coho	(CPF)	Fishermen	Chum	(CPF)	Coho	(CPF)
7/28-7/29	70	908	(13)	24	(0)	79	2,063	(26)	8	(0)
8/1-8/2	114	6,994	(61)	88	(1)	131	11,527	(88)	124	(1)
8/4-8/5	115	8,561	(74)	213	(2)	122	15,088	(124)	506	(4)
8/8-8/9	111	24,040	(217)	467	(4)	130	19,994	(154)	852	(7)
8/11-8/12	110	6,080	(55)	229	(2)	126	12,977	(103)	2,046	(16)
	137	46,583	(340)	1,021	(7)	175	61,649	(352)	3,536	(20)

1984

	SET NET ONLY AREA					GILL NET AREA				
Period	Fishermen	Chum	(CPF)	Coho	(CPF)	Fishermen	Chum	(CPF)	Coho	(CPF)
7/[illegible]/31	93	10,183	(109)	1,271	(14)	119	8,133	(68)	1,286	(11)
8/2-8/3	116	10,677	(92)	3,190	(28)	136	6,417	(47)	1,838	(14)
8/6-8/7	96	963	(10)	746	(8)	69	796	(12)	657	(10)
8/13-8/14	60	8,204	(137)	6,259	(104)	70	3,603	(51)	4,424	(63)
8/16-8/17	55	4,790	(87)	3,611	(66)	82	5,358	(65)	6,185	(75)
	137	34,817	(254)	15,077	(110)	164	24,307	(148)	14,390	(88)

1985

	SET NET ONLY AREA					GILL NET AREA				
Period	Fishermen	Chum	(CPF)	Coho	(CPF)	Fishermen	Chum	(CPF)	Coho	(CPF)
8/01-02	103	1,353	(13)	657	(6)	72	869	(12)	490	(7)
8/05-06	110	10,063	(91)	2,053	(19)	59	5,140	(87)	2,333	(40)
8/08-09	132	19,267	(146)	4,375	(33)	131	16,503	(126)	5,244	(40)
8/12-13	134	34,155	(255)	5,756	(43)	134	31,182	(233)	6,765	(50)
Totals	159	64,838	(408)	12,841	(81)	153	53,694	(351)	14,832	(97)

CPF = Catch Per Fisherman (average)

Appendix Table 18. Commercial salmon pack by species and type of processing, Yukon Area, 1960-1985. 1/

	Cases (48#)			Fresh-Frozen (round wt. in lbs.)			Cured king Salmon		Cured Chum Salmon		Salmon Roe (lbs.)
	King	Coho	Chum	King	Coho	Chum	Tierces	1/2 Tierce	Tierces	1/2 Tierce	
1960	13,000			2/	2/	2/	250	180			
1961	19,474			2/	2/	2/	504	146			
1962	15,959	512	1,760	2/	2/	2/	464	280			
1963	16,400	1,190		2/	2/	2/	2/	2/			
1964	12,041			2/	17,000	66,770	537	499			
1965	18,149			275,000	2,500	160,500	670	67			
1966	14,026	836	2,812	414,000	61,355	301,240	398	60			
1967	21,503		126	475,900	66,400	366,496	627	96			1,755
1968	19,499		816	561,690	93,154	454,409	351	170			21,000
1969	9,560	1,104	4,499	423,597	26,973 3/	829,586 3/	647	95	15		29,000
1970	6,431	1,002	6,413	716,600	12,900	1,725,000	447	191	51		26,300
1971	6,500	502	3,213	1,058,034	45,836	1,432,455	659	229	139		55,177
1972	7,418	1,005	6,249	1,002,395	83,960	1,495,922	497	147			85,278
1973	5,227	1,008	9,902	1,339,317	181,928	2,929,532	61	133		72	137,594
1974	6,660	603	21,074	1,062,666	58,816	3,879,300	381	56	57		208,842
1975	5,297	40	14,226	781,902	13,299	4,751,941	80	53	45	119	201,404
1976	3,921	80	11,375	1,398,779	29,778	4,256,679	93	92	72	10	226,893
1977	4,642	415	9,428	1,513,484	270,241	4,877,918	180	237	26	-	210,568
1978	5,711	74	9,340	1,473,354	168,241	8,639,156	222	117	7	75	261,422
1979	6,277	22	7,854	2,014,156	108,011	8,098,075	112	91	-	2	410,540
1980	8,764	130	15,783	3,341,262	56,295	8,781,062	29	18	-	37	579,927
1981	1,107	378	11,573	3,686,238	130,097	11,398,680	25	13	9	28	507,550
1982	-	7	751	2,790,456	246,500	4,992,877	-	19	-	1	584,053
1983	-	198	1,181	3,000,843	72,447	10,637,613	5	39	-	7	426,220
1984	-	5	1,768	2,426,205	590,526	5,516,532	-	36	-	16	468,244
1985	-	-	-	2,953,199	409,725	5,462,462	-	9	-	20 4/	476,024

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.
4/ Also 13 half tierces of coho salmon packed.

Appendix Table 19. Commercial salmon roe sales by subdistrict, upper Yukon Area, 1978-1985. 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	300	1,721 (1721)	0	0 (0)	330	18,641 (1721)
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	151,448 (167)
1983	0	130,013	0	19,140 (1591)	0	935 (372)	0	150,088 (1963)
1984	0	148,519	0	16,406 (1222)	0	4,132 (993)	0	169,057 (2215)
1985	0	222,149	0	20,197 (891)	0	7,264 (1634)	0	249,610 (2525)

	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
1978	1,046	4,551 (3946)	25	1,274 (1274)	0	0 (0)	0	0 (0)	1,071	5,825 (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	63 (42)
1983	0	242 (0)	0	269 (0)	0	1,345 (0)	0	0 (0)	0	1,856 (0)
1984	0	0 (0)	0	47 (0)	0	0 (0)	0	57 (57)	0	104 (57)
1985	0	0 (0)	0	0 (0)	0	0 (0)	0	0 (0)	0	0 (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)
1984	0	0 (0)	0	152 (0)	0	239 (56)	0	391 (56)
1985	0	0 (0)	0	142 (0)	0	1,398 (0)	0	1,540 (0)

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 20. Dollar value estimates of Yukon Area commercial salmon fishery, 1961-1985.

Year	Gross value of catch to fishermen				Wholesale Value Of Pack 1/	Tax Revenues To State 2/
	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	1,864,800	41,700
1968	494,300	6,700	34,000	535,000	1,655,200	47,000
1969	415,000	8,200	96,000	519,200	1,976,200	40,000
1970	401,300	10,300	211,500	623,100	2,113,100	45,000
1971	590,100	10,000	182,900	783,000	2,106,600	42,000
1972	547,800	20,400	215,800	784,000	2,405,200	45,300
1973	561,400	46,500	609,100	1,217,000	4,453,900	62,800
1974	881,300	28,400	1,011,300	1,921,000	6,035,900	84,100
1975	589,000	3,500	1,201,400	1,793,900	4,939,700	87,100
1976	983,500	8,600	1,158,900	2,151,000	6,815,500	96,900
1977	1,928,400	143,000	1,997,300	4,068,700	10,499,400	151,000
1978	2,133,700	79,200	3,101,800	5,314,700	14,194,800	179,400
1979	3,008,000	84,400	4,527,100	7,619,500	19,048,800	248,600
1980	3,639,300	21,800	2,676,800	6,703,100 3/	16,757,700	205,400
1981	4,635,500	91,900	5,323,300	10,050,700 4/	26,267,500	322,500
1982	3,871,300	153,700	2,693,800	6,718,800 5/	16,797,000	222,000
1983	4,198,600	29,000	2,499,800	6,984,800 6/	17,462,000	230,000
1984	3,620,400	268,800	1,498,000	5,689,000 7/	14,223,000	194,000
1985	4,389,100	202,600	1,952,700	7,031,600 8/	17,579,000	227,100

1/ Based on type of processing when fish were shipped out of the Area.
2/ Processors tax and vessel and crewmember license fees. Does not include CFEC permit fee.
3/ Includes $365,200 in roe sales upper Yukon Area.
4/ Includes $601,100 in roe sales upper Yukon Area.
5/ Includes $422,500 in roe sales upper Yukon Area.
6/ Includes $257,400 in roe sales upper Yukon Area.
7/ Includes $301,800 in roe sales upper Yukon Area.
8/ Includes $487,200 in roe sales upper Yukon Area.

Appendix Table 21. Estimated average prices paid to fishermen, Yukon Area, 1961-1985.

	PRICE PER FISH							
	Lower Yukon Area				Upper Yukon Area			
Year	King	Summer Chum	Fall Chum	Coho	King	Summer Chum	Fall Chum	Coho
1961	$3.50							
1962	3.50							
1963	3.50							
1964	3.75		.25	.50				
1965	4.50		.35					
1966	4.50		.35	.50				
1967	4.50	.35	.35	.50				
1968	4.64	.50	.50	.50				
1969	4.60	.50	.50	.55				
1970	5.00	.61	.61	.84				
1971	5.34	.64	.64	.82				
1972	5.90	.75	.75	.92				
1973	7.45	1.18	1.18	1.27				
1974	9.00	1.36	1.58	1.75	8.67	1.00	1.00	1.00
1975	9.24	1.30	1.50	1.51	16.25	1.12	1.12	1.12
1976	11.17	1.56	1.80	1.78	12.96	1.22	1.22	1.22
1977	20.32	2.80	3.60	3.75	24.17	1.75	1.75	1.75
1978	21.60	3.20	3.62	4.20	15.38	1.54	1.97	1.97
1979	22.74	3.87	5.05	5.87	20.20	1.65	2.24	2.24
1980	23.41	1.38	1.93	2.32	13.60	1.52	2.08	1.89
1981	29.76	3.00	4.40	4.08	23.70	1.42	2.59	2.00
1982	32.43	2.80	4.27	4.59	21.83	1.28	2.10	2.41
1983	28.70	2.45	2.69	2.45	20.63	1.06	1.46	1.86
1984	30.75	1.77	2.40	3.50	18.62	1.47	1.90	1.46
1985	30.45	2.35	3.62	3.92	15.82	1.40	1.88	2.11

	PRICE PER POUND								
	Lower Yukon Area				Upper Yukon Area				
Year	King	Summer Chum	Fall Chum	Coho	King	Summer Chum	Fall Chum	Coho	Roe
1964	.17		.03						
1965	.20								
1966	.20								
1967	.19	.05	.05	.07					
1968	.18	.06	.06						
1969	.19	.08	.08	.08					
1970	.22	.09	.09	.12					
1971	.24	.10	.10	.12					
1972	.24	.11	.11	.13					
1973	.30	.16	.16	.18					
1974	.38	.21	.21	.25	.50	.15	.13	.15	.75
1975	.42	.20	.20	.21	.92	.17	.14	.17	1.16
1976	.51	.24	.24	.27	.74	.19	.16	.19	1.33
1977	.85	.40	.45	.50	1.37	.27	.22	.27	2.66
1978	.90	.45	.47	.60	.87	.24	.25	.24	a/
1979	1.09	.52	.68	.80	1.00	.25	.29	.25	3.00
1980	1.04	.20	.28	.36	.85	.23	.27	.29	2.50
1981	1.20	.40	.55	.60	1.00	.20	.35	.35	3.00
1982	1.41	.40	.55	.69	1.02	.18	.28	.37	2.75
1983	1.40	.34	.34	.35	1.08	.16	.19	.31	1.66
1984	1.50	.26	.32	.50	.95	.23	.26	.24	1.78
1985	1.50	.35	.47	.53	.86	.23	.25	.33	1.94

a/ Data not available.

Appendix Table 22. Average weight of salmon, commercial catch, Yukon Area, 1964-1985.

