

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES

ANNUAL MANAGEMENT REPORT

1980

YUKON AREA

STAFF

ANCHORAGE AREA OFFICE -- 333 Raspberry Rd. 99502
Michael F. Geiger (Yukon Area Biologist)
James Brady (Assistant Area Biologist)

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

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Preface

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

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

The report is organized into the following major sections:

1. Area Introduction. This section presents a detailed description of the area, inhabitants, fishery resources, fisheries and management practices.
2. Area Report, 1980. This section presents a comprehensive report of the current year and makes comparisons with previous years.

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

The following is an explanation of how 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 24 hour fishing period, it is fished the entire period. If the period was more than 24 hours long, then the vessel is assumed to have fished the complete period for as many hours as was 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, irrespectively of how many deliveries 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.

Commercial catch data for 1979 and 1980 is preliminary. Final catch data, with only minor revisions anticipated, will be presented in Appendix Tables of the 1981 Annual Management Report.

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 2). 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 indigenous to the Yukon River drainage (Figure 1) with chum salmon being the most abundant. It is estimated that king salmon, coho salmon, pink salmon and 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. 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.

King salmon of the Yukon River are the largest species ranging from 2-90 pounds and averaging 20-25 pounds (sampled from 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. 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.

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).

Red salmon are extremely rare in the Yukon River and only a few individuals are caught each year.

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

Other species common to the freshwater and for 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 1200 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 2). 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 the Bonasila River to the U.S./Canada Border including the Tanana River (upper three districts). The districts are further subdivided into statistical areas for management purposes. Figures 3, 4, and 5 present the lower three district statistical area charts. Figures 6, 7, 8, and 9 present the upper three district statistical area charts. Yukon River mileages are presented 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 Andreefsky (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 the new regulations established by the Department in 1961, the annual king salmon harvest for the entire district has 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). Catches have generally declined since 1970, averaging 94,728 fish annually (1971-1979), because of below average runs and regulatory restrictions.

The greatest catch ever made in the district was 152,870 king salmon in 1980.

In 1975 the king salmon commercial catch of 63,740 was the smallest since 1960. During the same period (since 1960) commercial fishing effort increased substantially. Restrictions placed on the commercial fishery during the 1970's have generally resulted in improved escapements compared to the 1963-69 period. Above average escapements occurred in 1971 and 1977-80.

In recent years the decline of the Yukon River king salmon is believed to be partially attributed to the Japanese high seas mothership fishery. The high seas king salmon catches, taken incidentally to more numerous other species, have averaged 233,000 fish annually during the period 1960-1977. A peak catch of 554,000 kings were taken in this fishery in 1969 (Appendix Table 30). In some years the Japanese catch has exceeded the total western Alaskan catch (subsistence and commercial). Most of the high seas king salmon catch is composed of immature four year old fish which normally return as six year olds, two years later. Based on tagging and scale analysis studies it is estimated that in excess of 80% of the Japanese king salmon catches are of western Alaskan

origin (Yukon, Kuskokwim, and Bristol Bay stocks). This high seas fishery is intercepting western Alaskan king salmon at a higher rate than Bristol Bay sockeye salmon.

The I.N.P.F.C. Treaty was renegotiated in 1977 to afford increased protection for western Alaska salmon stocks. Japanese mothership king salmon catches were 105,000 and 126,000 in 1978 and 1979, respectively. However in 1980 a record 704,000 kings were taken in the mothership fishery (Appendix Table 30). The large 1980 catch, although representing a economic loss to western Alaskan fishermen, probably is reflective of abundance due to high survival rates. Above average returns are expected of 5 and 6 year old fish in 1981 and 1982, respectively.

Also western Alaskan kings are taken incidentally to the foreign groundfish trawl fishery (1977-79 average catch of 61,000 fish) In addition the Japanese landbase drift gillnet fishery harvests 154,000 kings annually (1970-79 average) but the degree of western Alaskan interceptions is unknown.

Since statehood the Yukon River commercial chum salmon fishery has steadily developed especially during the 1970's. During the period 1961-1965 commercial catches averaged 31,850 while during the same period subsistence chum catches averaged 400,874. As the subsistence commercial fishery declined and regulations were relaxed, coupled with the expansion of the fall chum fishery, the commercial catches averaged 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 774,849 during the period 1971-1979. The largest chum salmon catch in the history of the Yukon River commercial fishery occurred in 1980 when 1,358,310 fish were taken (Appendix Tables 1 and 2).

Prior to the mid 1960's summer chums were used primarily for subsistence, mostly for sled dog food. As the snow machine replaced the dog sled, subsistence fishing for summer chums declined. Beginning in 1967, commercial fishing restrictions regarding summer chums have been liberalized as the dependence for subsistence declined. The Yukon River summer chum salmon commercial harvest has increased sharply as a result of regulation changes (e.g. mesh size specifications and earlier openings of the fishing season); increased fishing effort (including expansion of the upper Yukon fishery); the availability of processing and tendering facilities, higher prices paid to fishermen; the development of Japanese markets; and the occurrence of very large runs in recent years. In 1967 only 11,000 summer chums were taken commercially while in 1980 a record 1,057,761 fish were harvested. 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 5 million fish based on commercial and subsistence catch documentation and aerial survey estimates. In the Anvik River an escapement of over 1 million summer chums was estimated in 1975. Overall, Yukon River summer chum escapements have been good in recent years,

however escapements in that portion of the drainage upstream of the Koyukuk River mouth have been variable.

Chum salmon (both summer and fall run) bound for the Yukon River are probably being intercepted by the Japanese mothership fishery in the Bering Sea. This fishery annually harvests 2-4 million fish of which significant numbers are believed to be of western Alaska (including Yukon River) origin, although tagging effort in the areas heavily fished by the Japanese has been limited. Also Yukon River chums, in addition to other western Alaska stocks, are intercepted by the U.S. South Unimak commercial fishery as demonstrated by tagging studies. Annual (1971-1979) catches of this interception fishery range from 62,000-497,000 chums. chums.

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 (1969-1979) catches have averaged 224,642. 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 presently in the lower three districts (Appendix Table 14).

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. Very large runs were experienced in 1970, 1971, 1975 and 1979 while small runs occurred in 1973, 1976, 1978 and 1980. Aerial survey assessments of escapements began in 1972. Tanana River drainage escapements in general appear more stable and experience less fluctuation than the Porcupine River system. For example, escapements in the Fishing Branch River have ranged from 353,000 (1975) to 13,000 (1976).

The Department will maintain an overall guideline harvest range of 147,500 - 322,500 (235,000 midpoint) of fall chum salmon until future returns from current levels of harvest can be evaluated. The Board of Fisheries at its December, 1978 meeting replaced the previous quota system with the more flexible guideline harvest range concept. Beginning with the 1974 season 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.

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 6,829; 14,166; and 19,550 fish during the periods 1961-1965, 1966-1970, and 1971-1979, respectively.

Commercial salmon catches by district and statistical area since 1960 are presented in Appendix Tables 2, 5-7, and 12-14.

The relatively recent development and expansion of the commercial salmon fishery has enabled many area residents to obtain a cash income. In recent years fishermen and processing plant employees have received over two million dollars annually (Appendix Table 19). Other forms of employment is often sporadic or nonexistent in this area. The vast majority of all commercial fishermen are Eskimo and Indian residents of the Yukon River drainage.

Most fishermen operate small outboard powered skiffs of 16 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.

A list of current Yukon area fishing regulations are presented in Attachment 3.

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 district for processing. In recent years, 1973-79, the wholesale value of the pack has averaged 7.8 million dollars.

Lower Yukon Area

The lower Yukon area consists of three districts: District 334-10 (mouth to Anuk River including Black River); district 334-20 (Anuk River to Toklik); district 334-30 (Toklik to Old Paradise Village) (Figures 3, 4 and 5).

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 334-10 and 334-20) 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 334-10 and 334-20, these fisheries have been regulated by scheduled weekly fishing periods. The "king salmon season" (no mesh size restrictions) in these districts opens June 10 by regulation 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. This was done to provide for adequate king salmon escapements in the face of increasing fishing effort and efficiency.

Commercial fishing effort has increased sharply since 1961. License registration for set gill nets has more than doubled while drift gill net gear has tripled during the period 1961-1977. Set gill nets are most commonly used, especially near the river mouth, but the use of drift gill nets has increased. Drift gill nets are legal forms of gear in the lower three districts only. 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. A total of 657 fishing vessels operated in the lower Yukon area in 1980 (Appendix Table 4). With the advent of the Limited Entry program, fishing effort has apparently stabilized. In 1980 686 CFEC gill net permits were issued (Appendix Table 3).

Since 1970 districts 334-10 and 334-20 commercial king salmon catches have averaged 80,197 fish annually (1971-1979) (Appendix Table 2).

In district 334-30 the commercial salmon fishing season opens June 10 and is allowed three days a week until the 1,800-2,200 king salmon guideline harvest level is taken (Appendix Table 11).

Excluding the 1920's, sale of other species of salmon captured during the king salmon season in the area of the present lower two districts has been allowed only since 1967. The incidental catch of summer chum salmon was limited during this season as fishermen used gill nets of stretched mesh measure of eight inches or greater. However, beginning in 1970, each fisherman could substitute up to 50 fathoms of gill net of any mesh size in districts 334-10 and 334-20. 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 king and summer chum salmon catches by mesh size are presented in Appendix Table 8.

Since 1961 the commercial fishing season in the lower Yukon districts has been reopened following the closure of the king salmon season. This second season is referred to as the "fall season" and 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 334-10 and 334-20. 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 8). 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 334-10 and 334-20 (and July 5-15 in district 334-30) after which only gill nets of 6 inch or less mesh gill nets may be used.

In recent years (1973-79) the lower Yukon area commercial summer chum salmon catch has averaged 482,826 fish annually (Appendix Table 14).

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 187,893 fish annually (1969-79) (Appendix Table 14). Beginning in 1974 a 200,000 chum salmon quota system (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 334-10 and 334-20. These actions were necessary to stabilize the catch in view of increased fishing effort and to provide for a harvest in the newly developed upper Yukon area fishery. In 1979 fishing time was reduced further to two days a week and the 200,000 quota was replaced by a flexible guideline harvest range of 120,000-220,000 chum salmon.

The harvest of coho salmon in the lower Yukon area is dependent upon the duration of the fishing season (usually related to when the chum salmon guideline harvest range is taken). Cohos peak during mid to late August. Lower Yukon coho salmon catches since 1971 have averaged 18,306 annually (1971-79) (Appendix Table 2).

The bulk of the lower Yukon River salmon catch is destined for Japanese markets as a fresh-frozen product. Freezer ships and shore base operations that process fresh-frozen salmon are located in the vicinity of Emmonak. Some fresh salmon is transported by aircraft from St. Marys, Marshall and Emmonak to Anchorage for further processing. Hard salting operations are located at Black River and Mountain Village. A floating cannery is located near Emmonak and a shore based cannery is operated at Mountain Village.

Upper Yukon Area

For regulatory and administrative purposes, the upper Yukon area is divided into three districts: District 334-40 extends from Old Paradise Village upstream approximately 360 miles to the mouth of Illinois Cr. near Kallands, district 334-50, from the mouth of Illinois Cr. upstream to the U.S./Canadian border (approximately 550 miles) and district 334-60, the Tanana River drainage, of which the lower 225 miles is open to commercial fishing (Figure 6, 7, 8 and 9).

Prior to 1974, the upper Yukon area (above the confluence of the Koyukuk River) was designated as one district. By regulation, commercial fishing was allowed seven 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 the 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 communities 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 334-40 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: District 334-50 and district 334-60.
- (3) Salmon catch quotas were established for the upper Yukon area as follows:
 - (a) Districts 334-40: 1,000 king salmon and after August 15, 10,000 chum and coho salmon combined for the area.
 - (b) District 334-50: 3,000 king salmon and after August 15, 25,000 chum and coho salmon combined for the area.
 - (c) District 334-60: 1,000 king salmon and after August 15, 15,000 chum and coho salmon combined for the area.
- (4) In Districts 334-40, 334-50 and 334-60, the weekly commercial fishing period was reduced from 7 to 5 days a week.

Effective for the 1979 fishing season the Board of Fisheries enacted several major regulation changes in the upper Yukon area:

- (1) Weekly fishing time in subdistrict 4-A of district 334-40 was reduced to 4 days a week and split fishing periods established for the king and summer chum salmon fishery (June 15-August 1).
- (2) King salmon quotas were replaced by guideline harvest level ranges: district 334-40 (900 to 1,100), district 334-50 (2,700 to 3,300) and district 334-60 (900 to 1,100).
- (3) Weekly fishing time in subdistrict 4-B of district 334-40, subdistrict 5A of district 334-50 and district 334-60 was reduced to 4 days a week and split fishing periods established for the fall chum and coho salmon fishery (after August 15).
- (4) Chum and coho salmon combined quotas in effect after August 15 were replaced by guideline harvest level ranges: Subdistrict 4-B of district 334-40 (10,000 to 40,000), district 334-50 (10,000 to 40,000) and district 334-60 (7,500 to 22,500).

Effective for the 1980 fishing season the Board of Fisheries promulgated the following major regulation changes in the upper Yukon area: Weekly fishing time in subdistrict 4-B of district 334-40, subdistrict 5-A of district 334-50 and district 334-60 was reduced to 4 days a week and split fishing periods established for the king and summer chum salmon fishery (June 15-August 15).

Because of the common origin of salmon stocks harvested throughout the length of the Yukon River, the commercial and subsistence fisheries

in the middle and upper river districts cannot be considered separate or distinct from those in the lower portion of the drainage. They do however, differ in several important respects.

For reasons of relative abundance, flesh quality and the existing regulation structure, the second, or fall run of chum salmon is the target species of the commercial fishery in districts 334-50 and 334-60. The summer run of chum salmon is of paramount importance in district 334-40 and comprise in excess of 70% of the total upriver commercial harvest (Appendix Table 14). 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 commercial fishery, as mentioned earlier, 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 334-40, 334-50, and 334-60, 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 district harvest for the years 1974 - 1979. During the same period, the upper Yukon districts have had an average of 188 participating fishermen or approximately 20% of the district total (Appendix Table 4). Final implementation of the Limited Entry Program is expected to stabilize year-to-year fishing effort.

King salmon are of minor importance to the commercial fisheries in the three upper drainage districts having a total guideline harvest range allocation of 4,500 to 5,500 kings (Appendix Table 11). Normally the king salmon guideline harvest range is not taken in district 334-40, as most fishermen retain them for subsistence purposes. In district 334-60, the king salmon guideline harvest range is normally taken during late July and in most years the commercial season remains closed until early September. In the Tanana (village) to Hess Creek area of district 334-50, however, there is considerable set gillnet effort directed towards the capture of king salmon and the guideline harvest range is taken each year in mid-late July.

Unlike the lower river fisheries, relatively few summer chum salmon are taken commercially in districts 334-50 and 334-60 (Appendix Table 14). Because of their low abundance, advanced sexual maturity and consequent poor flesh quality, summer chum salmon are generally retained for personal use in these areas.

The majority of commercially caught king salmon taken in the upper Yukon area are transported to Fairbanks and sold to local supermarkets and restaurants as a fresh-frozen product. Most chum salmon harvested in the same areas are tendered by small aircraft and boats from collection points (fish camps) along the river and are then flown to processing plants in Manley Hot Springs, Galena, Nenana, Fairbanks and Anchorage, where the majority are eventually canned. A small portion of the fall chum salmon catch is marketed as a fresh-frozen product. Small quantities

of king salmon and fall chums are smoke-cured and sold as "strips", a locally specialty product. Likewise, small numbers of chum salmon taken commercially are dried and sold as dog food.

Subsistence Utilization

There are approximately 10,000-15,000 Eskimo and Indian people in the area, the majority of whom reside in excess of 45 small villages scattered along the coast and major river systems. Nearly all of these native people are dependent to varying degrees on fish and game resources for their livelihood.

Subsistence fishermen operate gill nets largely in the main rivers and to a lesser extent in the coastal marine waters capturing mainly salmon, whitefish and sheefish. Fishwheels take considerable numbers of salmon in the upper Yukon and Tanana River. 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 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 frozen, 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 Rivers. Catch data from the Canadian portion of the drainage has been supplied by personnel of Environment Canada - Fisheries Service (Whitehorse office) since 1962. In recent years, the Department has conducted surveys of Koyukuk River villages.

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

To illustrate changes in effort, there were 393 fishwheels operated on the Yukon River in 1918. Fishwheels are very effective if fished properly. A single wheel is capable of taking from 2,000 to 5,000 chum salmon annually. The number of fishwheels recorded during the 1970 survey was an all-time low of 55, a 67% decrease since 1961 (Appendix Table 22). However, because of the expansion of the upper Yukon commercial fishery, beginning in 1973, the amount of fishwheel gear has increased (201 units in 1979).

Another very important factor tending to affect subsistence fishing effort during recent years is the increasing use of snow vehicles which may be replacing sled dogs at a faster rate than did the airplane. Since considerable numbers of salmon and other fish are fed to sled dogs, fewer fish will be required for subsistence purposes as the canine population declines. In 1961 each fishing family kept an average of 7.7 sled dogs while in 1972 this figure was down to 3.8 sled dogs. However, due to the renewed interest in sled dog racing, the number of dogs per family increased to 6.4 in 1980. The number of snowmachines owned by fishing families was documented beginning with the 1967 season, when the average number of snow machines 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 1.3 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 1974-1979 the subsistence chum salmon catches, utilized mainly for dog food, have increased, averaging 317,681. This increase can be attributed to above average size runs, especially summer chums, subsistence roe sales and increasing numbers of recreational sled dog teams.

Subsistence catches of king salmon, which are utilized mainly for human consumption, have remained relatively constant during the period 1961-1979 generally averaging 20-25,000 per year.

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

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

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 suspected, however, that residents of the upper Yukon area are much less dependent on these miscellaneous species than are their downriver counterparts.

Management

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

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

Due to the turbid water conditions of the main river (and some of its tributaries) and the vast size of the Yukon River drainage, accurate in-season assessment of the escapement immediately past the intensive downriver fishery is very difficult with the present available technology. Also in-season management of the runs (often mixed species) is hampered by the variable run timing and pattern of entry into the lower river fishery which causes difficulties when attempting to compare catch data. Also, some fishermen use small mesh gill nets, (5 1/2-6 inch) during the

king salmon season in order to harvest the larger run of summer chums. As a result, catch data in recent years may not be comparable to earlier years when 8-8 1/2 inch stretched mesh gill nets were primarily used.

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

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

New research projects have been initiated and other programs are planned, contingent on additional funding, for obtaining the biological information necessary for better management of the salmon runs. For example, a comprehensive tag and recovery program was begun in 1976 to determine the relative timing and distribution of fall chum salmon stocks past the commercial fishery. If various stocks can be identified from this program and scale analysis studies, then the fishery can be effectively regulated in order to achieve the proper balance between catch and escapement. Future salmon studies include expansion of the test fishing program, sonar assessment of the escapement in the main river, and upgrading escapement documentation in tributary streams.

As a result of the above factors the management of the Yukon River salmon runs must take a conservative approach. This has been achieved by establishing harvest goals, mesh size restrictions, area guideline harvest ranges, reduced weekly fishing periods, fishing season closures, etc.

The basic regulation that governs the commercial salmon harvest in the area is the scheduled weekly fishing period and/or guideline harvest ranges. Commercial fishing is normally allowed for a total of from two to four days a week during the open season which depends on the district and species involved. Season guideline harvest levels, are utilized for the king salmon fisheries of the upper four districts and the fall chum fishery 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 and regulations dealing with changes in fishing time and other regulations issued for the Yukon area in 1980 is presented in Attachment 1. Also presented are 1980 regulation

changes promulgated by the Board of Fisheries during its December, 1979 and January 1, 1980 meetings (Attachment 2). A complete list of Yukon area current commercial and subsistence fishing regulations are presented in Attachment 3. A copy of the 1980 Yukon Area Salmon Management Plan is presented in Attachment 5.

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 five positions--two area management biologists, one assistant area management biologist and two research biologists. In addition approximately 15 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 Fish and Wildlife Protection Division (Department of Public Safety).

Operating expenses for the Yukon area salmon management and research program from July 1, 1979 through June 30, 1980 were \$220,300. State and federal funds provided \$146,700 and \$73,600 respectively of this budget. An additional \$12,400 of State funds 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 needed information to determine the potential for commercial fisheries on underutilized species such as whitefish.

A unique problem in the lower river area is the language/communication barrier. Many of the older native people cannot read or speak English. Therefore, the staff often uses translators when conducting the many public meetings that are annually held throughout the area. While it may normally take only half an hour or so to conduct a public meeting or hearing in English, it usually takes two to three times that long when Eskimo translators are used. To assist in education and information, a weekly fishery program and special field announcements are broadcasted 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 4 lists special studies undertaken during 1980 and includes a summary of objectives, procedures and results for each.

AREA SALMON REPORT, 1980

Area Season Summary, 1980

In 1980 the king and summer chum salmon runs were judged above average in magnitude; the fall chum salmon run was considered below average in magnitude and the coho salmon run was average in magnitude based on comparable catch and escapement data.

In 1980 there were 152,788 kings; 8,741 cohos; and 1,355,884 chums, totaling 1,517,413 salmon taken commercially. This was the largest harvest recorded for king and chum salmon and for all species combined (Appendix Table 1). Tables 4 and 5 present 1980 commercial salmon

catches by fishing season and statistical areas. Tables 7 through 12 present daily catch data for each district.

In 1980 the king salmon catch greatly exceeded the previous five year average of 90,064 fish. The 1980 catch data presented in this section does not include king and chum salmon taken commercially by Canadian fishermen in Yukon Territory (Appendix Table 1).

The 1980 commercial chum salmon catch greatly exceeded the previous five year average of 999,768 fish. The harvest was composed of 1,057,761 summer and 298,123 fall chums (Appendix Table 14). The summer chum catch was a record exceeding the previous high catch of 1,045,092 fish in 1978.

In 1980 the commercial coho salmon catch was substantially smaller than the previous five year average of 17,727 fish.

Subsistence harvests in 1980 in the Yukon area (excluding Yukon Territory) were estimated at 58,224 king and 479,713 chum and coho salmon combined. The subsistence king catch was the largest on record.

In 1980 a total of 764 CFEC gill net permits and 164 fishwheel permits were issued in the area. Table 6 shows the residency of all persons issued C.F.E.C. permits for 1980. Appendix Table 3 shows the number of CFEC permits issued since 1976. The actual number of commercial fishing vessels, that made at least one salmon delivery during the season, are shown in Appendix Table 4.

The majority of the king salmon catch was processed primarily as a fresh/frozen product and to a lesser extent by canning and hard salting. The majority of the chum and coho salmon were fresh/frozen. Production of salmon roe totaled 579,927 pounds in 1980, including 146,075 pounds of salmon roe purchased from commercial fishermen in the upper Yukon area. Commercial salmon production data is presented in Appendix Table 18. All buyers and processors operating in the Yukon area during 1980 are listed in Table 3.

Yukon area commercial fishermen received \$6,703,100 for their catches in 1980. Due to low prices fishermen received less for their catch than the previous year even though record catches were made in 1980. In addition, a minimum estimate of \$1,475,000 in wages was earned by processing plant employees and tenderboat operators. The first wholesale value of the 1980 pack was estimated at \$16,757,000 (Appendix Table 19).

Average prices paid to fishermen and salmon weights from 1960-80 are presented in Appendix Tables 20 and 21, respectively.

Commercial Fishery, 1980

Lower Yukon Area

The 1980 lower Yukon area (districts 334-10, 334-20 and 334-30) commercial salmon catch totaled a record 1,101,696 fish which was comprised of 143,853 king; 950,355 chum (746,126 summer and 204,229 fall chums) and 7,488 coho salmon.

Lower Yukon fishing effort, in terms of the actual number of participating fishing vessels, was similar to 1979 (Appendix Table 4). In 1980 a total of 686 CFEC gillnet permits were issued for the lower Yukon area (Appendix Table 3).

King Salmon: The timing of the king salmon run entering the mouth of the Yukon River was early for the third consecutive year. This was attributed to the early breakup of the lower river ice cover (the main river was essentially clear of ice by May 19) and also the relatively ice-free conditions in the Bering Sea. The first reported king salmon catches in the lower river occurred on May 27 from subsistence fishermen in Alakanuk (Mile 17), Emmonak (Mile 24), and Mt. Village (Mile 87). During late May and during the first week of June subsistence fishermen in the lower river made excellent king salmon catches. As per the strategy outlined in the Yukon Area Management Plan, the commercial fishing season in subdistricts 334-10 and 334-20 was opened early (June 9 in district 334-10 and June 8 in district 334-20) before the normal June 10 opening date, because of the strong early run of kings documented in the main river from subsistence catches.

Overall the king salmon run was judged above average in magnitude and it probably exceeded last year's run which was documented as one of the largest king runs since statehood. This assessment was based on analysis of comparative catch data and subsequent spawning ground surveys throughout the drainage. The 1980 lower Yukon commercial king salmon catch (8-1/2 inch mesh size gillnets samples) was primarily composed of 5 (47%) and 6 (49%) year old fish from the 1975 and 1974 parent years, respectively. The large percentage of 5 year old fish indicate good survival from the 1975 brood year spawning.

Comparative district 334-10 commercial king salmon catch data is presented in Appendix Tables 9 and 10.

Peak commercial king salmon catches in district 334-10 were made during the periods June 12-14 (23,771) and June 19-21 (26,161). In district 334-20 king salmon catches peaked during the periods June 15-16 (10,911) and June 22-23 (12,038). The district 334-10 season catch of 76,269 kings was the largest since 1971. A record 50,824 kings were taken in district 334-20 this year and the catch in district 334-30 of 5,240 kings was the second largest ever recorded.

The distribution of king salmon catches during the early season in the delta area ranged from very good in the middle mouth (27,410), north mouth (9,169), and the Head of Passes and Fish Village areas (10,600) to very poor at Black River where unfavorable winds resulted in a catch of only 444 fish (Appendix Table 7).

The early season (king salmon season - no mesh size restrictions) ended after June 24 in districts 334-10 and 334-20. By emergency order only gillnets of 6 inch or less mesh could be operated thereafter. This action provided for increased catch efficiency of summer chums. A large incidental catch of 20,083 kings was taken with the smaller mesh gillnets. Normally the incidental king catch ranges from 5-8,000 kings in districts 334-10 and 334-20.

The commercial fishing season in district 334-30 was closed by emergency order on June 18th when 3,896 kings were taken exceeding the 1,800 to 2,200 guideline harvest level. The season reopened on June 25 to fishing with gillnets of 6 inch or smaller mesh and the incidental catch of kings totaled 1,344 fish.

Summer Chum Salmon: The summer chum salmon run was also early and the first fish was caught on May 31 near Alakanuk in the south mouth area. The summer chum run was considered above average in magnitude based on catch and escapement data. A record 746,126 summer chums were taken in the lower Yukon area in 1980. A total of 96,042 summer chums were taken during the king salmon season in districts 334-10, 334-20 and 334-30. The majority of the catch (650,084) was taken during the fall season with 6 inch or less mesh gillnets. Record summer chum catches were made in district 2 (310,531) and district 3 (44,571) this year.

Comparative summer chum salmon catch data for districts 334-10 and 334-20 are presented in Appendix Tables 14 and 15.

Fall Chum Salmon: The first fall chum was taken in the lower portion of district 334-10 during July 10-12. During late July fall chum catches were considerably below average indicating that early run segment was weak. An emergency order issued on July 27 reduced fishing time to two - 12 hour periods per week in districts 334-10 and 334-20. Also fishing time in district 334-30 was reduced to two - 24 hour periods per week. These reductions in fishing times were initiated in order to provide for increased escapements of the early fall chum run. Even with reduced fishing time, districts 334-20 fishermen continued to make relatively good fall chum catches as fish passed through the north and middle mouths of district 334-10 during closed periods.

On August 17, the normal fishing schedule in all three lower Yukon districts was reinstated by emergency order. Between August 17-19 a major run of fall chums entered the north and middle mouths. This run produced the largest single period (8/18-19) catch of fall chums (42,264 in district 334-10) for the season. The district 334-10 catch raised the total combined lower Yukon area harvest above the midpoint of the 120,000 to 220,000 fall chum guideline harvest range; consequently the commercial salmon fishing season in districts 334-10, 334-20, and 334-30 was closed on August 20.

The total fall chum catch for the lower Yukon districts was 204,229 fish. The breakdown of the fall chum catch was as follows: district 334-10 (106,829), district 334-20 (83,881), and district 334-30 (13,519) (Appendix Tables 11 and 14).

Based on evaluation of commercial and test fishing data in the lower Yukon River, the strength of the fall chum run appeared to be below average to average. The peak of the run occurred late in the season. After the closure of the commercial fishing season, fall chums continued to enter the mouths of the Yukon during late August. Subsistence catches in the lower Yukon districts indicated that some of these later chum runs were fair.

Comparative fall chum salmon catch data for district 334-10 is shown in Appendix Tables 16 and 17.

Coho Salmon: The first coho salmon caught in the lower Yukon area occurred on July 14. It was caught by a commercial fisherman in the north mouth area. Due to the early closure of the fishing season on August 20 the commercial catch was reduced. Cohos normally are most abundant during late August. In 1980 subsistence fishermen indicated they experienced good coho catches in early September. Cohos are of minor importance on the Yukon and the size of the catch is generally dependent on how late the season continues and on the amount of fishing effort exerted for the more abundant fall chums.

A total of 12 processors operated in the lower Yukon area during 1980. One new processor operated this year: Western Yukon Fisheries (Pitkas Point). Most of the salmon catch was processed as either a fresh/frozen product with the balance canned and hard salted.

Upper Yukon Area

During 1980, 415,717 salmon (all species combined) were commercially harvested in districts 334-40, 334-50, and 334-60 of the upper Yukon area. The catch was composed of 8,935 kings; 311,635 summer chums; 93,894 fall chums; and 1,253 cohos (Table 4). These totals represent 27% of the total 1980 Yukon area production and exceeded the recent 5-year average.

The value of the upper Yukon area fishery (an estimated \$910,000 received by the fishermen) exceeded that of past years. Even though the prices paid per pound of fishery products were down slightly from 1979 levels, the value of the upper Yukon fishery was higher, largely due to the volume of roe produced.

A total of 164 fishwheels and 78 set gillnet permanent and interim entry permits was issued for the 1980 season. This compares with 166 fishwheel and 64 set gillnet permits issued during 1979 (Appendix Table 3). The actual number of fishermen participating (making at least one delivery) in the 1980 commercial fishery was 177. Fishing effort by district was: district 334-40, 88; district 334-50, 51; and district 334-60, 38 (Appendix Table 4). Distribution of effort is comparable to recent years and total effort levels were 5% below the recent 5-year average. Gradual implementation of the limited entry program and uncertain market conditions likely contributed to the slight decrease in effort.

During the course of the season a total of 18 buyers and/or processors operated in the upper Yukon district. The majority of the catch now receives at least primary processing within the area before being shipped to outside markets. Most of the commercial catch is processed as a fresh-frozen product, with lesser amounts smoked and dried for human consumption or dog food.

King Salmon: Post-season analyses of catch and escapement data indicate that the 1980 king salmon run was one of the largest on record. As in past years, distribution of catch between districts was generally a function of individual district guideline harvest levels rather than effort or susceptibility to harvest.

The documented commercial harvest of king salmon in district 334-40 was 1,521. Landings of kings peaked during the period ending July 1. Based on the 1980 Yukon Area Management Plan strategy, an emergency

order was issued effective July 18, requiring commercial net fishermen to convert to 6-inch or smaller mesh gillnets in order to minimize the capture of large king salmon after that date. The majority of the kings produced in the district originated in the Galena and Kallands areas.

A record 5,338 kings were taken in district 334-50 during 1980. The run peaked in this area during the period ending July 17, when 1,300 kings were landed by 24 fishermen. An emergency closure was imposed effective July 17 as the guideline harvest level had been exceeded. Observed and reported subsistence catches indicated an unusually strong run through late July and early August.

Construction of a new processing plant in Tanana and the increased presence of Fairbanks-based buyers in this area provided local fishermen with more reliable outlets for their product than had existed in past years.

A record king salmon harvest was also made in the Tanana River district (334-60) where 2,076 kings were landed. Timing of the Tanana River king run appeared normal, and deliveries peaked during the week of July 16 when approximately 700 kings were landed by 17 fishermen.

Summer Chum Salmon: The 1980 summer chum salmon run is judged to have been above average in magnitude. A total of 311,635 summer chums was commercially harvested in the upper Yukon districts, which is 32% above the recent 5-year average.

In district 334-40, 272,339 summer chums were taken in the commercial fishery. As is normally the case, the majority (84%) of these were harvested in subdistrict 4-A. This figure is somewhat misleading in that many fishermen were able to sell roe only, because of market conditions in that area. Based on sex ratios and average roe weight per female data generated in-season, roe production was converted to "equivalent catch" figures. The actual number of fish sold in the round totaled 148,590 or 55% of the "equivalent catch" values presented above.

Carcasses of salmon, from which roe was extracted and sold, were dried and retained for subsistence use or sold as dog food.

Commercial catches of summer chums in district 334-50 totaled 459 fish. It should be understood that summer chums are not abundant in this area, have little market value, and are normally retained for subsistence purposes. The summer fishery in this area targets on king salmon, and summer chums are taken incidental to this fishery.

In district 334-60 a record harvest of 38,837 summer chums was made. Subsistence catches of summer chums indicated a continued strong run after the king salmon season had been closed, and the commercial chum season was reopened from August 4 to August 13 to allow additional harvest of this species. Catches peaked during the period ending July 27, when deliveries by 27 fishermen totaled 14,136 chums.

Fall Chum Salmon: Because of a poor run of fall chums to the upper Yukon in 1976, it was anticipated that the 1980 return (primarily 4-year-old fish) would be similarly weak. Commercial and test fisheries were closely monitored in the lower Yukon, and available data indicated a weak return of the early portion of the fall run; for this reason,

fishing time was reduced from two 24-hour periods per week to two 12-hour periods per week in districts 1 and 2. In anticipation of this weak run, the commercial fishery in subdistrict 4-B was closed effective August 1 until run strength could be better evaluated. Likewise, the fishery in district 5 remained closed to allow passage of the early portion of the fall run.

The commercial fishing season in subdistrict 4-B was reopened on August 17, and fishing was allowed on the normal 4-day-per-week (split-period) schedule until the season was closed on September 16. A total of 32,031 fall chums was harvested in this subdistrict. Of these, 14,896 (47%) were taken in statistical area 334-43. This statistical area represents south bank catches; results of tagging studies indicate the majority of south bank fish to be of Tanana River origin.

District 334-50 was reopened to commercial fishing on August 19. Comparative commercial catches indicated average to above-average run strength, and fishing was allowed on the normal schedule (two 48-hour periods per week). A total of 42,343 fall chums were harvested in this district. The run appeared to peak during the period ending August 31 when 12,643 fall chum were delivered by 32 fishermen. As indicated earlier, there was more processor interest in this area than in past years and competition between buyers was intense. During the last commercial period, fall chums brought fishermen an average \$.50 per lbs., which was considerably higher than in recent years.

The Tanana River fall chum run was somewhat later than normal, and the season was reopened on September 12. The run was considered average in magnitude, and the total commercial harvest was 19,520 fall chums. Effort during the Tanana River fall season was the lowest (26 fishermen) in recent years. The duration of the commercial fishing season for fall chums was only four days.

Coho Salmon: This species, because of its relatively low abundance and late run timing, is of minor importance in the upriver commercial fishery. During 1980 an estimated 1,253 cohos were commercially harvested in the upper Yukon districts. It should be noted that (for reporting purposes) buyers make little effort to distinguish fall chums from cohos. The catch statistics, therefore, reflect daily estimates of species composition documented by fisheries technicians stationed in Manley and Nenana.