AVERAGE WEIGHT IN POUNDS 1/									
Lower Yukon Area					Upper Yukon Area				
Year	King	Summer Chum	Fall Chum	Coho	Year	King	Summer Chum	Fall Chum	Coho
1964	22.6	-	-	-					
1965	23.0	-	-	-					
1966	23.0	-	-	-					
1967	24.0	-	-	7.3					
1968	26.5	-	-	-					
1969	23.9	-	-	6.7					
1970	22.3	-	-	7.1					
1971	22.6	-	-	6.9					
1972	24.6	6.6	7.6	7.1					
1973	24.5	6.8	7.9	7.1					
1974	23.7	6.5	7.5	7.0	1974	17.3	6.7	7.7	6.7
1975	22.0	6.5	7.5	7.2	1975	17.7	6.6	8.0	6.6
1976	21.9	6.5	7.5	6.6	1976	18.4	6.4	8.0	7.5
1977	23.9	7.0	8.0	7.5	1977	17.6	6.5	8.0	6.5
1978	24.0	7.1	7.7	7.0	1978	20.2	6.8	7.4	6.4
1979	20.9	7.4	7.4	7.3	1979	20.2	6.6	7.7	6.5
1980	22.5	6.9	6.9	6.4	1980	16.0	6.6	7.7	6.5
1981	24.8	7.5	8.0	6.8	1981	23.7	7.1	7.4	5.7
1982	23.0	7.1	7.7	6.7	1982	21.4	7.1	7.5	6.5
1983	20.5	7.2	7.9	7.0	1983	19.1	6.6	7.7	6.0
1984	20.5	6.8	7.5	7.0	1984	19.6	6.4	7.3	6.1
1985	20.3	6.7	7.7	7.4	1985	18.4	6.1	7.5	6.4

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

Appendix Table 23. Yukon River comparative subsistence catch and effort data, 1961-1985 (numbers per fishing family are in parentheses).

	Equivalent Catch 1/		Equivalent Catch Per Family 1/	
	King Salmon	Other 2/ Salmon	King Salmon	Other 2/ Salmon
1961	20,117	403,765	32	647
1962	10,217	325,244	18	577
1963	23,919	376,440	40	625
1964	14,847	458,609	25	762
1965	16,499	430,949	30	788
1966	11,507	204,913	23	416
1967	16,306	256,956	35	546
1968	11,883	170,552	25	358
1969	13,916	195,476	30	426
1970	13,474	199,613	34	498
1971	24,058	191,011	48	383
1972	19,314	129,343	46	311
1973	23,530	198,054	44	374
1974	19,014	284,977	38	580
1975	12,600	262,741	21	448
1976	16,196	235,056	25	358
1977	15,740	235,401	27	408
1978	25,496	255,447	36	360
1979	26,616	315,681	33	387
1980	38,749	436,321	51	571
1981	24,070	332,512	35	485
1982	23,880	407,099	32	542
1983	46,172	427,189	60	484
1984	39,564	424,587	50	532
1985	34,939	466,650	43	580

Year	Fishing Familes Surveyed 1/	People in Fishing Families 1/	Snow-machines 1/	Sled Dogs 1/	Gear Operated 1/ Fishwheels
1961	624	3,626 (5.8)		4,806 (7.7)	169
1962	564	3,279 (5.8)		3,848 (6.8)	138
1963	602	4,154 (6.9)		4,214 (7.0)	156
1964	602	3,612 (6.0)		4,003 (6.6)	155
1965	547	3,993 (7.3)		3,993 (7.3)	127
1966	492	3,149 (6.4)		3,112 (6.3)	116
1967	471	2,779 (5.9)	192 (0.4)	2,752 (5.8)	86
1968	476	3,094 (6.5)	262 (0.6)	2,719 (5.7)	71
1969	459	2,984 (6.5)	349 (0.8)	2,448 (5.3)	63
1970	400	2,680 (6.7)	346 (0.9)	2,214 (5.5)	55
1971	499	3,244 (6.5)	460 (0.9)	2,226 (4.5)	63
1972	416	2,621 (6.3)	438 (1.0)	1,589 (3.8)	59
1973	530	3,339 (6.3)	571 (1.1)	2,375 (4.5)	83
1974	491	3,093 (6.3)	534 (1.1)	2,105 (4.3)	90
1975	587	3,698 (6.3)	762 (1.3)	2,585 (4.4)	126
1976	657	4,139 (6.3)	882 (1.3)	3,401 (5.2)	154
1977	577	3,635 (7.3)	785 (1.4)	3,413 (5.9)	164
1978	711	3,929 (5.5)	843 (1.2)	3,722 (5.2)	178
1979	815	4,386 (5.3)	914 (1.1)	4,623 (5.7)	179
1980	764	4,101 (5.4)	891 (1.2)	4,874 (6.4)	179
1981	685	4,314 (6.3)	812 (1.2)	4,663 (6.8)	173
1982	751	3,936 (5.2)	840 (1.1)	4,513 (6.0)	141
1983	883	3/	3/	4,539 (5.1)	156
1984	798	3/	3/	4,630 (5.8)	158
1985	805	3/	3/	4,719 (5.9)	161

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 24. Yukon River king salmon subsistence catches by village, 1972-1985. 1/

Village	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Mouth to Anuk River														
Sheldons Point	462	165	283	108	122	302	546	91	427	163	79	1,021	802	143
Alakanuk	647	461	569	130	363	213	1,125	893	1,595	423	336	1,582	1,028	517
Emmonak-Kwiguk	300	1,071	208	55	398	62	2,738	1,362	1,175	1,021	1,328	2,436	2,099	1,382
Aproka Pass & vicinity	37	106	5	-	-	-	64	-	-	-	-	-	-	-
Kotlik-Hamilton	342	1,008	394	204	472	173	773	533	472	675	568	1,224	695	1,029
Subtotal	1,788	2,811	1,459	497	1,355	750	5,246	2,879	3,669	2,282	2,311	6,263	4,624	3,071
Anuk River to Owl Slough														
Mountain Village	932	912	460	394	397	172	817	1,025	843	811	218	1,875	1,217	672
Pitkas Point-St. Marys	1,517	1,270	878	438	1,273	576	1,314	1,718	1,297	1,380	985	2,432	2,663	778
Pilot Station	1,558	1,508	517	107	502	556	1,027	804	433	399	428	2,703	1,116	896
Marshall	713	1,163	1,068	436	694	364	806	721	1,101	990	478	2,055	2,176	1,122
Subtotal	4,720	4,853	2,923	1,375	2,866	1,668	3,964	4,268	3,674	3,580	2,109	9,065	7,172	3,468
Owl Slough to Bonasila R.														
Russian Mission	975	1,387	1,243	2,098	1,328	639	1,498	1,476	1,660	1,689	1,628	2,634	1,938	974
Holy Cross	2,359	3,708	2,243	2,792	1,492	1,920	2,404	1,787	3,123	2,312	1,731	2,276	2,456	2,368
Subtotal	3,334	5,095	3,486	4,890	2,820	2,559	3,902	3,263	4,783	4,001	3,359	4,910	4,394	3,342
Bonasila R. to Illinois Cr.														
Anvik	72	67	111	83	84	67	180	261	161	191	354	744	576	405
Grayling	185	516	547	100	117 2/	149	292	391	3,664	222	294	951	879	903
Kaltag	83	148	616	192	57	216	127	435	694	179	344	652	487	669
Nulato	364	307	1,161	1,119	968	1,531	1,354	1,245	2,297	1,117	811	1,135	966	1,063
Koyukuk	417	564	604	50	437	752	518	495	699	541	493	966	1,099	194
Galena	608	510	706	1,294	435	1,155	945	1,591	1,205	570	735	1,477	1,226	1,329
Ruby-Kokrines	2,076	2,418	2,899	912	1,959	735	1,539	2,221	1,736	964	1,168	2,346	1,107	1,657
Subtotal	3,805	4,530	6,644	3,750	4,057	4,605	4,955	6,639	10,456	3,784	4,199	8,271	6,250	6,220
Illinois Cr. to U.S. Can.Border														
Tanana	1,461	965	789	80	1,338	858	1,851	1,604	5,711	2,517	2,230	5,547	2,682	1,248
Rampart	1,457	2,614	452	517	581	1,194	987	1,820	1,169	488	887	1,070	876	1,302
Stevens Village	1,002 3/7/	1,027 3/	590	362	643 7/	1,252 7/	3,178	2,194 7/	3,962 7/	2,387 7/	3,745 7/	5,203 7/	4,676 7/	4,628 7/
Beaver	241	358	34	168	188	299	558	394	506	552	250	220	553	506
Fort Yukon	520	536	1,030	215	1,158	1,061	2,642	1,922	2,527	2,794	1,894	1,887	3,608	2,900
Circle	345	225	406	16	528	304	212	1,175	769	728	969	648	545	2,259
Eagle	353	421	66	20	633	1,171	963	2,888	2,880	3,782	2,864	2,183	1,998	2,247
Subtotal	5,379	6,146	3,367	1,377	5,069	6,129	10,391	11,997	17,524	13,248	12,839	16,758	14,938	15,090

Appendix Table 24. (Continued)

Village	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Innoko River														
Shageluk	-	-	-	-	11	-	-	62	35	10	-	-	-	-
Holikachuk	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal		-	-	-	11	-	-	62	35	10	-	-	-	-
Koyukuk River														
Huslia	1	35	69	23	21	50	132	146	154	61	125	459	169	144
Hughes	27	32	10	25	155	72	216	180	226	402	479	318	856	778
Alatna	3	1	17	0	0	1	7	2	20	0	6	6	2	-
Allakaket	25	73	138	151	231	172	239	236	197	185	268	700	373	283
Subtotal	56	141	234	199	407	295	594	564	597	648	878	1,483	1,400	1,205
Tanana River														
Minto-Manley Hot Spr.	99	58	176	213	326	752	298	269	764	711	797	1,265	722	2,130
Nenana	887	683	1,431	533	864	742	807	800	771	974	1,195	966	2,556	4,919
Fairbanks	190	26	38	32	31	67	126	264	291	400	451	475	321	326
Subtotal	1,176	767	1,645	778	1,221	1,561	1,231	1,333	1,826	2,085	2,443	2,706	3,599	7,375
Chandalar River														
Venetie	-	-	-	-	-	-	9	-	160	52	20	22	51	-
Subtotal	-	-	-	-	-	-	9	-	160	52	20	22	51	-
Yukon Terr. Villages														
Old Crow (Porcupine R.)	-	4	75	100	25	29	-	100	-	100	400	200	500	150
Dawson	-	-	-	-	500	531	421	1,200	-	1,016	20	-	-	-
Stewart River	100	99	-	-	-	-	-	-	-	1,000	62	-	-	-
Mayo-Stewart Crossing	-	25	233	-	-	61	105	-	-	-	720	-	-	-
Fraser Falls	-	25	-	-	-	-	-	-	-	-	-	-	-	-
Durwash-Kluane R.	-	-	-	-	-	-	-	-	-	-	0	-	-	-
Fort Selkirk	-	45	-	-	-	-	-	-	-	-	164	-	-	-
Pelly	380	53	433	-	200	265	500	-	-	-	3,142	-	-	-
Faro	-	75	-	-	-	-	-	-	-	3,286	-	-	-	-
Ross River	35	75	30	-	-	-	-	-	-	-	440	-	-	-
Minto	15	261	-	-	-	-	-	-	-	400	-	-	-	-
Tatchun Creek	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carmacks	1,080	1,384	2,563	-	800	1,121	1,280	3,000	-	-	3,172	-	-	-
Lake Laberge-Whitehorse	-	-	-	-	-	-	-	-	-	3,042	7	-	-	-
Takhini	-	-	-	-	-	-	-	-	-	-	-	-	-	-
McClintock R.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carcross	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Teslin-Johnson's Crossing	-	54	20	-	-	800	600	-	-	-	500	-	-	-
Subtotal 5/	3,960	2,323	3,823	3,000 6/	1,525	2,807	2,906	4,200	13,046 6/	9,216	8,268	5,625 6/	6,610 6/	6,428 6/
Total	24,218	26,640	23,787	16,045	19,331	20,388	30,297	35,205	55,770	38,906	36,426	55,103	49,038	46,199

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

Appendix Table 25. Subsistence and commercial king salmon catches by district, Yukon Area, 1977-1985.

	1977	1978	1979	1980	1981	1982	1983	1984	1985
District 1									
Subsistence	750	5,246	2,879	3,669	2,282	2,311	6,263	4,624	3,071
Commercial	69,915	59,006	75,007	90,382	99,506	74,450	95,457	74,671	90,011
Subtotal	70,665	64,252	77,886	94,051	101,788	76,761	101,720	79,295	93,082
District 2									
Subsistence	1,668	3,964	4,268	3,674	3,580	2,109	9,065	7,172	3,468
Commercial	16,722	32,924	41,498	50,004	45,781	39,132	43,229	36,697	48,365
Subtotal	18,390	36,888	45,766	53,678	49,361	41,241	52,294	43,869	51,833
District 3									
Subsistence	2,559	3,902	3,263	4,783	4,001	3,359	4,910	4,394	3,342
Commercial	3,965	2,916	5,018	5,240	4,023	2,609	4,106	3,039	2,588
Subtotal	6,524	6,818	8,281	10,023	8,024	5,968	9,016	7,433	5,930
Lower Yukon Total									
Subsistence	4,977	13,112	10,410	12,126	9,863	7,779	20,238	16,190	9,881
Commercial	90,602	94,846	121,523	145,626	149,310	116,191	142,792	114,407	140,964
Total	95,579	107,958	131,933	157,752	159,173	123,970	163,030	130,597	150,845
District 4									
Subsistence	4,900	5,549	7,265	11,088	4,442	5,077	9,754	7,650	7,425
Commercial	985	608	1,989	1,521	1,347	1,087	601	961	664
Subtotal	5,885	6,157	9,254	12,609	5,789	6,164	10,355	8,611	8,089
District 5									
Subsistence	6,129	10,405	11,997	17,684	13,300	12,859	16,780	14,989	15,090
Commercial	4,162	3,079	3,389	4,891	6,374	5,385	3,606	3,669	3,418
Subtotal	10,291	13,484	15,386	22,575	19,674	18,244	20,386	18,658	18,508
District 6									
Subsistence	1,575	1,231	1,333	1,826	2,085	2,443	2,706	3,599	7,375
Commercial	1,008	635	772	1,947	987	981	911	867	1,142
Subtotal	2,583	1,866	2,105	3,773	3,072	3,424	3,617	4,466	8,517
Upper Yukon Total									
Subsistence	12,604	17,185	20,595	30,598	19,827	20,379	29,240	26,238	29,890
Commercial	6,155	4,322	6,150	8,359	8,708	7,453	5,118	5,497	5,224
Total	18,759	21,507	26,745	38,957	28,535	27,832	34,358	31,735	35,114
Area Total									
Subsistence	17,581	30,297	31,005	42,724	29,690	28,158	49,478	42,428	39,771
Commercial	96,757	99,168	127,673	153,985	158,018	123,644	147,910	119,904	146,188
Total	114,338	129,465	158,678	196,709	187,708	151,802	197,388	162,332	185,95[illegible]

a/ Includes Innoko and Koyukuk River drainages.
b/ Includes Chandalar River drainage.

Appendix Table 26. Yukon River chum salmon subsistence catches by village, 1972-1985. 1/

Village	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Mouth to Anuk River														
Sheldon's Point	4,355	3,554	2,720	6,247	2,033	1,327	3,420	2,177	2,545	3,200	3,541	2,093	3,501	2,479
Alakanuk	5,696	6,551	12,743	3,656	10,866	6,591	9,583	11,252	5,091	7,684	7,874	10,688	12,090	11,199
Emmonak-Kwiguk	4,828	10,135	7,388	5,336	8,397	7,501	9,826	12,634	7,720	10,557	17,679	12,406	17,041	14,833
Aproka Pass & vicinity	344	580	1,460	229	231	25	473	-	-	-	-	-	-	-
Kotlik-Hamilton	3,976	7,639	6,098	6,578	10,289	7,152	9,127	9,053	9,857	9,158	10,566	11,320	10,807	12,359
Subtotal	18,398	27,625	33,936	17,258	31,816	22,596	32,429	35,116	25,213	30,619	39,660	36,507	43,439	40,870
Anuk R. to Owl Slough														
Mountain Village	5,909	7,524	11,661	6,720	8,278	11,368	6,920	13,304	10,548	8,232	9,689	16,748	13,144	11,863
Pitkas Point-St. Marys	11,072	9,201	14,478	8,644	12,060	12,347	10,097	12,275	7,898	9,204	14,574	13,236	16,970	11,984
Pilot Station	7,026	8,474	8,567	7,849	5,498	5,708	4,000	6,489	5,242	5,054	6,347	6,623	5,182	5,800
Marshall	5,174	4,934	6,763	5,710	3,938	2,896	2,562	7,002	7,229	7,234	7,572	7,202	10,160	6,526
Subtotal	29,181	30,133	41,469	28,923	29,774	32,319	23,579	39,070	30,917	29,724	38,182	43,809	45,456	36,173
Owl Slough to Bonasila R.														
Russian Mission	2,919	2,459	4,740	4,113	2,407	2,262	1,256	1,927	880	3,559	2,205	2,889	3,827	3,359
Holy Cross	3,421	3,532	4,611	4,691	1,546	5,404	939	3,474	4,773	4,753	5,969	5,500	6,497	2,994
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	10,324	6,353
Bonasila R. to Illinois Cr.														
Anvik	3,689	20,850	29,261	30,924	26,660	23,847	16,021	14,950	31,426	29,140	31,233	21,744	23,193	27,347
Grayling	6,428	12,778	27,421	26,476	27,500 2/	17,102	18,824	20,630	32,308	16,898	50,992	28,080	30,107	27,043
Kaltag	4,285	23,135	14,920	11,699	13,106	16,588	19,921	31,424	57,339	30,552	37,999	30,507	3,130	28,835
Nulato	7,648	13,568	37,312	22,552	13,253	12,065	9,056	11,336	31,062	8,295	20,033	14,289	1,907	21,085
Koyukuk	1,772	1,964	14,978	5,667	2,440	3,946	5,268	10,133	17,445	12,630	19,691	15,600	6,975	10,584
Galena	1,353	4,612	8,307	11,500	13,435	5,527	11,945	6,815	16,699	18,564	22,945	10,807	27,202	21,760
Ruby-Kokrines	6,725	12,932	19,235	8,820	10,777	4,349	14,709	16,731	21,017	14,272	15,068	22,245	14,418	21,992
Subtotal	31,900	89,839	151,434	117,638	107,171	83,424	95,124	112,019	207,296	30,351	197,761	143,272	106,932	158,326
Illinois Cr. to U.S. Can. Border														
Tanana	13,108	10,795	12,447	26,342	21,592	19,790	22,683	39,218	38,261	40,066	37,944	49,494	70,208	46,645
Rampart	3,674	8,986	1,527	8,117	14,175	10,056	2,771	25,010	6,101	7,485	5,495	9,372	12,165	25,265
Stevens Village	1,118 3/	6,078 3/	6,728 3/	2,297	1,170 5/	4,926 5/	16,460	12,413 5/	11,685 5/	23,061 5/	19,429 5/	23,690 5/	28,268 5/	30,821 5/
Beaver	3,157	1,372	1,583	1,270	517	716	1,717	1,826	458	881	2,412	6,104	167	2,025
Fort Yukon	1,597	3,074	142	19,458	1,143	13,630	21,580	22,266	7,828	24,632	3,485	11,120	10,590	17,132
Circle	752	592	1,266	1,283	153	203	859	3,541	1,785	7,228	290	3,762	3,107	5,026
Eagle	587	2,109	66	1,825	1,141	7,432	5,027	27,048	16,773	31,105	15,142	20,154	18,585	25,305
Subtotal	23,933	33,006	23,759	60,592	39,891	56,753	71,097	131,322	82,891	134,458	84,197	123,696	143,090	152,219
Innoko River														
Shageluk	-	-	-	-	1,577	-	-	6,647	2,485	2,671	-	-	-	-
Holikachuk	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	-	-	-	-	1,577	-	-	6,647	2,485	2,671	-	-	-	-
Koyukuk River														
Huslia	534	4,482	6,601	5,026	8,791	3,753	8,656	21,255	16,800	12,815	6,928	22,591	18,868	13,706
Hughes	2,777	2,541	8,786	5,429	4,280	4,856	6,555	12,865	13,455	6,849	9,640	2,232	16,424	14,186
Alatna	490	27	3,510	950	650	210	681	104	370	304	438	436	240	-
Allakaket	867	2,465	7,034	5,609	4,215	3,686	9,833	8,505	12,204	8,964	8,289	5,669	4,520	8,389
Subtotal	4,668	9,515	25,931	17,014	17,936	12,505	25,725	43,229	42,829	28,932	25,295	30,928	40,052	36,281

Appendix Table 26. (Continued)

Village	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Tanana River														
Minto-Manley Hot Spr.	6	7	20	6,000	9,400	16,192	15,494	22,213	19,801	19,930	12,128	33,898	14,889	20,419
Nenana	20,864	14,154	26,340	26,634	14,345	24,167	27,625	33,525	37,549	17,901	16,084	22,806	37,752	46,340
Fairbanks	8,608	1,657	2,958	1,615	2,826	725	3,917	6,043	7,849	9,009	7,229	6,106	8,311	6,583
Subtotal	29,478	15,818	29,318	34,249	26,571	41,084	47,036	62,581	65,199	46,480	35,441	62,810	60,952	73,342
Chandalar River														
Venetie	50	410	-	2,401	508	1,660	2,606	3,943	2,730	6,400	850	7,800	4,345	-
Subtotal	50	410	-	2,401	508	1,660	2,606	3,943	2,730	6,400	850	7,800	4,345	-
Porcupine River														
Canyon Village	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chalkytsik	-	-	-	-	-	600	-	-	-	-	-	-	-	-
Subtotal	-	-	-	-	-	600	-	-	-	-	-	-	-	-
Yukon Terr. Villages														
Old Crow (Porcupine R.)	5,000	6,247	7,000	11,000	3,100	5,560	5,000	7,000	7,500	3,500	1,000	2,000	4,500	3,750
Dawson	-	-	-	-	-	-	728	-	-	1,792	-	-	-	-
Stewart River	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mayo-Stewart Crossing	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fraser Falls	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Burwash-Kluane R.	-	199	32	-	-	-	-	-	-	-	500	-	-	-
Fort Selkirk	-	-	-	-	-	-	-	-	-	-	283	-	-	-
Pelly	-	-	14	-	100	650	-	-	-	1,395	2,000	-	-	-
Faro	-	-	-	-	-	-	132	-	-	-	-	-	-	-
Ross River	-	327	-	-	-	-	-	-	-	-	-	-	-	-
Minto	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tatchun Creek	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carmacks	-	487	1,590	-	200	780	350	-	-	642	676	-	-	-
Lake Laberge-Whitehorse	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Takhini	-	-	-	-	-	-	-	-	-	-	-	-	-	-
McClintock R.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carcross	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Teslin-Johnson's Crossing	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal 4/	5,000	7,329	9,102	18,100 6/	4,200	8,489	6,210	13,000 6/	13,218 6/	7,021	4,779	3,500 6/	6,335 6/	5,769 6/
Total	149,008	222,011	330,689	316,579	263,399	267,095	299,791	452,328	478,431	425,058	434,539	460,711	461,350	509,333

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 27. Subsistence and commercial summer chum salmon catches by district, Yukon area, 1977-1985.