Salmon Roe Sales

Regulations allowing the sale of subsistence caught salmon roe were repealed in late 1977; it remains legal, however, for commercial fishermen to sell roe taken during open periods of the commercial salmon fishing season. In many cases, the value of (chum) salmon roe exceeds the value of the fish, and for that reason relatively large amounts of eggs are sold.

During 1980 a total of 146,075 lbs. of roe (unprocessed weight) was sold by upriver commercial fishermen. Prices paid to fishermen for their roe averaged \$2.50 per pound. Because of marketing problems (discussed in the section of this report dealing with summer chums), an unusually large amount of roe (approximately 120,000 lbs.) was produced in subdistrict 4-A. Lesser amounts of roe were sold in districts 334-50 and 334-60, and no salmon roe sales were documented in the lower Yukon districts.

UPPER YUKON AREA SALMON ROE SALES, 1980. ^{1/}

District	King Salmon Season			Fall Season			Total
	King	Chum ^{2/}	Subtotal	King	Chum ^{3/}	Subtotal	
334-40	0	136,124	136,124	0	4,047	4,047	140,171
334-50	1,528	0	1,528	0	605	605	2,133
334-60	<u>421</u>	<u>3,282</u>	<u>3,703</u>	<u>0</u>	<u>68</u>	<u>68</u>	<u>3,771</u>
	1,949	139,406	141,355	0	4,720	4,720	146,075

^{1/} All figures in pounds of unprocessed product.

^{2/} Includes some king salmon roe.

^{3/} Includes some coho salmon roe.

Subsistence Fishery, 1980

Subsistence fishery surveys were conducted throughout the Yukon River drainage as they have been each year since 1961. During 1980 58,224 kings; 458,055 chums; and 21,658 cohos were reported harvested for subsistence purposes (including Canadian catches). In addition, a minimum of 68,697 whitefish and 7,009 sheefish was taken by subsistence fishermen.

The 1980 subsistence king salmon catch is the highest catch on record and exceeded the previous record (1979) by 65%. The combined chum and coho salmon subsistence harvest of 479,713 was the highest since 1964 and exceeded the recent 5-year average of 318,770 by approximately 50% (Appendix Table 22).

Table 13 presents 1980 catch data for each Yukon River community and Appendix Tables 23 and 24 present comparative historical catches.

Lower Yukon Area

An estimated 12,126 kings and 61,783 salmon of other species were harvested by 404 fishing families in the three lower districts during 1980. The magnitude of the king salmon catch (43% above the recent 5-year average) is thought to be a function of run size. The 1980 harvest of chum and cohos of 61,783 for the lower Yukon area is comparable to the recent average harvest. Lower Yukon fishermen comprise approximately 36% of the total subsistence fishing effort (excluding Canada) and took 14% of the total salmon catch. With the exception of the king salmon harvest, which appears to be largely a function of abundance, the lower Yukon River subsistence fishery appears stable in terms of both effort and catch.

Upper Yukon Area

Exclusive of Canadian catches, the 1980 subsistence harvest for the upper Yukon district totaled 30,598 kings and 403,430 salmon of other species (primarily chums).

As in the lower portion of the drainage, the upper Yukon subsistence king salmon take was considerably above (128%) the recent 5-year average, and the subsistence chum and coho salmon harvest of 403,430 was 65% above the 1975-79 average.

As indicated above, the significant increase in king salmon take appears closely tied to run size. Increases in the harvest of other species of salmon are less easily explained but probably reflect, in part, the increasing number of sled-dog teams in the Interior.

The possibility of overestimating the summer chum harvest in district 334-40 should be noted. As indicated in a previous section of this report, many commercial fishermen in this area had no market for their chum salmon. As a result, many fishermen extracted and sold roe from their catch and retained the carcasses for their personal use. It is likely that in many cases fishermen (particularly in Anvik, Grayling, and Kaltag) reported this portion of their commercial catch as subsistence fish. It is not possible to quantify what portion of the catch may have been double counted.

Subsistence fishing permits are required in three general areas within the Yukon district: 1) the Tanana River drainage upstream of the Wood River confluence; 2) the Yukon River between Hess Cr. and Dall River; 3) the Yukon River drainage between the upstream mouth of Twenty-two Mile Slough and the U.S./Canadian border.

In the Tanana drainage, a total of 315 permits were issued for subsistence salmon fishing and 254 successful fishermen reported catches of 282 kings; 7,788 chums and cohos combined (Appendix Table 25).

In the Hess Creek to Dall River portion of the Yukon River drainage, 70 permits were issued to residents of Stevens Village and Fairbanks. The 67 successful fishermen (who reported catches) took an estimated 1,350 kings and 6,488 chums (Appendix Table 25).

In the Circle and Eagle areas 48 permits were issued and catches for these villages are presented in Appendix Table 25.

In addition, 57 permits were issued authorizing the taking of salmon carcasses in the vicinity of the Delta River near Big Delta and 36 fishermen reported collecting 4,915 (chum) salmon carcasses (Appendix Table 25).

Enforcement, 1980

Lower Yukon Area

Enforcement activities of the Division of Fish and Wildlife Protection were few and far between in 1980. Boat and aircraft patrols occurred sporadically. In general compliance with regulations was good, however it is felt that many violations reported this year could be eliminated

by increased FWP surveillance. The major enforcement problems concerned non permit holders fishing commercially.

Upper Yukon Area

Compliance with commercial and subsistence fishing regulations in the upper Yukon area has generally improved in recent years. Increased presence of enforcement personnel has helped minimize the incidence of illegal commercial and subsistence fishing during closed periods.

The sale of subsistence-caught roe and fish continues to be a major problem, particularly in the Tanana River district. Three major cases involving the purchase and sale of subsistence fishery products were made by Fish and Wildlife Protection officers in 1980 and are pending adjudication.

Escapement, 1980

The Yukon River drainage is too extensive for complete aerial survey escapement coverage during any given season. In addition, poor survey conditions prevented surveys from being flown during some years or have resulted in minimum counts. Table 14 presents aerial survey escapement data for all streams surveyed in 1980.

Appendix Table 26 presents comparative king salmon escapement data for selected tributaries during the 1959-1980 period. In 1980, king salmon escapements into the major spawning areas ranged from average to above average. Record escapements were documented in the following index areas: Gisasa River (951), Salcha River (6,757), Chena River (2,541) and Nisutlin River (Sidney Creek-100 Mile Creek) (975).

In the Yukon Territory, surveys indicated average to above average king salmon escapement levels. The Whitehorse Dam Fishway count of 1,391 kings was the largest recorded since 1962. Due to possible problems associated with passage of adults through the fishway and mortality of smolts through turbines, the Whitehorse Dam Fishway is probably not a reliable index of king salmon escapements in the Yukon Territory.

Appendix Tables 27 and 28 present comparative summer and fall chum salmon escapements for selected streams. The magnitude of the summer chum escapements were generally average to above average throughout the drainage. In 1980, a total of 716,162 summer chum salmon spawners were documented in selected tributaries throughout the drainage. A minimum of 492,676 chums were documented in the Anvik River system where the escapement is enumerated by side scanning sonar. In the Andreafsky River (East and West Fork), aerial surveys indicated average escapements as 152,280 chum salmon spawners were enumerated in this system.

In 1980, escapements of fall chums were below average to average, similar in magnitude to the 1976 brood year escapement levels (Appendix Table 28). In the Toklat River an escapement of 25,194 fall chums was documented in 1980. Upper Tanana River and Porcupine River fall chum escapements were 14,056 and 33,346, respectively.

Tanana River drainage coho salmon escapements were generally average in 1980. Comparable coho salmon escapement data is presented in Appendix Table 29.

OUTLOOK FOR 1981

King Salmon

It is difficult to predict the relative magnitude of the 1981 Yukon River king salmon run. The majority of the king salmon expected to return in 1981 will probably be composed of six-year-old fish originating from the 1975 brood year. There are indications based on commercial catch and escapement data, that the 1975 brood year run was below average to average in magnitude. However, survival (favorable environmental conditions) of the 1975 brood year progeny was apparently excellent based on the large numbers of 5 year olds returning in 1980. Therefore, a large "carryover" of 6 year old fish may occur in 1981. Five-year-olds (1976) brood year should also contribute substantially to the run in 1981. Survival of the 1976 brood year was apparently excellent based on the large incidental catch of 4 year old kings in the Japanese mothership fishery in 1980.

In summary, based on available brood year run size data, the 1981 run of kings is expected to be above average in magnitude. If a poor run develops, fishing time restrictions may be required during the 1981 season in order to obtain adequate spawning escapements. Until future returns can be studied, the commercial harvest of Yukon River king salmon should not exceed 95-100 thousand fish unless an exceptionally large run is indicated.

Summer Chum Salmon

Normally, Yukon River summer chum runs are primarily composed of four-year-old fish. The return of four-year-olds in 1981 will be dependent on the strength of the 1977 brood year run and the survival of the resulting progeny. Based on the available commercial and test fishing catch and escapement data, the summer chum run in 1977 was average in magnitude. The contribution of five-year-old fish (1976 brood year) in 1981 may be significant based on the above average return of 4-year-olds in 1980.

In summary, it is expected that the magnitude of the 1981 Yukon River summer chum run will be average. The expected commercial harvest should total 600,000-1,200,000 fish. If the summer chum run in 1981 is below average in magnitude, fishing time restrictions will be necessary to insure adequate escapements.

Fall Chum Salmon

Four-year-old fish from the 1977 brood year are expected to be the predominant age class of the 1981 run. Escapements of fall chums in 1977 were judged to be average in abundance. The return of five-year-olds (1976 brood year) is not expected to contribute significantly to the return in 1981 based on the poor brood year escapements and the below average return of 4 year olds occurring in 1980.

In summary, the magnitude of the 1981 Yukon River fall chum is expected to be average. The expected commercial harvest should approximate 235,000 fish, the midpoint of the overall guideline harvest range. If

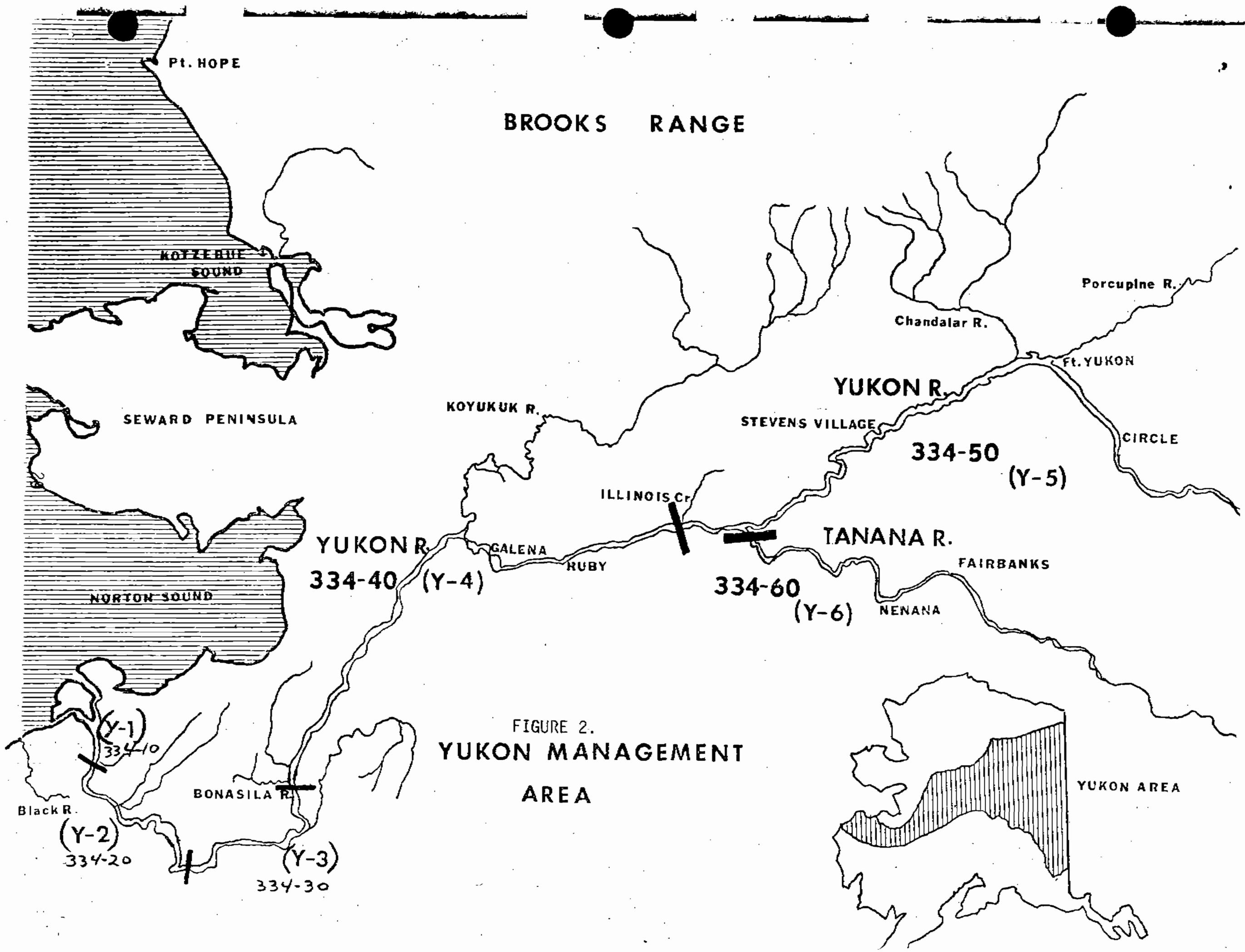
the fall chum run in 1981 is below average in magnitude, fishing time restrictions will be necessary in order to provide for adequate escapements.

Coho Salmon

Four-year-old fish (1977 brood year) are the dominant age class. Adequate escapement information for coho salmon is lacking but surveys in the Tanana River system indicated average to above average escapements in 1977. The return in 1981 is expected to be of similar magnitude. The coho salmon catch is expected to total 15-25,000 fish, depending on amount of fishing effort exerted on the fall chum run and the duration of the fishing season.



Figure 1. Yukon River Drainage.
(330,000 square miles)



BROOKS RANGE

**FIGURE 2.
YUKON MANAGEMENT
AREA**

Pt. HOPE

KOTZEBUE
SOUND

SEWARD PENINSULA

NORTON SOUND

KOYUKUK R.

YUKON R.
334-40 (Y-4)

GALENA RUBY

ILLINOIS Cr

334-60
(Y-6)

TANANA R.

FAIRBANKS

NENANA

334-50
(Y-5)

STEVENS VILLAGE

YUKON R.

Chandalar R.

Porcupine R.

Ft. YUKON

CIRCLE

Black R.

BONASILA R.