District 1	1977	1978	1979	1980	1981	1982	1983	1984	1985
Subsistence	15,059	30,897	16,144	15,972	11,310	18,452	24,679	28,459	24,349
Commercial	250,652	393,785	369,934	391,252	507,158	249,516	451,164	292,676	247,486
Subtotal	265,711	424,682	386,078	407,224	518,468	267,968	475,843	321,135	271,835
District 2									
Subsistence	21,994	21,684	23,276	13,681	14,218	18,442	27,396	26,996	19,795
Commercial	105,679	227,548	172,838	308,704	351,878	182,344	248,092	236,931	188,099
Subtotal	127,673	249,232	196,114	322,385	366,096	200,786	275,488	263,927	207,894
District 3									
Subsistence	6,842	1,706	2,946	3,242	4,929	5,840	4,609	7,351	3,687
Commercial	3,412	27,003	40,015	44,782	54,471	4,086	14,600	1,087	1,792
Subtotal	10,254	28,709	42,961	48,024	59,400	9,926	19,209	8,438	5,479
Lower Yukon Total									
Subsistence	43,895	54,287	42,366	32,895	30,457	42,734	56,684	62,806	47,831
Commercial	359,743	648,336	582,787	744,738	913,507	435,946	713,856	530,694	437,377
Subtotal	403,638	702,623	625,153	777,633	943,964	478,680	770,540	593,500	485,208
District 4									
Subsistence	83,118	110,052	123,740	221,201	139,572	199,985	136,045	112,965	165,383
Commercial	169,541	386,104	204,747	283,384	246,750	154,968	154,797	167,851	259,092
	252,659	496,156	328,487	504,585	386,322	354,953	290,842	280,816	424,475
District 5									
Subsistence	26,040	21,028	23,878	8,594	27,308	9,791	23,943	31,535	26,996
Commercial	1,274	5,498	9,617	456	1,285	234	1,898	692	700
Subtotal	27,314	26,526	33,495	9,050	28,593	10,025	25,841	32,227	27,696
District 6									
Subsistence	6,449	11,770	6,203	9,708	10,947	8,459	23,714	23,441	24,618
Commercial	4,317	43,050	22,382	39,137	34,464	23,114	24,327	56,584	68,453
Subtotal	10,766	54,820	28,585	48,845	45,411	31,573	48,041	80,025	93,071
Upper Yukon Total									
Subsistence	115,607	142,850	153,821	239,503	177,827	218,235	183,702	167,941	216,997
Commercial	175,132	434,652	236,746	322,977	282,499	178,316	181,022	225,127	328,245
Total	290,739	577,502	390,567	562,480	460,326	396,551	364,724	393,068	545,242
Area Total									
Subsistence	159,502	197,137	196,187	272,398	208,284	260,969	240,386	230,747	264,828
Commercial	534,875	1,082,988	819,533	1,067,715	1,196,006	614,262	894,878	755,821	765,622
Total	694,377	1,280,125	1,015,720	1,340,113	1,404,290	875,231	1,135,264	986,568	1,030,450

c/ Includes Innoko and Koyukuk River drainages.
b/ Includes "equivalent numbers" of salmon converted from roe sales.

Appendix Table 28. Subsistence and commercial fall chum salmon catches by district, Yukon Area, 1977-1985.

District 1	1977	1978	1979	1980	1981	1982	1983	1984	[illegible]
Subsistence	5,085	390	15,788	7,433	15,540	10,016	8,238	8,885	13,[illegible]
Commercial	131,758	127,947	109,406	106,829	167,834	97,484	124,371	78,751	129,948
Subtotal	136,843	128,337	125,194	114,262	183,374	107,500	132,609	87,636	143,223
District 2									
Subsistence	5,989	1,297	14,662	12,435	11,770	9,511	10,341	11,394	11,544
Commercial	51,994	51,646	94,042	83,881	154,883	96,581	85,645	70,803	40,490
Subtotal	57,983	52,943	108,704	96,316	166,653	106,092	95,986	82,197	52,034
District 3									
Subsistence	461	266	2,443	2,320	2,893	1,659	2,863	2,233	2,290
Commercial	15,851	11,527	25,955	13,519	19,043	5,815	10,018	6,429	5,164
Subtotal	16,312	11,793	28,398	15,839	21,936	7,474	12,881	8,662	7,454
Lower Yukon Total									
Subsistence	11,535	1,953	32,893	22,188	30,203	21,186	21,442	22,512	27,109
Commercial	199,603	191,120	229,403	204,229	341,760	199,880	220,034	155,983	175,602
Total	211,138	193,073	262,296	226,417	371,963	221,066	241,476	178,495	202,711
District 4									
Subsistence a/	8,457	10,652	37,896	23,675	20,123	20,319	34,209	31,152	25,275
Commercial c/	13,980	12,709	52,098	32,325	13,393	4,061	6,445	9,840	26,977
Subtotal	22,437	23,361	89,994	56,000	33,516	24,380	40,654	40,992	52,[illegible]
District 5									
Subsistence b/	32,175	51,705	110,792	76,466	111,567	71,828	105,105	98,433	117,125
Commercial c/	25,730	26,236	55,556	42,376	93,575	13,635	43,993	24,117	25,338
Subtotal	57,905	77,941	166,348	118,842	205,142	85,463	149,098	122,550	142,463
District 6									
Subsistence	30,604	30,557	51,766	50,328	26,632	19,564	32,174	22,726	36,963
Commercial c/	18,673	16,946	41,355	19,520	29,008	7,416	37,190	20,620	42,352
Subtotal	49,277	47,503	93,121	69,848	55,640	26,980	69,364	43,346	79,315
Upper Yukon Total									
Subsistence	71,236	92,914	200,454	150,469	158,322	111,711	171,488	152,311	179,363
Commercial	58,383	55,891	149,009	94,221	135,976	25,112	87,628	54,577	94,667
Total	129,619	148,805	349,463	244,690	294,298	136,823	259,116	206,888	274,030
Area Total									
Subsistence	82,771	94,867	233,347	172,657	188,525	132,897	192,930	174,823	206,472
Commercial	257,986	247,011	378,412	298,450	477,736	224,992	307,662	210,560	270,269
Total	340,757	341,878	611,759	471,107	666,261	357,889	500,592	385,383	476,741

a/ Includes Innoko and Koyukuk River drainages.
b/ Includes Chandalar River drainages.
c/ Includes "equivalent numbers" of salmon converted from roe sales.

Appendix Table 29. Subsistence and commercial coho salmon catches by district, Yukon area, 1977-1985.

District 1	1977	1978	1979	1980	1981	1982	1983	1984	1985
Subsistence	2,452	1,142	3,184	1,808	3,769	11,192	3,590	6,095	3,246
Commercial	31,720	16,460	11,369	4,829	13,129	15,115	4,595	29,472	27,676
Subtotal	34,172	17,602	14,553	6,637	16,898	26,307	8,185	35,567	30,922
District 2									
Subsistence	4,336	598	1,132	4,801	3,736	10,229	6,072	7,066	4,834
Commercial	5,319	5,835	2,850	2,660	7,848	14,179	2,557	43,064	17,125
Subtotal	9,655	6,433	3,982	7,461	11,584	24,408	8,629	50,130	21,959
District 3									
Subsistence	363	233	12	91	490	675	917	740	376
Commercial	538	758	-	-	419	87	-	621	171
Subtotal	901	991	12	91	909	762	917	1,273	547
Lower Yukon Total									
Subsistence	7,151	1,973	4,328	6,700	7,995	22,096	10,579	13,901	8,456
Commercial	37,577	23,053	14,219	7,489	21,396	29,381	7,152	73,157	44,972
Total	44,728	25,026	18,547	14,189	29,391	51,477	17,731	87,058	53,428
District 4									
Subsistence[a]	4,354	145	259	7,734	2,259	2,952	3,946	2,867	3,949
Commercial	-	32	155	30	-	15	-	1,095	938
Subtotal	4,354	177	414	7,764	2,259	2,967	3,946	3,962	4,887
District 5									
Subsistence	798	970	595	561	1,713	3,428	2,448	17,467	8,098
Commercial	2	1	-	-	-	-	-	-	-
Subtotal	800	971	595	561	1,713	3,428	2,448	17,467	8,098
District 6									
Subsistence	4,030	4,709	4,612	5,163	9,261	7,418	6,922	14,785	11,761
Commercial	1,284	3,066	2,791	1,226	2,284	7,780	6,168	7,688	11,762
Subtotal	5,314	7,775	7,403	6,389	11,545	15,198	13,090	22,473	23,523
Upper Yukon Total									
Subsistence	9,182	5,824	5,466	13,458	13,233	13,798	13,316	35,119	23,808
Commercial	1,286	3,099	2,946	1,256	2,284	7,795	6,168	8,783	12,700
Total	10,468	8,923	8,412	14,714	15,517	21,593	19,484	43,902	36,508
Area Total									
Subsistence	16,333	7,797	9,794	20,158	21,228	35,894	23,895	49,020	32,264
Commercial	38,863	26,152	17,165	8,745	23,680	37,176	13,320	81,940	57,672
Total	55,196	33,949	26,959	28,903	44,908	73,070	37,215	130,960	89,936

a/ Includes Innoko and Koyukuk River drainages.

Appendix Table 30. Subsistence salmon catches taken order authority of a permit, upper Yukon area, 1973-1985.

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

Year	No. of permits issued	Permittees Reporting Catches	Kings	Summer Chums	Fall Chum and Coho
1973	22	4	26	771	886
1974	70	1/	38	1,373	1,580
1975	36	1/	32	751	864
1976	110	1/	31	1,314	1,512
1977	89	33	81	118	607
1978	160	126	126	2,729	1,188
1979	246	199	264	2,384	4,459
1980	315	254	282	3,729	4,059
1981	346	228	400	3,239	5,770
1982	330	209	451	2,708	4,521
1983	259	147	475	2,276	3,830
1984	308	212	321	3,177	5,134
1985	291	155	326	2,646	3,937

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

Year	No. of permits issued	Permittees Reporting Catches	Fall Chum Salmon Carcasses
1973	16	8	1,561
1974	21	1/	1,974
1975	26	1/	2,573
1976	36	1/	3,441
1977	46	29	5,816
1978	70	43	2,517
1979	32	25	4,582
1980	57	36	4,915
1981	43	27	5,030
1982	37	13	1,690
1983	45	29	5,357
1984	31	14	2,353
1985	30	14	2,111

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

Year	No. of permits issued	Permittees Reporting Catches	Kings	Chums	Cohos
1974	29	1/	591	1,857	1,271
1975	19	1/	727	778	70
1976	28	18	531	974	-
1977	38	1/	467	2,567	-
1978	57	1/	1,333	9,735	-
1979	55	41	2,194	12,374	-
1980	70	67	1,350	6,488	36
1981	57	24	1,095	12,034	-
1982	64	44	1,935	11,328	20
1983	68	46	2,672	15,059	-
1984	67	54	4,676	27,869	399
1985	55	42	2,618	21,832	33

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

Year	No. of permits issued	Permittees Reporting Catches	Kings	Chums	Cohos
1979	75	60	4,063	30,475	114
1980	48	39	3,649	18,477	6
1981	71	51	4,510	38,333	-
1982	60	61	3,833	15,432	-
1983	53	52	2,831	23,708	-
1984	58	54	2,543	21,675	17
1985	59	36	2,419	19,059	2

1/ Information not available.

Appendix Table 31. Comparative Yukon River king salmon aerial escapement estimates, 1972-1985.[a]

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Andreafsky River														
East Fork	798	825		993	818	2,008	2,487	1,180	958[b]	2,146[f]	1,274	2,720[g]	2,473[g]	1,617
West Fork	582[b]	788	285	301	643	1,499	1,062	1,134	1,500	231[b]	851	-	1,993	2,248
Total	1,380	1,613	285[b]	1,294	1,461	3,507	3,549	2,314	2,458	2,377[b]	2,125	2,720[b]	4,466	3,865
Anvik River Drainage														
Tower Count	1,104	517	471	548	958	1,261	1,088	1,247	-	-	-	-	-	-
Below Tower Site (includes trib)	94[c]	96[b]	-	182[c]	195[c,d]	110	236	237	-	-	-	-	-	-
Total	1,198	613	471[b]	730	1,153	1,371	1,324	1,484	1,330	807[b]	-	653[b]	641[b]	1,051
Nulato River														
North Fork (including main river)			55[b]	123	471	286	498	1,093	954	-	-	526	-	1,600
South Fork			23[b]	81	177	201	422	414	369	791		480	-	1,180
Total			78	204	648	487	920	1,507	1,323	791[b]	-	1,006	-	2,780
Gisasa River			161	385	332	255	45[b]	484	951		421	572	-	735
Tozitna River				202	42[b]	123.	194		257		51	388	-	86
Chena River	138[b,c]	21	1,035[c]	316[c]	531	563	1,726	1,159	2,541	600[b]	2,073	2,553	501	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	1,031	2,035
Tatchun Creek[i]	97	99	192	175	52	150	200	150	222	133[e]	73	264[e]	161[e]	190[e]
Little Salmon River[i]	126	27[b]				171	330	489[b]	296[b]	670	403	101[b]	434	255[j]
Big Salmon River[i]														
Big Salmon Lake-Scurvey Cr	112	23[b]		153				555	470	930	174	189	228	202
Scurvey Cr - vicinity Souch Cr	448	52[b]						77	1,098	1,481	583	351	816	599
Total	560	75[b]	70[b]	153[b]	86[b]	316[b]	524	632	1,568	2,411	757	540	1,044	801
Nisutlin River Drainage[i]														
Sidney Cr - 100 Mile Cr	237	36[b]		239	102	77	375	713	975	1,626	578	701	832	409
McNeil Ri - Nisutlin Lake	46	6[b]		84	50		109		400	168	97	107	222	96
Wolf Ri (Wolf Lake-Red Ri)	13			40[b]				183	477	395	104	95	124	110
Total	296	42[b]	150[b]	363[b]	152[b]	77[b]	484[b]	896[b]	1,852	2,189	779	903	1,178	615
Whitehorse Dam[i,j] (Fishway Counts)	391	224	273	313	121	277	725	1,184	1,383	1,539	473	905	1,042[k]	508[l]

a Data obtained from aerial surveys unless otherwise indicated. Only peak estiamtes are listed.
b Incomplete or poor survey conditions resulting in a very minimal count.
c Boat survey.
d Also includes 93 kings observed in Yellow River.
e Foot survey.
f Sonar estimate was 5,343.
g Sonar estimate.
h Above sonar site.
i Yukon Territory streams.
j Canadian DFO data.
k Includes 65 kings taken for hatchery brood stock.
l Includes 98 kings taken for hatchery brood stock.

Appendix Table 32. Estimated potential egg deposition of king salmon in three spawning areas of the Yukon River drainage (Salcha River, Anvik River, and Whitehorse Fishway), 1970-1985.

	Salcha River				Anvik River				Whitehorse Fishway			
Year	Est. Total Escapement[a]	Percent Female	Total Females	Potential Egg Deposition($x10^6$)[b]	Est. Total Escapement[c]	Percent Female	Total Females	Potential Egg Deposition($x10^6$)[b]	Est. Total Escapement[d]	Percent Female	Total Females	Potential Egg Deposition($x10^6$)[b]
1970	1,882	21.0	395	3.56					625	13.2	83	0.75
1971	158[e]	(no samples collected)							856	51.3	439	3.96
1972	1,193	55.3	660	5.96					391	53.8	210	1.90
1973	391	37.6	147	1.33					224	39.0	87	0.79
1974	1,857	25.0	464	4.19					273	40.0	109	0.98
1975	1,055	38.9	410	3.70	720	25.0	180	1.62	313	(no samples collected)		
1976	1,641	41.3	678	6.12	1,155	26.7	308	2.78	121	54.5	66	0.60
1977	1,202	65.9	792	7.15	1,354	50.4	682	6.15	277	57.1	158	1.43
1978	3,499	48.1	1,683	15.19	1,281	53.2	681	6.15	725	46.3	336	3.03
1979	4,789	37.4	1,791	16.16	1,474	19.5	287	2.59	1,184	(no samples collected)		
1980	6,756	45.6	3,081	27.80	1,330	46.4	617	5.57	1,383	54.2	750	6.77
1981	1,237[e]	44.3	548	4.95	807[e]	58.8	475	4.29	1,539	68.7	1,057	9.54
1982	2,534	35.9	910	8.21	-	(no survey made)			473	53.5	253	2.28
1983	1,961	56.0	1,098	9.91	653[e]	43.1	281	2.54	905	40.0	362	3.27
1984	1,031	42.1	434	3.92	641[e]	41.3	265	2.38	977	49.4	483	4.36
1985	2,035	48.5	987	8.91	1,051	24.2	254	2.30	410	39.8	163	1.47

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 passage count.
e Poor survey - minimal escapement count.

Appendix Table 33. Comparative Yukon River summer chum salmon escapement estimates, 1974-1985.[a]

	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Andreafsky River												
East Fork	3,215[b]	223,485	105,347	112,722	127,050	66,471	36,823[b]	81,555[f]	7,501[b,g]	110,608[c]	70,125[c]	66,146
West Fork	33,578	235,954	118,420	63,120	57,321	43,391	115,457		7,267	--	238,565	52,750
Total	--	459,439	223,767	175,842	184,371	109,862	152,280	--	--	--	308,690	118,896
Anvik River Drainage												
Tower Count	201,277	601,880	237,851	162,614	166,102	37,457	--	--	--	--	--	--
Below Tower Site[j]		211,130	168,315	100,240	85,237	--	--	--	--	--	--	--
Above Tower Site[j]		634,355	243,695	--	--	84,620	--	--	--	--	--	--
Subtotal	--	845,485	412,010	100,240	85,237	--	--	--	--	--	--	--
Total[k]	201,277[b]	845,485	406,166	262,854	251,339	280,537[c,n]	492,676[c]	1,479,582[c]	444,581[c]	362,912[c]	891,028[c]	1,080,243[c]
Rodo River	16,137	25,335	38,258	16,118	17,845	--	--	--	--	--	--	24,576
Nulato River[l]												
North Fork	22,144	87,280	30,771	58,275	41,659	35,598	11,244[b]	--	--	19,749	--	19,344
South Fork	29,016	51,215	9,230[b]	11,385	12,821	1,506	3,702[b]	14,348	--	1,263[i]	--	10,494
Total	51,160	138,495	40,001[b]	69,660	54,480	37,104	--	--	--	21,012	--	29,836
Gisasa River[m]	22,022	56,904	21,342	2,204[b]	9,280[b]	10,962	10,388	--	334[h]	2,356[b]	--	13,232
Hogatza River[m]												
Clear Creek	--	7,610	9,356	6,437	2,716	5,132	12,375	--	4,198	14,051	--	8,072
Caribou Creek	--	14,745	11,388	4,297	2,386	9,089	7,411	--	786	14,090	--	14,494
Total	--	22,355	20,744	10,734	5,102	14,221	19,786	--	4,984	28,141	--	22,566
Tozitna River	1,823	3,512	725[b]	761	2,262	--	580	--	874	1,604	--	1,030
Chena River	4,350[d]	2,702[d]	685	610	1,609	1,025	338[b]	3,500[b]	1,509	1,097	1,861	1,005
Salcha River	3,510[e]	7,573	6,474	677	5,405	3,060	4,140	8,500	3,756	716	9,810	3,178

a Only peak estimates are presented. Survey rating is fair-good unless otherwise indicated.
b Poor survey or incomplete estimate; minimal and/or rough estimate.
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.
j Includes tributaries.
k Best estimate of escapements, combined tower, sonar, aerial and boat surveys.
l Including main river.
m Koyukuk River drainage.
n Count includes 277,712 sonar estimate plus 2,825 below sonar site.

Table 34. Fall chum salmon escapement to selected index areas in the Yukon River drainage, 1973-1985.[a]

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
TANANA RIVER DRAINAGE													
Upper Toklat River[b]	6,957	34,310	42,418[c]	35,190	21,800[c]	35,000	96,550[d]	23,054	13,907	3,309[e]	15,105[e]	15,861	21,824[d]
Lower Toklat River	--	--	35,867[c]	(2,000[d])	--	--	64,540	(2,140)	--	--	--	--	--
Upper Tanana River													
Benchmark #735 Slough	127	1,450[c]	--	336	1,270	1,705[c]	2,714	1,900[e]	168[c]	--	--	--	1,093
Delta River	7,971[f]	4,010	3,089[e]	5,498	17,925	10,051	8,125	4,637	22,375[e,n]	3,433[e]	7,230[e]	12,327[e]	17,276[o]
South Bank Tanana River[g]	5,635	4,567[f]	--	4,979	3,797	5,700	20,820	3,444	7,063	--	1,350[c]	2,150	975[c]
Bluff Cabin Slough	3,450	4,840[f]	5,000[c,d]	3,197	6,491	5,340	6,875	3,190	6,120	1,156[e]	12,715[e]	4,017[e]	2,655
One mile Slough	1,720	1,235	745[d]	1,552	1,900	475	3,850[c]	885[c]	632	--	1,115[c]	560[c]	366[c]
Subtotal	18,903	16,102	8,834[k]	15,562	31,383	23,271	42,384	14,056	36,358	4,589[k]	22,410[k]	19,054[k]	22,365
TOTAL TANANA INDICES	25,860	50,412	87,119[k]	50,752	53,183	58,271	203,474	39,250	50,265	7,898[k]	37,515[k]	34,915[k]	44,189
PORCUPINE RIVER DRAINAGE													
Sheenjek River	1,175[f,h]	40,507	78,060	11,866	20,506	14,610[c]	41,140	13,027	69,043[i]	29,093[i]	45,733[i]	25,120[i]	152,768[i]
Fishing Branch River (YT)	15,987[j]	32,525[j]	353,282[j]	13,450	32,500	15,000	44,080	20,319[c]	10,549[c,k]	5,846	10,000	5,570	56,016[j]
Total Porcupine Indices	17,162[l]	73,032[l]	431,342[l]	25,316	53,006	29,610	85,220	33,346	79,592[l]	34,939[l]	55,733[l]	30,690[l]	208,784[l]
UPPER YUKON TRIBUTARIES													
Chandalar River	--	17,455	6,345[c,k]	58[c,k]	4,183	--	--	2,607	4,906[m,k]	1,145[m]	--	--	2,535[p]
Kluane River (YT)	2,500	350[k]	362[e,f]	20[f]	3,555	0[f]	4,640[e]	3,150	25,806	5,378[e]	8,578[e,k]	7,200	7,538
Yukon River (YT) Ft. Selkirk-Carmacks	--	--	7,671	--	--	--	--	--	250[k]	1,020	7,560	2,800	10,760

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

Appendix Table 35. Comparative Yukon River drainage coho salmon aerial escapement estimates, 1972-1985.[a]

	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Nenana River														
Lost Slough	--	--	1,388	943	118	524	350	227	499	274	--	766	2,677	1,584
Clear Creek	--	--	--	--	13	--	--	--	--	--	--	--	2,600[b,e]	--
Wood Creek[b]	--	--	--	--	--	310[c]	300[c]	--	1,603[c]	849[h]	1,436[h]	1,044[h]	8,805[h]	3,775[h]
Seventeenmile Slough	--	--	27	956	281	1,167	466	1,987	592	1,005	--	103	--	2,081
Subtotal Nenana River	--	--	1,415	1,899	412	2,001	816	2,214	1,091	2,128	1,436	1,913	14,082	7,440
Delta Clearwater River[d,e]	632	3,322	3,954	5,100	1,920	4,793	4,798	8,970	3,946	8,563[f]	8,365[f]	8,019[f]	11,061	5,358
Clearwater Lake and Outlet	417	551[d]	560	1,575[d,e]	1,500[d,e]	730[d,e]	570[d,e]	1,015[d,e]	1,545[d,e]	459[g]	--	253	1,368	750
Richardson Clearwater River	454[g]	375[d]	652[d]	4[g]	80[g]	327	--	372	611	550	--	88	428	--

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

Appendix Table 36. Associated environmental and salmon catch data, Yukon River, 1961-1985.