YUKON AREA

(Y-2)
334-20

(Y-3)
334-30

(Y-1)
334-10

YUKON RIVER
DELTA

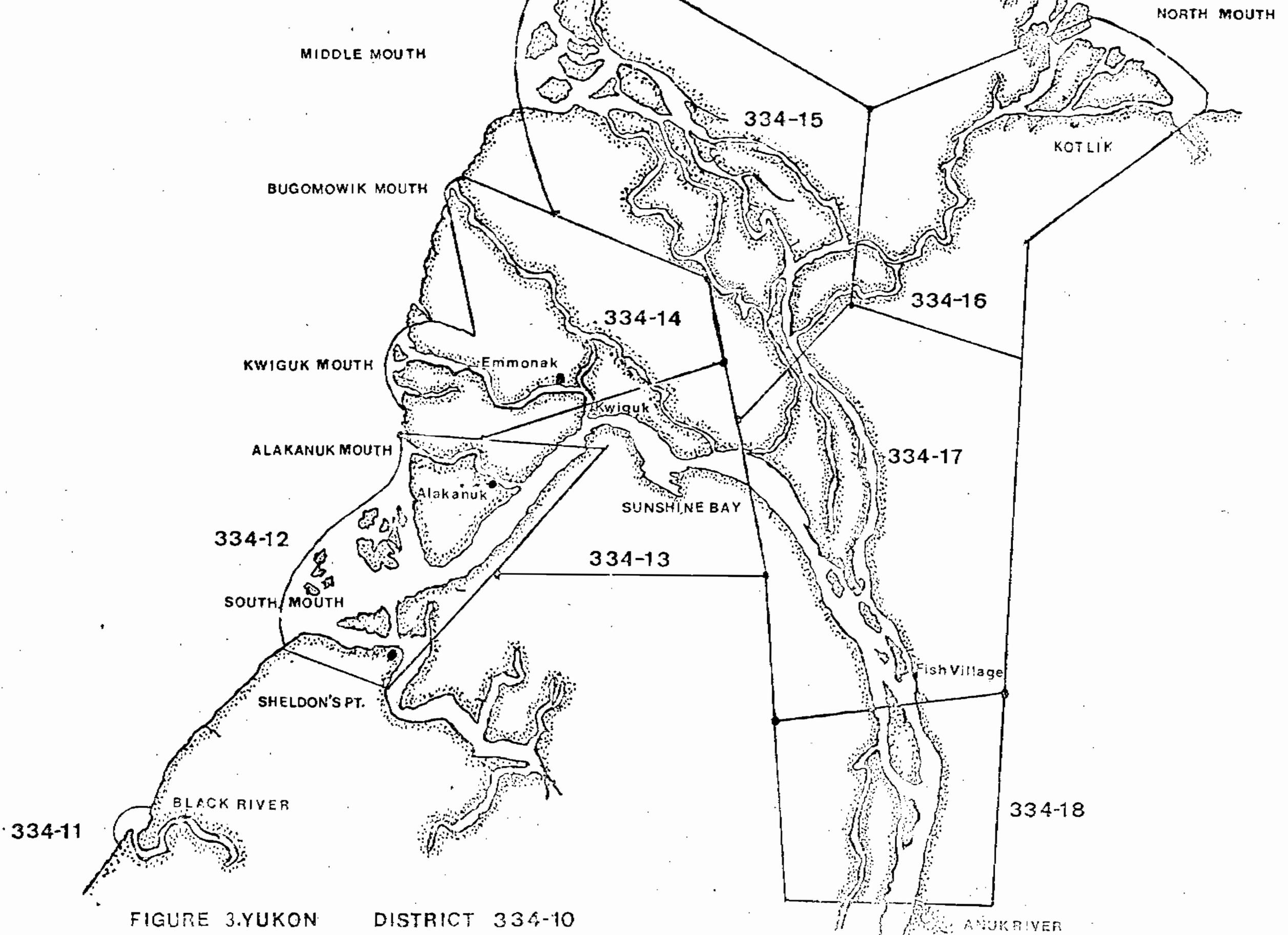


FIGURE 3.YUKON DISTRICT 334-10

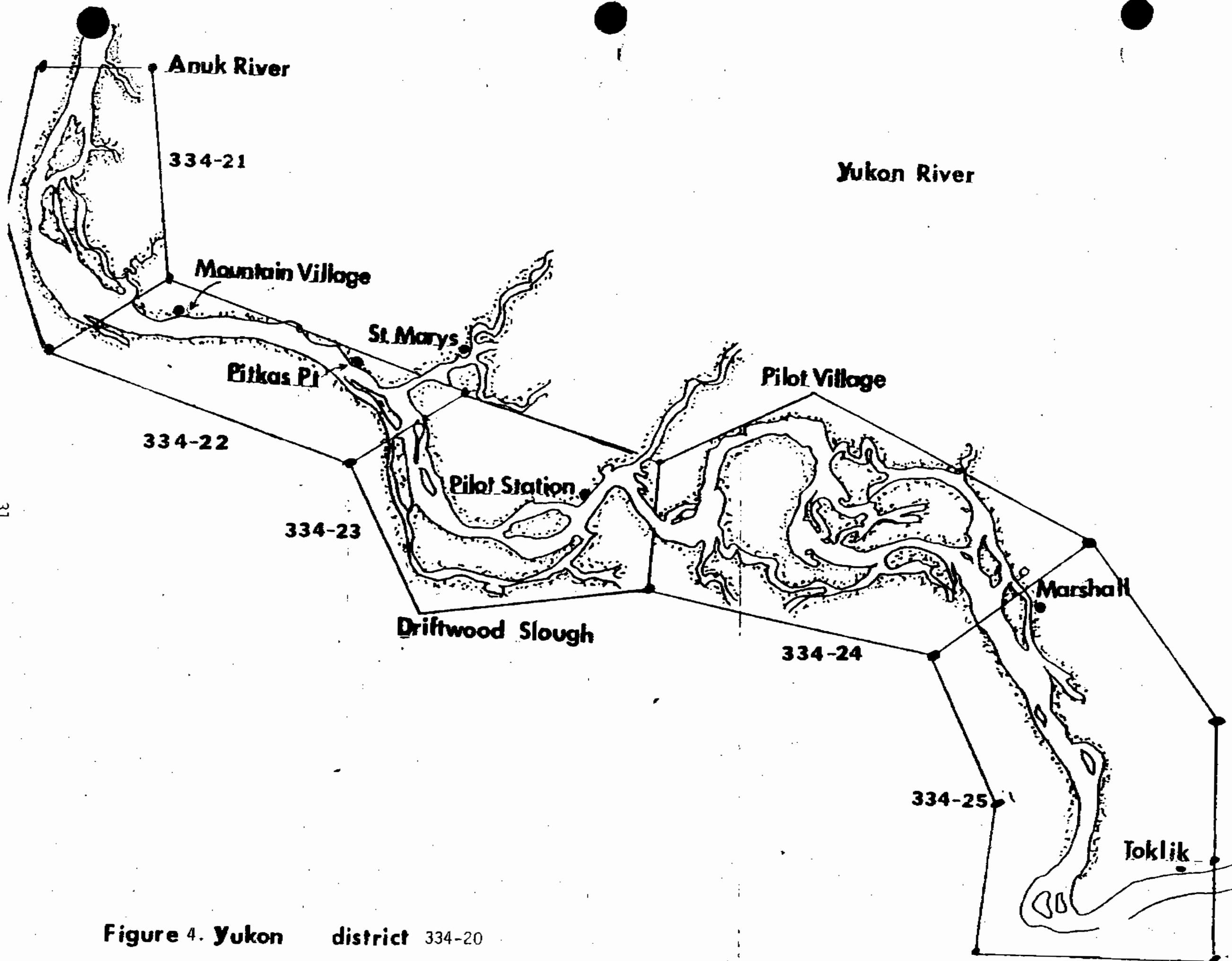


Figure 4. Yukon district 334-20

31

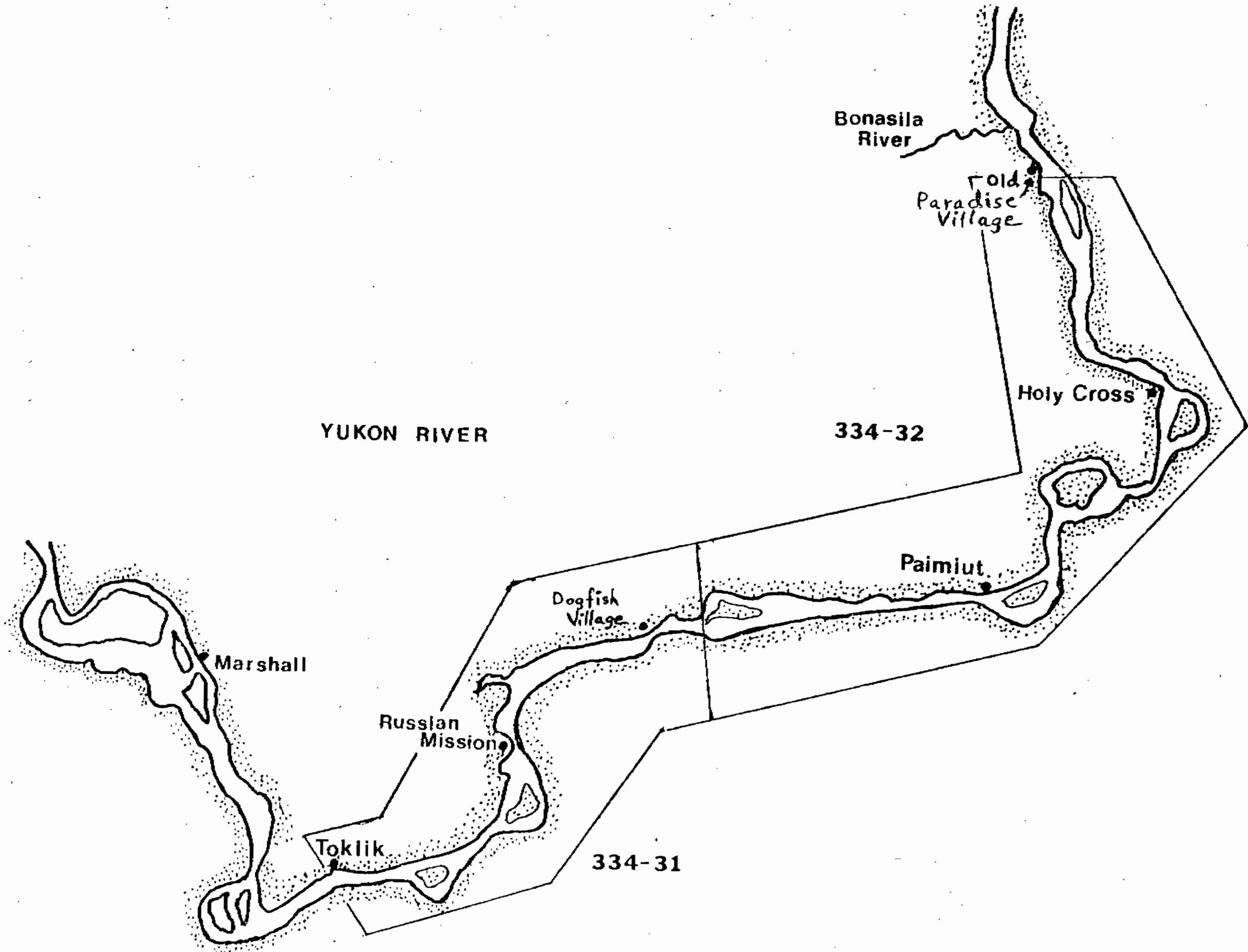


FIGURE 5. YUKON DISTRICT 334-30

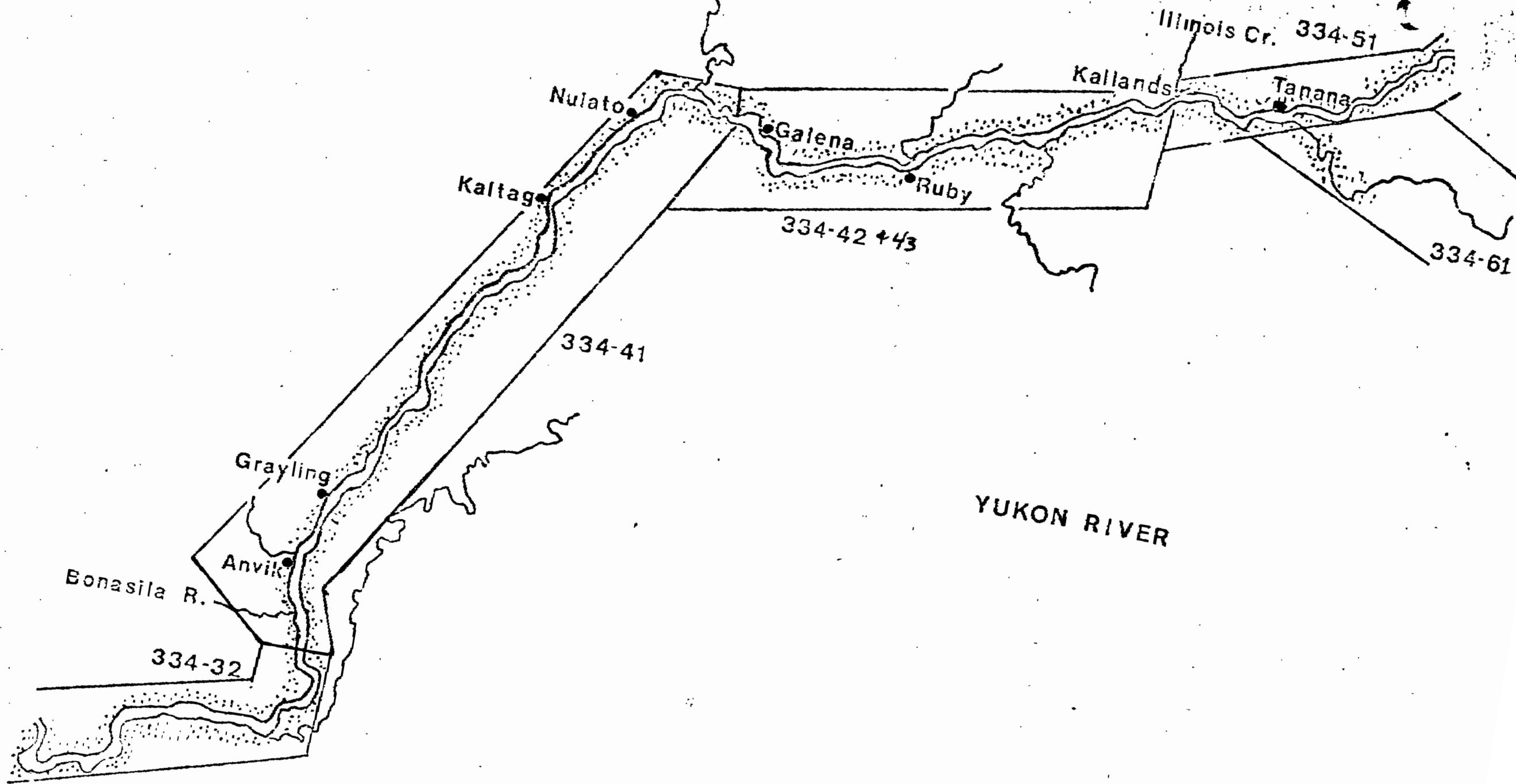


FIGURE 6. YUKON

DISTRICT 334-40

YUKON RIVER

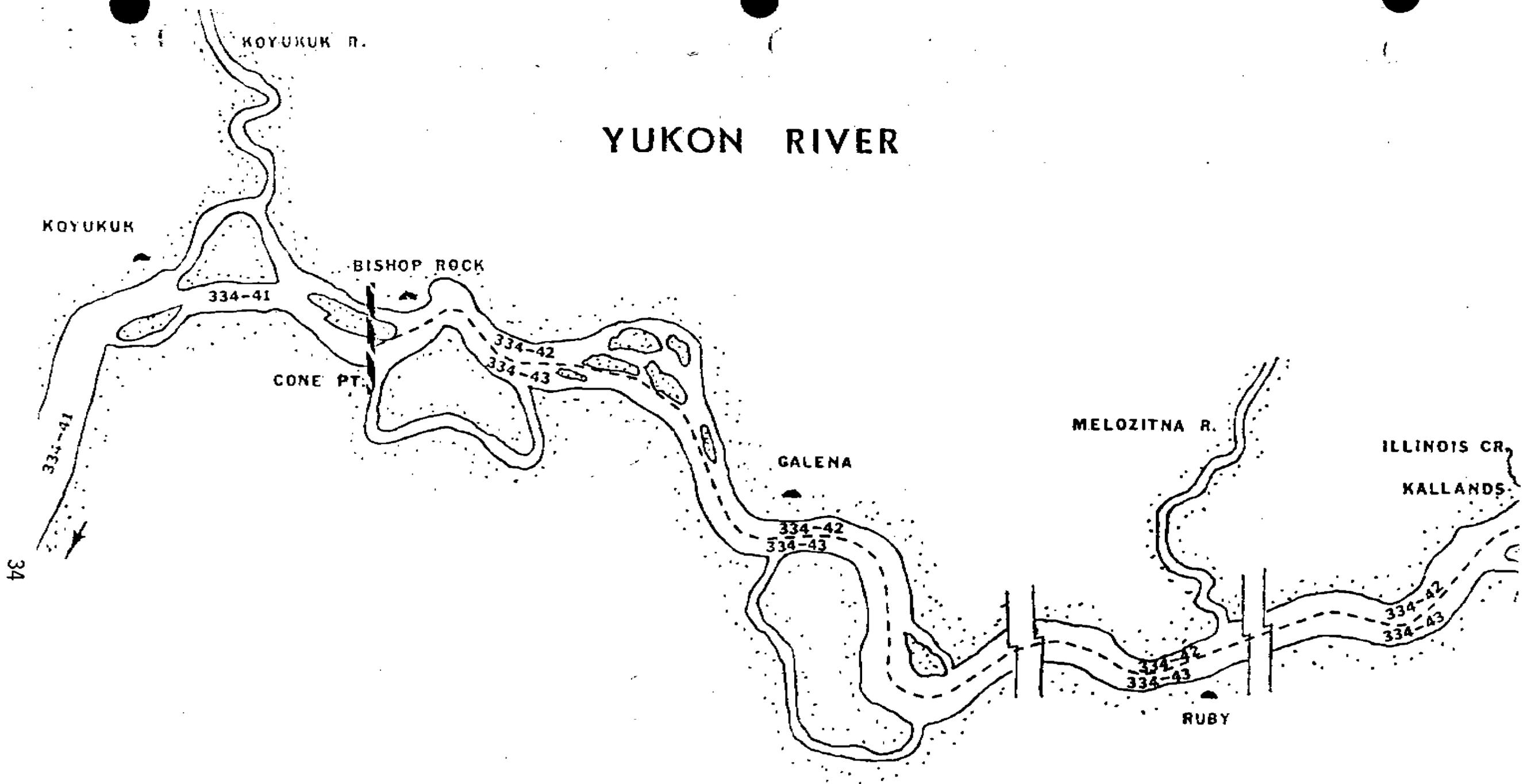


FIGURE 7. Yukon district 334-40

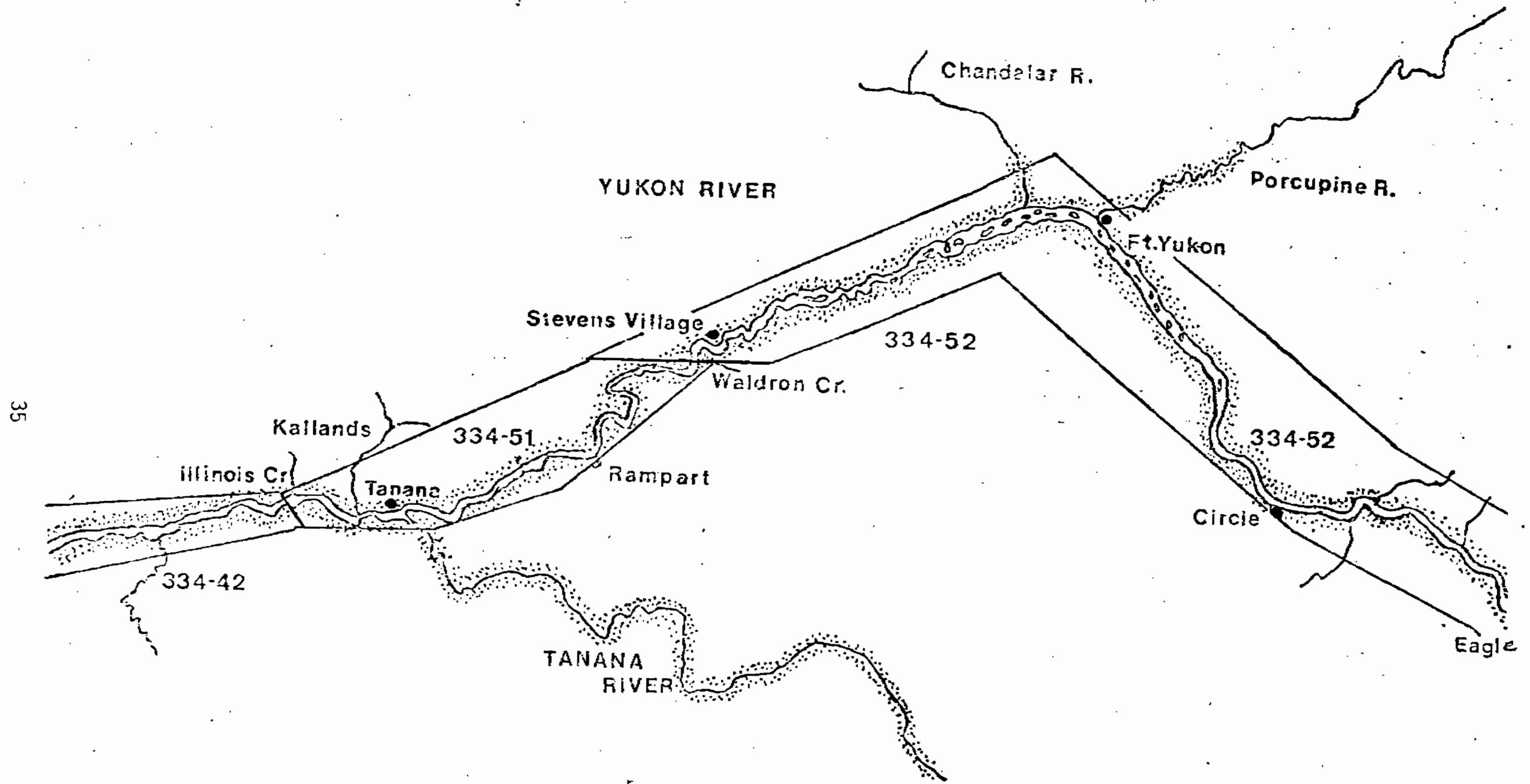


FIGURE 8. YUKON DISTRICT 334-50

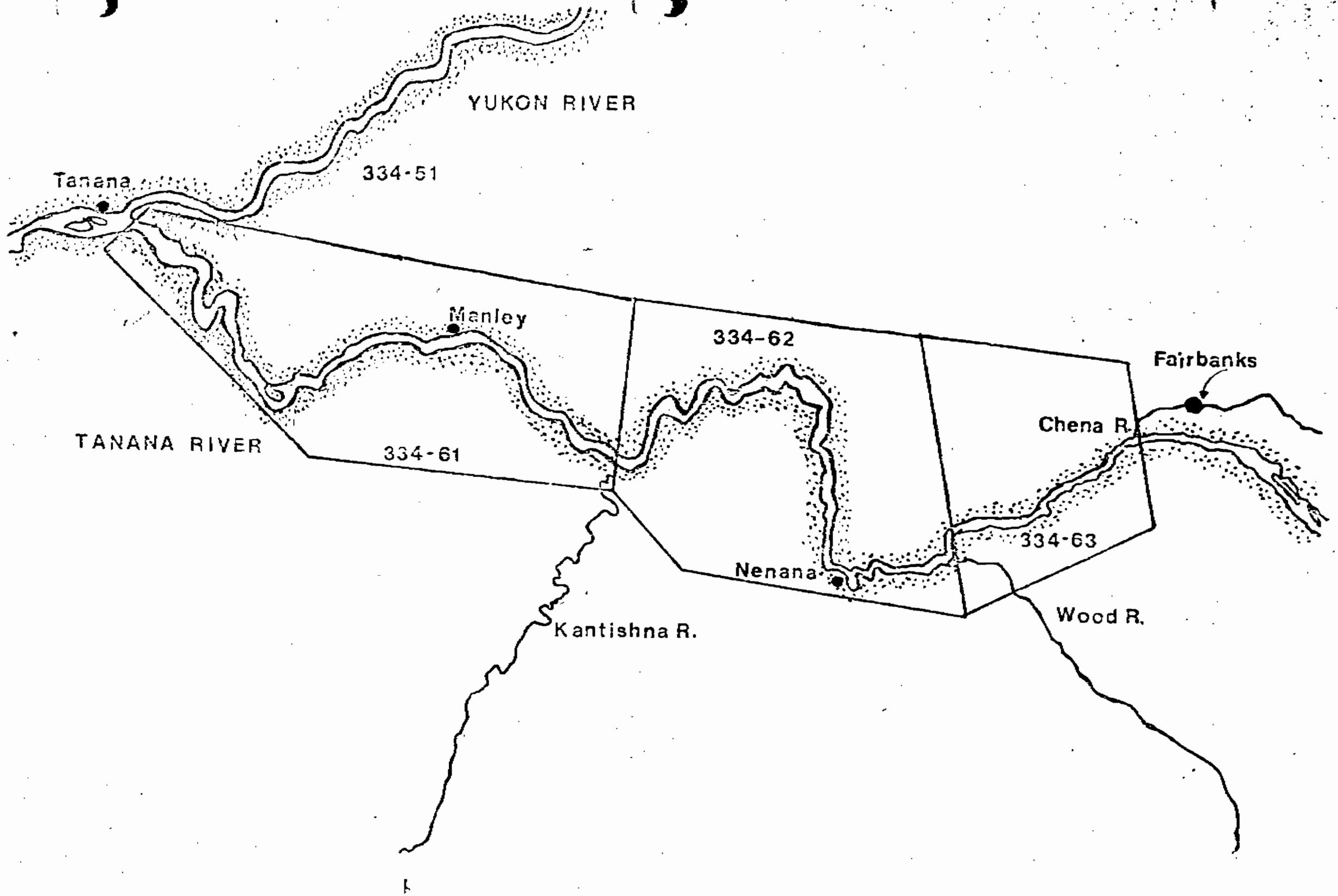


FIGURE 9. YUKON DISTRICT 334-60

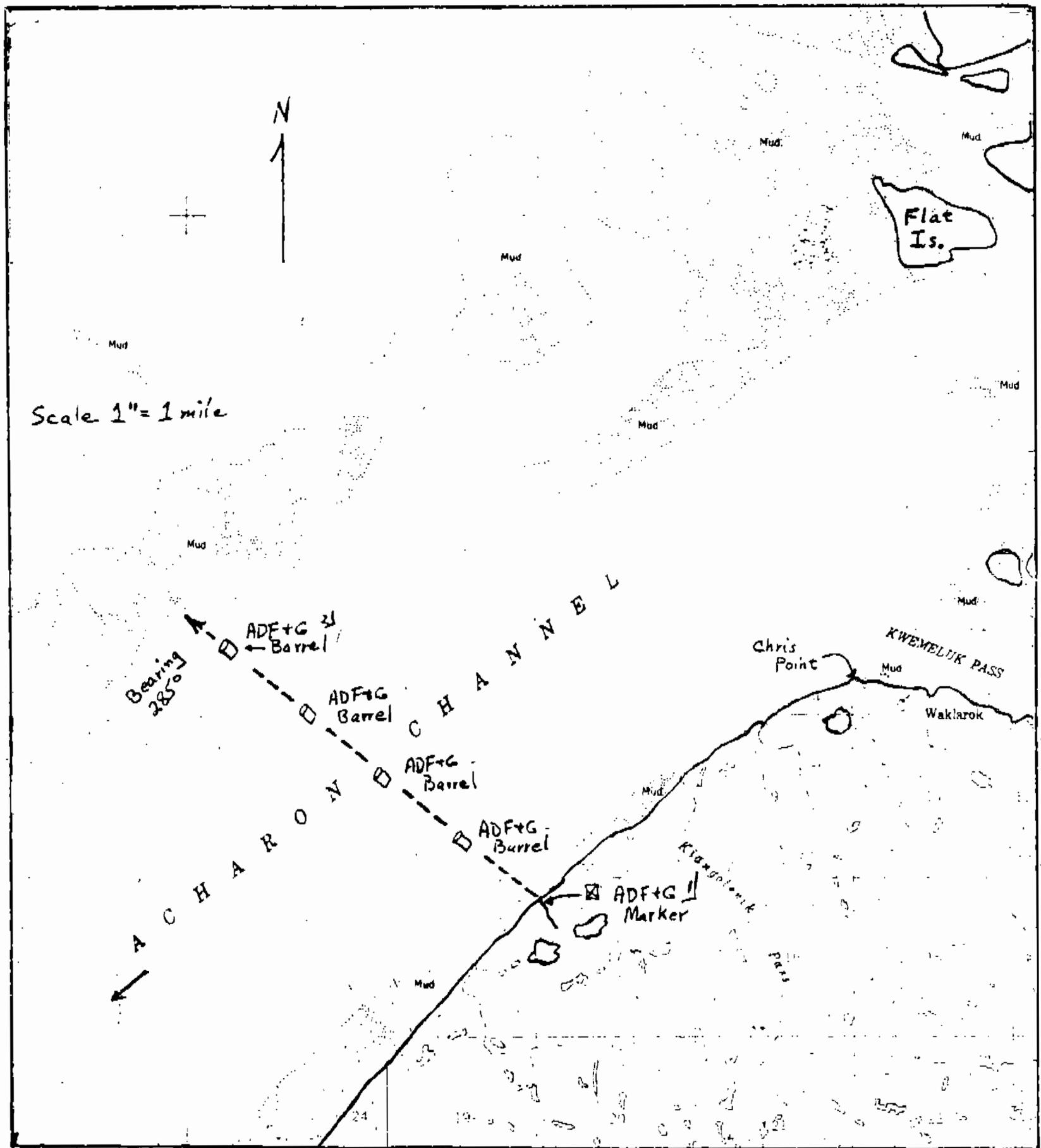


Figure 11. Closed waters Acharon Channel, south mouth Yukon River. (5AAC 05.350. CLOSED WATERS. (1) Acharon Channel of the south mouth area of the Yukon River west of a 2-1/2 nautical mile long line bearing 285° from an ADF&G regulatory marker located below Chris Point to the opposite side of the channel; 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.

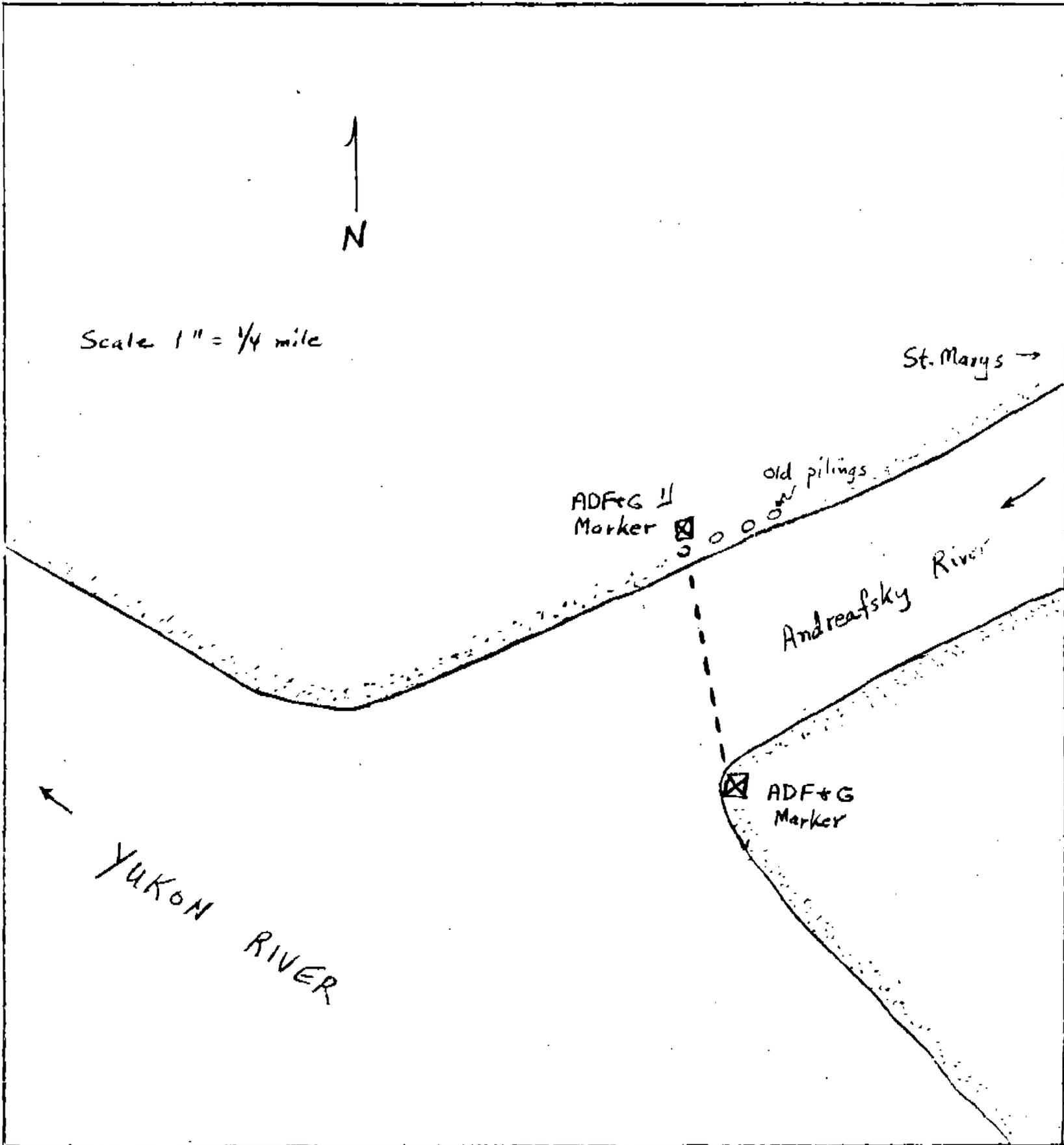


Figure 13. Closed waters of Andraefsky River mouth. (5AAC 05.350. CLOSED WATERS. (4) waters of the Andraefsky River upstream of a line from Department regulatory markers placed on each side of the river at its mouth).

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

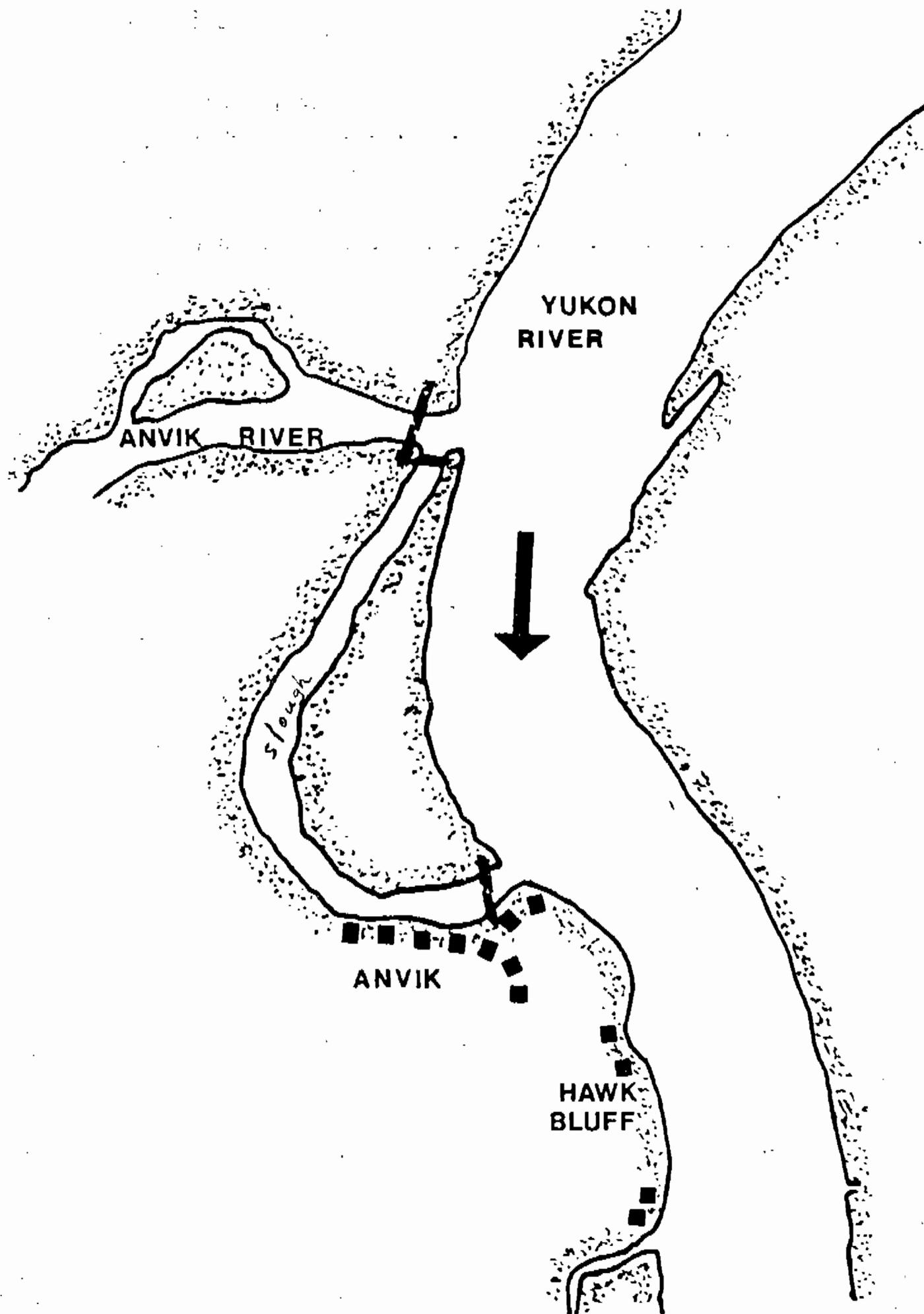


Figure 14. Closed waters of Anvik River mouth. (5AAC 05.350. (CLOSED WATERS:(8) waters of the Anvik River upstream of a line between department regulatory markers placed on each side of the river at its mouth). Markers (6) placed north and south banks of the Anvik River mouth and at upstream and downstream mouths of slough (Old Anvik River Channel).

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

Species Code	Scientific Name	Common Name
601	<u>Lampetra japonica</u>	Arctic lamprey
570	<u>Stenodus leucichthys</u>	Sheefish
581	<u>Coregonus nasus</u>	Broad Whitefish
582	<u>Coregonus pidschian</u>	Humpback Whitefish
583	<u>Coregonus sardinella</u>	Least Cisco
585	<u>Coregonus laurettae</u>	Bering Cisco
586	<u>Prosopium cylindraceum</u>	Round Whitefish
587	<u>Prosopium coulteri</u>	Pygmy Whitefish
610	<u>Thymallus arcticus</u>	Arctic Grayling
550	<u>Salvelinus namaycush</u>	Lake Trout
520	<u>Salvelinus alpinus</u>	Arctic Char
530	<u>Salvelinus malma</u>	Dolly Varden
410	<u>Oncorhynchus tshawytscha</u>	King Salmon
420	<u>Oncorhynchus nerka</u>	Red Salmon
430	<u>Oncorhynchus kisutch</u>	Coho Salmon
440	<u>Oncorhynchus gorbuscha</u>	Pink Salmon
450	<u>Oncorhynchus keta</u>	Chum Salmon
513	<u>Osmerus mordax dentex</u>	Rainbow Smelt
514	<u>Hypomesus olidus</u>	Pond Smelt
500	<u>Esox lucius</u>	Pike
630	<u>Dallia pectoralis</u>	Blackfish
650	<u>Couesius plumbeus</u>	Lake Chub
640	<u>Catostomus catostomus</u>	Longnose Sucker
670	<u>Percopsis omiscomaycus</u>	Trout-perch
590	<u>Lota lota</u>	Burbot, Lush
661	<u>Pungitius pungitius</u>	9-spine Stickleback
162	<u>Cottus cognatus</u>	Slimy Sculpin

ESTUARINE

113	<u>Eleginus gracilis</u>	Saffron Cod
121	<u>Pleuronectes stellatus</u>	Starry Flounder
122	<u>Liopsetta glacialis</u>	Arctic Flounder
230	<u>Clupea pallasii</u>	Pacific Herring
	<u>Mallotus villosus</u>	Capelin

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

Table 2 . Yukon River Drainage Mileages

<u>Location</u>	<u>Mileages from Mouth</u>
<u>North Mouth (Apoon Pass)</u>	
Kotlik	6
Hamilton	26
<u>Middle Mouth (Kwipak, Kawanak Pass)</u>	
Choolunawick	16
Akers Camp	26
New Hamilton	34
<u>South Mouth (Kwikluak Pass)</u>	
Mouth, Black River	-18
Flat Island Test Fishing Site	0
Sheldons Point	5
Tin Can Point	8
Alakanuk	17
Emmonak-Kwiguk (Kwiguk Pass)	24
Sunshine Bay	24
Aproka Pass (upstream mouth)	35
Kwipak 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 Andraefsky	97
Pitkas Point	103
Mouth, Andraefsky 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
<u>Toklik (District 2/3 Boundary)</u>	<u>191</u>
Kakamut	193
Russian Mission	213
Dogfish village	227
Paimuit	251
Mouth, Innoko River (South Slough)	274

ShageTuk	328
Holikachuk	383
Holy Cross	279
Mouth, Koserefski River	286
Old Paradise Village (District 3/4 Boundary)	301
<hr/>	
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, Mowitna River	612
Birches	647
Kallands - Mouth of Illinois Creek (District 4/5 Boundary)	664
<hr/>	
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, Sheenjok 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
<hr/>	
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, 1980.

Commercial operator (Processing location/buying station)	Product	District
Yukon Delta Fish Marketing Co-op, Inc. Emmonak, Alaska 99581 (Emmonak)	Frozen salmon Kings Cohos Chums Salmon Roe	1
Amukon Trading Post Scammon Bay, Alaska 99662 (Black River)	Hard salt Kings Chums	1
Bering Sea Fisheries, Inc. 4413 83rd Avenue S.E. Everett, Washington 98205 (Lamont Slough)	Frozen salmon & canned (#1 tails) Kings Cohos Chums Salmon Roe	1
Whitney Fidelgo Seafoods (Mokuhona Fisheries) 4401 W. International Airport Rd. Anchorage, Alaska (Emmonak)	Fresh Salmon Kings Chums Cohos Salmon Roe	1
Schenk Seafood Sales, Inc. P. O. Box 984 Bellingham, Washington 98225 (Kwikluak Pass near Emmonak)	Frozen Salmon Kings Cohos Chums Salmon Roe	1
Trinity Seafoods Inc. 129 Viewcrest Port Angeles, WA. 98362	Fresh Salmon Chums Kings Cohos	1 & 2

Table 3. Yukon area processors and associated data, 1980. (Continued)

Commercial operator (Processing location/buying station)	Product	District
Azachorak Corp, DBA The Village Cannery Mountain Village, Alaska 99632 (Mt. Village)	Hard salt, frozen & canned (#1/2 flats) salmon Kings Chums, cohos Salmon Roe	1 & 2
Boreal Fisheries 24320 - 70th Ave. East Graham, Washington 98338 (Old Andreafsky)	Fresh salmon Kings Chums Cohos Salmon Roe	2
Maserculiq Fish Processors Fortuna Ledge, AK 99585 (Marshall)	Fresh salmon Kings Chums Cohos Salmon Roe	2 & 3
Harry Turner Box 97 Holy Cross, AK 99602 (Paimiut)	Smoked salmon strips Kings	3
K & A Fisheries Aniak, AK. 99557 c/o Joe Parent KaIskag, AK 99607 (Russian Mission)	Fresh salmon Kings Chums Salmon Roe	3
Western Yukon Fisheries Box 131 St. Marys, Alaska 99658 (Pitkas Point)	Fresh Salmon Kings Chums Cohos	2

Table 3. Yukon area processors and associated data, 1980. (Continued)

Commercial operator (Processing location/buying station)	Product	District
Clark Fishing Enterprises Box 517 Aniak, AK 99557 (Ingrihak-Paimuit)	Fresh Salmon Kings Chums Salmon Roe	3
Grayling Air Service Grayling, Alaska 99590 (Grayling)	Fresh Salmon Chums Salmon Roe	4
Ingalik Fisheries Anvik, Alaska 99558 (Anvik)	Fresh Salmon Kings Salmon Roe	4
Walton Co. Inc. Anvik, Alaska 99558 (Anvik)	Salmon Roe	4
Huntington Fisheries Box 49 Galena, Alaska 99741 (Galena)	Fresh Salmon Kings Chums Salmon Roe	4
Reinhard Rupprecht Box 50 Nenana, Alaska 99760 (Kallands)	Frozen Salmon Kings Chums Salmon Roe	4
McCann's Fish Tanana, AK 99777 (Tanana)	Salmon Roe	4 & 5

Table 3. Yukon area processors and associated data, 1980. (Continued)

Commercial operator (Processing location/buying station)	Product	District
Sterling Salmon Inc. 631 Chadbourne Ave Millbrae, CA (Tanana)	Fresh Salmon Chums Salmon Roe	4 & 5
Martin Seafoods 800 Ocean Dock Rd. Anchorage, AK 99501 (Ruby)	Fresh Salmon Chums Salmon Roe	4
N & W Fish Co. S.R. Box 20616 Fairbanks, AK 99701 (Rampart)	Frozen Salmon Kings Chums Salmon Roe	5 & 6
Interior Fisheries SRA Box 168 Anchorage, AK 99502 (Manley)	Frozen Salmon Kings Chums Salmon Roe	5
Peter Merry Guide Service SRA 1707 Totem Dr. Anchorage, AK 99507 (Rampart)	Fresh Salmon Kings Chums Salmon Roe	5
Arctic Diving 1321 Karen Fairbanks, AK 99701 (Rampart/Fairbanks)	Fresh Salmon Kings Chums Coho Salmon Roe	5 & 6
Aurora Meats and Seafoods 1260 Aurora Dr. Fairbanks, AK 99701 (Rampart)	Frozen Salmon Kings Chums	5

Table 3. Yukon area processors and associated data, 1980. (Continued)

Commercial operator (Processing location/buying station)	Product	District
Johnson Fish Co. 2101 Broadmoor Fairbanks, AK 99701 (Rampart, Fairbanks)	Fresh Salmon Kings Chums Salmon Roe	5 & 6
Great Northern Fish Products 928 23rd St. Fairbanks, Alaska 99701 (Rampart/Old Minto)	Frozen Salmon Chums	5 & 6
Yutana Fisheries 1625 Cottonwood Fairbanks, AK 99701 (Manley)	Frozen Salmon Kings Chums Coho	5 & 6
Stevens Fisheries Box 38 Nenana, AK 99760 (Nenana)	Frozen Salmon Kings Chums Cohos Salmon Roe	6
Nenana Reefer Box 26 Nenana, AK 99760 (Nenana)	Frozen Salmon Kings Chums Cohos Salmon Roe	6

Table 4. Commercial salmon catches by species and district, Yukon area, 1980.

District	Kings	Summer Chums	Fall Chums	Total Chums	Cohos	Total All Species
<u>334-10</u>						
King salmon season (6/9 - 6/24)	75,775	62,571	-	62,571	-	138,346
Fall or second season (6/26 - 8/19)	12,014	328,453	106,829	435,282	4,828	452,124
Total 334-10	<u>87,789</u>	<u>391,024</u>	<u>106,829</u>	<u>497,853</u>	<u>4,828</u>	<u>590,470</u>
<u>334-20</u>						
King salmon season (6/8 - 6/23)	42,755	33,305	-	33,305	-	76,060
Fall or second season (6/25 - 8/18)	8,069	277,226	83,881	361,107	2,660	371,836
Total 334-20	<u>50,824</u>	<u>310,531</u>	<u>83,881</u>	<u>394,412</u>	<u>2,660</u>	<u>447,896</u>
<u>334-30</u>						
King salmon season (6/12 - 6/18)	3,896	166	-	166	-	4,062
Fall or second season (6/30 - 8/20)	1,344	44,405	13,519	57,924	-	59,628
Total 334-30	<u>5,240</u>	<u>44,571</u>	<u>13,519</u>	<u>58,090</u>	<u>-</u>	<u>63,000</u>
Total Lower Yukon	143,853	746,126	204,229	950,355	7,488	1,101,696
<u>334-40</u>						
King salmon season (6/15 - 7/29)	1,517	272,339	0	272,339	0	273,856
Fall season (8/17 - 9/16)	4	0	32,031	32,031	27	32,062
Total 334-40	<u>1,521</u>	<u>272,339</u>	<u>32,031</u>	<u>304,370</u>	<u>27</u>	<u>305,918</u>
<u>334-50</u>						
King salmon season (6/17 - 7/17)	5,338	459	0	459	0	5,797
Fall season (8/19 - 8/31)	0	0	42,343	42,343	0	42,343
Total 334-50	<u>5,338</u>	<u>459</u>	<u>42,343</u>	<u>42,802</u>	<u>0</u>	<u>48,140</u>
<u>334-60</u>						
King salmon season (6/27 - 8/13)	2,076	38,837	0	38,837	0	40,913
Fall season (9/12 - 9/17)	0	0	19,520	19,520	1,226	20,746
Total 334-60	<u>2,076</u>	<u>38,837</u>	<u>19,520</u>	<u>58,357</u>	<u>1,226</u>	<u>61,659</u>
Total Upper Yukon	8,935	311,635	93,894	405,529	1,253	415,717
GRAND TOTAL YUKON AREA	152,788	1,057,761	298,123	1,355,884	8,741	1,517,413

Table 5. Yukon area commercial salmon catches by statistical area, 1980.

Statistical Area	1/ King Salmon Season		2/ Fall Season			King	Total Chum	Coho
	King	Chum	King	Chum	Coho			
334-11	444	132	12	3,150	29	456	3,282	29
12	11,496	24,945	1,200	56,959	1,647	12,696	81,904	1,647
13	2,794	3,284	368	13,699	206	3,162	16,983	206
14	9,009	9,078	862	36,681	181	9,871	45,759	181
15	27,410	14,678	3,072	72,798	322	30,482	87,476	322
16	9,169	2,428	3,192	96,046	721	12,361	98,474	721
17	10,600	4,873	2,460	105,533	1,423	13,060	110,406	1,423
18	4,853	3,153	848	50,416	299	5,701	53,569	299
Subtotal 334-10	75,775	62,571	12,014	435,282	4,828	87,789	497,853	4,828
334-21	9,835	8,123	1,753	73,484	530	11,588	81,607	530
22	10,475	13,227	3,320	144,621	1,217	13,795	157,848	1,217
23	6,411	5,303	1,741	70,833	791	8,152	76,136	791
24	7,832	3,156	743	43,726	83	8,575	46,882	83
25	8,202	3,496	512	28,443	39	8,714	31,939	39
Subtotal 334-20	42,755	33,305	8,069	361,107	2,660	50,824	394,412	2,660
334-31	2,207	105	596	23,156	0	2,803	23,261	0
32	1,689	61	748	34,768	0	2,437	34,829	0
Subtotal 334-30	3,896	166	1,344	57,924	0	5,240	58,090	0
Total Lower Yukon	122,426	96,042	21,427	854,313	7,488	143,853	950,355	7,488
334-41	352	229,450	0	0	0	352	229,450	0
42	534	38,923	4	17,135	0	538	56,058	0
43	631	3,966	0	14,896	27	631	18,862	27
Subtotal 334-40	1,517	272,339	4	32,031	27	1,521	304,370	27
334-51	4,940	459	0	40,304	0	4,940	40,763	0
52	398	0	0	2,039	0	398	2,039	0
Subtotal 334-50	5,338	459	0	42,343	0	5,338	42,802	0
334-61	92	5,109	0	6,347	423	92	11,456	423
62	1,651	29,365	0	11,198	632	1,651	40,563	632
63	333	4,363	0	1,975	171	333	6,338	171
Subtotal 334-60	2,076	38,837	0	19,520	1,226	2,076	58,357	1,226
Total Upper Yukon	8,931	311,635	4	93,894	1,253	8,935	405,529	1,253
Grand Total Yukon Area	131,357	407,677	21,431	948,207	8,741	152,788	1,355,884	8,741

1/ King Salmon Season

334-10 6/9-6/24
 334-20 6/8-6/23
 334-30 6/12-6/18
 334-40 6/15-7/29
 334-50 6/17-7/17
 334-60 6/27-8/13

2/ Fall Season

334-10 6/26-8/19
 334-20 6/25-8/18
 334-30 6/30-8/20
 334-40 8/17-9/16
 334-50 8/19-8/31
 334-60 9/12-9/17

Table 6 . Yukon Area Commercial Fisheries Entry Commission permits issued by residence, 1980.

District	Residence	Gillnet Permits 1/	Fishwheel Permits 1/
334-10, 334-20 and 334-30	Mountain Village	103	
	Emmonak	100	
	Alakanuk	89	
	Kotlik	78	
	St. Marys	63	
	Marshall	47	
	Pilot Station	41	
	Scammon Bay	40	
	Sheldon's Point	26	
	Russian Mission	20	
	Unalakleet	14	
	Holy Cross	11	
	Anchorage	10	
	Pitkas Point	7	
	Stebbins	7	
	Bethel	4	
	Wasilla	4	
	Shaktoolik	3	
	Everett, WA	2	
	Hooper Bay	2	
	Chugiak	1	
	Chuloonawick	1	
	College	1	
	Delta Junction	1	
	Eagle River	1	
	Fairbanks	1	
	Nome	1	
Palmer	1		
Paxson	1		
Puyallup, WA	1		
Rock Hill, S.C.	1		
Sitka	1		
Spenard	1		
St. Michael	1		
Tuntutulak	1		
Total Lower Yukon		686	
334-40	Anvik	5	5
	Grayling	2	10
	Kaltag	5	9
	Nulato	0	16
	Koyukuk	0	3
	Galena	8	22
	Ruby	5	13
	Nenana	2	2
	Flat	1	0
	Fairbanks	1	0
Anchorage	1	1	
Subtotal		30	81
334-50	Tanana	10	19
	Rampart	6	7
	Stevens Village	2	2
	Circle	2	2
	Ft. Yukon	0	1
	Eagle	1	0
	Anchorage	1	0
	Fairbanks	9	7
	Nenana	3	2
	Tok	1	1
Mahley	1		
Subtotal		36	41

Table 6 . Yukon Area Commercial Fisheries Entry Commission permits issued by residence, 1980. (continued)

District	Residence	Gillnet Permits ^{1/}	Fishwheel Permits ^{1/}
334-60	Manley	1	5
	Nenana	3	21
	Fairbanks	6	14
	North Pole	0	1
	Minto	0	1
	Kenai	1	0
	Healy	1	0
Subtotal		12	42
Totals Upper Yukon		78	164
Grand Total Yukon Area		764	164

^{1/} Does not include transfers

Table 7. Commercial salmon catches from district 344-10, Yukon area, drift and set gill nets combined, 1980.