	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Average None April Air Temperature (°F)	18	18	18	13	20	15	23	14	22	15	13	12	18	21	13	10	9	25	26	24	24	12	25	12	1
Nenana Ice Breakup, Tanana River	5/5	5/12	5/5	5/20	5/7	5/8	5/4	5/8	4/28	5/4	5/8	5/10	5/4	5/6	5/10	5/2	5/6	4/30	4/30	4/29	4/30	5/10	4/29	5/9	5/11
Ice Out of Yukon Delta	a/	6/10	5/29	>6/12	6/1	6/6	a/	a/	5/25	"late May"	6/5	6/3	6/1	"late May"	6/1	6/1	6/1	5/20	5/20	5/19	5/18	6/2	5/21	6/1	6/5
1st King Salmon b/ Caught Delta Area	6/5	6/7 c/	a/	a/	6/6	6/9	5/20	a/	5/26	6/6	6/11	6/9	5/30 d/	5/27	6/1	6/12	6/9	5/26	5/24	5/27 e/	5/25	6/6	5/25	6/2 f/	6/14
1st King Salmon b/ Caught Kuskokwim R.	a/	a/	a/	a/	5/31	5/27 g/	5/20	5/26	5/23	5/21	6/6	6/5	5/27	5/23	5/26	6/1	5/31	5/18	5/16	5/17	5/22	6/1	5/23	5/25	6/3
1st King Caught District 1 Commercial Fishery	6/5	6/11	6/3	6/15	6/7	6/10	6/2	6/3	6/2	6/6	6/11	6/9	6/5	6/3	6/9	6/14	6/11	6/8	6/4	6/9	6/5	6/14	6/9	6/18	6/24
1st Summer Chum b/ Salmon Caught Delta Area	a/	a/	a/	a/	a/	a/	5/30	6/5	6/2	6/5	6/15	6/11	6/5	6/1	6/13	6/13	6/11	5/26	5/28	5/31	5/28	6/6	5/30	6/8	6/16
1st Summer Chum District 1 Commercial Fishery	-	-	-	-	-	-	6/9	6/7	6/2	6/11	6/15	6/10	6/7	6/3	6/13	6/14	6/13	6/8	6/4	6/9	6/5	6/14	6/9	6/8	6/24

a/ Information not available.
b/ Subsistence or test net fishery.
c/ Caught 6/9 Mt. Village, back calculated arrival date to mouth.
d/ Caught 6/3 Pilot Station, back calculated arrival date to mouth.
e/ Caught 5/23 Marshall, back calculated arrival date to mouth.
f/ Caught 6/5 Pitkas Point, back calculated arrival date to mouth.
g/ Caught 6/1 Kalskag, back calculated arrival date to mouth.

Appendix Table 37. Total catch and estimated catch of Western Alaska (including Canadian Yukon) king salmon (in thousands of fish) taken in Japanese high seas salmon gill net fisheries and total catch of king salmon taken in foreign and joint-venture trawl fisheries, 1964-1985.

	Japanese Mothership Gillnet		Japanese Landbased Driftnet		Japanese Total Gillnet		Bering Sea-Aleutian Area Trawl			Gulf of Alaska Trawl		
	Western Alaska		Western Alaska		Western Alaska			Joint			Joint	
Year	Origin	Total	Origin	Total	Origin	Total	Foreign	Venture	Total	Foreign	Venture	Total
1964	179	410	40	208	219	618						
1965	106	185	20	102	126	287						
1966	108	208	22	118	130	326						
1967	71	128	22	115	93	243						
1968	244	362	18	97	262	459						
1969	367	554	17	88	384	642						
1970	312	437	28	148	340	585						
1971	132	206	27	139	159	345						
1972	189	261	20	107	209	368						
1973	56	119	31	165	87	284						
1974	208	361	36	188	244	549						
1975	108	162	20	137	128	299						
1976	117	285	42	201	159	486						
1977	55	93	31	146	86	239				4.8		4.8
1978	36	105	63	210	99	315	39.1		39.1	a/		
1979	69	126	45	160	114	286	100.4		100.4	16.9	1.0	17.9
1980	416	704	22	160	438	864	113.2	1.9	115.1	31.6	.2	31.8
1981	30	88	55	190	85	278	36.7	.3	37.0	28.6	0	28.6
1982	45	107	41	165	86	272	13.9	1.7	15.6	a/	a/	5.9
1983	31	87	44	178	75	265	9.8	.5	10.3	5.9	9.4	9.4
1984	37	82	b/	92	b/	174	a/	a/	b/	b/	b/	b/
1985	25	66	b/	101	b/	167	b/	b/	b/	b/	b/	b/

a/ Species composition unknown
b/ Information not available

Commercial Fishery, 1985

A total of 1,299 short tons (100% sac roe) herring was harvested in the Cape Romanzof District during the 1985 commercial fishing season. The 1985 catch was the largest catch in the history of the fishery (Appendix Table 38). The entire harvest came from statistical area 334-08 -- Kokechik Bay (Figure 20).

Two processors purchased herring during the 1985 season (Table 3). All processors and their respective tenders anchored within Kokechik Bay. The average price paid was $425 per ton, based on $500 per ton for 10% roe with a $50 per 1% point differential. Roe recovery averaged 8.3%. Fishermen operating in the Cape Romanzof District earned an estimated $553,000. The catch was frozen in the round.

A total of 75 C.F.E.C. gill net permit holders (plus 112 crewmembers) and 69 fishing vessels participated in the fishery (Table 17). Nearly all of the permit holders (90.7%) were from local area villages: Hooper Bay, Chevak and Scammon Bay. Local fishermen accounted for 94.1% of the total harvest (Table 18). The high participation level by local residents is attributed to the superexclusive use area designation implemented for the Cape Romanzof District by the Board of Fisheries.

The Cape Romanzof District herring run was very late compared to previous years. Kokechik Bay, where the majority of the herring spawn, was not ice-free until June 5. Herring were first caught on June 5 with variable mesh test gill nets. However, test catches through June 10 consisted of entirely "green" herring. After June 10 an increased proportion of ripe fish was documented. Initial spawn deposition occurred on June 12 and increased significantly afterwards. In accordance with the Cape Romanzof District Management Plan the fishing season was opened after initial spawning occurs.

The first fishing period of 12 hours duration was announced by emergency order June 14, the latest opening on record. Two subsequent periods, each of 24 hours duration, were also announced by emergency order. The fishing season closed on June 18. The duration of the fishing season (4 days) and actual fishing time (2 1/2 days) was the least amount allowed in the history of the fishery. During closures, field crews conducted test fishing and spawning ground surveys throughout the commercial fishing area to assess stock condition and abundance.

Herring Abundance

Test fish catches, spawn deposition observations, and commercial harvest rates indicated a very strong herring run in 1985.

Turbid water conditions in the Cape Romanzof District preclude total aerial survey biomass estimates in Kokechik Bay and Scammon Bay. However, four surveys were conducted under less than optimal conditions in 1985. A minimum biomass estimate of 1,200 s.t. was documented on June 19.

Other Studies

Field crews sampled with variable mesh test gill nets to collect age, weight, length, and gonad maturity information. Test fishing catch samples indicate that age 4, 6, 7, and 8 year old herring were the most abundant. Additional

projects conducted by the field crews included spawn substrate and deposition studies, collection of commercial catch age-sex-size samples, and monitoring the commercial fishery.

Subsistence Fishery, 1985

In 1985, a subsistence harvest of 7.9 tons (15,728 lbs.) of herring were reported taken by fishing families from Hooper Bay, Chevak and Scammon Bay. The above catch represents minimal estimates since not all fishing families were surveyed. Subsistence fishing effort in recent years has probably decreased for some of the villages as local residents participated in the commecial herring fishery. Comparative subsistence catch and effort data is presented in Appendix Table 39.

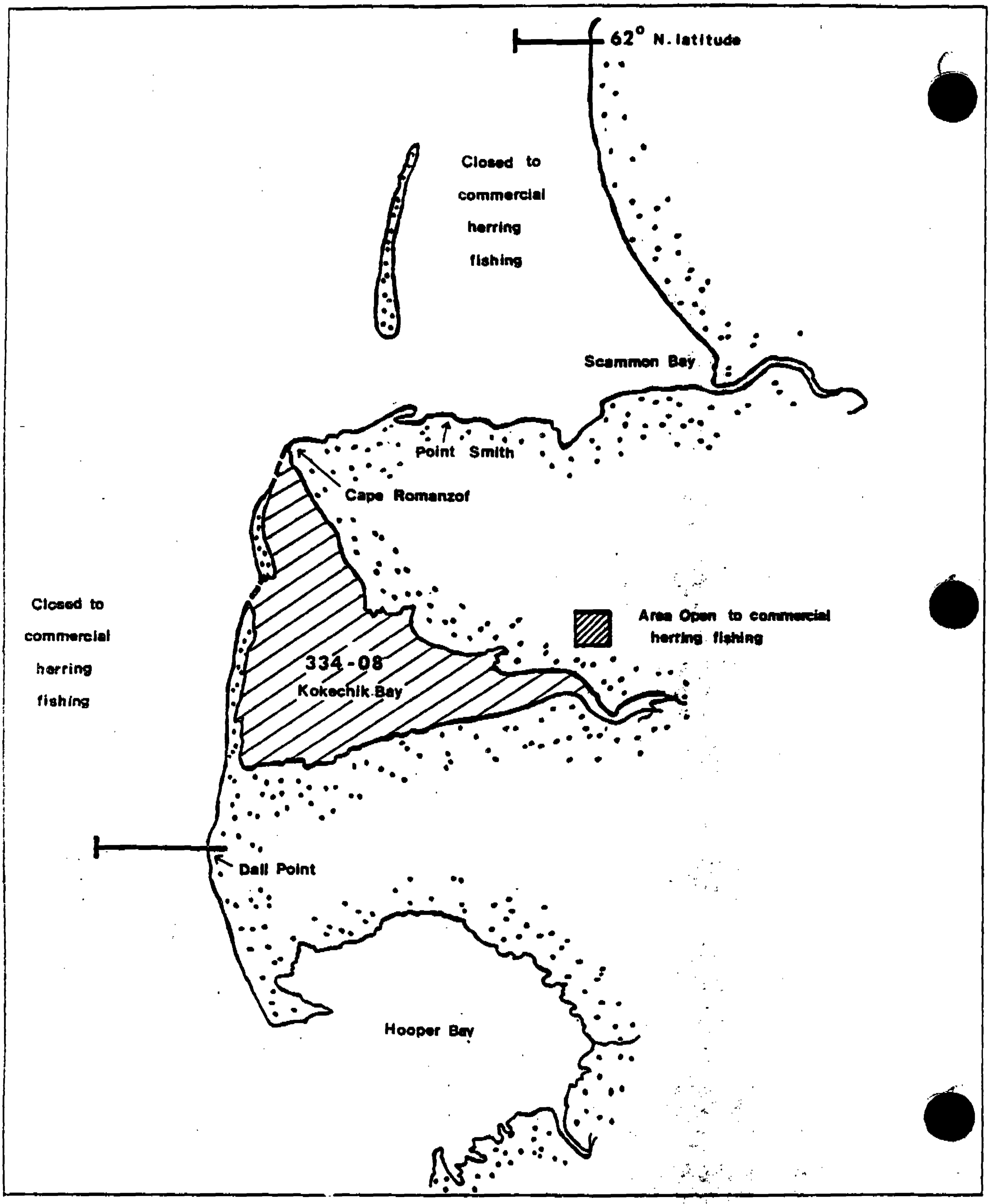


Figure 21. Cape Romanzof herring district and statistical reporting area.