Date of Landing	Hours Fished	No. of Boats	Total catch (catch/boat hr.)			Cumulative catch (cum. catch/boat hr.)		
			King	Coho	Chum	King	Coho	Chum
6/9	6		1,744		508	1,744		508
6/10	18		5,072		1,730	6,816 (1.01)		2,238 (0.33)
	24	281	6,816 (1.01)		2,236 (0.33)			
6/12	6		3,401		2,426	10,217		4,664
6/13	24		14,271		13,276	24,488		17,940
6/14	6		6,098		4,531	30,587 (1.51)		22,471 (1.11)
	36	375	23,771 (1.76)		20,233 (1.50)			
6/16	6		4,506		1,688	35,093		24,159
6/17	18		10,116		8,472	45,209 (1.59)		32,631 (1.15)
	24	338	14,622 (1.81)		10,160 (1.25)			
6/19	6		5,805		3,914	51,014		36,545
6/20	24		14,171		13,609	65,185		50,154
6/21	6		6,185		9,092	71,370 (1.74)		59,246 (1.44)
	36	349	26,161 (2.08)		26,615 (2.12)			
6/23	6		2,065		948	73,435		60,194
6/24	12		2,422		2,377	75,857 (1.67)		62,571 (1.38)
	18	248	4,487 (1.01)		3,325 (0.74)			
Subtotal 1/	138	407	75,857 (1.67)		62,571 (1.38)			
6/26	6		984		8,227	984		8,227
6/27	18		2,016		25,998	3,000 (0.41)		34,225 (4.74)
	24	301	3,000 (0.41)		34,225 (4.74)			
6/30	6		1,206		13,357	4,206		47,582
7/1	18		2,372		30,858	6,578 (.51)		78,440 (6.04)
	24	240	3,578 (0.62)		44,215 (7.68)			
7/2	6		522		26,810	7,100		105,250
7/3	24		2,498		100,354	9,598		205,604
7/4	6		221		11,628	9,819 (.40)		217,232 (8.76)
	36	328	3,241 (0.27)		138,792 (11.75)			
7/7	6		181		5,859	10,000		223,091
7/8	18		657		19,983	10,657 (.35)		243,074 (8.08)
	24	218	838 (0.16)		25,842 (4.94)			
7/10	6		44		2,643	10,701		245,717
7/11	24		463		41,420	11,164		287,137
7/12	6		187		22,810	11,351 (.29)		309,947 (8.05)
	36	236	634 (0.08)		66,873 (7.87)			
7/14	6		67		3,893	11,418		313,640
7/15	18		322	9	14,613	11,740 (.25)	9 (+)	328,453 (7.45)
	24	231	389 (0.07)	9 (+)	18,506 (3.34)			
7/17	6		6		554	11,746		329,007
7/18	18		125	6	3,643	11,871 (.24)	15 (+)	332,650 (7.11)
	24	113	131 (0.04)	6 (+)	4,197 (1.55)			
7/21	6		9		2,834	11,880		335,484
7/22	18		36	5	3,810	11,916 (.23)	20 (+)	339,294 (6.84)
	24	116	45 (0.01)	5 (+)	6,644 (2.39)			
7/24	6		3	2	2,003	11,919	22 (+)	341,297
7/25	18		37	-	8,398	11,956 (.21)		349,695 (6.52)
	24	168	40 (0.01)	2 (+)	10,401 (2.58)			
7/28	6		6	-	5,467	11,962		355,162
7/29	6		14	2	5,837	11,976 (.20)	24 (+)	364,999 (6.52)
	12	201	20 (0.01)	2 (+)	15,304 (6.34)			
7/31	12	83	8 (0.01)	13 (+)	1,364 (1.36)	11,984 (.20)	37 (+)	366,363 (6.43)
8/4	12	85	5 (+)	9 (0.01)	6,231 (6.10)	11,999 (.20)	46 (+)	372,594 (6.42)
8/7	12	139	14 (+)	98 (0.04)	13,423 (6.25)	12,003 (.20)	144 (0.01)	385,017 (6.44)
8/11	12	129	2 (+)	184 (0.21)	5,202 (3.36)	12,005 (.19)	328 (0.01)	391,219 (6.36)
8/14	12	95	3 (+)	473 (0.41)	1,799 (1.57)	12,008 (.19)	801 (0.03)	393,018 (6.28)
8/18	6			1,067	12,489		1,868	405,507
8/19	18		6	2,960	29,775	12,014 (.18)	4,828 (0.16)	435,282 (6.37)
	24	236	6 (+)	4,027 (0.71)	42,264 (7.46)			
Subtotal 2/	336	395	12,014 (0.18)	4,828 (0.16)	435,282 (6.37)			
Grand Total	474	432	87,871	4,828	497,853			

1/ King salmon season (6/9-6/24)

2/ Fall season (6/26 - 8/19)

Table 8. Commercial salmon catches from district 344-20, Yukon area, drift and set gill nets combined, 1980.

Date of Landing	Hours Fished	No. of Boats	Total catch (catch/boat hr.)			Cumulative catch (cum. catch/boat hr.)		
			King	Coho	Chum	King	Coho	Chum
6/8	6		1,605		47	1,605		47
6/9	6		2,347		228	3,952 (2.12)		275 (0.15)
	12	155	3,952 (2.12)		275 (0.15)			
6/11	6		3,336		220	7,288		495
6/12	18		4,448		297	11,736 (1.85)		792 (0.15)
	24	187	7,784 (1.73)		517 (0.16)			
6/15	6		3,662		1,957	15,398		2,749
6/16	18		7,249		7,157	22,647 (2.05)		9,906 (0.91)
	24	201	10,911 (2.26)		9,114 (1.89)			
6/18	6		1,971		1,657	24,618		11,563
6/19	24		3,963		4,269	28,581		15,832
6/20	6		2,136		1,892	30,717 (1.73)		17,724 (1.00)
	36	184	8,070 (1.21)		7,818 (1.18)			
6/22	6		5,447		7,050	36,164		24,774
6/23	6		6,591		8,531	42,755 (2.12)		33,305 (1.65)
	12	210	12,038 (4.78)		15,581 (6.18)			
Subtotal 1/	108	229	42,755 (2.12)		33,305 (1.65)			
6/25	6		790		20,282	790		20,282
6/26	18		1,479		29,453	2,269 (0.52)		49,735 (11.57)
	24	179	2,269 (0.52)		49,735 (11.57)			
6/29	6		601		12,644	2,870		62,379
6/30	18		1,516		41,958	4,386 (0.53)		104,337 (12.60)
	24	166	2,117 (0.53)		54,602 (13.71)			
7/2	6		321		10,297	4,707		114,634
7/3	24		1,097		28,299	5,804		142,933
7/4	6		386		10,453	6,190 (0.44)		153,386 (10.96)
	36	158	1,804 (0.31)		49,049 (8.62)			
7/6	6		309		12,793	6,499		166,179
7/7	18		511		32,304	7,010 (0.41)		198,483 (11.58)
	24	132	820 (0.26)		45,097 (14.24)			
7/9	6		141		8,026	7,151		206,509
7/10	24		421		19,676	7,572		226,185
7/11	6		100		4,759	7,672 (0.34)		230,944 (10.36)
	36	144	662 (0.12)		32,461 (6.26)			
7/13	6		36		7,242	7,708		238,186
7/14	18		167		30,243	7,875 (0.31)		268,429 (10.44)
	24	140	203 (0.06)		37,485 (11.15)			
7/16	6		31		3,933	7,906		272,362
7/17	18		65		4,864	7,971 (0.29)		277,226 (9.94)
	24	91	96 (0.04)		8,797 (4.02)			
7/20	6		5		702	7,976		277,928
7/21	18		17		8,112	7,993 (0.27)		286,040 (9.73)
	24	64	22 (0.01)		8,814 (5.74)			
7/23	6		3		1,918	7,996		287,958
7/24	18		27		5,103	8,023 (0.26)		293,061 (9.43)
	24	69	30 (0.02)		7,021 (4.24)			
7/27	6		5		3,266	8,028		296,327
7/28	6		7		9,665	8,035 (0.25)		305,992 (9.39)
	12	129	12 (0.01)		12,931 (8.35)			
7/30	12	140	12 (0.01)		13,904 (8.30)	8,047 (0.23)		319,896 (9.33)
8/3	12	54	5 (0.01)	1 (+)	1,380 (2.12)	8,052 (0.23)	1 (+)	321,276 (9.21)
8/6	12	95	5 (+)	2 (+)	5,671 (4.97)	8,057 (0.22)	3 (+)	326,947 (9.06)
8/10	12	139	5 (+)	32 (0.02)	16,892 (10.12)	8,062 (0.21)	35 (0.01)	343,839 (9.12)
8/13	12	137	3 (+)	332 (0.20)	11,554 (7.02)	8,065 (0.20)	367 (0.07)	355,393 (9.02)
8/17	6		1		902	8,066	709	356,295
8/18	18		3	342	4,812	8,069 (0.19)	2,660 (0.31)	361,107 (8.45)
	24	140	4 (+)	1,951 (0.68)	5,714 (1.70)			
Subtotal 2/	336	232	8,069 (0.19)	2,660 (0.31)	361,107 (8.45)			
Grand Total	444	247	50,824	2,660	394,412			

1/ King salmon season (6/8-6/23)

2/ Fall season (6/25-8/18)

Table 9. Commercial salmon catches from district 334-30, Yukon area, drift and set gill nets combined, 1980.

Date of Landing	Hours Fished	No. of Boats	Total catch (catch/boat hour)			Cumulative catch (cum. catch/boat hr.)		
			King	Coho	Chum	King	Coho	Chum
6/12	6							
6/13	24		999		48	999		48
6/14	6		245		2	1,244(1.81)		50(.07)
	<u>36</u>	19	1,244(1.81)		50(.07)			
6/16	6		107			1,351		
6/17	24		1,041		21	2,392		71
6/18	6		1,504		95	3,896(2.85)		166(.12)
	<u>36</u>	19	2,652(3.87)		116(.16)			
Subtotal ^{1/}	72	21	3,896(2.85)		166(.12)			
6/30	6							
7/1	24		58		1,846	58		1,846
7/2	6		203		1,359	261(.60)		3,205(7.42)
	<u>36</u>	12	261(.60)		3,205(7.42)			
7/3	6							
7/4	24		121		1,722	382		4,927
7/5	6		446		8,801	828(.79)		13,728(13.20)
	<u>36</u>	17	567(.93)		10,523(17.19)			
7/7	6							
7/8	24		151		7,143	979		20,871
7/9	6		87		5,651	1,066(.62)		26,522(15.98)
	<u>36</u>	17	238(.39)		12,794(20.90)			
7/10	6		32		2,764	1,098		29,286
7/11	24		127		8,692	1,225		37,978
7/12	6		24		1,376	1,249(.54)		39,354(17.08)
	<u>36</u>	18	183(.28)		12,832(19.80)			
7/14	6		27		1,647	1,276		41,001
7/15	24		33		2,320	1,309(.47)		43,321(15.43)
7/16	6							
	<u>36</u>	14	60(.11)		3,967(9.87)			
7/17	6							
7/18	24		13		1,084	1,322(.43)		44,405(14.51)
7/19	6							
	<u>36</u>	7	13(.05)		1,084(4.30)			
7/21	6							
7/22	24		17		180	1,339(.40)		44,585(13.46)
7/23	6							
	<u>36</u>	7	17(.06)		180(.71)			
7/31	6		3		1,037	1,342(.38)		45,622(12.93)
8/1	18							
	<u>24</u>	9	3(.01)		1,037(4.80)			
8/4	6		1		856	1,343(.35)		46,478
8/5	18				815			47,293(12.47)
	<u>24</u>	11	1(+)		1,671(6.33)			
8/7	6				147			47,440
8/8	18		1		526	1,344(.32)		47,966(11.56)
	<u>24</u>	15	1(+)		673(1.86)			
8/11	6				787			48,753
8/12	18				1,565			50,318(11.03)
	<u>24</u>	17			2,352(5.76)			
8/14	6				380			50,698
8/15	18				5,599			56,297(11.17)
	<u>24</u>	20			5,979(6.79)			
8/18	6				566			56,863
8/19	24				587			57,450
8/20	6				474			57,924(10.25)
	<u>36</u>	17			1,627(2.66)			
Subtotal ^{2/}	408	23	1,344(.32)		57,924(10.25)			
Grand Total	480	27	5,240		58,090			

^{1/} King Salmon season (6/12-6/18)

^{2/} Fall season (6/30-8/20)

Table 10. Commercial salmon catches, district 334-40, Yukon area, set gillnet and fishwheel catches combined, 1980.

Period Ending	Fishermen	King	Chum	Coho
6/17	1	5		-
6/24	7	18	838	-
6/27	38	206	16,565	-
7/1	59	390	32,392	-
7/4	60	253	44,965	-
7/8	60	166	34,550	-
7/11	68	202	43,640	-
7/15	67	172	45,119	-
7/18	70	67	40,003	-
7/22	49	6	11,724	-
7/25	14	7	2,508	-
7/29	1	25	35	-
Subtotal <u>1/</u>	79	1,517	272,339	0
8/19	17	0	1,538	0
8/22	19	0	2,475	0
8/26	24	0	5,377	1
8/29	19	0	3,418	0
9/2	18	3	3,766	9
9/5	26	1	4,669	17
9/9	16	0	3,918	0
9/12	19	0	3,733	0
9/16	10	0	3,137	0
Subtotal <u>2/</u>	33	4	32,031	27
TOTAL	88	1,521	304,370	27

1/ King season 6/15-7/29

2/ Fall season 8/17-9/16

Table 11. Commercial salmon catches, district 334-50, Yukon area, set gillnet and fishwheel catches combined, 1980.

Period Ending	Fishermen	King	Chum	Coho
6/19	7	80	-	-
6/22	8	255	-	-
6/26	11	306	-	-
6/29	17	385	-	-
7/3	19	632	-	-
7/6	21	1,133	32	-
7/10	18	513	89	-
7/13	18	734	226	-
7/17	24	1,300	112	-
Subtotal <u>1/</u>	35	5,338	459	0
8/21	31	-	10,673	-
8/24	25	-	7,994	-
8/28	31	-	11,033	-
8/31	32	-	12,643	-
Subtotal <u>2/</u>	43	0	42,343	0
TOTAL	51	5,338	42,802	0

1/ King season 6/17-7/17

2/ Fall Season 8/19-8/31

Table 12. Commercial salmon catches, district 334-60, Yukon area, set gillnet and fishwheel catches combined, 1980.

Period Ending	Fishermen	King	Chum	Coho
6/29	1	2	0	
7/2	2	21	0	
7/6	2	16	2	
7/9	7	37	110	
7/13	13	260	830	
7/16	17	695	1,302	
7/20	19	556	2,205	
7/23	25	345	10,445	
7/27	27	134	14,136	
8/6	15	3	2,050	
8/10	19	7	4,378	
8/13	18	0	3,379	
Subtotal <u>1/</u>	33	2,076	38,837	
9/14	26	0	8,563	259
9/17	26	0	10,957	967
Subtotal <u>2/</u>	26	0	19,520	1,226
TOTAL	38	2,076	58,357	1,226

1/ King season 6/27-8/13

2/ Fall season 9/12-9/17

Table 13. Yukon River subsistence salmon catch data, 1980 (includes Canadian catch).^{1/}

Village	Survey Date	Fishing Families	Dogs ^{2/}	Snow Machines ^{2/}	Kings	Summer Chums ^{3/}	Fall Chums	Cohos	Subtotal Chums & Cohos	Total Salmon	Whitefish/Sheefish	8-1/2" Nets	6" Nets	Fishwheels
Sheldons Pt.	8/28	18	29	23	427	907	1,249	389	2,545	2,972	54/227	9	25	0
Alakanuk	8/29	59	142	95	1,595	3,343	1,227	521	5,091	6,686	207/207	13	43	0
Emmonak	8/30	59	147	91	1,175	4,915	2,016	789	7,720	8,895	30/105	18	61	0
Kotlik	8/26	40	165	67	472	6,807	2,941	109	9,857	10,329	45/187	12	45	0
Subtotal		176	483	276	3,669	15,972	7,433	1,806	25,213	28,882	336/726	52	174	0
Mt. Village	9/4	57	115	73	843	3,090	5,719	1,739	10,548	11,391	156/178	13	58	0
Pitkas Pt.	9/5	11	36	6	241	289	608	32	929	1,170	201/69	3	11	0
St. Marys	9/5	38	72	35	1,056	3,327	2,660	982	6,969	8,025	163/228	12	35	0
Pilot Station	9/6	38	81	40	433	2,545	1,187	1,510	5,242	5,675	497/436	11	35	0
Marshall	9/7	39	168	48	1,101	4,430	2,261	538	7,229	8,330	250/119	15	35	0
Subtotal		183	472	202	3,674	13,681	12,435	4,801	30,917	34,591	1,267/1,030	54	174	0
Russian Mission	9/8	19	71	27	1,660	628	226	26	880	2,540	0/40	18	13	0
Holy Cross	9/9	26	113	30	3,123	2,614	2,094	65	4,773	7,896	108/185	21	16	0
Subtotal		45	184	57	4,783	3,242	2,320	91	5,653	10,436	108/225	39	29	0
Lower Yukon Totals		404	1,139	535	12,126	32,895	22,188	6,700	61,783	73,909	1,711/1,981	145	377	0
Anvik	9/28	15	96	18	161	28,051	2,750	625	31,426	31,587	39/340	9	6	8
Grayling	9/13	22	251	24	3,664	29,894	1,904	510	32,308	35,972	88/60	5	11	12
Kaltag	10/80	19	239	22	694	53,470	2,111	1,758	57,339	58,033	2,956/614	6	8	13
Nulato	10/80	24	151	30	2,297	29,657	1,134	271	31,062	33,359	843/96	14	14	8
Koyukuk	10/80	15	164	19	699	14,416	2,319	710	17,445	18,144	1,084/276	5	12	2

Table 13. Yukon River subsistence salmon catch data, 1980 (includes Canadian catch).^{1/} (cont.)

Village	Survey Date	Fishing Families	Dogs ^{2/}	Snow Machines ^{2/}	Kings	Simmer ^{3/} Chums	Fall Chums	Conos	Subtotal Chums & Conos	Total Salmon	Whitefish/Sheefish	6-1/2" Nets	6" Nets	Fishwheels
Galena	10/80	34	199	51	1,205	13,102	2,652	945	16,699	17,904	3,818/130	17	19	12
Ruby	10/80	20	227	20	1,736	15,084	4,557	1,376	21,017	22,753	4,896/205	6	5	15
Subtotal		149	1,327	184	10,456	183,674	17,427	6,195	207,296	217,752	13,724/1,721	52	75	70
Tanana	10/8	38	549	30	5,711	5,109	32,834	318	38,261	43,972	25,190/1,062	35	19	25
Rampart	10/9	10	99	6	1,169	109	5,977	15	6,101	7,270	2,143/110	9	2	4
Fbks. Fishcamp ^{4/}	5/ ^{5/}	42 ^{6/}	--	--	1,350	1,227	6,488	36	7,751	9,101	5,813/313	31	31	7
Stevens Village	10/23	18	103	13	2,612	520	3,233	181	3,934	6,546	525/30	8	6	4
Beaver	10/17	6	26	3	506	263	190	5	458	964	56/20	4	4	0
Ft. Yukon	10/15	37	296	20	2,527	1,291	6,537	0	7,828	10,355	2,736/112	22	10	21
Circle	10/15	6	35	6	769	48	1,737	2	1,785	2,554	21/17	3	0	2
Eagle	10/16	54	270	54	2,830	27	16,740	6	16,773	19,653	916/263	47	31	5
Subtotal		211	1,378	132	17,524	8,594	73,736	561	82,891	100,415	37,400/1,927	159	103	68
Main River Totals		764	3,844	851	40,106	225,163	113,351	13,456	351,970	392,076	52,835/5,629	366	555	138
Huslia	11/80	16	178	26	154	15,063	1,104	633	16,800	16,954	855/347	3	15	0
Hughes	10/80	11	130	13	226	10,545	2,265	645	13,455	13,681	10,082/359	0	11	0
Alatna	10/80	1	0	1	20	300	50	20	370	390	30/6	0	1	0
Allakaket	10/80	22	132	21	197	9,134	2,829	241	12,204	12,401	1,826/432	0	23	0
Koyukuk River Totals		50	440	61	597	35,042	6,248	1,539	42,829	43,426	12,793/1,144	3	50	0
Shageluk ^{5/}		4	--	--	35	2,485	0	0	2,485	2,520	260/59	--	--	--
Innoko River Totals		4	--	--	35	2,485	0	0	2,485	2,520	260/59	--	--	--

Table 13. Yukon River subsistence salmon catch data, 1980 (includes Canadian) catch.^{1/} (cont.)

Village	Survey Date	Fishing Families	Dogs ^{2/}	Snow Machines ^{2/}	Kings	Summer ^{3/} Chums	Fall Chums	Cohos	Subtotal Chums & Cohos	Total Salmon	Whitefish/Sheefish	8-1/2" Nets	6" Nets	Fishwheels
Venetie	10/17	6	75	5	160	0	2,730	--	2,730	2,890	210/3	3	6	2
Chandalar River Totals		6	75	5	160	0	2,730	2	2,730	2,890	210/3	3	6	2
Manley	10/7	11	207	2	410	564	7,653	1,454	9,671	10,081	504/13	5	6	5
Minto	10/6	12	206	1	354	450	9,500	180	10,130	10,484	354/27	2	4	12
Nenana	10/3	30	491	23	771	4,945	29,742	2,862	37,549	38,320	1,570/117	6	16	29
Fairbanks ^{7/}	5/	254 ^{8/}	N/A	N/A	291	3,749	3,433	667	7,849	8,140	171/17	N/A	N/A	9
Tanana River Totals		307	904	26	1,826	9,703	50,328	5,163	65,199	67,025	2,599/174	11	26	55
Subtotals														
Upper Yukon (Alaska)		727	4,124	408	30,598	239,503	150,469	13,458	403,430	434,028	66,986/5,028	238	260	195
Yukon Territory Totals ^{9/}														
Old Crow		--	--	--	2,000	--	6,000	1,500	7,500	9,500	--	--	--	--
Porcupine River Totals		--	--	--	2,000	--	6,000	1,500	7,500	9,500	--	--	--	--
Dawson		--	--	--	13,500	--	7,000	--	7,000	20,500	--	--	--	--
Yukon Territory Totals		--	--	--	15,500	--	13,000	1,500	14,500	30,000	--	--	--	--
Grand Total Yukon River Drainage		1,131	5,263	943	58,224	272,398	185,657	21,658	479,713	537,937	68,697/7,009	333	637	195

^{1/} Catch data expanded.

^{2/} Data from fishing families only.

^{3/} Includes small numbers of pinks in districts 1-3.

^{4/} Data from fishermen who fished between Hess Creek and Dall River.

^{5/} Survey conducted by mail, November-January.

^{6/} 70 permits issued: 54 to Fairbanks-area residents (42 of whom fished, 8 did not fish, 4 did not report); 16 permits issued to residents of Stevens Village and Rampart--their catches included under those villages.

^{7/} Data from fishermen who fished in the Tanana River between Wood River and the Salcha River.

^{8/} 315 permits issued: 254 fishermen fished, 49 did not fish, 12 did not report.

^{9/} Data from Environment Canada Fisheries Service (Whitehorse)

Table 14. Aerial survey salmon escapement estimates, ^{1/} Yukon River drainage, 1980.

Stream (Drainage)	Date	Survey Rating	Kings	Cohos	Summer Chums	Fall Chums	Pinks
<u>Andreafsky River</u>							
West Fork	7/23	Fair	1,500	-	114,759	-	123,545
East Fork	7/23	Poor	958	-	36,823	-	14,650
			<u>2,458</u>	<u>-</u>	<u>151,582</u>	<u>-</u>	<u>138,195</u>
<u>Anvik River Drainage</u>							
Above Sonar Site	7/24	Fair	1,323	-	(327,095)	-	-
Sonar Count 2/	6/27-7/25		-	-	482,181	-	-
Below Sonar Site	7/24	Fair	7	-	10,495	-	-
			<u>1,330</u>	<u>-</u>	<u>492,676</u>	<u>-</u>	<u>-</u>
<u>Nulato River (main stem)</u>							
North Fork	7/29	Poor	6	-	2,280	-	-
South Fork	7/29	Poor	948	-	8,964	-	-
			<u>369</u>	<u>-</u>	<u>3,702</u>	<u>-</u>	<u>-</u>
			<u>1,323</u>	<u>-</u>	<u>14,946</u>	<u>-</u>	<u>-</u>
<u>Koyukuk River Drainage</u>							
Gisasa River	7/30	Fair	951	-	10,388	-	-
Kateel River	7/30	Good	-	-	6	-	-
Dakli River	7/30	Good	1	-	3,388	-	-
Wheeler Creek	7/30	Good	2	-	6,160	-	-
			<u>3</u>	<u>-</u>	<u>9,548</u>	<u>-</u>	<u>-</u>
<u>Hogatza River</u>							
Clear Creek	7/18	Good	-	-	12,375	-	-
Caribou Creek	7/18	Good	-	-	7,411	-	-
			<u>-</u>	<u>-</u>	<u>19,786</u>	<u>-</u>	<u>-</u>
<u>Indian River</u>							
South Fork-Koyukuk R.	7/18	Fair	38	-	4,420	-	-
Jim R. 3/4/7/	7/23-26	Fair	33	-	-	-	-
			57	-	279	-	-
			<u>128</u>	<u>-</u>	<u>4,732</u>	<u>-</u>	<u>-</u>
Total Koyukuk R. Drainage			1,082	-	44,460	-	-
<u>Melozitna River Drainage</u>							
Fox Creek	7/17	Fair	-	-	73	-	-
Melozitna Hot Springs Cr.	7/29		11	-	6,272	-	-
			<u>11</u>	<u>-</u>	<u>6,345</u>	<u>-</u>	<u>-</u>
<u>Tozitna River</u>	7/17	Good	257	-	580	-	-
<u>Tanana River Drainage</u>							
<u>Toklat River</u>							
Upper Mainstem	10/24	Fair	-	-	-	11,459	-
Lower Mainstem	10/24	Fair	-	-	-	2,140	-
Shushana Cr.	10/24	Fair	-	-	-	9,605	-
Geiger Cr.	10/24	Fair	-	12	-	1,990	-
Subtotal			<u>-</u>	<u>12</u>	<u>-</u>	<u>25,194</u>	<u>-</u>
<u>Nenana River</u>							
Lost Slough	10/24	Poor	-	499	-	-	-
Seventeen Mile Slough	10/24	Fair	-	592	-	-	-
			<u>-</u>	<u>1,091</u>	<u>-</u>	<u>-</u>	<u>-</u>
Chatanika River	8/11	Fair	37	-	648	-	-
Chena River	7/21	Good	2,541	-	338	-	-
Salcha River	7/23 & 8/11	Fair	6,757	-	4,140	-	-

Table 14. Aerial survey salmon escapement estimates, ^{1/} Yukon River drainage, 1980. (Cont)

Stream (Drainage)	Date	Survey Rating	Kings	Cohos	Summer Chums	Fall Chums	Pinks
<u>Upper Tanana R. Drainage</u>							
Benchmark #735							
Slough 4/	11/19	Good	-	-	-	1,900	-
Richardson Clearwater	10/10	Good	-	611	-	-	-
Billy Cr. Slough	11/10	Fair	-	-	-	13	-
Delta River	10/30	Fair	-	-	-	4,637	-
Tanana R. (bridge to Island)	10/30	Fair	-	-	-	3,444	-
Bluff Cabin Sl.	10/30	Fair	-	99	-	3,190	-
Clearwater Lk. 3/ 5/ and outlet	10/28	Good	-	1,545	-	-	-
One Mile Slough	10/30	Poor	-	-	-	885	-
Delta Clearwater R. 3/ 5/	10/27	Fair	-	3,946	-	321	-
Subtotal Upper Tanana River			-	6,201	-	14,390	-
Total Tanana River Drainage			9,335	7,304	5,126	39,584	-
Chandalar River	10/2	Good	-	-	-	2,988	-
<u>Porcupine River Drainage</u>							
Sheenjok River	10/2	Fair	-	-	-	13,027	-
Fishing Branch R. (Y.T)	10/13	Poor	-	-	-	20,319	-
			-	-	-	33,346	-
<u>Yukon Territory Streams</u>							
Nisutlin River	8/13-15	Good-Fair	1,849	-	-	-	-
Wolf River	8/13	Good	482	-	28	-	-
Big Salmon R.	8/15	Good	1,568	-	-	-	-
Little Salmon R.	8/15	Poor	286	-	-	-	-
Tatchun Cr. 4/6/	8/30		222	-	-	-	-
Whitehorse							
Fishway 6/	7/22-9/3		1,383	-	-	-	-
Morley River 6/	8/22		265	-	-	-	-
Swift River 6/	8/22		420	-	-	-	-
Teslin River 5/	8/28		700	-	-	-	-
Takhini River 3/	8/30		173	-	-	-	-
Ibex River 6/	8/20		10	-	-	-	-
Michie Creek 6/	8/21		(536)	-	-	-	-
MacNaughton Cr. 6/	8/22		29	-	-	-	-
Smart River 6/	8/22		52	-	-	-	-
Donjek River 4/6/	10/25		-	-	-	100	-
Kluane R. 4/6/	10/25		-	-	-	2,750	-
Koidern R. 6/	10/25		-	-	-	27	-
Subtotal			7,439	-	28	2,877	-
TOTAL YUKON RIVER DRAINAGE			23,235	7,304	715,743	78,474	138,195

- 1/ Only peak estimates listed, carcasses included (data in parenthesis not included in subtotals).
2/ Side scan sonar estimate.
3/ Boat survey.
4/ Foot survey.
5/ Survey by Sport Fish Division.
6/ Survey by Environment Canada - Fisheries Service (Whitehorse).
7/ Survey by BLM.

Appendix Table 1. Yukon River drainage commercial and subsistence salmon catches, 1903-1980.

YEAR	Commercial Catch												Subsistence Catch						Total Utilization											
	Alaska				Yukon Territory				Total				Alaska		Yukon Territory		Totals		Alaska		Yukon Territory		Totals							
	KING	COHO	CHUM	TOTAL	KING	CHUM	TOTAL	KING	COHO	CHUM	TOTAL	KING	OTHER SALMON	TOTAL	KING	OTHER SALMON	TOTAL	KING	OTHER SALMON	TOTAL	KING	OTHER SALMON	TOTAL	KING	OTHER SALMON	TOTAL				
1903							4,666 ^{5/}																			4,666		4,666		
1904																														
1905																														
1906																														
1907																														
1908							7,000																					7,000		
1909							9,238																					9,238		
1910																														
1911																														
1912							12,133																					12,133		
1913							12,573																					12,573		
1914							10,466																					10,466		
1915							9,566																					9,566		
1916																														
1917																														
1918	12,239	26,144	73,921	112,304			7,066	12,239	26,144	73,921	119,370		1,400,000	1,400,000															1,400,000	
1919	104,822	37,070	327,898	469,790			1,800	104,822	37,070	327,898	471,590		269,000	269,000															269,000	
1920	58,467		155,655	214,122			12,000	58,467		155,655	226,122	20,000	860,000	880,000															880,000	
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	15,000	330,000	345,000																
1923	13,393			13,393			1,833	13,393			15,226	17,500	435,000	452,500																
1924	27,375			27,375			4,560	27,375			31,935		1,130,000	1,130,000																
1925							3,900				3,900	15,000	259,000	274,000																
1926							4,373				4,373	20,500	555,000	575,500																
1927							5,366				5,366		520,000	520,000																
1928							5,733				5,733		670,000	670,000																
1929							5,266				5,266		537,000	537,000																
1930							3,660				3,660		633,000	633,000																
1931							3,473				3,473	26,693	565,000	591,693																
1932	4,739			4,739			4,200	4,739			8,939	23,160	1,092,000	1,115,160																
1933	8,829			8,829			3,333	8,829			12,162	19,950	603,000	622,950																
1934	25,365			25,365			2,000	25,365			27,365		474,000	474,000																
1935	7,265			7,265			3,466	7,265			10,731	20,400	537,000	557,400																
1936	20,963			20,963			3,400	20,963			24,363	22,750	560,000	582,750																
1937	6,226			6,226			3,746	6,226			9,972		5,528	346,000	351,528															
1938	13,727			13,727			860	13,727			14,587	19,244	340,450	359,694																
1939	9,987			9,987			720	9,987			10,707	18,050	327,650	345,700																
1940	18,053			18,053			1,153	18,053			19,206	14,400	1,029,999	1,043,400																
1941	29,905			29,905			2,806	29,905			32,711	17,703	438,000	455,703																
1942	22,487			22,487			713	22,487			23,200		197,000	197,000																
1943	27,650			27,650			609	27,650			28,259		200,000	200,000																
1944	14,232			14,232			986	14,232			15,218																			
1945	19,727			19,727			1,333	19,727			21,060																			
1946	22,782			22,782			353	22,782			23,135																			
1947	54,026			54,026			120	54,026			54,146																			
1948	33,842			33,842				33,842			33,842																			
1949	36,379			36,379				36,379			36,379																			
1950	41,808			41,808				41,808			41,808																			
1951 ^{3/}	56,278			56,278				56,278			56,278																			
1952	38,637	10,868		49,505			10,868	38,637			49,505																			
1953	58,859			58,859			5,977	58,859			64,836		380,000	380,000																
1954	64,545			64,545			14,375	64,545			78,920																			
1955	55,925			55,925				55,925			55,925																			
1956	62,208			62,208			10,742	62,208			72,951																			
1957	63,623			63,623				63,623			63,623																			
1958	63,375			63,375	3,000	1,500	4,500 ^{2/}	66,735			68,235	11,890	337,500	349,390	8,000															
1959	78,370			78,370	2,477	1,098	3,575	80,847			81,945																			
1960 ^{5/}	67,597			67,597	4,085	5,493	9,578	71,682			77,175																			
1961	120,260	2,855	42,577 ^{5/}	165,692	3,446	3,278	6,724	123,706	2,855	45,885	172,416	21,488	407,089	428,577	10,376	8,000	19,890	337,500	357,390	75,625	337,500	413,125	11,000	1,500	12,500	86,625	339,000	425,625		
1962	94,734	22,926	53,160 ^{5/}	170,820	4,037	936	4,973																							

Appendix Table 2. Commercial salmon catches by species and districts, Yukon area, 1960-1980.

KING SALMON									
Year	Lower Yukon Area				Upper Yukon Area				Totals
	334-10	334-20	334-30	Subtotals	334-40	334-50	334-60	Subtotals	
1960	50,713	15,994	-	66,707	-	-	-	884	67,591
1961	84,463	29,028	4,965	118,456	-	-	-	1,804	120,260
1962	67,099	22,224	4,687	94,010	-	-	-	724	94,734
1963	85,004	24,211	6,976	116,191	-	-	-	803	116,994
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	20,289	3,618	128,257	-	-	-	1,449	129,706
1968	79,465	21,392	4,543	105,400	-	-	-	1,126	106,526
1969	70,862	14,799	3,577	89,238	-	-	-	985	90,223
1970	57,681	17,210	3,712	78,603	-	-	-	1,666	80,269
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	71,680	17,947	3,471	93,098	685	2,663	1,473	4,821	97,919
1975	44,585	11,187	4,207	59,979	389	2,372	500	3,761	63,740
1976	62,632	17,413	4,239	84,284	385	2,900	1,102	4,387	88,671
1977	69,456	16,781	3,943	90,180	959	4,267	1,008	6,234	96,414
1978	57,890	32,335	2,917	93,142	701	3,115	644	4,460	97,602
1979	76,269	41,357	5,108	122,734	1,969	3,520	833	6,322	129,056
1980	87,769	50,824	5,240	143,853	1,521	5,338	2,076	8,935	152,788

COHO SALMON									
Year	Lower Yukon Area				Upper Yukon Area				Totals
	334-10	334-20	334-30	Subtotals	334-40	334-50	334-60	Subtotals	
1960	-	-	-	-	-	-	-	-	-
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	14,041	-	845	14,886	-	-	-	95	14,981
1970	12,245	-	-	12,245	-	-	-	-	12,245
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	13,728	176	-	13,904	-	909	1,427	2,336	16,240
1975	2,288	-	-	2,288	-	5	53	58	2,346
1976	4,084	17	-	4,101	-	-	1,096	1,096	5,197
1977	30,588	5,312	521	36,421	-	-	1,600	1,600	38,021
1978	16,262	5,835	758	22,855	32	7	3,066	3,105	25,960
1979	11,244	2,920	-	14,164	155	-	2,791	2,946	17,110
1980	4,828	2,660	-	7,488	-	27	1,226	1,253	8,741

Appendix Table 2. Commercial salmon catches by species and districts, Yukon area 1960-1980 (continued).

CHUM SALMON									
Year	Lower Yukon Area				Upper Yukon Area				Totals
	334-10	334-20	334-30	Subtotals	334-40	334-50	334-60	Subtotals	
1960	-	-	-	-	-	-	-	-	-
1961	42,577 ^{1/}	-	-	42,577	-	-	-	-	42,577
1962	53,160 ^{1/}	-	-	53,160	-	-	-	-	53,160
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	46,148	1,425	1,880	49,453	-	-	-	-	49,453
1968	62,852 ^{1/}	1,407	3,136	67,395	-	-	-	-	67,395
1969	184,411	5,024	1,722	191,157	-	-	-	703	191,860
1970	320,138	22,394	3,285	346,357	-	-	-	907	346,724
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	395,431 ^{1/}	109,138 ^{1/}	463	505,032	-	-	-	13,003	518,035
1974	541,863	127,644	2,273	771,580	37,079	30,382	40,202	107,663	879,243
1975	576,607	150,259	5,590	732,456	178,720	40,209	33,474	252,403	984,859
1976	382,216	120,959	14,504	517,679	213,019	6,247	24,564	243,830	761,509
1977	385,972	159,051	19,310	564,333	183,932	26,801	22,595	233,328	797,661
1978	523,557	277,086	38,728	839,371	375,617	25,907	47,934	449,458	1,288,829
1979	491,475	270,979	69,395	831,849	222,653	57,282	54,196	334,131	1,165,980
1980	497,853	394,412	58,090	950,355	304,370	42,802	58,357	405,529	1,355,884

TOTAL SALMON									
Year	Lower Yukon Area				Upper Yukon Area				Totals
	334-10	334-20	334-30	Subtotals	334-40	334-50	334-60	Subtotals	
1960	50,713	15,994	-	66,707	-	-	-	884	67,591
1961	129,895	29,028	4,965	163,888	-	-	-	1,804	165,692
1962	143,185	22,224	4,687	170,096	-	-	-	724	170,820
1963	90,576	24,211	6,976	121,763	-	-	-	803	122,566
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	160,423	21,714	6,620	188,757	-	-	-	1,449	190,206
1968	155,470	22,799	7,829	186,098	-	-	-	1,126	187,224
1969	269,314	19,823	6,144	295,281	-	-	-	1,783	297,064
1970	390,064	39,604	6,997	436,665	-	-	-	2,573	439,238
1971	380,668	25,338	3,540	409,546	-	-	-	2,848	412,394
1972	342,702	52,166	5,681	400,549	-	-	-	2,368	402,917
1973	487,272 ^{1/}	124,778 ^{1/}	3,667	615,717	-	-	-	14,312	630,029
1974	727,071	145,767	5,774	878,612	37,764	33,954	43,102	114,820	993,432
1975	623,480	161,446	9,797	794,723	179,109	43,086	34,027	256,222	1,050,945
1976	448,932	138,389	18,743	606,064	213,404	9,147	26,762	249,313	855,377
1977	486,016	181,144	23,744	690,934	184,891	31,066	25,202	241,162	932,096
1978	597,709	315,256	42,403	955,368	376,350	29,029	51,644	457,023	1,412,391
1979	578,988	315,256	74,503	968,747	224,777	60,802	57,820	343,399	1,312,146
1980	590,470	447,896	63,330	1,101,696	306,918	40,140	61,659	415,717	1,517,413

^{1/} Includes small numbers of pink or red salmon.

Appendix Table 3 . Commercial Fisheries Entry Commission (C.F.E.C.) permits issued by gear type, Yukon area, 1976-1980.

Year	Number of <u>GILL NET</u> Permits ^{5/}		Total
	Lower Yukon ^{1/ 2/}	Upper Yukon ^{3/ 4/}	
1976	678	118	796
1977	691	66	757
1978	694	68	762
1979	700	64	764
1980	686	78	764

Year	Number of <u>FISHWHEEL</u> Permits ^{5/}
	Upper Yukon ^{4/}
1976	169
1977	161
1978	161
1979	166
1980	164

1/ Information obtained from Commercial Fisheries Entry Commission Annual Reports.

2/ Set or drift gillnet.

3/ Set gillnet only.

4/ Includes Interim-use permits.

5/ Does not include transfers.

Appendix Table 4. Actual number of commercial salmon fishing vessels by district, Yukon area, 1971-1980. 1/

KING SALMON SEASON									
Year	Lower Yukon Area				Upper Yukon Area				Total
	334-10	334-20	334-30	Subtotals	334-40	334-50	334-60	Subtotals	
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

FALL SEASON									
Year	Lower Yukon Area				Upper Yukon Area				Total
	334-10	334-20	334-30	Subtotals	334-40	334-50	334-60	Subtotals	
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

COMBINED SEASONS									
Year	Lower Yukon Area				Upper Yukon Area				Total
	334-10	334-20	334-30	Subtotals	334-40	334-50	334-60	Subtotals	
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

1/ Actual number of fishing vessels refer to those boats which made at least one delivery. Data presented shows the number of vessels that operated in each subdistrict. Some individual fishing vessels in the lower Yukon area may have operated in more than one subdistrict during the year.

Appendix Table 5 . Commercial king salmon catches by statistical area, Lower Yukon area, 1971-1980.

District 334-10

	<u>334-11</u>	<u>334-12</u>	<u>334-13</u>	<u>334-14</u>	<u>334-15</u>	<u>334-16</u>	<u>334-17</u>	<u>334-18</u>	<u>Total</u>
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	3,644	1,374	276	7,184	2,409	56,981
1974	3,093	29,082	7,062	3,982	13,003	2,084	6,811	5,950	71,067
1975	7,275	15,712	8,698	308	1,744	606	7,144	3,710	45,197
1976	8,343	28,117	7,575	852	5,081	1,444	6,156	5,064	62,632
1977	11,167	16,968	8,174	915	15,533	1,550	7,084	8,065	69,456
1978	1,154	12,175	4,128	4,372	20,797	3,628	7,422	4,214	57,890
1979	970	13,541	4,052	5,992	13,144	10,897	19,287	8,386	76,269
1980	456	12,696	3,162	9,871	30,482	12,361	13,060	5,701	87,789

District 334-20

	<u>334-21</u>	<u>334-22</u>	<u>334-23</u>	<u>334-24</u>	<u>334-25</u>	<u>Total</u>
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	6,270	5,032	2,612	3,673	-	17,587
1975	2,413	3,029	1,787	2,595	-	9,824
1976	5,111	4,511	3,056	4,735	-	17,413
1977	6,580	4,623	2,113	3,465	-	16,781
1978	8,868	7,690	5,086	8,439	2,252	32,335
1979	10,810	10,904	6,733	7,673	5,237	41,357
1980	11,588	13,795	8,152	8,575	8,714	50,824

District 334-30

	<u>334-31</u>	<u>334-32</u>	<u>Total</u>
1971	1,352	2,138	3,490
1972	1,783	2,058	3,841
1973	2,264	940	3,204
1974	1,196	2,217	3,413
1975	2,761	1,416	4,177
1976	1,827	2,412	4,239
1977	1,741	2,202	3,943
1978	747	2,170	2,917
1979	2,111	2,997	5,108
1980	2,803	2,437	5,240

Appendix Table 6 . Commercial king salmon catches by statistical area, Upper Yukon area, 1974-1980.

District 334-40

	<u>334-41</u>	<u>334-42</u>	<u>334-43</u>	<u>Total</u>
1974	-	679	-	679
1975	15	374	-	389
1976	32	353	-	385
1977	305	654	-	959
1978	276	425	-	701
1979	791	344	834	1,969
1980	352	538	631	1,521

District 334-50

	<u>334-51</u>	<u>334-52</u>	<u>334-53</u>	<u>334-54</u>	<u>Total</u>
1974	2,282	379	-	-	2,661
1975	2,602	263	-	-	2,865
1976	2,593	307	-	-	2,900
1977	3,984	283	-	-	4,267
1978	2,874	241	-	-	3,115
1979	3,455	65	-	-	3,520
1980	4,940	398	-	-	5,338

District 334-60

	<u>334-61</u>	<u>334-62</u>	<u>334-63</u>	<u>Total</u>
1974	141	1,103	251	1,495
1975	77	130	253	460
1976	503	295	304	1,102
1977	477	365	166	1,008
1978	38	62	544	644
1979	101	362	370	833
1980	92	1,651	333	2,076

Appendix Table 7. King salmon catches by statistical areas, district 334-10 of the Yukon area 1965-1980 1/

Statistical Area	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	
334-11 (Black River)	2,266	2,495	2,110	4,047	1,405	4,992	3,038	2,730	7,193	2,973	7,109	7,569	10,714	5,992	1,097	930	444
12 (South Mouth)	18,140	20,038	25,811	27,859	21,894	23,367	25,105	11,638	28,166	28,372	13,746	25,925	15,289	10,772	10,829	10,722	11,490
13 (Sunshine Bay)	8,137	5,400	6,203	7,997	9,635	5,258	7,135	3,435	4,302	6,863	3,167	6,574	7,623	2,619	3,760	3,039	2,794
14 (Kwiguk)	6,836	4,143	7,730	3,202	5,594	5,351	10,342	9,073	3,468	3,964	259	782	825	8,457	3,991	5,256	9,009
15 (Middle Mouth)	23,729	10,858	27,202	6,700	12,875	6,079	16,853	18,375	756	12,801	1,406	4,521	15,181	15,211	19,711	10,760	27,410
16 (North Mouth)	4,458	3,009	4,729	919	3,833	849	3,924	5,276	40	1,930	506	1,348	1,544	13,117	3,387	8,129	9,169
17 (Head of Passes)	16,114	12,898	18,583	17,378	9,930	4,890	12,037	13,059	6,683	6,674	6,760	5,086	6,736	17,915	6,590	15,784	10,600
18 (Fish Village)	9,588	11,882	11,967	11,363	5,422	6,716	5,963	4,473	2,182	5,880	3,597	4,587	7,833	10,109	3,833	7,170	4,853
334-10 Total	89,268	70,783	104,335	79,465	70,588	57,502	84,397	68,059	52,790	69,457	41,550	56,392	65,745	87,695	53,198	61,790	75,775

1/ Catch data only for king salmon season (June and early July).

Appendix Table 8. Comparative commercial catches of king and summer chum salmon by mesh size, lower Yukon area, 1961-1980.

	<u>No Mesh Size Restrictions</u> ^{1/}		<u>5-1/2 - 6 inch Mesh Size</u> ^{2/}	
	<u>Districts 334-10, 334-20 & 334-30</u>		<u>Districts 334-10, 334-20 & 334-30</u>	
	<u>Kings</u>	<u>Summer Chums</u>	<u>Kings</u>	<u>Summer Chums</u>
1961	118,399	-	-	-
1962	93,983	-	-	-
1963	116,191	-	-	-
1964	92,506	-	-	-
1965	116,235	-	-	-
1966	91,322	-	-	-
1967	128,242	10,976	-	-
1968	105,385	14,470	-	-
1969	88,964	41,418	97	19,151
1970	78,424	104,705	119	32,663
1971	107,113	42,239	1,176	57,851
1972	89,217	79,225	2,254	56,443
(Average 1961-72)	(102,165)	(48,839)	(912)	(41,527)
1973 ^{3/}	68,473	89,304	5,168	196,540
1974	90,334	351,363	1,631	227,507
1975	54,791	148,919	4,247	376,557
1976	75,758	275,986	7,563	123,457
1977	85,011	161,368	4,907	227,038
1978	84,727	278,259	8,010	374,741
1979	98,210	137,083	24,153	477,518
1980	122,508	96,042	21,164	654,281
(Average 1973-80)	(84,977)	(192,291)	(9,605)	(332,205)

^{1/} Primarily 8-8-1/2 inch mesh size used during early June - early July.

^{2/} Catch through July 15-19, relatively few kings and summer chums taken after these dates.

^{3/} Six inch maximum size regulation beginning late June-early July became effective in districts 334-10 and 334-20.

Appendix Table 9. Comparative commercial king salmon catch data, Yukon area, 1960-1980 ^{1/}

	Year	334-10	334-20	Sub-total (10+20)	334-30
Commercial Catch	1960	50,713	15,994	66,707	
	1961	84,406	29,028	113,434	4,965
	1962	67,072	22,224	89,296	4,687
	1963	85,004	24,211	109,215	6,976
	1964	67,555	20,246	87,801	4,705
	1965	89,268	23,763	113,031	3,204
	1966	70,783	16,927	87,710	3,612
	1967	104,335	20,289	124,624	3,618
	1968	79,465	21,392	100,857	4,543
	1969	70,588	14,799	85,387	3,577
	1970	57,502	17,210	74,712	3,712
	1971	84,397	19,226	103,623	3,490
	1972	68,059	17,317	85,376	3,841
	1973	52,790	12,479	65,269	3,204
	1974	69,457	17,464	86,921	3,413
	1975	41,550	9,064	50,614	4,177
	1976	56,392	15,296	71,688	4,070
	1977	65,745	15,328	81,073	3,938
	1978	53,198	28,872	82,070	2,657
	1979	61,790	33,347	95,137	3,073
	1980	75,857	42,755	118,612	3,896

	Year	334-10	334-20	Sub-total (10+20)	334-30
Boat Hours (Catch per boat hour)	1960	40,848 (1.24)	34,914 (0.46)	75,762 (0.88)	
	1961	79,224 (1.07)	29,118 (1.00)	108,342 (1.05)	2,808 (1.77)
	1962	84,792 (0.79)	38,118 (0.58)	122,910 (0.73)	2,520 (1.86)
	1963	72,288 (1.18)	27,672 (0.87)	99,960 (1.09)	5,616 (1.24)
	1964	56,736 (1.19)	22,398 (0.91)	79,134 (1.11)	4,596 (1.02)
	1965	78,096 (1.14)	31,008 (0.77)	109,104 (1.04)	2,286 (1.40)
	1966	69,894 (1.01)	22,380 (0.76)	92,274 (0.95)	1,782 (1.23) ^{2/}
	1967	102,456 (1.02)	37,488 (0.54)	139,944 (0.89)	4,050 (0.89)
	1968	92,450 (0.86)	32,280 (0.66)	124,730 (0.81)	3,745 (1.21)
	1969	84,864 (0.83)	27,828 (0.53)	112,692 (0.76)	3,577 (0.72)
	1970	61,260 (0.94)	20,460 (0.84)	81,720 (0.91)	3,566 (1.04)
	1971	73,272 (1.15)	19,956 (0.96)	93,228 (1.11)	4,790 (0.73)
	1972	79,236 (0.86)	19,872 (0.87)	99,108 (0.86)	5,916 (0.65)
	1973	75,036 (0.70)	23,496 (0.53)	98,532 (0.66)	7,292 (0.44)
	1974	86,256 (0.80)	29,808 (0.50)	116,064 (0.75)	7,032 (0.49)
	1975	49,944 (0.83)	8,376 (1.08)	58,320 (0.87)	3,552 (1.18)
	1976	64,572 (0.37)	23,484 (0.65)	88,150 (0.81)	4,392 (0.92)
	1977	42,618 (1.54)	15,180 (1.01)	57,798 (1.40)	3,636 (1.08)
	1978	57,528 (0.92)	25,524 (1.13)	83,052 (0.99)	1,872 (1.42)
	1979	53,040 (1.17)	23,904 (1.39)	76,944 (1.24)	1,464 (2.10)
	1980	45,348 (1.67)	20,196 (2.12)	65,544 (1.81)	1,368 (2.85)

^{1/} 334-10 and 334-20 data are only for the king salmon season (June & early July).
^{2/} Catch per vessel hour does not include 1,421 king salmon captured by an unknown number of fishermen.

Appendix Table 10. Comparative king salmon commercial catch data by date, king salmon season, district 334-10, Yukon area, 1961-80.

Date	Cumulative catch ^{1/} (Cumulative catch /boat hour) ^{2/}																			
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
6/1																				
6/2							4.4(0.41)													
6/3																				
6/4									3.8(0.42)											
6/5			0.7(0.26)					0.1(0.05)												
6/6																				
6/7							21.3(0.85)						0.3(0.15)							
6/8	3.6(0.32)		4.7(0.45)					1.4(0.18)												
6/9					0.6(0.17)															
6/10							37.9(0.98)													
6/11						0.6(0.16)				0.5(0.16)										
6/12			16.9(0.87)		4.1(0.31)			11.3(0.62)	26.8(0.75)											
6/13																				
6/14		8.0(0.57)																		
6/15	46.6(1.61)		34.3(1.14)			4.8(0.38)		25.7(0.76)	41.7(0.79)											
6/16					19.3(0.85)															
6/17				0.2(0.11)			66.5(0.99)			8.4(0.48)										
6/18						23.1(0.86)			47.9(0.75)			4.5(0.24)								
6/19			50.3(1.27)		42.7(1.22)			31.8(0.89)			5.1(0.30)									
6/20				9.5(0.88)					58.3(0.82)	32.7(1.07)										
6/21		27.5(0.76)					83.4(1.02)													
6/22	66.6(1.42)		56.8(1.13)			40.9(1.00)		56.7(0.90)				21.5(0.68)								
6/23					69.1(1.47)					18.2(0.61)										
6/24				37.0(1.80)			98.0(1.02)		66.3(0.85)	39.3(0.97)		37.8(0.77)								
6/25						54.4(1.06)														
6/26			72.0(1.23)		77.2(1.32)			70.3(0.94)		50.2(1.07)	40.7(0.88)									
6/27				48.5(1.54)			104.3(1.02)													
6/28		62.3(0.95)				66.7(1.08)			70.6(0.83)				52.8(0.70)							
6/29	79.0(1.23)		83.1(1.22)		81.0(1.18)			77.9(0.90)				53.2(0.86)								
6/30											75.3(1.29)				69.5(0.80)					
7/1				55.3(1.38)						55.8(0.99)					41.6(0.83)		42.1(0.76)			
7/2						70.8(1.01)						68.1(0.86)				56.4(0.87)		65.7(1.54)		
7/3			85.0(1.18)		89.3(1.14)			79.5(0.86)		57.5(0.94)	84.4(1.15)									
7/4				65.3(1.32)																
7/5		67.1(0.79)																		
7/6	84.4(1.07)																			
7/7																				
7/8				67.6(1.19)																

^{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 at least one delivery during any day of the period.

Appendix Table 11. Commercial salmon catches taken under quotas or guideline harvest level ranges, Yukon area, 1974-1980.

District	Lower Yukon Area		KING SALMON ^{1/}		
	334-10 and 334-20	334-30	334-40	334-50	334-60
1974	-	3,413 (3,000)	679 (1,000)	2,661 (3,000)	1,458 (1,000)
1975	-	4,177 (3,000)	389 (1,000)	2,865 (3,000)	460 (1,000)
1976	-	4,070 (3,000)	385 (1,000)	2,900 (3,000)	1,102 (1,000)
1977	-	3,938 (3,000)	959 (1,000)	4,266 (3,000)	1,008 (1,000)
1978	-	2,657 (2,000)	701 (1,000)	3,115 (3,000)	1,644 (1,000)
1979 ^{2/}	-	3,073 (1,800- 2,200)	1,232 (900- 1,100)	3,520 (2,700- 3,300)	833 (900- 1,000)
1980	-	3,896 (1,800- 2,200)	1,517 (900- 1,100)	5,338 (2,700- 3,300)	2,076 (900- 1,100)

District	Lower Yukon Area ^{3/}		FALL CHUM AND COHO SALMON ^{1/}		
	334-10, 334-20 and 334-30		334-40 ^{5/}	334-50	334-60
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 ^{2/}	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)

^{1/} Quotas or guideline harvest level shown in parenthesis.

^{2/} Beginning in 1979, quotas were replaced by guideline harvest level ranges.

^{3/} Chum salmon only; coho salmon catch not applied toward quotas or G.H.L.

^{4/} Chum and coho salmon combined; mostly fall chums.

^{5/} Beginning in 1978 quota or guideline harvest levels in effect for subdistrict 334-42 only. Subdistrict 334-41 closed August 1.

Appendix Table 12. Commercial chum salmon catches by statistical area, Lower Yukon area, 1971-1980.

District 334-10

	<u>334-11</u>	<u>334-12</u>	<u>334-13</u>	<u>334-14</u>	<u>334-15</u>	<u>334-16</u>	<u>334-17</u>	<u>334-18</u>	<u>Total</u>
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	18,607	61,970	6,413	52,770	22,706	395,427
1974	38,272	326,731	127,228	20,878	49,982	5,014	36,232	36,715	641,052
1975	33,095	254,300	103,573	12,773	46,113	5,779	99,728	28,354	583,715
1976	26,336	205,416	52,460	9,417	28,423	4,227	32,024	23,913	382,216
1977	34,145	184,735	53,722	9,660	43,344	1,033	40,579	18,754	385,972
1978	5,108	195,699	67,397	57,320	79,827	5,742	75,436	37,028	523,557
1979	1,539	118,868	39,014	43,503	94,089	47,900	97,804	48,758	491,475
1980	3,282	81,904	16,983	45,759	87,476	98,474	110,406	53,569	497,853

District 334-20

	<u>334-21</u>	<u>334-22</u>	<u>334-23</u>	<u>334-24</u>	<u>334-25</u>	<u>Total</u>
1971	2,255	3,144	286	427	-	6,112
1972	3,091	22,746	250	7,718	-	33,805
1973	22,207	56,528	6,181	24,125	-	109,041
1974	38,273	51,108	11,187	25,253	-	125,821
1975	20,887	99,651	11,028	20,044	-	151,610
1976	22,027	58,693	18,237	22,002	-	120,959
1977	26,488	76,320	23,664	32,579	-	159,051
1978	48,090	131,141	31,403	60,800	5,652	277,086
1979	75,813	86,886	30,565	33,321	44,394	270,979
1980	81,607	157,848	76,136	46,882	31,939	394,412

District 334-30

	<u>334-31</u>	<u>334-32</u>	<u>Total</u>
1971	26	24	50
1972	-	527	527
1973	-	463	463
1974	2,047	110	2,157
1975	-	5,590	5,590
1976	4,450	10,054	14,504
1977	12,877	6,433	19,310
1978	20,230	18,498	38,728
1979	26,807	42,588	69,395
1980	23,261	34,829	58,090

Appendix Table 13. Commercial chum salmon catches by statistical area, Upper Yukon area, 1974-1980. 1/

District 334-40

	<u>334-41</u>	<u>334-42</u>	<u>334-43</u>	<u>Total</u>
1974	1,200 (2/)	37,714 (2/)	-	38,914 (9.2)
1975	107,813 (2.1)	70,908 (11.4)	-	178,721 (13.5)
1976	178,708 (0.5)	34,311 (1.3)	-	213,019 (1.8)
1977	150,425 (1.7)	33,140 (12.3)	-	183,565 (14.0)
1978	309,484 (-)	66,133 (11.2)	-	375,617 (11.2)
1979	138,443 (-)	58,407 (28.6)	25,803 (21.8)	222,653 (50.4)
1980	229,450 (-)	56,058 (17.1)	18,862 (14.9)	304,370 (32.0)

District 334-50

	<u>334-51</u>	<u>334-52</u>	<u>334-53</u>	<u>334-54</u>	<u>Total</u>
1974	27,860 (2/)	153 (2/)	-	-	28,013 (23.6)
1975	40,334 (27.2)	10 (-)	-	-	40,344 (27.2)
1976	6,175 (5.4)	72 (-)	-	-	6,247 (5.4)
1977	26,848 (25.7)	0	-	-	26,848 (25.7)
1978	25,570 (20.7)	337 (.3)	-	-	25,907 (21.0)
1979	56,447 (55.8)	835 (.8)	-	-	57,282 (56.6)
1980	40,763 (40.3)	2,039 (2.0)	-	-	42,802 (42.3)

District 334-60

	<u>334-61</u>	<u>334-62</u>	<u>334-63</u>	<u>Total</u>
1974	-	-	-	41,411 (24.8)
1975	18,761 (13.3)	5,147 (2.8)	9,424 (2.6)	33,332 (18.7)
1976	9,337 (6.4)	9,178 (8.0)	6,049 (3.6)	24,564 (18.0)
1977	5,945 (3.6)	12,420 (11.1)	4,586 (3.9)	22,951 (18.6)
1978	6,742 (4.7)	35,927 (8.0)	5,265 (.5)	47,934 (13.2)
1979	7,736 (7.4)	36,271 (21.5)	9,863 (5.5)	54,196 (34.4)
1980	11,456 (6.3)	40,563 (11.2)	6,338 (2.0)	58,357 (19.5)

1/ Fall chum catch in thousands of fish shown in parenthesis.

2/ Information not available.

Appendix Table 15. Comparative commercial summer chum salmon catch data, districts 334-10 and 334-20, Yukon area, 1967-80.

Year	District 334-10					District 334-20				
	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	99,944	(4.75)
1976	6/14-7/14	12.0	90,658	272,493	(3.00)	6/20-7/16	11.0	32,624	99,407	(3.05)
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	395,610	(3.96)	6/8-7/14	13.5	44,376	218,196	(4.92)
1979	6/4-7/14	13.5	106,680	382,069	(3.57)	6/3-7/13	13.5	44,748	174,901	(3.91)
1980	6/9-7/15	12.8	89,412	391,024	(4.37)	6/8-7/17	12.5	48,060	310,531	(6.46)

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

Appendix Table 16. Comparative commercial coho and chum salmon catch data for the fall season, district 334-10, Yukon area, 1961-80.

Year	Dates	Days 1/ Fished	Boat Hours	Commercial catch (catch/boat hour)	
				Coho	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)
1969	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 (0.3)	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)

1/ One "day" is equivalent to 24 hours during open fishing period.

2/ Information not available.

Appendix Table 17. Comparative fall chum salmon commercial catch data by date, fall season, district 334-10, Yukon area, 1969-1980.

Date	Cumulative catch 1/ (Cumulative catch/boat hour)											
	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
7/18		16.1(1.86)			16.4(1.26)					6.3(1.70)		4.2(1.55)
7/19	3.8(1.10)			18.6(1.91)					21.4(3.72)			
7/20						12.1(1.57)					6.0(1.35)	
7/21			8.2(1.05)		53.6(2.03)			6.9(0.73)		11.4(1.36)		
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)					
7/24			31.9(1.71)			24.7(1.76)		9.7(0.60)			13.2(1.31)	
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)	
7/28			37.6(1.38)		112.8(2.28)			16.7(0.69)		67.0(3.34)		
7/29		81.6(2.95)		63.7(1.72)					40.8(2.16)			36.5(3.07)
7/30	57.0(3.24)						55.9(2.54)					
7/31			53.5(1.48)			86.9(3.16)		79.5(2.24)			37.7(1.62)	37.9(2.94)
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)			
8/3						91.8(2.86)					55.2(1.82)	
8/4			89.6(1.94)		127.9(1.84)			87.3(1.98)		81.8(2.89)		44.1(3.16)
8/5		159.4(3.67)		73.6(1.46)					44.9(1.76)			
8/6	94.2(3.45)						112.4(2.87)					
8/7			104.3(1.89)			93.0(2.73)		87.7(1.85)			93.0(2.44)	57.6(3.62)
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)			
8/10						94.7(2.57)						
8/11			110.2(1.74)		164.6(1.84)			88.4(1.69)		84.8(2.53)	94.3(2.27)	62.8(3.61)
8/12		189.9(3.47)		123.5(1.86)					96.4(2.76)			
8/13	112.5(3.21)						134.6(2.78)	91.0(1.65)				
8/14			148.3(2.07)			137.4(3.31)						
8/15		192.2(3.35)			170.7(1.77)					86.2(2.30)	101.4(2.14)	64.6(3.48)
8/16	120.7(3.18)			125.1(1.65)			158.2(3.04)		113.0(2.79)			
8/17												
8/18			153.2(1.95)		177.5(1.70)					96.4(2.29)		
8/19		209.1(3.45)		146.3(1.77)					120.0(2.65)			106.8(4.41)
8/20	130.4(3.18)											
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.

Appendix Table 18. Commercial salmon pack by species and type of processing, Yukon area, 1960-1980. ^{1/}

Year	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	8,369,156	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

^{1/} Pack represents type of processing when fish were stripped out of district.

^{2/} Information not available.

^{3/} Includes approximately 11,600 and 110,500 (round weight) of coho and chum salmon respectively, as salted fish for Japanese market.

Appendix Table 19. Dollar value estimates of Yukon area commercial fishery, 1961-1980. ^{1/}

Year	Gross value of catch to fishermen				Wages earned ^{2/}	Total income to area	Wholesale value of pack ^{3/}	Tax revenues to state ^{4/}
	King	Coho	Chum	Total				
1961	420,900	1,400	14,700	437,000			1,292,300	37,500
1962	330,300	11,500	20,100	361,900			1,275,250	50,400
1963	409,500	2,800	-	412,300			1,550,400	42,000
1964	351,000	1,200	2,200	354,400			1,203,800	35,000
1965	531,400	200	10,700	542,300			1,412,700	42,000
1966	419,900	9,600	25,000	454,500			1,308,100	37,000
1967	583,700	5,500	17,200	606,400	250,000	856,400	1,864,800	41,700
1968	494,300	6,700	34,000	535,000	264,000	799,000	1,655,200	47,000
1969	415,000	8,200	96,000	519,200	234,000	753,000	1,976,200	40,000
1970	401,300	10,300	211,500	623,100	185,800	808,900	2,113,100	45,000
1971	590,100	10,000	182,900	783,000	357,700	1,140,700	2,106,600	42,000
1972	547,800	20,400	215,800	784,000	445,400	1,229,400	2,405,200	45,300
1973	561,400	46,500	609,100	1,217,000	585,800	1,802,900	4,453,900	62,800
1974	881,300	28,400	1,011,300	1,921,000	500,100	2,421,100	6,035,900	84,100
1975	589,000	3,500	1,201,400	1,793,900	596,600	2,390,500	4,939,700	87,100
1976	983,500	8,600	1,158,900	2,151,000	687,600	2,838,600	6,815,500	96,900
1977	1,928,400	143,000	1,997,300	4,068,700	850,000	4,918,700	10,499,400	151,000
1978	2,133,700	79,200	3,101,800	5,314,700	1,085,700	6,400,400	14,194,800	179,400
1979	3,008,000	84,400	4,527,100	7,619,500	1,210,000	8,829,500	19,048,800	248,600
1980	3,639,300	21,800	2,676,800	6,703,100 ^{5/}	1,475,000	8,178,100	16,757,700	205,400

^{1/} Information not available for wages earned during 1961-1966.

^{2/} Includes wages paid to tender boat operators and resident processing plant employees in district.

^{3/} Based on type of processing when fish were shipped out of the district.

^{4/} Processors tax and vessel and crewmember licenses fees. Does not include CFEC permit fee.

^{5/} Includes \$365,200 in roe sales Upper Yukon area. 85

Appendix Table 20. Estimated average prices paid to fishermen, Yukon area, 1961-1980. 1/

PRICE PER FISH								
Lower Yukon Area					Upper Yukon Area			
Date	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	.50				
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

PRICE PER POUND								
Lower Yukon Area					Upper Yukon Area			
Date	King	Summer Chum	Fall Chum	Coho	King	Summer Chum	Fall Chum	Coho
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
1975	.42	.20	.20	.21	.92	.17	.14	.17
1976	.51	.24	.24	.27	.74	.19	.16	.19
1977	.85	.40	.45	.50	1.37	.27	.22	.27
1978	.90	.45	.47	.60	.87	.24	.25	.24
1979	1.09	.52	.68	.80	1.00	.25	.29	.25
1980	1.04	.20	.28	.36	.85	.23	.27	.29

1/ Information not available for some species.

Appendix Table 21. Average weights and numbers of salmon per case, Yukon area, 1962-1980. ^{1/}

<u>Year</u>	<u>Mean round weight in pounds</u> ^{2/ 4/}			<u>Mean no. of fish/case</u> ^{3/}		
	<u>King</u>	<u>Coho</u>	<u>Chum</u>	<u>King</u>	<u>Coho</u>	<u>Chum</u>
1962				3.2	13.3	10.5
1963						
1964	22.6		8.0	3.4		
1965	23.0		6.6	3.3		
1966	23.0		6.9	3.5		
1967	24.0	7.3	7.0	3.2		
1968	26.5		8.3	3.3		11.0
1969	23.9	6.7	6.5	3.4	10.0	12.0
1970	22.3	7.1	6.7	3.7	10.6	11.7
1971	22.6	6.9	6.4	3.3	10.3	12.4
1972	24.6	7.1	6.8	3.2	10.1	11.8
1973	24.5	7.1	7.4	3.1	10.5	10.8
1974	23.4	7.1	6.7	3.4	10.5	11.7
1975	22.0	7.2	6.8	3.8	10.4	11.6
1976	21.7	6.8	6.8			
1977	23.3	7.7	7.2			
1978	23.8	7.1	7.1			
1979	20.7	7.2	7.2			
1980	21.2	6.4	6.5			

- ^{1/} Information is not available for some species.
^{2/} Based on age-length-weight samples or fish ticket entries.
^{3/} Standard 48 lb. case.
^{4/} Prior to 1974 only lower Yukon area data available.

Appendix Table 23. Comparative Yukon River king salmon subsistence catches by village, 1961-1980.