Table 17. Commercial herring catch and effort data by period, Cape Romanzof district, 1985.

Date	Hours	Deliveries	Permit Holders	Boats	Sac Roe (s.t.)	Cumulative Sac Roe (s.t.)	Avg. Roe
6/14	12	160	58	53	241.7	241.7	8.29
Period Subtotal	12	160	58	53	241.7		8.29
6/15	15	124	59	56	192.1	433.8	9.07
6/16	9	181	70	64	347.5	781.3	8.29
Period Subtotal	24	305	71	66	539.6		8.56
6/17	15	185	66	62	386.0	1,167.3	8.01
6/18	9	63	40	40	131.5	1,298.8	8.34
Period Subtotal	24	248	66	63	517.5		8.09
Total	60	713	75	69	1,298.8	1,298.8	8.33

Table 18. Commercial herring catch and effort by residency by date, Cape Romanzof district, 1985.

Date		Local a/	Non-Locals	Residents	Non-Residents	Total
6/14	Effort b/	55	2	57	1	58
	Catch (s.t.)	233.7	4.8	238.5	3.2	241.7
6/15	Effort	56	2	58	1	59
	Catch (s.t.)	172.1	10.3	182.4	9.7	192.1
6/16	Effort	64	5	69	1	70
	Catch (s.t.)	333.3	8.2	341.5	6.0	347.5
6/17	Effort	63	2	65	1	66
	Catch (s.t)	371.4	8.8	380.2	5.8	386.0
6/18	Effort	38	1	39	1	40
	Catch (s.t.)	112.4	9.5	121.9	9.5	131.5
Total	Effort	74 (98.7%)	4 (5.0%)	74 (98.7%)	1 (1.3%)	75 (100%)
	Catch (s.t.)	1224.6 (94.1%)	41.7 (3.3%)	1264.3 (97.4%)	34.3 (2.6%)	1298.6 (100%)

a Residents of Scammon Bay, Chevak and Hooper Bay villages
b Gear permit holders

Appendix Table 38. Commercial herring fishery data, Cape Romanzof district, 1980-1985.

	1980	1981	1982	1983	1984	1985
Catch 1/	610 s.t.	720 s.t.	655 s.t.	815 s.t.	1,180 s.t.	1,299 s.t.
Number of Fishermen 2/	69	111	75	63	66	75
Number of Buyers	2	4	2	3	3	2
Roe Recovery	9.8%	8.0%	9.3%	9.0%	8.6%	8.3%
Estimated Value 3/	$110,000	$212,000	$218,000	$330,000	$355,000	$553,000
Dates Fishing Occurred	5/21-6/7	5/14-26	6/2-14	5/16-26	5/31-6/5	6/14-18
Peak Catch Date	5/22	5/17	6/8	5/19-22	6/1-2	6/17-18

1/ Catch in short tons (s.t.)
2/ Interim-use CFEC permit holders.
3/ Value to fishermen.

Appendix Table 39. Subsistence herring catches village, in the vicinity of Cape Romanzof, 1975-1985.

	Catches in Pounds (No. Fishing Families)										
	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Scammon Bay	- 1/	1,390(4)	- 1/	1,300	12,000(21)	6,270(18)	15,400(16)	7,750(15)	5,050(14)	8,600(16)	4,765(12)
Chevak	- 1/	1,400(9)	300(2)	- 1/	4,600(21)	7,100(20)	4,264(10)	3,860(10)	2,900(5)	5,105(7)	4,318(13)
Hooper Bay	5,543(34)	6,007(28)	4,750(28)	7,780(29)	6,145(42)	7,375(23)	7,914(20)	9,346(18)	10,356(18)	8,469(24)	6,845(20)
Total	5,543(34)	8,797(41)	5,050(30)	9,080(29)	22,745(84)	20,745(61)	27,578(46)	20,956(43)	18,306(37)	22,174(47)	15,928(45)

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 40).

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 41.

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 42. Set gillnets are primarily used for taking whitefish and sheefish and the catch is marketed in local village stores or Bethel.

Appendix Table 40. Colville River commercial whitefish catches, 1964-1985.

Year	Broad whitefish	Humpback whitefish	Arctic cisco ("kaktok")	Least cisco ("herring")
1964	2,951 a		16,000	9,000
1965	3,000 a		50,000	
1966	2,500 a		40,000	
1967	data not available			
1968	3,130		42,055	18,180
1969	data not available			
1970	2,080 a		19,602	25,930
1971	3,815	132	38,016	22,713
1972	3,850	1,497	37,333	13,283
1973	2,161		71,569	25,188
1974	3,117	2,316	35,601	13,813
1975	2,201	1,946	28,291	20,778
1976	2,172	1,815	31,659	34,620
1977	443	1,431	31,796	14,961
1978	20	1,102	17,292	21,589
1979		1,831	8,684	24,984
1980		4,231	14,657	31,459
1981	1,035	469	38,206	16,584
1982	1,662	201	15,067	25,746
1983		408	18,162	35,322
1984	789	179	27,686	13,076
1985	401	191	23,679	17,595

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 41. Commercial freshwater fishery catches, upper Yukon area, 1972-1985.

Healy Lake			Lake Minichumina		
	Whitefish			Whitefish	
Year	Number	Pounds	Year	Number	Pounds
1972	2,605	3,950	1971	3,277	9,831
1973	2,187	3,915	1972	718	2,154
1974	1,885	3,390	1973	1,697	5,037
1975	1,357	2,375	1974	854	2,562
1976	1,440	2,625			
1979	1,336	2,306			
1980	data not available				
1981	no effort				
1982	no effort				
1983	no effort				
1984	no effort				
1985	no effort				

Tanana River 1/		
	Burbot	
Year	Number	Pounds
1984	-	76

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

Appendix Table 42. Commercial freshwater fishery catches, lower Yukon Area, 1978-1985.

	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	-	-	-	-
1984	94	762	794	2,362	-	-	-	-
1985	358	3,081	1,514	4,586	-	-	-	-

Attachment 1. List of Yukon Area emergency orders issued, 1985.

E.O. No.	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
3-Y-1-85	June 14	Establish the first commercial herring fishing period of 12 hours from 9:00 a.m. June 14 until 9:00 p.m. June 14 in the Cape Romanzof District.	Test fishing and spawning ground observations indicate mature herring present in harvestable numbers.
3-Y-2-85	June 15	Establish the second fishing period of 24 hours from 9:00 a.m. June 15 until 9:00 a.m. June 16 in the Cape Romanzof District.	Spawn deposition surveys indicate a high abundance of herring. In addition scale analysis indicate a good recruitment of younger age fish (4 year olds).
3-Y-3-85	June 17	Establish the third and final commercial herring fishing period of 24 hours from 9:00 a.m. June 17 until 9:00 a.m. June 18 in the Cape Romanzof District.	Spawning ground surveys, test fishing data and commercial catch rates indicate a continued very high abundance of herring. An additional 500 tons of herring is expected to be taken during the last fishing perid which should result in a total harvest of approximately 1,300 tons.
3-Y-4-85	June 24	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 that substantial numbers of king (and chum) salmon have entered the river and that escapements from the early portion of the run should be good.
3-Y-5-85	July 2	Establish a 6 hour commercial salmon fishing period and allow only the use of 6 inch or smaller mesh gill nets in District 2.	Test fishing data and incidental commercial catches taken in large mesh gill nets indicate a very large summer chum run. Allowing only 6" or smaller mesh gear for a 6 hour fishing period will provide for increased harvest of surplus chums and minimize the incidental catch of king salmon.

3-Y-6-85	July 1	Open the commercial salmon fishing season and establish two-24 hour weekly fishing periods in District 3.	Test fishing and subsistence catch data indicate that king salmon are present in havestable numbers and well distributed throughout the lower 300 miles of the river.
3-Y-7-85	July 3	Allow the taking of salmon for commercial purposes with gill nets of 6 inch or smaller mish gill nets after July 3 in District 1 and after July 4 in District 2.	A switchover to gill nets of 6 inch or smaller mesh gill nets will allow the harvest of the more abundant summer chums and minimize the catch of the late king salmon run.
3-Y-8-85	July 3	Prohibit subsistence fishing for salmon by commercial fishermen with gill nets of 6 inch or larger mesh size after July 3 in District 1 and after July 4 in District 3.	Action taken to prevent king salmon taken under the guise of subsistence fishing from entering commercial channels.
3-Y-9-85	July 3	Establish special 24 hour subsistence fishing periods every other weekend during commercial salmon fishing closures in Districts 1 and 2 through July 19.	Special subsistence fishing periods established by emergency order as stipulated by regulation to provide for increased subsistence fishing opportunities.
3-Y-10-85	July 6	Close the commercial salmon fishing season in District 3.	The 1,800 - 2,200 king salmon guideline harvest range was exceeded.
3-Y-11-85	July 15	Open the commercial salmon fishing season in that portion of District 3 upstream from Paimiut. Also establish a two day a week fishing schedule and allow only the use of 6 inch or smaller mesh size gill nets.	Action taken to allow the harvest of summer chums which are present in harvestable numbers. The remainder of District 3 will be closed to commercial fishing in order to allow uninterrupted subsistence fishing.
3-Y-12-85	July 15	Prohibit subsistence fishing for salmon by commercial fishermen with gill nets of 6 inch or larger mesh size effective July 15, in that portion of District 3 upstream of Old Paradise Village.	Action taken to prevent king salmon taken under the guise of subsistence fishing from entering commercial channels.

3-[illegible]-85	July 19	Establish special 24 hour subsistence fishing periods every weekend in District 1 (except for set net only locations) and in District 2 effective July 19.	Special subsistence fishing periods established by emergency order as stipulated by regulation to provide for increased subsistence fishing opportunities.
3-Y-14-85	July 19	Close the commercial salmon fishing season effective July 19 in District 1, July 22 in District 2, and July 16 in District 3.	Closure of fishery necessary to afford increased protection of the early fall chum salmon run. Fishing season expected to reopen between July 26-August 1.
3-Y-15-85	July 20	Close the commercial salmon fishing season in subdistricts 5-A, 5-B, and 5-C effective July 20.	The 2,400 - 2,800 king salmon guideline harvest range was exceeded.
3-Y-16-85	August 1	Reopen the commercial salmon fishing season in Districts 1,2, and 3; establish two-24 hour weekly fishing periods in the set net only area in the lower portion of District 1 and in District 3; establish two-12 hour weekly fishing periods in the upper portion of District 1 and in District 2.	During the season closure in late July moderate numbers of fall chums entered the lower Yukon River and escapements should be good from the early run segment. A reopening of the fishing season is warranted to harvest the fall chum run.
3-Y-17-85	August 13	Close the commercial salmon fishing season effective August 13 in Districts 1, 2, and 3.	The lower half (120,000 to 170,000) of the 120,000 to 220,000 fall chum salmon guideline harvest range for Districts 1, 2, and 3 combined was taken.
3-Y-18-85	August 18	Close the commercial salmon fishing season effective August 18 in District 6.	The king and summer chum salmon runs are essentially over. The fishing season will reopen in mid-September for the fall chum and coho salmon runs.
3-Y-19-85	August 20	Close the commercial salmon fishing season effective August 20 in subdistrict 5-D.	The 300 - 500 king salmon guideline harvest range was taken.