Village	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Mouth to Anuk River																				
Sheldons Point	180	116 ^{1/}	921 ^{1/}	52	49	127	755	30	728	1,093	882	462	165	283	108	122	302	546	91	427
Alakanuk	165	53	81	87	177	263	287	205	852	589	1,116	647	461	569	130	363	213	1,125	893	1,595
Emmonak-Kwiguk	137	21	120	63	145	160	541	42	810	151	627	300	1,071	208	55	398	62	2,738	1,362	1,175
Aproka Pass & vicinity	179	181	293	73	281	645	959	147	238	23	42	37	106	5	0	-	-	64	-	-
Kotlik-Hamilton	111	35	195	53	131	47	162	53	551	394	328	342	1,008	394	204	472	173	773	533	472
Subtotal	772	406	1,610	328	783	1,242	2,704	477	3,179	2,250	2,995	1,788	2,811	1,459	497	1,355	750	5,246	2,879	3,669
Anuk River to Owl Slough																				
Mountain Village	1,110	619	2,427	985	510	217	1,345	238	557	348	2,036	932	912	460	394	397	172	817	1,025	843
Pitkas Point - St. Marys	1,810	391	1,254	521	826	499	993	168	737	575	1,915	1,517	1,270	878	438	1,273	576	1,314	1,718	1,297
Pilot Station	753	219	801	237	502	440	1,534	784	367	647	1,400	1,558	1,508	517	107	502	556	1,027	804	433
Marshall	1,265	503	2,012	290	942	350	306	365	564	598	985	713	1,163	1,068	436	694	364	806	721	1,101
Subtotal	4,938	1,732	6,494	2,093	2,780	1,506	4,178	1,555	2,225	2,168	6,336	4,720	4,853	2,923	1,375	2,866	1,668	3,964	4,268	3,674
Owl Slough to Bonasila R.																				
Russian Mission	1,563	641	1,392	1,185	1,393	800	2,019	2,170	707	993	839	975	1,387	1,243	2,098	1,328	639	1,498	1,476	1,660
Holy Cross	2,648	1,111	3,123	2,243	2,351	2,645	2,876	1,418	1,877	1,678	3,032	2,359	3,708	2,243	2,792	1,492	1,920	2,404	1,787	3,123
Subtotal	4,211	1,752	4,515	3,428	3,744	3,445	4,895	3,588	2,584	2,671	3,871	3,334	5,095	3,486	4,890	2,820	2,559	3,902	3,263	4,783
Bonasila R. to Illinois Cr.																				
Anvik	22	51	163 ^{2/}	153	118	144	54	114	71	67	152	72	67	111	83	84	67	180	261	161
Grayling	25 ^{2/}	37 ^{2/}	197 ^{2/}	124	246	85	199	208	187	155	416	185	516	547	100	117 ^{2/}	149	292	391	3,664
Kaltag	33	224	102	330	57	47	199	60	232	124	154	83	148	616	192	57	216	127	435	694
Nulato	513	171	835	355	305	218	578	209	771	734	470	364	307	1,161	1,119	968	1,531	1,354	1,245	2,297
Koyukuk	483	423	629	209	228	93	262	398	357	30	410	417	564	604	50	437	752	518	495	699
Galena	626	123	282	158	260	407	210	456	263	313	574	608	510	706	1,294	435	1,155	945	1,591	1,205
Ruby-Kokrines	1,060	226	1,514	2,555	1,843	887	820	881	1,619	1,313	2,465	2,076	2,418	2,899	912	1,959	735	1,539	2,221	1,736
Subtotal	2,762	1,255	3,722	3,884	3,057	1,881	2,322	2,326	3,500	2,736	4,641	3,805	4,530	6,644	3,750	4,057	4,605	4,955	6,639	10,456
Illinois Cr. to U.S. Can. Border																				
Tanana	2,379	332	1,414	329	524	421	151	627	683	361	428	1,461	965	789	80	1,338	858	1,851	1,604	5,711
Rampart	605	1,438	1,231	990	1,041	869	368	922	321	150	1,190	1,457	2,614 ^{3/}	452 ^{3/}	517	581	1,194	987	1,820	1,169
Stevens Village	650	831	1,073	325	910	620	534	787	350	851	750	1,002 ^{3/1/}	1,027 ^{3/}	590 ^{3/}	362	643 ^{1/}	1,252 ^{1/}	3,178	2,194 ^{1/}	3,962 ^{1/}
Beaver	185	442	491	710	480	31	210	495	458	773	777	241	358	34	168	188	299	558	394	506
Fort Yukon	2,958	1,822	2,831	2,098	2,747	1,074	692	632	75	1,019	706	520	536	1,030	215	1,158	1,061	2,642	1,922	2,527
Circle	496	393	250	1,200	-	-	-	-	-	-	666	345	225	406	15	528	304	212	1,175	769
Eagle	875	400	500	17	100	-	-	-	-	-	111	353	421	66	20	633	1,171	963	2,888	2,880
Subtotal	8,148	5,658	7,790	5,669	5,802	3,015	1,955	3,463	1,887	3,154	4,628	5,379	6,146	3,367	1,377	5,069	6,129	10,391	11,997	17,524
Innoko River																				
Shageluk																11	-	-	62	35
Holikachuk																				
Subtotal																				

LY = 9921 3890

7089 13,202 9842 12,759 7868

11 - - 62 35

Koyukuk River																				
Rusila	-	100	32	112	9	-	7	35	16	12	5	1	35	69	23	21	50	132	146	154
Hughes	-	-	47	18	-	-	65	82	10	116	378	27	32	10	25	155	72	216	180	226
Alatna	-	-	-	-	-	-	-	1	8	2	0	3	1	17	0	0	1	7	2	20
Allakaket	-	-	85	-	-	-	70	3	15	128	268	25	73	138	151	231	172	239	236	197
Subtotal	-	100	184	130	9	-	142	121	49	258	651	56	141	234	199	407	295	594	564	597
Tanana River																				
Minto-Mantley Hot Springs	347	92	325	468	276	146	-	12	76	138	7	99	58	176	213	326	752	298	269	764
Nenana	310	115	213	194	157	272	252	462	465	357	2,357	887	683	1,431	533	864	742	807	800	771
Fairbanks	-	-	-	-	-	-	-	-	-	132	98	190	26	38	32	31	67	126	264	291
Subtotal	657	207	538	662	433	418	252	474	501	627	2,462	1,176	767	1,645	778	1,221	1,561	1,231	1,333	1,826
Chandalar River																				
Yenatie	-	-	-	-	-	-	-	-	7	10	-	-	-	-	-	-	-	9	0	160
Subtotal	-	-	-	-	-	-	-	-	7	10	-	-	-	-	-	-	-	9	0	160
Porcupine River																				
Canyon Village	-	-	17	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chalkytsi & Kevinjik R. Fish Camp	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Old Crow, Y.T.	-	-	44	-	94	65	43	28	27	8	9	-	20	100	100	23	29	-	0	2,000
Subtotal	-	-	63	37	94	65	43	28	27	8	9	-	20	100	100	23	29	-	0	2,000
Yukon Territory Villages 5/																				
Dawson	2,231	2,000	1,500	3,476	351	50	50	100	-	40	-	-	-	-	-	500	531	421	1,200	13,500
Stewart River	-	-	-	-	-	-	-	100	-	30	-	100	99	-	-	-	-	-	-	-
Mayo-Stewart Crossing	-	300	250	150	400	100	30	-	-	-	250	-	25	233	-	-	61	105	-	-
Fraser Falls	-	-	-	-	-	-	-	-	-	-	-	-	25	-	-	-	-	-	-	-
Burwash-Kluane R.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fort Selkirk	-	-	-	-	100	125	400	200	22	11	-	-	45	-	-	-	-	-	-	-
Pelly	-	2,000 4/	2,000 4/	1,000	300	350	600	600	200	450	450	380	53	433	-	200	265	500	-	-
Faro	-	-	-	-	-	-	-	-	-	-	-	-	75	-	-	-	-	-	-	-
Ross River	-	500	600	-	500	120	150	200	-	120	-	35	75	30	-	-	-	-	-	-
Minto	-	-	-	600	170	350	-	100	-	-	-	15	261	-	-	-	-	-	-	-
Tatchun Creek	-	-	-	150	-	250	100	100	60	-	-	-	-	-	-	-	-	-	-	-
Carmacks	-	3,000	2,500	700	600	1,050	1,450	1,200	450	700	1,400	1,080	1,384	2,563	-	800	1,121	1,280	3,000	-
Lake Laberge-Whitehorse	-	-	-	-	-	-	-	-	-	20	180	-	-	-	-	-	-	-	-	-
Takhini	-	-	-	-	-	-	40	-	-	-	-	-	-	-	-	-	-	-	-	-
McClintock R.	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-
Carcross	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Teslin-Johnson's Crossing	-	1,000	900	720	450	300	200	200	175	605	80	-	54	20	-	-	800	600	-	-
Subtotal	10,376	10,500	7,750	6,646	3,021	2,635	3,170	2,872	973	2,092	2,791	1,647	2,096	3,279	2,900 6/	1,500	2,778	2,906	4,200	13,500
Total:	31,864	21,610	32,970	22,877	19,723	14,272	19,661	15,006	15,000	15,974	28,384	1,905	26,459	23,137	15,866	19,329	20,374	30,297	35,205	50,224

1/ Includes Black River catches. 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 subtotals. 6/ Catch by village not available.

7/ Includes catches made by Fairbanks permit holders who fished in Yukon River near bridge crossing.

Appendix Table 24. Comparative Yukon River chum salmon subsistence catches by village, 1961 - 1980 7/

Village	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Mouth to Anvik River																				
Sheldon's Point	12,683	10,899 1/	32,577 1/	8,701	10,884	3,007	2,757	8,693	5,573	4,238	4,355	4,355	3,554	2,720	6,247	2,033	1,327	3,420	2,177	2,545
Atakanuk	8,932	5,747	17,953	11,333	21,473	9,830	9,964	14,184	15,806	10,994	7,895	5,696	6,551	12,743	3,656	10,866	6,591	9,583	11,252	5,091
Emmonak-Kwiguk	15,670	9,074	27,749	16,954	47,386	11,824	15,314	16,569	12,836	7,265	5,087	4,828	10,135	7,388	5,336	8,397	7,501	9,826	12,634	7,720
Aproka Pass & Vicinity	8,409	6,071	8,915	7,712	20,129	10,741	7,910	4,853	4,048	565	559	344	580	1,460	229	231	25	473	-	-
Kotlik-Hamilton	3,931	5,362	9,942	4,076	4,728	3,003	7,251	1,709	6,391	4,878	4,682	3,976	7,639	6,098	6,578	10,289	7,152	9,127	9,053	9,857
Subtotal	49,805	37,153	97,136	48,776	104,600	38,405	43,196	46,008	44,654	27,940	22,578	18,398	27,625	33,936	17,258	31,816	22,596	32,429	35,116	25,213
Anvik River to Owl Slough																				
Mountain Village	7,373	8,331	10,106	13,593	11,475	7,548	8,305	7,312	10,676	4,865	8,214	5,909	7,524	11,661	6,720	8,278	11,368	6,920	13,304	10,548
Pitkas Point - St. Marys	8,771	10,510	7,001	12,508	14,130	8,460	9,790	9,166	11,566	14,604	13,533	11,072	9,201	14,478	8,644	12,060	12,347	10,097	12,275	7,898
Pilot Station	5,605	13,926	5,553	10,776	7,865	5,587	6,520	4,770	7,515	5,882	4,171	7,026	8,474	8,567	7,849	5,498	5,708	4,000	6,489	5,242
Marshall	5,992	6,595	8,023	10,125	6,631	3,640	3,070	3,530	6,606	4,910	6,154	5,174	4,934	6,763	5,710	3,938	2,896	2,562	7,002	7,229
Subtotal	27,741	39,362	30,683	47,002	40,101	25,235	27,685	24,778	36,383	30,261	32,072	29,181	30,133	41,469	28,923	29,774	32,319	23,579	39,070	30,917
Owl Slough to Bonasila R.																				
Russian Mission	4,098	9,994	5,354	10,069	4,888	2,707	4,897	3,836	3,668	3,114	2,378	2,919	2,459	4,740	4,113	2,407	2,262	1,256	1,927	880
Holy Cross	21,144	20,424	12,532	31,447	25,709	4,228	22,341	10,309	6,037	4,188	2,387	3,421	3,532	4,611	4,691	1,546	5,404	939	3,474	4,773
Subtotal	25,242	30,418	17,886	41,516	30,597	6,935	27,238	14,145	9,705	7,302	4,765	6,340	5,991	9,351	8,804	3,953	7,666	2,195	5,401	5,653
Bonasila R. to Illinois Cr.																				
Anvik	61,406	43,404 2/	28,064 2/	34,341 2/	37,179	14,239	20,793	10,020	8,925	9,924	8,121	3,689	20,850	29,261	30,924	26,660 2/	23,847	16,021	14,950	31,426
Grayling	56,284	32,737 2/	18,358 2/	23,784 2/	36,436	11,437	22,852	8,225	18,037	12,548	6,900	6,428	12,778	27,421	26,476	27,500 2/	17,102	18,824	20,630	32,308
Kaitag	23,395	25,824	23,193	35,961	29,382	21,729	27,028	12,090	9,942	12,465	10,662	4,285	23,135	14,920	11,699	13,106	16,588	19,291	31,424	57,339
Nulato	63,163	27,948	31,742	62,446	43,988	22,017	22,521	13,242	23,853	26,456	18,369	7,648	13,568	37,312	22,552	13,253	12,065	9,056	11,336	31,062
Koyukuk	13,544	6,282	7,966	36,167	11,232	7,443	4,613	3,541	3,359	3,789	3,125	1,772	1,964	14,978	5,667	2,440	3,946	5,268	10,133	17,445
Galena	10,585	1,673	6,731	3,100	2,741	8,296	2,650	1,079	2,422	3,179	2,015	1,353	4,612	8,307	11,500	13,435	5,527	11,945	6,815	16,699
Ruby-Kokrines	15,654	18,243	15,585	30,122	17,603	5,530	10,690	2,382	5,201	8,068	13,356	6,725	12,932	19,235	8,820	10,777	4,349	14,709	16,731	21,017
Subtotal	244,031	156,111	131,639	225,921	178,561	90,691	111,147	50,579	71,739	76,429	62,548	31,900	89,839	151,434	117,638	107,171	83,424	95,124	112,019	207,296
Illinois Cr. to U.S.-Canadian Border																				
Tanana	12,775	7,245	16,646	15,348	14,885	10,421	11,938	13,406	12,455	23,017	25,273	13,108	10,795	12,447	26,342	21,592	19,790	22,683	39,218	38,261
Rampart	11,722	6,962	11,209	14,963	13,462	4,056	15,763	2,636	8,935	5,252	11,435	3,674	8,986 3/	1,527 3/	8,117	14,175	10,056	2,771	25,010	6,101
Stevens Village	3,490	4,355	8,247	6,979	7,346	1,900	3,145	2,022	2,725	8,292	7,957	1,118 3/	6,078 3/	6,728 3/	2,297	1,170 9/	4,926 9/	16,460	12,413 9/	11,685
Beaver	2,975	2,334	12,119	11,359	3,274	4,135	4,292	3,619	1,965	2,378	1,870	3,157	1,372	1,583	1,270	517	716	1,717	1,826	458
Fort Yukon	13,252	10,255	31,219	19,407	19,402	3,960	8,983	6,564	3,338	6,354	3,498	1,597	3,074	142	19,458	1,143	13,630	21,580	22,266	7,828
Circle	992	800	100	2,300	-	-	-	-	-	-	2,940	752	592	1,266	1,283	153	203	859	3,541	1,785
Eagle	150	100	125	1,582	256	-	-	-	-	-	490	587	2,109	66	1,825	1,141	7,432	5,027	27,048	16,773
Subtotal	45,356	32,051	79,665	71,938	58,625	24,472	44,121	28,247	29,418	45,293	53,463	23,993	33,006	23,759	60,592	39,891	56,753	71,097	131,322	82,891
Innoko River																				
Shageluk	-	3,500	-	-	-	-	-	-	-	-	-	-	-	-	-	1,577	-	-	6,647	2,485
Holikachuk	-	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	-	3,600	-	-	-	-	-	-	-	-	-	-	-	-	-	1,577	-	-	6,647	2,485
Koyukuk River																				
Huslia	-	16,000	5,455	13,913	5,101	-	5,489	3,677	2,466	4,018	1,468	534	4,482	6,601	5,026	8,791	3,753	8,656	21,255	16,800
Hughes	-	-	767	559	-	-	5,837	2,237	3,112	6,367	16,902	2,777	2,541	8,786	5,429	4,280	4,856	6,555	12,865	13,455
Alatna	-	-	-	-	-	-	170	99	830	1,226	609	490	27	3,510	950	650	210	681	104	370
Allakaket	-	-	1,972	-	-	-	3,929	1,391	3,254	7,769	8,773	867	2,465	7,034	5,609	4,215	3,686	9,833	8,505	12,204
Subtotal	-	16,000	8,194	14,472	5,101	-	15,425	7,404	9,662	19,370	27,752	4,668	9,515	25,931	17,014	17,936	12,505	25,725	43,229	42,829

Appendix Table 24. Comparative Yukon River chum salmon subsistence catches by village, 1961 - 1980 (continued)

Village	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	
Tanana River																					
Minto-Marley Hot Springs	6,486	17,228	15,493	17,628	11,358	7,152	22	740	330	540	8	6	7	20	6,000	9,400	16,192	15,494	22,213	19,801	
Nenana	6,426	13,821	13,599	11,129	7,363	12,023	3,517	8,055	3,247	11,398	19,007	20,864	14,154	26,340	26,634	14,345	24,167	27,625	33,525	37,549	
Fairbanks										1,072	5,555	3,608	1,657	2,956	1,615	2,826	725	3,917	6,843	7,849	
Subtotal	12,912	31,049	29,092	28,757	18,721	19,175	3,539	8,795	3,577	13,010	24,670	29,478	15,818	29,318	34,249	26,571	41,054	47,036	62,581	65,199	
Chandalar River																					
Verona		1,000	200		9,856	1,098	2,626	551	3,116	2,400	801	50	410	---	2,401	508	1,660	2,606	3,943	2,730	
Subtotal		1,000	200		9,856	1,098	2,626	551	3,116	2,400	801	50	410	---	2,401	508	1,660	2,606	3,943	2,730	
Porcupine River																					
Canyon Village		210	1,566	2,316	1,531																
Chalkytsik		500	64	742	1,438																
Old Crow, T.F.		2,800	20,000		7,535	7,175	11,768	10,000	3,411	620	100	5,800	5,827	7,000	11,600	3,125	5,592	5,000	11,000	7,500	
Subtotal		3,510	21,630	3,058	10,504	7,175	11,768	10,000	3,411	620	100	5,800	5,827	7,000	11,600	3,125	6,192	5,000	11,000	7,500	
Yukon Territory Villages 5/																					
Dawson	725	3,000	1,500	3,331		50	50	50			60								728	2,000	7,000
Stewart River																					
Mayo-Stewart Crossing																					
Fraser Falls																					
Burwash-Kluane R.									250	200	760										
Fort Selkirk					1,000	450	1,000	500	500	500	100	2,000		199	32						
Pelly		1,500 4/	1,500 4/		100			50	300						14		100	650			
Faro																					
Ross River																					
Minto				600	623	450	50	100	100					327						132	
Tatchun Creek														487	1,590						
Carmacks		2,000	2,500	250	260	100	500	200	400	50						200	780	350			
Lake Laberge-Whitehorse																					
Takhini																					
McClintock R.																					
Carcross																					
Teslin-Johnson's Crossing										2											
Subtotal	5,800	6,500	5,500	4,181	2,265	1,425	1,832	1,100	2,089	580	13,900	3,000	1,111	1,636	6,500 8/	300	2,929	1,210	2,000	7,000	
Total:	412,889 5/	358,441 6/	421,625	485,621	458,931	214,611	288,577	189,607	213,754	223,205	214,368	151,008	219,275	323,034	300,379	262,622	267,127	299,791	452,328	479,713	

1/ Includes Black River catches.

2/ Includes Shageluk-Holkachuk fish camp catches.

3/ Includes Fairbanks fish camp catches.

4/ Includes Minto catches.

5/ Data by village obtained from annual reports. Subtotals include revised catch data and summation of village catches may not equal subtotal.

6/ Includes pinks and cohos not provided in breakdown of catch by village data.

7/ Includes small numbers of pink and coho salmon.

8/ Catch by village not available.

9/ Includes catches made by Fairbanks permit holders who fished in Yukon River near bridge crossings.

Appendix Table 22. Yukon River comparative subsistence catch and effort data, 1961-1980 (numbers per fishing family are in parenthesis).

Year	Total Catch		Equivalent Catch 1/		Mean Equivalent Catch per Family 1/	
	King Salmon	Other Salmon 2/	King Salmon	Other Salmon 2/	King Salmon	Other Salmon 2/
1961	31,864	405,632	20,117	403,765	32	647
1962	21,610	356,754	10,217	325,244	18	577
1963	32,790	408,381	23,919	376,440	40	625
1964	22,877	485,630	14,847	458,609	25	762
1965	19,723	458,379	16,499	430,949	30	788
1966	14,272	214,236	11,507	204,913	23	416
1967	19,661	288,595	16,306	256,956	35	546
1968	15,006	189,607	11,883	170,552	25	358
1969	15,000	213,725	13,916	195,476	30	426
1970	15,794	223,237	13,474	199,163	34	498
1971	27,953	228,849	24,058	191,011	48	383
1972	21,868	151,008	19,314	129,343	46	311
1973	26,459	219,275	23,530	198,054	44	374
1974	23,137	323,834	19,014	284,977	38	580
1975	15,466	300,379	12,600	262,741	21	448
1976	19,329	262,624	16,196	235,056	25	358
1977	20,388	267,127	15,740	235,401	27	408
1978	30,297	299,791	25,496	255,447	36	360
1979	35,205	452,328	26,616	315,661	33	387
1980	58,224	479,713	38,749	436,321	51	571

Year	Fishing Families surveyed	People in fishing families 1/	Snowmachines 1/	Sled dogs 1/	Gear operated 1/	
					Gill nets	Fishwheels
1961	624	3,626 (5.8)		4,806 (7.7)	577	169
1962	564	3,279 (5.8)		3,848 (6.8)	613	138
1963	602	4,154 (6.9)		4,214 (7.0)	716	156
1964	602	3,612 (6.0)		4,003 (6.6)	840	155
1965	547	3,993 (7.3)		3,993 (7.3)	645	127
1966	492	3,149 (6.4)		3,112 (6.3)	582	116
1967	471	2,779 (5.9)	192 (0.4)	2,752 (5.8)	530	86
1968	476	3,094 (6.5)	262 (0.6)	2,719 (5.7)	565	71
1969	459	2,984 (6.5)	349 (0.8)	2,448 (5.3)	930	63
1970	400	2,680 (6.7)	346 (0.9)	2,214 (5.5)	647	55
1971	499	3,244 (6.5)	460 (0.9)	2,226 (4.5)	795	63
1972	416	2,621 (6.3)	438 (1.0)	1,589 (3.8)	755	59
1973	530	3,339 (6.3)	571 (1.1)	2,375 (4.5)	991	83
1974	491	3,093 (6.3)	534 (1.1)	2,105 (4.3)	668	90
1975	587	3,698 (6.3)	762 (1.3)	2,585 (4.4)	1,119	126
1976	657	4,139 (6.3)	882 (1.3)	3,401 (5.2)	1,071	154
1977	577	3,635 (7.3)	785 (1.4)	3,413 (5.9)	755	164
1978	711	3,929 (5.5)	843 (1.2)	3,722 (5.2)	943	178
1979	815	4,386 (5.3)	914 (1.1)	4,623 (5.7)	1,324	179
1980	764	4,101 (5.4)	891 (1.2)	4,874 (6.4)	939	179

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

Appendix Table 25. Subsistence salmon catches taken under order authority of a permit, Upper Yukon area, 1973-80.

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	1/	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

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

Upper Yukon River (Hess Creek to Dall River) Subsistence Salmon Fishery					
Year	No. of permits issued	Permittees reporting catches	Kings	Chums	Cohos
1974	29	1/	591	1,857	1,271
1975	19	1/	727	778	70
1976	28	1/	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

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

1/ Information not available

Appendix Table 26. Comparative Yukon River drainage king salmon escapement estimates, 1959-1980 1/.

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Andreasfky River																						
East Fork		1,020	1,003	675 ^{2/}		867		361		380	231 ^{2/}	665	1,904	798	825		993	818	2,008	2,487	1,180	958 ^{2/}
West Fork		1,220		762 ^{2/}		705	355 ^{2/}	303	276 ^{2/}	383	274 ^{2/}	574 ^{2/}	1,284	582 ^{2/}	788	285	421	643	1,499	1,062	1,134	1,500
Total		2,240		1,437		1,572		664		763	505	1,239	3,188	1,380	1,613		1,414	1,461	3,507	3,549	2,314	2,458
Invik River Drainage																						
Tower Count														1,104	517	471 ^{2/}	548	958	1,261	1,018	1,237	-
Below Tower Site (includes tributaries)														68	96 ^{2/}		172 ^{3/}	198 ^{3/4/}	93	240	237	-
Above Tower Site (includes tributaries)														346	126 ^{2/}		190	98	-	-	-	-
Subtotal		1,950	1,226				650 ^{2/}	638	336 ^{2/}	297 ^{2/}	296 ^{2/}	368		414	222 ^{2/}		362	296	93	240	237	-
Total (Best estimate of escapements, combined tower, aerial and boat surveys).		1,950	1,226				650 ^{2/}	638	336 ^{2/}	297 ^{2/}	296 ^{2/}	368		1,172	613	471 ^{2/}	720	1,155	1,354	1,328	1,474	1,330
Nulato River																						
North Fork (including main river)		483	376													55	123	471	286	498	1,093	954
South Fork		273	167													23	81	177	201	422	414	369
Total		756	543													78	204	648	487	920	1,507	1,323
Gisasa River		300	266 ^{2/}													161	385	332	255	45	484	951
Tozitna River		106 ^{2/}															202	42 ^{2/}	123	194	-	257
Chena River		132			137								193 ^{2/ 3/}	138 ^{2/3/}	21	1,035 ^{3/}	316 ^{3/}	531	563	1,726	1,159	2,541
Salcha River		1,660	2,878	937		450	408	800		735	461 ^{2/}	1,882	152 ^{2/}	1,193	249	1,857	1,055	1,691	1,202	3,499	4,789	6,757
Tatchum Creek												100 ^{2/}	100	97		192	175	52	150	200	150	222
Nisutlin River (Sidney Creek-100 Mile Cr.)										407	105	615	640	317	36 ^{2/}	48 ^{2/}	249	102	77	375	713	975
Whitehorse Dam (Fishway Counts)	1,054	660	1,068	1,500	484	587	903	563	533	407	334	625	856	392	228	273	313	121	277	725	1,184	1,391

1/ Data obtained from aerial surveys unless otherwise indicated. Peak estimates listed only.
 2/ Incomplete or poor survey conditions resulting in a very minimal count.
 3/ Boat survey.
 4/ Also includes 94 kings observed in Yellow River.
 5/ Foot survey.

Appendix Table 27. Comparative Yukon River drainage summer chum salmon escapement estimates, 1958-1980

	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	
Andreafsky River																								
East Fork			3,830	8,110	18,040				25,619		17,600 ^{4/}	119,000	84,090	98,095	41,460	10,149 ^{2/}	3,215 ^{2/}	223,485	105,347	112,722	127,050	66,471	36,823 ^{2/}	
West Fork					19,530		12,810	14,670 ^{2/}	18,145	14,495 ^{4/}	74,600 ^{4/}	159,500	91,710 ^{2/}	71,745	25,573	51,835	33,258	235,954	118,420	63,120	57,321	43,391	115,457	
Total					37,570				43,764		92,200	278,500	175,800	169,840	67,033			459,439	223,767	175,842	184,371	109,862	152,280	
Anvik River Drainage																								
Tower Count															108,342	71,475	201,277	601,880	237,851	162,514	166,102	37,457		
Below Tower Site (tributaries)															137,515	15,190		211,130	168,315	100,240	85,237	280,537 ^{6/}		
Above Tower Site (includes tributaries)															74,118	10,966		634,355	243,695			84,620		
Subtotal	100-200,000	200,000	11,100		20,600		12-14,000 ^{2/}	100,000	37,500	116,000	51,580 ^{2/}		232,780		208,763	26,156		845,485	412,010	100,240	85,237			
Total (Best estimate of escapement combined tower, aerial & boat surveys)	100-200,000	200,000	11,100		20,600		12-14,000 ^{2/}	100,000	37,500	116,000	51,580 ^{2/}		232,780		245,857	86,665	201,277	845,485	406,166	262,754	251,339	280,537 ^{6/}	492,676 ^{6/}	
Rodo River		3,000	3,483														16,137	25,335	38,258	16,118	17,845			
Mulato River																								
North Fork (including main river)	50,000																	22,144	87,280	39,690	58,275	41,659	35,598	11,244 ^{2/}
South Fork	2,500			1,1560														29,016	51,215	9,230	11,385	12,821	1,506	3,702 ^{2/}
Total	52,500																	51,160	138,495	48,920	69,660	54,480	37,104	14,946
Gisasa River (Koyukuk R. Drainage)			400															22,022	56,904	21,342	2,204	9,280	10,962	10,388
Hogatza River (Koyukuk R. Drainage)																								
Clear Creek																		7,610	9,356	6,437	2,710	5,132	12,375	
Caribou Creek																		14,745	10,108	4,297	2,386	9,089	7,411	
Total																		22,355	19,544	10,734	5,102	14,221	19,786	
Tozitna River																		1,823	3,512	725 ^{2/}	761	2,262		580
Chena River					469 ^{3/}	898									670	79		4,350 ^{3/}	2,702 ^{3/}	685	610	1,609	1,025	338 ^{2/}
Saicha River				670	1,152	1,161	250 ^{2/}	2,375	2,200		3,790	425 ^{2/}	7,879	306 ^{2/}	947 ^{2/}	290		8,040 ^{5/}	7,573	6,474	677	5,405	3,060	4,140

1/ Data obtained from aerial surveys unless otherwise indicated. Peak estimates listed only.

2/ Incomplete or poor survey conditions resulting in a very minimal count.

3/ Boat survey.

4/ Includes pink salmon.

5/ Combined aerial and boat surveys.

6/ Includes estimate from side scan sonar located mainstem lower Anvik River downstream of Beaver River mouth.

Appendix Table 28. Comparative Yukon River drainage fall chum salmon aerial survey escapement estimates, 1971-1980 ^{1/}

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
TANANA RIVER DRAINAGE										
Bear Paw River	-	-	1,530	2,996	1,657	-	-	-	-	-
Toklat River drainage										
Upper Toklat River ^{3/}	-	1,000 ^{2/}	6,957	34,310	42,418	35,224	25,000	35,000	107,593 ^{8/}	23,054
Lower Toklat River	-	-	-	-	35,867	2,000 ^{2/}	-	-	64,540	2,140
Subtotal Toklat R. drainage			6,957	34,310	78,285	37,224	25,000	35,000	172,133	25,194
Upper Tanana River drainage										
Benchmark #735 Slough	-	5,255	127 ^{2/}	1,450	-	336	1,270	1,705	2,714	1,900 ^{7/}
Delta River	-	3,650	7,971	4,010	3,946 ^{7/}	5,526	17,925	10,051	8,125	4,637
Upper Tanana River ^{4/}	-	8,350	5,635	4,567	-	4,979	3,725	5,700	20,820	3,444
Bluff Cabin Slough	-	6,040	3,450	4,840	5,000 ^{2/}	3,197	6,491	5,340	6,875	3,190
Delta Clearwater Slough (1 Mile Slough)	-	-	1,720	1,235	745 ^{2/}	1,552	1,900	475	3,850	885
Subtotal Upper Tanana R. drainage		23,295	18,903	16,102	9,691	15,590	31,311	23,271	42,384	14,056
CHANDALAR RIVER	-	-	-	17,455	6,345 ^{2/}	58 ^{2/}	4,183	-	-	2,986
PORCUPINE RIVER DRAINAGE										
Sheenjek River	-	-	1,175	40,507	78,060	12,023	20,506	14,610	41,140	13,027
Fishing Branch River (Yukon Terr)	250,300,000	35,125 ^{5/}	15,987 ^{6/}	32,525 ^{6/}	353,282 ^{6/}	13,450	32,500	15,000	44,080	20,319
Subtotal Porcupine R. drainage	250-300,000	35,125	17,162	73,032	431,342	25,473	53,006	29,610	85,220	33,346
TOTAL	250-300,000	59,420	44,552	143,895	527,320	78,345	113,500	87,881	299,737	75,684

- 1/ All surveys rated fair-good unless rated otherwise. Only peak estimates listed.
- 2/ Poor or incomplete survey; very minimal and/or rough estimate.
- 3/ Includes following areas: Toklat River in vicinity of roadhouse, Shushana River and Geiger Creek.
- 4/ Richardson Highway Bridge to Blue Creek.
- 5/ Combined tagging population estimate and weir count.
- 6/ Weir count.
- 7/ Foot survey.
- 8/ Combined aerial and ground survey estimates.

Appendix Table 29. Comparative Yukon River drainage coho salmon aerial survey escapement estimates, 1971-1980 ^{1/}

	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
<u>Nenana River drainage</u>										
<u>Lost Slough</u>										
East Bank 1 mile below Anderson	-	-	-	900	116	118	524	350	227	499
East Bank 3 miles below Anderson	-	-	-	488	827	-	-	-	-	-
<u>Wood Creek</u>	-	-	-	-	-	-	310	-	-	-
<u>Clear Creek</u>	-	-	-	-	-	13	-	-	-	-
<u>Seventeen Mile Slough</u>	-	-	-	27	956	229	1,167	466	1,987	592
Subtotal Nenana R. drainage	-	-	-	1,415	1,899	360	2,001	816	2,214	1,091
<u>Delta Clearwater River</u>	3,000	632 ^{3/}	1,982	3,950	5,100 ^{3/}	1,920	4,793 ^{3/}	4,798 ^{3/}	8,970 ^{3/}	3,936 ^{3/}
<u>Clearwater Lake and Outlet</u>	-	417	249 ^{2/}	560	1,530	460 ^{3/}	730 ^{3/}	570 ^{3/}	1,015 ^{3/}	1,545 ^{3/}
<u>Richardson Clearwater River</u>	-	527 ^{2/}	175	235	4 ^{2/}	80 ^{2/}	327	-	372	611

- ^{1/} Peak estimates presented only
^{2/} Poor or incomplete survey
^{3/} Boat survey by Sport Fish Division

Appendix Table 30. Estimated total catch in thousands of western Alaska and Canadian Yukon king salmon by the Japanese mothership fishery, foreign groundfish fisheries, and U.S. commercial and subsistence fisheries. (Also presented are Japanese landbased drift gillnet king salmon catches; estimated western Alaskan interceptions unknown).^{1/}

Year	Japanese Mothership ^{2/}		Foreign Groundfish ^{3/}	Sub-Total	Western Alaska		Sub-Total	Total	(Japanese Landbased Drift gillnet)
					Commercial	Subsistence			
1956	55.4	(137)	-	-	132.7	-	-	-	(18)
1957	15.2	(31)	-	-	158.4	-	-	-	(33)
1958	5.4	(46)	-	-	181.9	-	-	-	(45)
1959	27.8	(68)	-	-	195.1	-	-	-	(42)
1960	135.0	(180)	-	-	195.7	-	-	-	(113)
1961	13.9	(31)	-	-	243.1	-	-	-	(79)
1962	29.7	(122)	-	-	213.1	-	-	-	(124)
1963	40.8	(87)	-	-	208.1	66.2	274.3	315.1	(102)
1964	252.9	(410)	-	-	260.0	50.5	310.5	563.4	(195)
1965	105.5	(185)	-	-	263.0	52.9	315.8	421.3	(93)
1966	111.5	(208)	-	-	207.5	69.5	277.0	388.5	(112)
1967	69.8	(128)	-	-	284.0	81.9	365.9	435.7	(110)
1968	226.3	(362)	-	-	259.0	54.2	313.2	539.5	(88)
1969	435.2	(554)	-	-	287.6	65.2	352.9	788.1	(83)
1970	344.8	(437)	-	-	290.8	95.1	386.0	730.8	(101)
1971	143.6	(206)	-	-	283.2	73.8	357.1	500.7	(134)
1972	169.5	(261)	-	-	224.1	66.7	290.8	460.3	(103)
1973	47.0	(119)	-	-	177.4	69.7	247.1	294.1	(162)
1974	286.8	(361)	-	-	180.2	57.3	237.6	524.4	(186)
1975	109.2	(162)	-	-	126.2	77.2	203.3	312.5	(135)
1976	167.7	(283)	-	-	241.5	84.0	325.6	493.3	(201)
1977	^{4/} 64.5	(93)	43.5	108.0	296.1	84.1	380.2	488.2	(146)
1978	^{4/} 31.3	(105)	39.1	70.4	380.0	74.6	454.6	525.0	(210)
1979	^{4/} 65.0	(126)	100.4	165.4	412.0	99.3	511.3	676.7	(161)
1980	^{4/} 388.0	(704)	111.6	499.6	312.0	113.3	423.3	922.9	(160)

1/ Data from I.N.P.F.C. documents.

2/ Estimates do not include dropouts; (total catch in parenthesis).

3/ Assumed 100% of the catch is of western Alaska and Canadian Yukon origin.

4/ Preliminary estimates.

CAPE ROMANZOF DISTRICT HERRING FISHERY

Commercial Fishery, 1980

In 1980 a commercial herring fishery occurred for the first time in the Cape Romanzof district (Figure 10). The total commercial herring harvest for the district was 554.0 metric tons (98% sac roe, 2% bait). The catch breakdown by stat-area is as follows:

Stat. Area	Total Catch lbs.	Herring Sac Roe Lbs.	% of Total	Herring Bait Lbs.	% of Total
334-08	740,307	713,049	58.5%	27,258	2.2%
334-09	478,519	478,519	39.3%	---	---
Total	1,218,826 (554 m.t.)	1,191,568 (540.6 m.t.)	97.8%	27,258 (13.4 m.t.)	2.2%

Daily catch data is presented in Table 15.

The commercial herring season in the Cape Romanzof district opened April 15 by regulation, however no commercial activity was reported until May 21 when the first processors arrived in the area. By May 26 a cumulative catch of 393 m.t. had been taken and the fishing season was temporarily closed from May 26-30 to allow further evaluation of stock condition and abundance. Additional spawning and good test fishing catches of maturing herring were documented during the closure. The season reopened by emergency order on noon May 30. Effort during this second opening was observed to be much less than the first opening. This was attributed to: 1) a severe storm on the 30th of May lasting for several days; 2) only one processor remained in the area. Total harvest for the Cape Romanzof district during the second opening was 151.6 metric tons. The season was closed by emergency order on June 7.

There were two herring processing firms located in the Cape Romanzof district: Icicle Fisheries (M/V Alaska Star and the Viking Queen) and Offshore Fisheries (M/V Westward Wind, Alaskan Enterprise and Northwest Enterprise). The vessels were anchored just inside Kokechik Bay near Aniktun Island. However, only three of these boats, Alaska Star, Viking Queen and the Westward Wind actually did any buying. Processing methods were of two types: freezing or brining. On several occasions, the processing boat Alaska Star offloaded directly onto a Japanese freighter located four miles outside of Kokechik Bay.

The price being offered to the fishermen of the Cape Romanzof district varied between the two firms. The average price offered for sac roe herring of 8% quality was \$185/ton with a + \$20/% point deviation. Fishermen received an estimated \$110,000 for their catch. Average roe percentage reported by the processors was 9.8%.

The number of vessels totaled 54 boats, 78% of which belonged to local fishermen from the villages Hooper Bay, Scammon Bay and Chevak. Fishing effort in terms of number of interim use permit holders totaled 69 (at least one delivery during the season), 70% of whom were local fishermen, the remaining 30% having come into the area with the processors. Approximately

40% of the harvest was taken by local fishermen. Due to ice conditions Scammon Bay fishermen were unable to participate during the early part of the season, May 21-26.

Wastage observed due to the presence of a commercial fishery operating in the Cape Romanzof district was minimal. Occasionally herring carcasses were found washed up along the coastline (predominantly in the vicinity of Kokechik Bay), however these were few in numbers. It is interesting to note that those vessels equipped with hydraulic powered shakers seemed to be contributing most to what waste which did occur. This was a result of fish being vigorously flipped out of the nets and washing onto shore.

Subsistence Fishery, 1980

In 1980 a total subsistence harvest of 9.4 metric tons (20,745 lbs.) of herring were reported taken by 61 families from Hooper Bay, Chevak and Scammon Bay. Subsistence fishing effort and participation were probably decreased from previous years for some of these villages as several persons went commercial fishing for the first time in the Cape Romanzof district. Comparative subsistence catch and effort data is presented in Appendix Table 31.

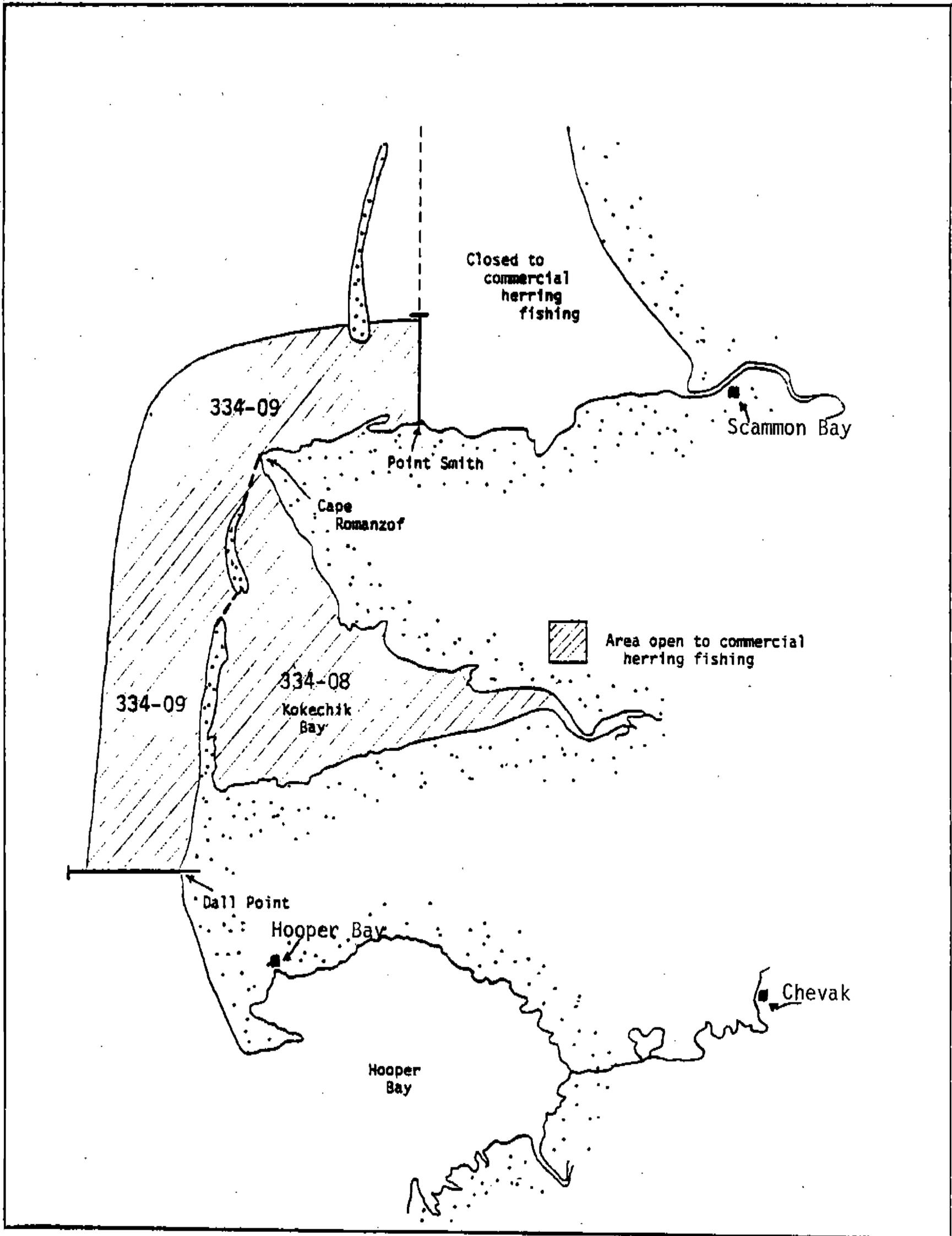


Figure 10. Cape Romanzof herring district and statistical reporting areas.

Table 15 Cape Romanzof district commercial herring catch data, 1980.

Date	Catch Sac. Roe (metric tons)	% of total	Catch Bait herring (metric tons)	% of total	Average Roe % daily	Seasonal Catch Accum. to date (metric tons)	Total Daily Catch Accum. (metric tons)
5/21	49.8	9.0%	-	-	11.0%	49.8	49.8
5/22	118.0	21.3%	2.5	0.4%	9.2%	170.3	120.5
5/23	64.0	11.6%	-	-	8.8%	234.3	64.0
5/24	78.5	14.2%	3.1	0.6%	9.4%	315.9	81.6
5/25	39.9	7.2%	-	-	9.0%	355.8	39.9
5/26	31.7	5.7%	5.1	0.9%	9.7%	392.6	36.8
Subtotal	382.0	69.0%	10.7	1.9%	9.5%	392.6	392.6
5/30			-weather wouldn't permit fishing-				
5/31	27.0	4.9%	-	-	-	419.6	27.0
6/1	69.4	12.5%	-	-	-	489.0	69.4
6/2	28.8	5.2%	-	-	-	517.8	28.8
6/3	23.2	4.2%	-	-	-	541.0	23.2
6/4	10.6	1.9%	-	-	-	551.6	10.6
6/5	2.4	0.4%	-	-	-	554.0	2.4
6/6			-no processor was buying-				
6/7			-season officially closed at 8:00 AM				
Subtotal	161.3	29.1%	-	-	10.0%	554.0	161.4
Total	543.3	98.1%	10.7	1.9%	9.8%	554.0	554.0

Appendix Table 31. Subsistence herring catches by village, Yukon area, 1975-1980.

	Catches in pounds (No. fishing families)					
	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
Scammon Bay	-	1,390(4)	-	1,300	12,000(21)	6,270(18)
Chevak	-	1,400(9)	300(2)	-	4,600(21)	7,100(20)
Hooper Bay	<u>5,543(34)</u>	<u>6,007(28)</u>	<u>4,750(28)</u>	<u>7,780(29)</u>	<u>6,145(42)</u>	<u>7,375(23)</u>
Total		8,797(41)			22,745(84)	20,745(61)

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 32).

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 33.

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 also been issued for various locations in the lower Yukon area. Reported harvests for those fisheries are presented in Appendix Table 34. Set gillnets are primarily used for taking whitefish and sheefish and the catch is marketed in local village stores or Bethel.

Appendix Table 32. Colville River Commercial Catches
1964-1980

	<u>Broad Whitefish</u>	<u>Humpback Whitefish</u>	<u>Arctic Cisco</u> (<u>"Kaktok"</u>)	<u>Least Cisco</u> (<u>"Herring"</u>)
1964	2,951 <u>1/</u>		16,000	9,000
1965	3,000 <u>1/</u>		50,000	
1966	2,500 <u>1/</u>		40,000	
1967	Data not available			
1968	3,130		42,055	18,180
1969	Data not available			
1970	2,080 <u>1/</u>		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 <u>2/</u>	20 <u>3/</u>	1,102	17,292	21,589
1979	<u>3/</u>	1,831	8,684	24,984
1980	<u>3/</u>	4,231	14,657	31,459

1/ Includes small numbers of humpback whitefish.

2/ Also reported taken were 1 king salmon, 2 red salmon, 9 chum salmon and 118 pink salmon.

3/ No fishing effort during June or July.

(Average weights: Broad whitefish 5.1 pounds, Least cisco 0.91 pounds, Arctic cisco 1.0 pounds.)

Appendix Table 33. Commercial whitefish catches upper Yukon area, 1972-1980.

Healy Lake			Lake Minchumina		
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				

Appendix Table 34. Commercial freshwater fishery catches, lower Yukon area, 1978-1980.

<u>Year</u>	<u>Sheefish</u>		<u>Whitefish</u>		<u>Blackfish</u>
	<u>Number</u>	<u>Pounds</u>	<u>Number</u>	<u>Pounds</u>	<u>Pounds</u>
1978	-	-	19	87	-
1979	5	39	23	55	-
1980 <u>1/</u>	261	2,123	78	250	293

1/ Preliminary

Yukon and Tanana River Fall Chum Salmon Tagging Study
1976-1980

Maximum sustained harvest of salmon stocks in the Yukon River drainage can only be accomplished by identifying the individual stocks in the fishery, and regulating harvest according to stock strength. Responsible management requires adequate spawning escapements for future production. A tagging study was conducted between 1976 and 1978 to determine whether upper Yukon and Tanana River fall chum salmon stocks could be distinguished by bank orientation and/or run timing in the Galena-Ruby area of the Yukon River. (Figure 1).

Fall chums were captured in August and September by fishwheels and tagged with individually numbered Petersen disk or Floy spaghetti tags. The location of the fishwheels was as follows:

<u>Year</u>	<u>River Bank</u>	<u>Location</u>
1976	North	Galena
	South	Galena
1977	North	Galena
	South	Galena
	South	Ruby
1978	North	Tanana Village
	North	30 miles above Tanana
	South	29 miles above Tanana
	South	Ruby

A two dollar reward was offered to fishermen for each tag returned with information as to capture location, date and gear. In addition, Department personnel conducted spawning ground surveys to recover tagged fish.

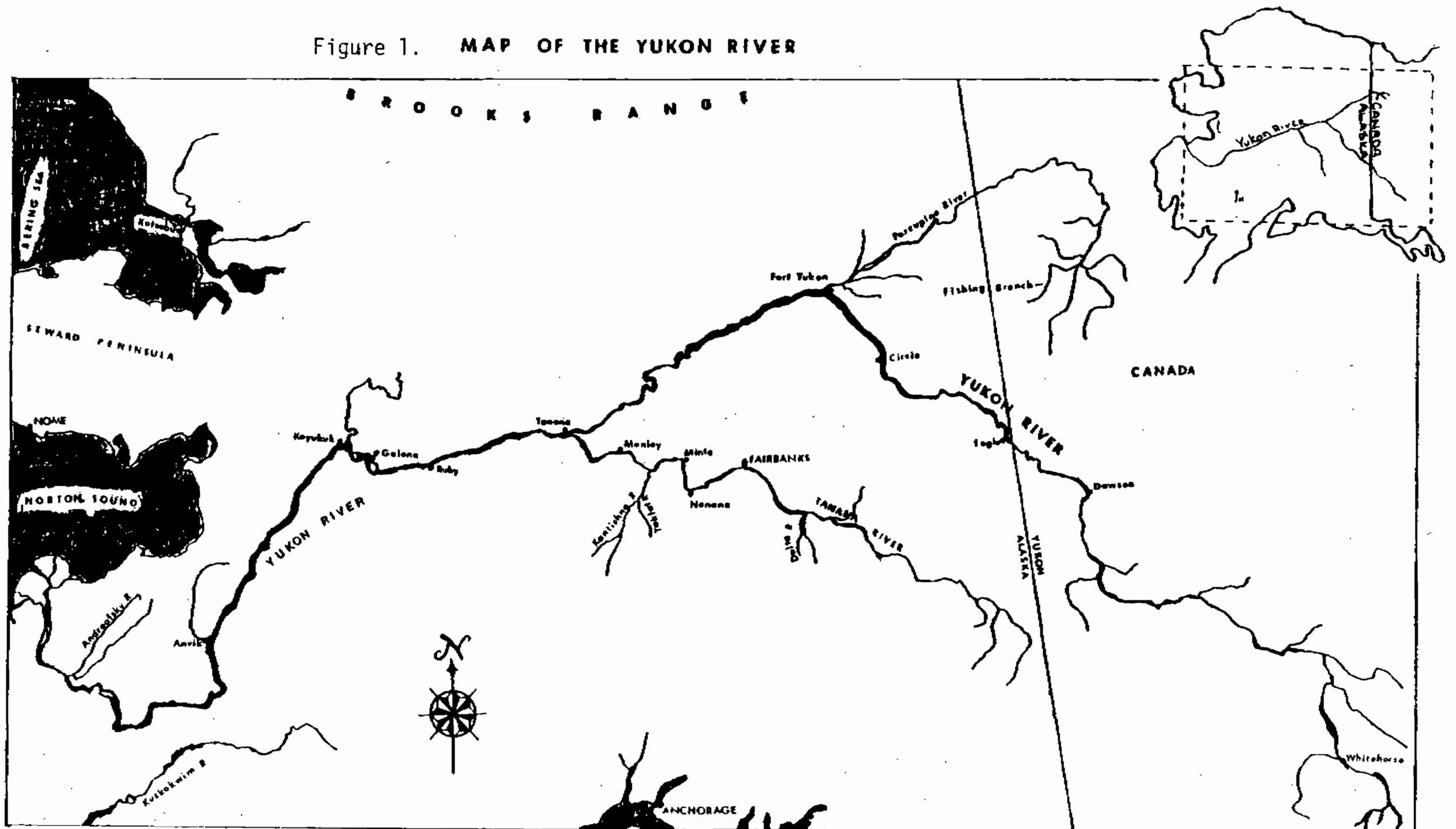
A total of 1,217 fall chums were tagged in main Yukon River in 1976, 5,358 in 1977, and 9,668 in 1978. Tag recoveries totaled 608 (50%) in 1976, 1,951 (36%) in 1977, and 4,682 (48%) in 1978. Analysis of the tag returns indicates a significant difference in bank orientation between upper Yukon and Tanana River fall chum stocks (Figure 2). Seventy-nine percent of the fish recovered in the upper Yukon River in 1976 had been tagged on the north bank, 21% on the south bank. Conversely, 87% of the fish recovered on the Tanana River had been tagged on the south bank of the Yukon River, 13% on the north bank. These results were reinforced by the 1977 study. Eighty-eight percent of the fall chums recovered in the upper Yukon River in 1977 had been tagged on the north bank, 12% on the south bank. Conversely, 96% of the fish recovered in the Tanana River had been tagged on the south bank of the Yukon River, only 4% on the north bank.

Since three of the four fishwheels operated in 1978 were located at or above the confluence of the Yukon and Tanana rivers, results of that study do not apply to this discussion. However, it is clear from the 1976 and 1977 tagging studies that upper Yukon River fall chums migrate mostly along the north bank, and Tanana River fall chums migrate mostly along the south bank of the Yukon River in the Galena-Ruby area.

The tagging study was conducted on the Tanana River (Figure 3) in 1979 and 1980 to determine whether upper Tanana and Toklat River fall chums could be separated by run timing and/or bank orientation in the lower Tanana River near Manley Hot Springs. Methods were similar to those employed on the Yukon River study. The fishwheels were located on the north bank of the Tanana River 8 miles below Manley, and on the south bank 40 miles below Manley in 1979. Due to the inability to locate a suitable fishwheel site on the south bank in 1980, both fishwheels were located on the north bank, 8 and 10 miles below Manley.

A total of 7,259 fall chums were tagged between the two fishwheels in 1979, and 1,346 (18.5%) were later recovered. A total of 5,279 fall chums were tagged between the two fishwheels in 1980, and 1,234 (23.4%) were later recovered. Analysis of the tag returns does not indicate a significant difference in bank orientation or timing between the upper Tanana and Toklat stocks in the lower Tanana River. Fifty-nine percent of the fall chums recovered in the upper Tanana in 1979 had been tagged at the north bank fishwheel. Conversely, 65% of the fall chums recovered in the Toklat had been tagged at the south bank fishwheel (Table 1). This is not much better than 50% recovery in each area as expected by chance. Examination of run timing indicates that the upper Tanana River stock has an early component that is not seen in the Toklat stock. However, there is great overlap in run timing between the two stocks, and it does not appear that fishing periods could be regulated to allow for single stock harvest in the Manley Hot Springs area.

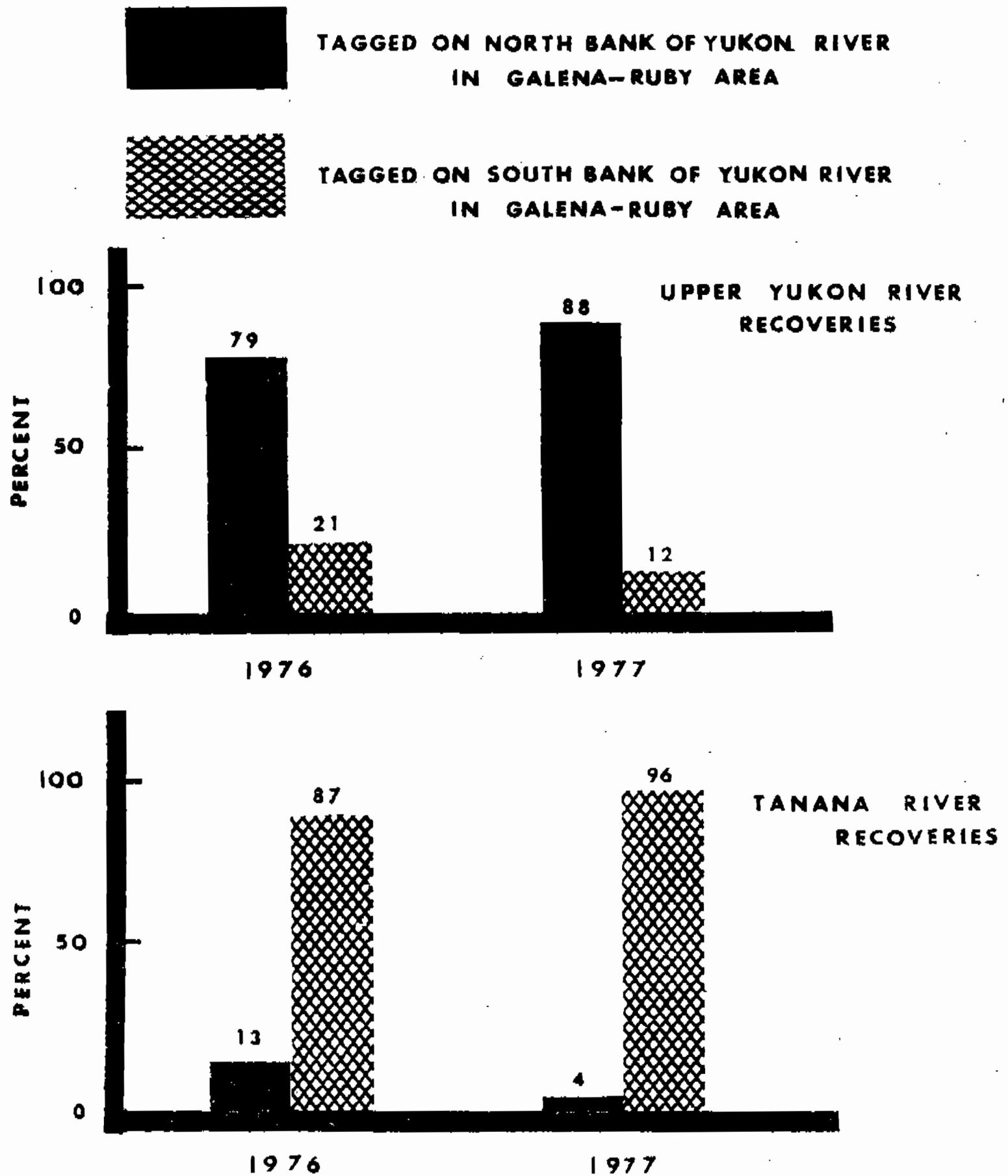
Figure 1. MAP OF THE YUKON RIVER



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Figure 2. Recovery of fall chum salmon tagged on the north and south bank of the Yukon River in the Galena-Ruby area in 1976 and 1977.



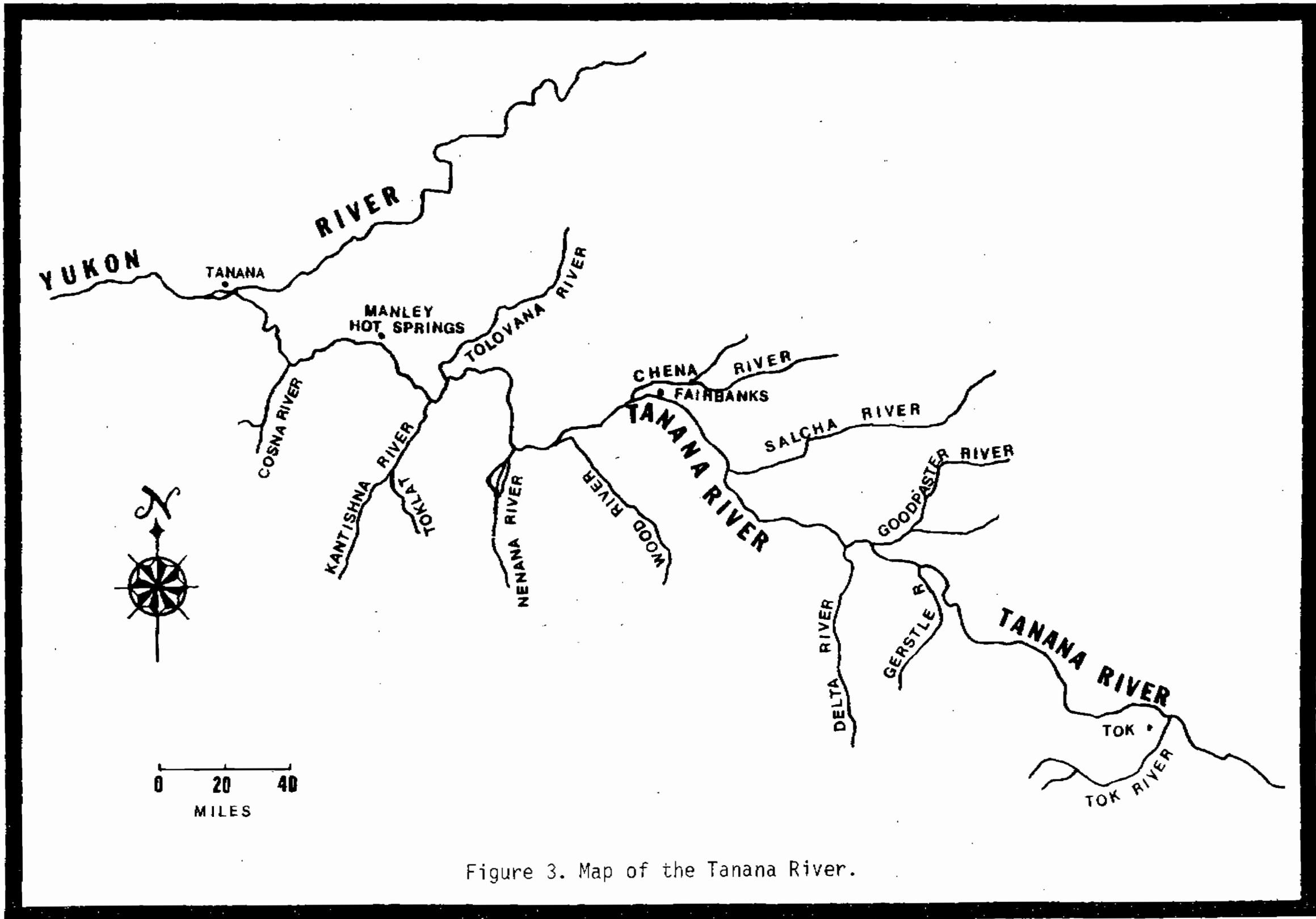


Figure 3. Map of the Tanana River.

Table 1. Tanana River fall chum salmon tag recoveries by recovery area, 1979.

	Tagged		Recovery Area					
			Tanana Below Kantishna		Tanana Above Kantishna		Kantishna- Toklat	
	N	%	N	%	N	%	N	%
<u>Chum</u>								
North Bank	3,728	51	164	37	317	59	130	35
South Bank	3,531	49	274	63	217	41	244	65
Chum Total	7,259	100	438	100	534	100	374	100

Attachment 1. List of Yukon area emergency orders issued, 1980.

<u>Number</u>	<u>Effective Date</u>	<u>Action Taken</u>	<u>Comments</u>
3-Y-1-80	May 26	Closure of commercial herring season in Cape Romanzof district.	The 350 metric ton guideline harvest level was exceeded. Reopening of season dependent on subsequent test fishing and spawning ground surveys.
3-Y-2-80	May 30	Reopen commercial herring season in Cape Romanzof district.	Continued abundance of herring, more younger age classes present and very few spawnouts warrants reopening of the season.
3-Y-3-80	June 7	Closure of commercial herring season in Cape Romanzof district.	An additional 163 mt of herring taken (total catch of 554 mt). Declining catches indicate run has slacked off.
3-Y-4-80	June 8	Open the commercial salmon fishing season in districts 1 and 2 prior to normal June 10 season opening. First period in district 2 was reduced to 12 hours and second period was reduced to 24 hours.	Action taken because of strong early run of kings entering lower river.
3-Y-5-80	June 18	Closure of commercial salmon fishing season in district 3.	The 1,800-2,200 king salmon guideline harvest level was exceeded.
3-Y-6-80	June 22	Extend fishing season for one additional 18 hour period in district 1 and one 12 hour period in district 2.	Comparative catch data indicate a very strong king run. Severe storm limited fishing effort during June 18-19 when large numbers of kings entered river and escapements should be excellent from this run segment.
3-Y-7-80	June 25	Specify that only gill nets of 6 inch or smaller mesh size may be used in districts 1 and 2. Also reduced fishing time on June 26-27 from a 36 to a 24 fishing period in districts 1 and 2.	Action taken to allow harvest of more abundant summer chums and minimize catch of the late run of kings.
3-Y-8-80	June 30	Reopen the commercial salmon fishing and specify that only gillnets of 6 inch or less mesh size may be used in district 3.	Action taken to allow harvest of the more abundant summer chum run and minimize the catch of the late king run.
3-Y-9-80	July 17	Closure of the commercial salmon fishing season in district 5.	The 2,000-3,000 king salmon guideline harvest level was exceeded.
3-Y-10-80	July 18	Specify that only gillnets of 6 inch or smaller mesh size may be used in dist. 4.	Action taken to minimize the catch of king salmon and allow continued fishing for summer chums.
3-Y-11-80	July 27	Closure of the commercial salmon fishing season in district 6.	The 900-1,100 king salmon guideline harvest was exceeded.
3-Y-12-80	July 27	Reduce fishing time to 2-12 hour periods per week in districts 1 and 2 and 2-24 periods per week in district 3.	Action taken to bolster escapements from early fall chum run which appears below average in magnitude.
3-Y-13-80	August 1	Closure of commercial salmon fishing season in subdistrict 4-8.	Action taken to protect early run of fall chums which appears below average in magnitude.
3-Y-14-80	July 30	Provide for daylight fishing schedule in districts 1 and 2.	Action taken at request of fishermen for safety reasons. Actual amount of fishing time remains unchanged.
3-Y-15-80	August 4	Reopen commercial salmon fishing season in district 6.	Action taken to allow additional fishing on summer chums, which are present in commercially harvestable numbers.
3-Y-16-80	August 12	Closure of the commercial salmon fishing season in district 6.	Summer chum run has ended and closure necessary until such time fall chums are well distributed throughout the Tanana River.
3-Y-17-80	August 17	Reinstate normal fishing schedule of 2 days per week in districts 1 and 2 and three days per week in district 3.	Action taken to allow harvest of the late fall chum and coho salmon runs, which are expected to be available in harvestable numbers.
3-Y-18-80	August 17	Reopen the commercial salmon fishing season in subdistrict 4-8.	Action taken to allow commercial fishing to "test" the fall chum run strength.
3-Y-19-80	August 19	Reopen the commercial salmon fishing season in district 5.	Fall chums appear to be above average in magnitude based on strong subsistence catches.
3-Y-20-80	August 20	Closure of the commercial salmon fishing season in districts 1, 2 and 3.	The midpoint (170,000) of the 120,000-220,000 chum salmon guideline harvest level was exceeded.
3-Y-21-80	August 31	Closure of the commercial salmon fishing in district 5.	The upper end of the 10,000 to 40,000 fall chum and coho salmon guideline harvest level has been taken.
3-Y-22-80	September 12	Reopen the commercial salmon fishing season in district 6.	Fall chums are well distributed throughout the Tanana River in harvestable numbers.
3-Y-23-80	September 16	Closure of the commercial salmon fishing season in subdistrict 4-8.	The upper end of the 10,000 to 40,000 fall chum and coho salmon guideline harvest level has been taken.
3-Y-24-80	September 18	Closure of the commercial salmon fishing season in district 6.	The upper end of the 7,500 to 22,500 fall chum and coho salmon guideline harvest level has been taken.

Attachment 2. Summary of 1980 Yukon area commercial and subsistence fishing regulations promulgated by the Board of Fisheries during Anchorage meetings, December, 1979 and January, 1980.

<u>SECTION</u>	<u>ACTION TAKEN</u>
5 AAC 01.210. FISHING SEASONS AND WEEKLY FISHING PERIODS.(c)(2). 5 AAC 01.225. WATERS CLOSED TO SUBSISTENCE FISHING.(f)(1)(2) and 5 AAC 01.230. SUBSISTENCE FISHING PERMITS. (b)(2).	Prohibited subsistence fishing for non-salmon species by permit in the Yukon River drainage between the mouths of the Nowitna and Rodo Rivers between June 15-July 15.
5 AAC 01.210. FISHING SEASONS AND WEEKLY FISHING PERIODS. (c)(4).	Changed the weekly subsistence fishing schedule after closure of the commercial salmon fishing season in sections 6A and 6B of subdistrict 6.
5 AAC 01.210. FISHING SEASONS AND WEEKLY FISHING PERIODS. (d)	Extend the area where subsistence fishing is allowed three days a week after the closure of the commercial salmon fishing season in sub-district 6 to include that portion of the Tanana River drainage upstream to the mouth of the Salcha River.
5 AAC 01.256. WATERS CLOSED TO SUBSISTENCE FISHING. (b)(6) and 5 AAC 01.230. SUBSISTENCE FISHING PERMITS. (b)(4).	Prohibit subsistence fishing in that portion of the Middle Fork of the Koyukuk River system between Dry Gulch and Hammond River where fishing is allowed under authority of a subsistence permit.
5 AAC 03.100. et. seq.	Divided the AYK area into four regulatory areas Clarence, Yukon and Kuskokwim areas, that would conform to present salmon net registration areas
5 AAC 03.200. FISHING DISTRICTS AND SUB-DISTRICTS. (e)(3),(4)(A).	Changed the common boundary to Old Paradise Village instead of the Bonasila River for sub-districts 3 and 4.
5 AAC 03.320. WEEKLY FISHING PERIODS. (c) (3)(A)(B).	Reduced weekly fishing periods from 4 to 3 days a week during June 10 through July 25 in sub-district 3.
5 AAC 03.320. WEEKLY FISHING PERIODS. (c) (4)(B),(5)(A) and (6)(A)	Reduced weekly fishing periods from 5 to 4 days a week from June 15 through August 15 in section 4-B of subdistrict 4, section 5-A of subdistrict 5 and in subdistrict 6.
5 AAC 03.320. WEEKLY FISHING FISHING PERIODS. (c)(6)(B).	Changed weekly fishing schedule (total allowable fishing time unchanged) in subdistrict 6.
5 AAC 03.370. REGISTRATION AND REREGISTRATION. (a).	Required that fishing vessel subdistrict registration for the Yukon district be performed by completing a form provided by the Department.
5 AAC 27.910. FISHING SEASONS	Opened the commercial herring fishing season on April 15 in the Bering Sea-Kotzebue Area (includes the Cape Romanzof district).
5 AAC 27.930. GEAR.	Prohibited the use of purse and beach seines for commercial herring fishing in the Cape Romanzof district.
5 AAC 27.970. BUYER REPORTING REQUIREMENTS.	Provided for registration of buyers prior to purchasing herring or herring spawn on kelp and specify vessel identification and catch reporting requirements in the Cape Romanzof, Norton Sound, Port Clarence and Kotzebue districts.

Attachment 3. List of 1980 Yukon area commercial and subsistence fishing regulations.

**TITLE 5.
FISH AND GAME**

**CHAPTER 1.
SUBSISTENCE FINFISH FISHING.**

**ARTICLE 4.
YUKON AREA**

5 AAC 01.200. DESCRIPTION OF YUKON AREA. The Yukon area includes all waters of Alaska between the latitude of Canal Point light and the latitude of the westernmost point of the Naskonat Peninsula, including those draining into the Bering Sea.

Authority: AS 16.05.251(a)(2) and (b)

5 AAC 01.205. DESCRIPTION OF DISTRICTS AND SUBDISTRICTS. Districts and subdistricts are as described in 5 AAC 05.200.

Authority: AS 16.05.251(a)(2) and (b)

5 AAC 05.200. FISHING DISTRICTS AND SUBDISTRICTS. (a) District 1 consists of that portion of the Yukon River drainage from its terminus upstream to the northern edge of the mouth of the Anuk River and all waters of the Black River including waters within one nautical mile of its terminus.

(b) District 2 consists of that portion of the Yukon River drainage from the northern edge of the mouth of the Anuk River upstream to a Department of Fish and Game regulatory marker located at Toklik and includes the Anuk River drainage.

(c) District 3 consists of that portion of the Yukon River drainage from a Department of Fish and Game regulatory marker located at Toklik upstream to a Department of Fish and Game regulatory marker at the mouth of an unnamed slough three-fourths of a mile downstream from Old Paradise Village.