3-Y-20-85	August 22	Reopen the commercial salmon fishing season effective August 22 in District 2 for a 6 hour fishing period.	A reopening of the fishing season in District 2 was allowed in order to harvest surplus cohos. A 6 hour fishing period was allowed in order to minimize the harvest of fall chums.
3-Y-21-85	August 24	Reopen the commercial salmon fishing season effective August 24 in subdistricts 5-A, 5-B, and 5-C.	Fall chum salmon are present in harvestable numbers throughout the lower 150 miles of District 5.
3-Y-22-85	August 29	Close the commercial salmon fishing season effective August 29 in subdistricts 5-A, 5-B, and 5-C.	The midpoint (22,000) of the 8,000 to 36,000 fall chum and coho salmon combined guideline harvest range will be achieved.
3-Y-23-85	September 13	Close the commercial salmon fishing season effective September 13 in subdistricts 4-B and 4-C.	The midpoint (25,000) of the 10,000 to 40,000 fall chum and coho salmon combined guideline harvest range will be approached.
3-Y-24-85	September 13	Reopen the commercial salmon fishing season effective September 13 in subdistrict 5-D.	Fall chums are well distributed throughout the upper portion of District 5 and a reopening of the commercial fishing season is warranted.
3-Y-25-85	September 15	Reopen the commercial salmon fishing season effective September 15 and establish two-24 hour fishing periods through September 18 in district 6.	As evidenced by subsistence catches the fall chum and coho salmon runs are well distributed in the lower and middle portions of the Tanana River. A reopening of the commercial fishing season is warranted.
3-Y-26-85	September 20	Allow one additional 24 hour commercial salmon fishing period from September 24- to 25 in district 6.	Comparative test fishing and commercial catch data indicate above average fall chum and coho salmon run strength. An additional 24 hour fishing period, following a 6 day closure, will allow

Attachment 2. Summary of 1985 Yukon area commercial and subsistence fishing regulations promulgated by the Alaska Board of Fisheries during November, 1984 meeting in Fairbanks.

Section	Action Taken
5AAC 27.910. (a) FISHING SEASONS AND WEEKLY FISHING PERIODS.	Established a May 1 through June 30 commercial herring fishing season in the Cape Romanzof district.
5AAC 27.985. (a) SUPEREXCLUSIVE USE AREAS.	Specified that the Cape Romanzof herring district is a superexclusive use area.
5AAC 05.320. (3) FISHING PERIODS.	Specified that fishing periods are established by emergency order from June 5 through August 31 in district 3.
5AAC 05.330. (7) GEAR.	Specified that after July 19 only set gill nets may be operated in waters of Apoon Pass downstream of the mouth of the Kotlik River and in waters of Okwega Pass downstream from its confluence with Apoon Pass.
5AAC 05.331. (b) (c) GILLNET SPECIFICATIONS AND OPERATION.	Specified that in districts 1, 2 and 3 that salmon may be taken only with gill nets of six inch or smaller mesh during periods established by emergency order (previous specific dates were deleted).
5AAC 05.370. REGISTRATION AND REREGISTRATION.	Established district registration and reregistration by Commercial Fisheries Entry Commission permit holder.

Attachment 3. Summary of special projects conducted in the Yukon Area by the Division of Commercial Fisheries, 1985.

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 Mouth of the Yukon River Delta).

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

c. Results:

1) Big Eddy Test Fishing Project:

a) KING AND SUMMER CHUM: Index set nets for king and summer chum salmon were operated from June 10 to July 14. A total of 1,166 king and 6,008 summer chum salmon were captured. The king salmon catch decreased significantly compared to 1984. 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 28. Due to the cold spring weather and late ice breakup, this was one of the latest king salmon runs in the past 25 years. The mean date for summer chum salmon was June 27. This was the second consecutive year of large summer chum run magnitude.

b) FALL CHUM AND COHO: Index set nets for fall chum and coho salmon were operated from July 15 until August 28. A total of 1,357 fall chum and 1,049 coho salmon were taken. Fall chum salmon catches increased substantially from 1984 and 1982 levels. Coho salmon catches were the largest since the project was initiated in 1977. Test fishing data indicated mean dates of August 6 and August 14 for fall chum and coho salmon, respectively.

2) Middle Mouth Test Fishing Project:

a) KING AND SUMMER CHUM: Index set nets for king and summer chum salmon were operated June 15 until July 14. A total of 1,299 king and 2,817 summer chum were captured. King salmon catches were down from 1984. The mean date of migration was July 3, indicating very late run timing. Summer chum salmon catches were up significantly from 1983 and 1984 levels. The mean date for summer chum salmon was June 29.

b) FALL CHUM AND COHO SALMON: Index set nets for fall chum and coho salmon were fished from July 15 until August 28. A total to 3,363 fall chum and 372 coho salmon were captured. Fall chum salmon catches increased significantly from 1984. The coho salmon catch was down substantially from 1983 and 1984. The mean dates of migration were calculated to be August 9 and August 17 for fall chum and coho salmon, respectively.

2. UPPER YUKON RIVER TEST FISHING

a. Location

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

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

3) Manley: North bank of Tanana River.

b. Objectives: To determine run timing and relative abundance of summer chum salmon at the Stink Creek site and of fall chum and coho salmon at the Ruby and Manley area sampling locations.

c. Results:

1. Summer Chum Salmon: The test fishwheel at site 1 was operated from July 3 through July 27. During this period, a total of 28,370 chum salmon was captured and the run peaked on July 11.

2. Fall chum and Coho Salmon: At site 2, (south bank near Ruby) the fishwheel was operated from August 4 through September 20. A total of 11,440 chums and 1,812 cohos was taken, and the chum salmon runs, as evidenced by fishwheel catches, peaked during the period August 16 - 21 and again from August 31 through September 5. Peak coho salmon catches were made on September 9.

The Ruby area north bank test fishwheel was run from August 5 through September 13. During that time, a cumulative total of 4,236 chums was caught and the timing was bimodal with peaks occurring during the periods August 15 - 17 and August 29 through September 4.

A test fishwheel was, for the second consecutive year, operated in the lower Tanana River near Manley Hot Springs. The wheel was operational from August 16 through September 20. During this period, a total of 3,831 chums and 701 coho salmon was captured. Peak chum catches were made between September 13 - 19.

3. SUBSISTENCE SALMON FISHERY SURVEYS

a. Location: Yukon, Koyukuk and Tanana Rivers and Yukon Territory villages.

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

c. Results: A total of 1,019 fishing families were surveyed in the Yukon River drainage and their catches totaled 46,199 king salmon and 509,333 other salmon. Catch and effort information was obtained by personal interviews and catch questionnaires. Yukon Territory subsistence catch data was furnished by Government of Canada-Department of Fisheries and Oceans (Whitehorse).

4. COMMERCIAL SALMON CATCH SAMPLING

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

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

c. Results: Several hundred samples of king, chum and coho salmon were collected in 1985. Detailed age, sex and size composition data has been compiled and will be presented in a separate report.

5. CHINOOK SALMON STOCK BIOLOGY

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

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

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

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

All Yukon River chinook salmon scale samples, including samples collected from District 4, 5 and 6 fisheries and samples collected by the Department of Fisheries and Oceans (Canada), were coalesced

and aged by the project biologist. Age, sex and size summaries were computed for all Yukon River chinook salmon fisheries and sampled spawning escapements. These data will be published along with 1985 chum and coho salmon age, sex and size data in a separate catch and escapement report.

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

6. ANDREAFSKY RIVER ESCAPEMENT STUDY

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

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

c. Results: Extremely high water conditions from project start-up in late June through mid-July resulted in the majority of the salmon passing beyond the sonar counting range. The sonar counter was deployed without the use of an artificial substrate tube for the first time on this project. A total of 66,146 summer chum salmon and 1,617 chinook salmon was enumerated above the sonar site by aerial survey on 23 July. Only about 19% of these fish were enumerated by the sonar unit. Poor water clarity during most of the season and poor beach seine catches did not allow for independent verification of sonar accuracy until the aerial survey was flown late in the season. A new method of deploying the sonar transducer, and the availability of a second unit, should allow for accurate sonar enumeration in the future even if the same high water conditions are encountered.

Chum salmon age composition was 72% age 4, 26% age 5, and females accounted for 58% of the fish sampled. Chinook salmon were 44% age 6, 40% age 4, and females accounted for 33% of the fish sampled. The female component was the strongest since the 1981 escapement.

7. ANVIK RIVER ESCAPEMENT STUDY

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

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

c. Results: The sonar escapement estimate was 1,080,243 summer chum salmon. This was second only to the 1981 parent year escapement

of nearly 1.5 million fish, and was 2.2 times greater than the escapement objective of 487,000 fish. The sonar counters were operated without the use of artificial substrate tubes for the first time on this project. An improved transducer deployment method has been recommended for future use without the artificial substrates.

Chum salmon age composition was 75% age 4, 22% age 5, and females accounted for 56% of the sample. Chinook salmon age composition was 39% age 5, 30% age 4 and 30% age 6, based on a very small sample size. Females accounted for only 24% of the fish sampled.

8. 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: The sonar-estimated escapement to the Sheenjek River in 1985 was 152,768 fall chum salmon from September 2-29. Mean date of run passage was September 18. Although sonar operations extended to September 29, being 4 to 7 days later than in previous years, magnitude of the run through September 22 was still the greatest since sonar operations began in 1981. The 1985 sonar-estimated escapement was five times greater than sonar-estimated escapements in 1982 and 1984; two of the poorest years on record.

Fall chum salmon age composition was 1% age 3, fish; 93% age 4, fish; and 6% age 5, fish based upon beach seine samples collected from September 4-21. An additional 150 samples were obtained for subsequent electrophoretic analysis.

9. YUKON RIVER SONAR

a. Location: River mile 123, approximately one mile upstream from the village of Pilot Station.

b. Objectives: The primary objective of this project is to hydroacoustically estimate the number of fish, by species, passing river mile 123.

1) develop sampling techniques to permit estimation of the total number of fish passing the sonar site; and

2) develop a method to accurately estimate species composition of the population of fish passing the sonar site in order to apportion sonar counts to species.

c. Results: Sonar was operational on both banks of the Yukon River between 20 June and 26 August in 1985. A total of 2,944,748 fish passed the sonar site; 75% passed on the south bank while 25% passed on the north bank. Four mesh sizes of gillnet were fished

throughout the season to give data for development of species apportionment estimates. Application of these estimates to total counts resulted in the following run composition: 49,384 chinook salmon; 2,378,067 summer chum salmon; 328,452 fall chum salmon; 85,442 coho salmon; and 103,403 "other" species which includes whitefish, burbot, sheefish, and pink salmon.

10. DELTA RIVER ESCAPEMENT STUDY

a. Location: Lower one mile of the Delta River.

b. Objectives: Determine timing and magnitude of salmon escapement to this river.

c. Results: A total population estimate of 17,276 fall chum salmon was made for this river in 1985. The population estimate was generated from replicate (9) foot survey observations conducted throughout the period September 27 to December 5 and spawner residence time data collected in the Delta River in 1973 and 1974. Run timing was examined by estimating the number of new fish entering the stream between subsequent surveys. Fifty percent of the population estimate was observed by October 25.

Fall chum salmon age composition was 14.6% age 3, fish; 76.2% age 4, fish; 8.8% age 5, fish; and 0.4% age 6 fish. An additional 122 fish were obtained for subsequent electrophoretic analysis.

11. CAPE ROMANZOF HERRING PROJECT

a. Location: Kokechik Bay and Scammon Bay.

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

c. Results: A total of 2,967 herring were caught in test nets (variable mesh gill nets) during the period June 4-23. Initial spawning occurred on June 12, the latest ever documented. The magnitude of the run was apparently larger than previous years based on spawn deposition surveys and test fishing catches. Observed spawn mortality was negligible compared to previous years. The majority of the sampled herring were age 4 (22%), 6 (23%), 7 (17%) and 8 (26%).