(d) District 4 consists of the portion of the Yukon River drainage from a Department of Fish and Game regulatory marker at the mouth of an unnamed slough three-fourths of a mile downstream from Old Paradise Village upstream to the western edge of the mouth of Illinois Creek at Kallands;

(1) subdistrict 4-A consists of that portion of the Yukon River from a Department of Fish and Game regulatory marker at the mouth of an unnamed slough three-fourths of a mile downstream from Old Paradise Village upstream to the tip of Cone Point;

(2) subdistrict 4-B consists of the portion of the Yukon River from the tip of Cone Point upstream to the western edge of the mouth of Illinois Creek.

(e) District 5 consists of that portion of the Yukon River drainage (excluding the Tanana River drainage) from the western edge of the mouth of Illinois Creek to the U.S.-Canada border and includes the Illinois Creek drainage;

(1) subdistrict 5-A consists of that portion of the Yukon River from the western edge of the mouth of Illinois Creek upstream to a Department of Fish and Game regulatory marker located two miles downstream from Waldron Creek and includes the Illinois Creek drainage;

(2) subdistrict 5-B consists of that portion of the Yukon River from a Department of Fish and Game regulatory marker located two miles downstream of Waldron Creek upstream to the U.S.-Canada border.

Attachment 3 (continued). List of 1980 Yukon area commercial and subsistence fishing regulations.

(f) District 6 consists of the Tanana River drainage to its confluence with the Yukon River;

(1) subdistrict 6-A consists of that portion of the Tanana River drainage from its mouth upstream to the eastern edge of the mouth of the Kantishna River and includes the Kantishna River drainage;

(2) subdistrict 6-B consists of that portion of the Tanana River drainage from the eastern edge of the mouth of the Kantishna River upstream to the eastern edge of the mouth of the Wood River and includes the Wood River drainage;

(3) subdistrict 6-C consists of that portion of the Tanana River drainage from the eastern edge of the mouth of the Wood River upstream to the eastern edge of the mouth of the Chena River and includes the Chena River drainage.

5 AAC 01.210. FISHING SEASONS AND WEEKLY FISHING PERIODS. (a) Unless restricted in this section and sec. 225 of this chapter, salmon may be taken in the Yukon Area at any time.

(b) In the following locations salmon may be taken only during the open weekly fishing periods of the commercial salmon fishing season and may not be taken for 24 hours before the opening and 24 hours after the closure of the commercial salmon fishing season:

(1) districts 1, 2 and 3;

(2) district 4, excluding the Koyukuk and Innoko River drainages and excluding that area between the mouths of the Rodo and Nowitna Rivers where the requirements of sec. 225(f) of this chapter are effective;

(3) district 5, excluding the Tozitna River drainage and excluding subdistrict 5-B;

(4) district 6 excluding the Kantishna River drainage and that portion of the Tanana River drainage upstream of the mouth of the Salcha River.

(c) During any commercial salmon fishing season closure of greater than five days in duration, salmon may not be taken during the following periods in the following districts:

(1) from June 10 to August 20 in districts 1, 2 and 3 from 6:00 p.m. Monday until 6:00 p.m. Wednesday;

(2) in district 4, excluding the Koyukuk and Innoko River drainages salmon may not be taken from 6:00 p.m. Friday until 6:00 p.m. Sunday;

(3) in district 5, excluding the Tozitna River drainage and subdistrict 5-B, salmon may not be taken from 6:00 p.m. Sunday until 6:00 p.m. Tuesday;

(4) in subdistricts 6-A and 6-B, excluding the Kantishna River drainage and that portion of the Tanana River drainage upstream of the mouth of the Salcha River, salmon may not be taken from 6:00 p.m. Wednesday until 6:00 p.m. Friday.

(d) In subdistrict 6-C and that portion of the Tanana River drainage upstream to the mouth of the Salcha River salmon may not be taken following the closure of the commercial salmon fishing season from 6:00 p.m. Monday until 6:00 p.m. Friday.

(e) Except as provided in sec. 225 of this chapter, and except as may be provided by the terms of a subsistence fishing permit, there is no closed season on fish other than salmon.

Authority: AS 16.05.251(a)(2),(7),(10),(12) and (b)

Attachment 3 (continued). List of 1980 Yukon area commercial and subsistence fishing regulations.

5 AAC 01.220. LAWFUL GEAR AND GEAR SPECIFICATIONS. (a) Salmon may only be taken by gill net, beach seine or fishwheel, subject to the restrictions set forth in this section.

(b) In districts 1 and 2, commercial fishermen may not take salmon for subsistence purposes by gill nets larger than six inch mesh after a date specified by emergency order issued between June 27 and July 5.

(c) In district 3, commercial fishermen may not take salmon for subsistence purposes during the commercial salmon fishing season by gill nets larger than six inch mesh after a date specified by emergency order issued between July 5 and July 15.

(d) In district 4, commercial fishermen may not take salmon for subsistence purposes during the commercial salmon fishing season by gill nets larger than six inch mesh after a date specified by emergency order issued between July 10 and July 31.

(e) In district 4, 5 and 6, salmon may not be taken for subsistence purposes by drift gill net.

(f) Fish other than salmon may only be taken by set gill net, drift gill net, beach seine, fishwheel, pot, long line, fyke net, dip net, jigging gear, spear or lead, subject to the following restrictions which also apply to subsistence salmon fishing:

(1) during the open weekly fishing periods of the commercial salmon fishing season, a commercial fisherman may not fish for commercial and subsistence purposes simultaneously with more than one type of gear.

(2) the aggregate length of set gill net in use by an individual may not exceed 150 fathoms and each drift gill net in use by an individual may not exceed 50 fathoms in length;

(3) in districts 4, 5 and 6, it is unlawful to set subsistence fishing gear within 200 feet of other operating commercial or subsistence fishing gear;

(4) a gill net may obstruct not more than one-half the width of any fish stream; a stationary fishing device may obstruct not more than one-half the width of any salmon stream.

Authority: AS 16.05.060
AS 16.05.251(a)(2),(4),(7),(10) and (b)

5 AAC 01.221. IDENTIFICATION OF GEAR. In addition to the requirements of sec 10(h) of this chapter:

(1) each fishwheel must have the first initial, last name and address of the operator plainly and legibly inscribed on the side of the fishwheel facing midstream of the river;

(2) for all gill nets and unattended gear that are fished under the ice, the first initial, last name and address of the operator must be plainly and legibly inscribed on a stake inserted in the ice and attached to the gear.

Authority: AS 16.05.251(a)(4),(5),(7) and (b)

Attachment 3 (continued). List of 1980 Yukon area commercial and subsistence fishing regulations.

5 AAC 01.225. WATERS CLOSED TO SUBSISTENCE FISHING. (a) The following locations in the upper Yukon River drainage are closed to subsistence fishing, except that whitefish and suckers may be taken under the authority of a subsistence fishing permit designating restrictive measures for the protection of other fish:

(1) streams and within 500 feet of their stream mouths:

(A) Birch Creek, Beaver Creek, Clearwater Creek (Delta Clearwater Creek at 64° 06' N. lat., 145° 34' W. long.), Clear Creek (Richardson Clearwater Creek at 64° 14' N. lat., 146° 16' W. long.), Goodpaster River, Shaw Creek, Salcha River, Little Salcha River, Chena River, Chatanika River, Big Salt River, Hess Creek, and Blue Creek;

(B) the Dall River is closed from June 10 through September 10;

(2) streams: Ray River;

(3) lakes: Deadman, Jan, Boleo, Birch, Lost, Harding, Craig, Fielding, Two-Mile, Quartz, and Little Harding;

(4) sloughs: Chena (Piledriver).

(b) The following drainages located north of the main Yukon River are closed to subsistence fishing:

(1) Kanuti River upstream from a point five miles downstream of the state highway crossing;

(2) Fish Creek upstream from the mouth of Bonanza Creek;

(3) Bonanza Creek;

(4) Jim River including Prospect Creek and Douglas Creek;

(5) South Fork of the Koyukuk River system upstream from the mouth of Jim River;

(6) Middle Fork of the Koyuk River system upstream from the mouth of the North Fork;

(7) North Fork of the Chandalar River system upstream from the mouth of Quartz Creek.

(c) The main Tanana River and its adjoining sloughs are closed to subsistence fishing between the mouth of the Salcha River and the mouth of the Gerstle River, except that salmon may be taken in the area upstream of the Richardson Highway bridge to the mouth of Clearwater Creek after November 20.

(d) The Tanana River drainage is closed to subsistence fishing for pike between the Kantishna River and the Delta River at Black Rapids on the Richardson Highway and Cathedral Rapids on the Alaska Highway, except that pike may be taken for subsistence purposes in the Tolovanna River and adjoining sloughs and lakes between Department of Fish and Game regulatory markers placed approximately two miles upstream and downstream of the village of Minto.

(e) The Delta River is closed to subsistence fishing, except that salmon may be taken after November 20.

(f) Repealed 4/13/80.

Authority: AS 16.05.251(a)(2),(7),(10),(12) and (b)

Attachment 3 (continued). List of 1980 Yukon area commercial and subsistence fishing regulations.

5 AAC 01.230. SUBSISTENCE FISHING PERMITS. (a) Except as provided in this section, fish may be taken for subsistence purposes without a subsistence fishing permit.

(b) A subsistence fishing permit is required as follows:

(1) for the Yukon River drainage from the mouth of Hess Creek to the mouth of the Dall River;

(2) repealed 4/13/80;

(3) for the Yukon River drainage from Department of Fish and Game regulatory markers placed near the upstream mouth of 22 Mile Slough upstream to the U.S.-Canada border;

(4) repealed 4/13/80;

(5) for the Tanana River drainage above the mouth of the Wood River;

(6) for whitefish and suckers in the waters listed in sec. 225(a) of this chapter.

(c) In addition to the subsistence fishing permit conditions set forth in sec. 15 of this chapter, permits issued for fish other than salmon may also designate restrictive measures for the protection of salmon.

(d) Only one subsistence fishing permit will be issued to each household per year.

Authority: AS 16.05.251(a)(2),(3),(4),(7),(10),(12) and (b)

5 AAC 01.240. MARKING OF SUBSISTENCE TAKEN SALMON. In district 6 no person may possess salmon for subsistence purposes unless the dorsal fin has been immediately removed from the salmon. It is unlawful to purchase salmon from which the dorsal fin has been removed. Possession of salmon taken for subsistence purposes from which the dorsal fin has not been removed is prima facie evidence that the salmon was taken and possessed for commercial purposes.

Authority: AS (a)(2),(3),(4),(7) and (b)

Attachment 3 (continued). List of 1980 Yukon area commercial and subsistence fishing regulations.

COMMERCIAL FISHING

CHAPTER 5.
YUKON AREA.

ARTICLE 1.
DESCRIPTION OF AREA.

5 AAC 05.001. APPLICATION OF THIS CHAPTER. Requirements set forth in this chapter apply to commercial fishing only, unless otherwise specified. Subsistence fishing regulations affecting commercial fishing vessels or affecting any other commercial fishing activity are set forth in the subsistence fishing regulations in the chs. 1 and 2 of this title.

Authority: AS 16.05.251

5 AAC 05.100. DESCRIPTION OF AREA. The Yukon area includes all waters of Alaska between the latitude of Canal Point light and the latitude of the westernmost point of the Naskonat Peninsula, including those waters draining into the Bering Sea.

Authority: AS 16.05.251(a) (2)

ARTICLE 2.
FISHING DISTRICTS AND SUBDISTRICTS.

5 AAC 05.200. FISHING DISTRICTS AND SUBDISTRICTS. (a) District 1 consists of that portion of the Yukon River drainage from its terminus upstream to the northern edge of the mouth of the Anuk River and all waters of the Black River including waters within one nautical mile of its terminus.

(b) District 2 consists of that portion of the Yukon River drainage from the northern edge of the mouth of the Anuk River upstream to a Department of Fish and Game regulatory marker located at Toklik and includes the Anuk River drainage.

(c) District 3 consists of that portion of the Yukon River drainage from a Department of Fish and Game regulatory marker located at Toklik upstream to a Department of Fish and Game regulatory marker at the mouth of an unnamed slough downstream from Old Paradise Village.

(d) District 4 consists of that portion of the Yukon River drainage from a Department of Fish and Game regulatory marker at the mouth of an unnamed slough downstream from Old Paradise Village upstream to the western edge of the mouth of Illinois Creek at Kallands and includes the Bonasila River drainage:

(1) subdistrict 4-A consists of that portion of the Yukon River from a Department of Fish and Game regulatory marker at the mouth of an unnamed slough downstream from Old Paradise Village upstream to the tip of Cone Point and includes the Bonasila River drainage;

(2) subdistrict 4-B consists of that portion of the Yukon River from Cone Point upstream to the western edge of the mouth of Illinois Creek.

(e) District 5 consists of that portion of the Yukon River drainage (excluding the Tanana River drainage) from the western edge of the mouth of Illinois Creek to the U.S.-Canada border and includes the Illinois Creek drainage:

(1) subdistrict 5-A consists of that portion of the Yukon River from the western edge of the mouth of Illinois Creek upstream to a Department of Fish and Game regulatory marker located two miles downstream from Waldron Creek and includes the Illinois Creek drainage;

(2) subdistrict 5-B consists of that portion of the Yukon River from a Department of Fish and Game regulatory marker located two miles downstream of Waldron Creek upstream to the U.S.-Canada border.

Attachment 3 (continued). List of 1980 Yukon area commercial and subsistence fishing regulations.

(f) District 6 consists of the Tanana River drainage to its confluence with the Yukon River;

(1) subdistrict 6-A consists of that portion of the Tanana River drainage from its mouth upstream to the eastern edge of the mouth of the Kantishna River and includes the Kantishna River drainage;

(2) subdistrict 6-B consists of that portion of the Tanana River drainage from the eastern edge of the mouth of the Kantishna River upstream to the eastern edge of the mouth of the Wood River and includes the Wood River drainage;

(3) subdistrict 6-C consists of that portion of the Tanana River drainage from the eastern edge of the mouth of the Wood River upstream to the eastern edge of the mouth of the Chena River and includes the Chena River drainage.

Authority: AS 16.05.251(a) (2)

**ARTICLE 3.
SALMON FISHERY.**

5 AAC 05.310. FISHING SEASONS. Except as provided in secs. 320-370 of this chapter, salmon may be taken only as follows:

(1) in districts 1, 2 and 3 from June 10 through August 31, except that when June 10 falls within a closed weekly period the season will open the next following open weekly period; the early season is closed by emergency order and subsequent seasons are opened and closed by emergency orders;

(2) in districts 4, 5 and 6 from June 15 through September 30;

(A) the early season is closed by emergency order and subsequent seasons are opened and closed by emergency order;

(B) section 4-A closes August 1;

Authority: AS 16.05.060
AS 16.05.251(a) (2)

5 AAC 05.320. WEEKLY FISHING PERIODS. Weekly fishing periods are as follows:

(1) district 1:

(A) June 10 through July 15, salmon may be taken from 6:00 p.m. Monday until 6:00 p.m. Tuesday and from 6:00 p.m. Thursday until 6:00 a.m. Saturday;

(B) after July 15, salmon may be taken from 6:00 p.m. Monday until 6:00 p.m. Tuesday and from 6:00 p.m. Thursday until 6:00 p.m. Friday;

(2) district 2:

(A) June 10 through July 15, salmon may be taken from 6:00 p.m. Sunday until 6:00 p.m. Monday and from 6:00 p.m. Wednesday until 6:00 a.m. Friday;

(B) after July 15, salmon may be taken from 6:00 p.m. Sunday until 6:00 p.m. Monday and from 6:00 p.m. Wednesday until 6:00 p.m. Thursday;

(3) district 3: June 10 through August 31, salmon may be taken from 6:00 p.m. Monday until 6:00 a.m. Wednesday and from 6:00 p.m. Thursday until 6:00 a.m. Saturday;

Attachment 3 (continued). List of 1980 Yukon area commercial and subsistence fishing regulations.

(4) district 4:

(A) in subdistrict 4-A from June 15 through August 1, salmon may be taken from 6:00 p.m. Sunday until 6:00 p.m. Tuesday and from 6:00 p.m. Wednesday until 6:00 p.m. Friday;

(B) in subdistrict 4-B from June 15 through August 15, salmon may be taken from 6:00 p.m. Sunday until 6:00 p.m. Tuesday and from 6:00 p.m. Wednesday until 6:00 p.m. Friday;

(C) in subdistrict 4-B after August 15, salmon may be taken from 6:00 p.m. Sunday until 6:00 p.m. Tuesday and from 6:00 p.m. Wednesday until 6:00 p.m. Friday;

(5) district 5:

(A) in subdistrict 5-A from June 15 through August 15, salmon may be taken from 6:00 p.m. Tuesday until 6:00 p.m. Thursday and from 6:00 p.m. Friday until 6:00 p.m. Sunday;

(B) in subdistrict 5-A after August 15, salmon may be taken from 6:00 p.m. Tuesday until 6:00 p.m. Thursday and from 6:00 p.m. Friday until 6:00 p.m. Sunday;

(C) in subdistrict 5-B salmon may be taken seven days a week;

(6) district 6:

(A) June 15 through August 15, salmon may be taken from 6:00 p.m. Monday until 6:00 p.m. Wednesday and from 6:00 p.m. Friday until 6:00 p.m. Sunday;

(B) after August 15, salmon may be taken from 6:00 p.m. Monday until 6:00 p.m. Wednesday and from 6:00 p.m. Friday until 6:00 p.m. Sunday.

Authority: AS 16.05.060

AS 16.050251(a) (2)

5 AAC 05.330. GEAR. (a) In district 1, 2, and 3, set gill nets and drift gill nets only may be operated.

(b) In districts 4, 5, and 6, set gill nets and fishwheels only may be operated.

(c) No person may operate more than one fishwheel at any one time.

(d) No person may operate or assist in operating more than one type of gear at any one time.

Authority: AS 16.05.251(a) (4)

Attachment 3 (continued). List of 1980 Yukon area commercial and subsistence fishing regulations.

5 AAC 05.331. GILLNET SPECIFICATIONS AND OPERATION. (a) No person may operate set gill net gear that exceeds 150 fathoms in aggregate length; no person may operate drift gill net gear that exceeds 50 fathoms in length.

(b) In districts 1 and 2, salmon may be taken only with gill nets of six-inch or smaller mesh after a date specified by emergency order issued between June 27 and July 5.

(c) In district 3, salmon may be taken only with gill nets of six-inch or smaller mesh after a date specified by emergency order issued between July 5 and 15.

(d) In district 4, salmon may be taken only with gill nets of six-inch or smaller mesh after a date specified by emergency order issued between July 10 and July 31.

(e) No gill net gear may be operated in a manner to obstruct more than one-half the width of any waterway. In the intertidal zone this restriction applies at all stages of the tide.

Authority: 16.05.060
AS 16.05.251(a) (2), (4)

5 AAC 05.333. FISHWHEEL SPECIFICATIONS AND OPERATION. Fishwheel baskets must be stopped from rotating in the water during periods closed to commercial and subsistence fishing. The fishwheel vessel registrant is responsible for the operation of the fishwheel.

Authority: AS 16.05.251(a) (2), (4), (12)

5 AAC 05.334. IDENTIFICATION OF GEAR. (a) Each drift gill net in operation must have at one end a red keg, buoy or cluster of floats plainly and legibly marked with the fisherman's permanent registration number assigned by the department under sec. 370(h) of this chapter.

(b) Each set gill net in operation must have at each end a red keg, buoy or cluster of floats, or in the case of set gill nets anchored to land must have a red keg, buoy or cluster of floats at the outer end of the net, which must be plainly and legibly marked with the fisherman's permanent registration number assigned by the department under 5 AAC 39.280.

(c) Each fishwheel in operation must have plainly and legibly inscribed on it the permanent registration number assigned by the department under 5 AAC 39.280. Numbers must be at least six inches in height with lines at least one inch wide and must be painted in contrasting colors. These numbers must be placed on the side of the fishwheel facing midstream of the river.

Authority: AS 16.05.251(a) (4)

5 AAC 05.335. MINIMUM DISTANCE BETWEEN UNITS OF GEAR. (a) In district 1: no person may set or operate any part of a set gill net within 300 feet of any part of another set gill net.

(b) In district 2: no person may set or operate any part of a set gill net within 200 feet of any part of another set gill net.

(c) In districts 4, 5, and 6: no person may set commercial fishing gear within 200 feet of other operating commercial or subsistence fishing gear.

Authority: AS 16.05.251(a) (2), (4)

Attachment 3 (continued). List of 1980 Yukon area commercial and subsistence fishing regulations.

5 AAC 05.350. CLOSED WATERS. Salmon may not be taken in the following waters:

(1) Acharon Channel of the south mouth area west of a line from a department shore marker below Chris Point bearing 285° to a department shore marker 2-1/2 nautical miles on the opposite side of the channel; this closed water area is also defined as west of a line established by a series of yellow and green barrels placed by the department between shore markers;

(2) other waters farther than one nautical mile seaward from any grassland bank in district 1;

(3) waters west of a one nautical mile radius from the mouth of the Black River;

(4) waters of the Andreafsky River upstream of a line from department regulatory markers placed on each side of the river at its mouth;

(5) Tanana River upstream of the downstream mouth of the Chena River;

(6) tributaries of the Yukon and Tanana Rivers;

(7) all other waters of the Yukon area except those waters described in sec. 200 of this chapter;

(8) waters of the Anvik River upstream of a line between department regulatory markers placed on each side of the river at its mouth.

Authority: AS 16.05.251(a) (2)

5 AAC 05.360. GUIDELINE HARVEST LEVELS. (a) When the king salmon guideline harvest level has been attained the season in the district will be closed and a later season may be announced to attain guideline harvest levels for the other species of salmon.

(b) The following are guideline harvest ranges for the districts, subdistricts, and time periods specified:

(1) district 1 after July 15, district 2 after July 18, and district 3 after July 21: 120,000 to 220,000 chum salmon from the areas;

(2) district 3: 1800 to 2200 king salmon;

(3) district 4: 900 to 1100 king salmon and after August 15 in subdistrict 4-B 10,000 to 40,000 chum and coho salmon combined;

(4) district 5: 2700 to 3300 king salmon and after August 15, 10,000 to 40,000 chum and coho salmon combined;

(5) district 6: 900 to 1100 king salmon and after August 15, 7500 to 22,500 chum and coho salmon combined for the area.

Authority: AS 16.05.060

AS 16.05.251(a) (2), (3), (7)

Attachment 3 (continued). List of 1980 Yukon area commercial and subsistence fishing regulations.

5 AAC 05.370. REGISTRATION AND REREGISTRATION. (a) The owner, or his authorized agent, of a commercial salmon fishing vessel registered for salmon net registration area Y shall register prior to fishing for a district described in sec. 200 of this chapter. Registration is accomplished on a form provided by the department by indicating the district in which the vessel is intended to be first used during the season.

(b) Subsequent to the initial registration for districts 1 and 2, a registrant may operate a vessel in another district following reregistration for the district of intended operation. The registrant shall not fish during the 48-hour waiting period following reregistration.

(c) A salmon interim-use or entry permit holder whose vessel is registered to fish in district 3 shall not fish in districts 1 or 2 until after July 10.

(d) A salmon interim-use or entry permit holder whose vessel is registered to fish in either districts 1, 2 or 3 shall not fish in districts 4, 5 or 6.

(e) A salmon interim-use or entry permit holder whose vessel is registered to fish in districts 4, 5 or 6 shall not fish in another district.

(f) A vessel including a vessel used to take salmon with a fishwheel may be registered in only one district. Fishwheel vessel registrants shall indicate on the renewal form the single district selected.

(g) After fishing in either district 1 or 2, a salmon interim-use or entry permit holder shall wait 48 hours before fishing in another district.

(h) Each drift gill net registrant acting under (a) of this section will be assigned a permanent registration number by the department.

Authority: AS 16.04.251(a) (2) (3)

5 AAC 05.380. UNLAWFUL POSSESSION OF SUBSISTENCE TAKEN SALMON. It is unlawful to purchase salmon from which the dorsal fin has been removed as required by 5 AAC 01.240. Possession of salmon taken for subsistence purposes from which the dorsal fin has not been removed is prima facie evidence that the salmon was taken and possessed for commercial purposes.

Authority: AS 16.05.251(a) (2), (4), (7) and (b)

**ARTICLE 4.
BOTTOMFISH FISHERY.**

5 AAC 05.410. FISHING SEASON. There is no closed season on bottomfish.

Authority: AS 16.05.251(a) (2)

**ARTICLE 5.
SMELT FISHERY.**

5 AAC 05.510. FISHING SEASON. There is no closed season on smelt.

Authority: AS 16.05.251(a) (2)

Attachment 3 (continued). List of 1980 Yukon area commercial and subsistence fishing regulations.

CHAPTER 27. HERRING FISHERY.

ARTICLE 13. STATISTICAL AREA Q:

BERRING SEA, KOTZEBUE AREA.

5 AAC 27.900. DESCRIPTION OF STATISTICAL AREA. Statistical area Q has as its southern boundary a line extending west from Dall Point and as its northern boundary a line extending west from Point Hope, and as its western boundary the International Date Line in the Bering Sea and Chukchi Sea.

Authority: AS 16.05.251(a)(2)

5 AAC 27.905. DESCRIPTION OF DISTRICTS. (a) The Cape Romanzov district consists of all waters of Alaska between the latitude of Dall Point and 62° N. lat.

5 AAC 27.910. FISHING SEASONS. (a) Herring may be taken only from April 15 through July 31 only in those districts listed in sec. 905 of this chapter, except that the season for taking herring by purse seine in the Norton Sound district is opened and close by emergency order.

5 AAC 27.930. GEAR. Herring may be taken only by the gear specified for the following districts:

- (1) Cape Romanzov district: gill nets;

5 AAC 27.931. GILL NET SPECIFICATIONS AND OPERATION. (a) Not more than 150 fathoms of herring gill net may be operated from any licensed fishing vessel and no single herring gill net may exceed 50 fathoms in length, except that in the Norton Sound district no single herring gill net may exceed 150 fathoms in length and the aggregate length of gill net in use by an interim-use or entry permit holder may not exceed 150 fathoms.

(b) Each gill net in operation must be buoyed at both ends and at least one buoy must be plainly and legibly marked with the permittee's herring interim-use or entry permit number.

Authority: AS 16.05.251(a)(4),(5)

5 AAC 27.950. WATERS CLOSED TO HERRING FISHERY. (a) In the Cape Romanzov district, the waters east of the longitude of Point Smith are closed to herring fishing.

(d) Herring may not be taken in any waters of statistical area Q that are not set forth in sec. 905 of this chapter.

(e) The Cape Romanzov district is closed to the commercial taking of herring spawn on kelp or on any other substrate.

Attachment 3 (continued). List of 1980 Yukon area commercial and subsistence fishing regulations.

5 AAC 27.960. GUIDELINE HARVEST LEVELS. (a) The guideline harvest level for taking herring in the Cape Romanzof district is 350 metric tons.

(e) The guideline harvest levels set forth in (a)-(d) of this section represent preseason estimated levels of allowable herring harvests which will not jeopardize the viability of herring stocks. A district or section may close to herring fishing before or after the guideline harvest level has been reached if principles of management and conservation dictate such action, based on the biological condition of the stocks.

Authority: AS 16.05.251(a)(2),(3)

5 AAC 27.970 BUYER REPORTING REQUIREMENTS. In addition to the requirements of 5 AAC 39.130(f) each buyer or his agent shall report in person to a local representative of the department upon arrival on the fishing grounds and before commencing operations in the Cape Romanzof and Norton Sound districts and in person, by radio or telephone upon arrival on the fishing grounds and before commencing operations in the Port Clarence and Kotzebue districts. Each buyer shall:

(1) identify and describe all vessels to be employed in the processing or transporting herring or herring spawn on kelp in each district;

(2) report daily all herring or herring spawn on kelp purchased from fishermen or other processing records in each district as specified by a department representative; this may be a requirement for fish tender operators if specified by a local department representative, and;

(3) submit fish tickets before departure from each district and no later than 10 days after termination of buying operations in each district or as otherwise specified by a local department representative.

Authority: AS 16.05.251(a)(4),(5),(7),(12)

5 AAC 27.980. POSSESSION OF SALMON. Salmon taken incidentally in conjunction with commercial herring fishing must be returned to the water.

Authority: AS 16.05.251(a)(2),(4),(10)

Attachment 4. Summary of special projects conducted in the Yukon Area by the Division of Commercial Fisheries, 1980.

1. YUKON RIVER TEST FISHING

- a. Location: Middle Mouth (Kawanak Pass) and Big Eddy (Kwikluak Pass near Emmonak in the south mouth) of the Yukon River.
- b. Objectives: Determine run timing and distribution and relative abundance of king and summer chum, fall chum and coho salmon in the lower Yukon River.
- c. Results:

1) Middle Mouth:

- (a) King and summer chum salmon: A total of 2,779 king and 3,293 summer chum salmon was taken in index set gillnets from May 31 through July 15. Peak catches of king salmon occurred on June 12 and June 18-19. Peak summer chum catches occurred during June 18-22, June 29 and July 3-6.
- (b) Fall chum and coho salmon: A total of 1,121 fall chum and 132 coho salmon was taken in index set gillnets from July 16 through August 30. Peak catches of fall chums occurred July 26-28, August 6-7 and August 18-19. Coho salmon catches peaked on August 20-21, 24 and 30.

2) Big Eddy:

- (a) King and summer chum salmon: A total of 1,371 king and 2,640 summer chum salmon was taken in index set gillnets from May 30 through July 15. Peak catches of king salmon occurred on June 14, 16 and 18. Summer chum salmon catches peaked on June 8 and June 22-23.
- (b) Fall chum and coho salmon: A total of 317 fall chum and 49 coho salmon was taken in index set gillnets from July 16 through August 30. Peak catches of fall chums occurred on July 26-28, August 8-10 and August 17-18. Peak coho salmon catches occurred on August 25 and 28.

2. SUBSISTENCE SALMON FISHERY SURVEYS

- a. Location: Yukon, Koyukuk, Tanana Rivers, and Yukon Territory Villages.
- b. Objectives: Determine subsistence utilization of salmon and fishing effort needed for formulating future management procedures and goals; also collect tag recoveries from high seas and Department tagging programs.

- c. Results: A total of 1,131 fishing families were surveyed in the Yukon River drainage and their catches totaled 58,224 king salmon and 479,713 other salmon. A total 1,000 river miles was traveled by boat and 500 air miles by single engine aircraft in conducting the survey. Yukon territory subsistence catch data was furnished by Environment Canada - Fisheries Service (Whitehorse Office).

3. YUKON RIVER ANADROMOUS FISH INVESTIGATION

- a. Location: Yukon River drainage.
- b. Objectives: Develop estimates or indices of magnitude and quality of king and chum salmon escapements; determine size and the effect of commercial and subsistence harvest on various stocks of king and chum salmon; plus relate collected data to long-term trends in the salmon stocks and evaluate management procedures needed to maintain them at their level of maximum yield.
- c. Results: The king salmon escapement for the Anvik River in 1980 was estimated to be 1,330. King escapements were generally excellent in all streams surveyed throughout the drainage. A total of 1,383 king salmon were enumerated at the Whitehorse fishway in 1979. This was the largest count since 1962.

The 1980 Anvik River sonar count of summer chums was 482,181 - indicating an above average escapement when compared to previous years. Escapements of summer chums in other systems were generally above average.

Fall chum escapements in 1980 were below average to average. 1980 escapements of fall chum salmon were very similar to the 1976 brood year levels.

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 1980. Detailed age, sex and size composition data has been compiled and will be presented in a separate report.

5. YUKON RIVER FALL CHUM AND COHO SALMON TAG-RECOVERY PROJECT

- a. Location: Tanana River drainage
- b. Objectives: The primary objective of this study is to determine the relative timing and distribution (bank orientation) of various stocks past the commercial fishery in order to provide for more effective management.

- c. Results: In 1980 a total of 5,279 fall chum and 699 coho salmon, captured with two fishwheels in the Tanana River (located in the vicinity of the village of Manley) were tagged during the period August 11 through September 28. A total of 1,234 (23.4%) tagged chum and only one (0.1%) coho salmon were recovered. Results from the 1980 tagging project do not indicate a significant difference in bank orientation or timing between upper Tanana and Toklat River fall chum stocks in the lower Tanana River.

6. CAPE ROMANZOF HERRING PROJECT

- a. Location: Kokechik and Scammon Bays.
- b. Objectives: Determine distribution, timing and relative abundance of spawning herring and collect information on spawn deposition and mortality. Collect age, sex, size and maturity information of herring from test fishing and commercial catches.
- c. Results: A total of 2,368 herring were caught in sampling gill nets during the period May 12 through June 9. Initial spawning occurred on May 19 and continued throughout the project's duration. Both the magnitude of the run and the size of fish were larger than 1979. Spawn was deposited primarily on Fucus seaweed, mainly in Kokechik Bay near the Air Force Base shore facilities. The density of spawn ranged from very light in Scammon Bay to extremely heavy with several instances of "cauliflower" layering in portions of Kokechik Bay. Observed spawn mortality was in excess of 60% in some areas. The majority of the sampled herring were ages 6 and 8.

7. KING SALMON STOCK SEPARATION STUDIES

- a. Location: Yukon River drainage
- b. Objectives: To determine through scale analysis the relative contribution of various king salmon stocks harvested in the main river commercial and subsistence fisheries.
- c. Age (scale), sex and size data were collected from commercial/subsistence catches and various spawning streams (Andreafsky, Nulato, Anvik, Salcha and Chena Rivers and several tributaries in the Yukon Territory). Scale measurements (circulii counts and widths) have been completed and data is undergoing computer analysis. Results will be presented in a separate report.

8. UPPER YUKON RIVER TEST FISHING

- a) Location: Mouse Pt. (mile 603)
- b) Objectives: Determine run timing and relative abundance of upper Yukon (north bank) stocks of fall chum salmon by fishing a two basket fishwheel.
- c) Results: A total of 2 king, 486 fall chum and 1 coho salmon was taken from the index fishwheel between August 4 and September 6 during the first year of operation. Peaks in the fall chum migration occurred on August 14 and August 26.

ATTACHMENT 5.

1980 YUKON AREA SALMON MANAGEMENT PLAN FOR
COMMERCIAL AND SUBSISTENCE FISHERIES

ALASKA DEPARTMENT OF FISH AND GAME
Division of Commercial Fisheries
Arctic-Yukon-Kuskokwim Region

Yukon Area Biologist: Mike Geiger
333 Raspberry Rd.
Anchorage 99502

Assistant Area Biologist: Drew Crawford
Box 90
Bethel 99559

Upper Yukon Area Biologist: Fred Andersen
1300 College Rd.
Fairbanks 99701

1980 YUKON AREA SALMON MANAGEMENT PLAN

ALASKA DEPARTMENT OF FISH AND GAME DIVISION OF COMMERCIAL FISHERIES

INTRODUCTION

This management plan was developed in order to inform fishermen, processors and other interested persons about the status of the 1980 Yukon River salmon runs and Department strategies that may be used to regulate the various fisheries. Statements made concerning anticipated run magnitudes and management strategies are based on the best information presently available. Statements regarding fishing times and relative sizes of the runs should be considered as tentative and subject to change. This management plan will be updated and improved as information from ongoing and proposed Department programs becomes available.

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

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

Management is made difficult by the character of the salmon runs, fisheries (for example, allocation problems between upriver and downriver fishermen) and the river itself. Since most of the commercial fisheries have only developed or expanded in recent years, there is a lack of adequate escapement and return data on which to fully evaluate the effects of increased commercial harvests. The various fisheries scattered over 1,400 river miles harvest mixed stocks usually several weeks and hundreds of miles from their spawning grounds. Because the Yukon River commercial fishery is essentially a "cape fishery" (fishing on mixed stocks) some tributary populations may be under or overharvested in relation to their actual abundance. For example, in a mixed stock fishery, where it is impossible to manage each stock separately, small spawning populations may be reduced to very low levels or even eliminated.

Due to the turbid water conditions of the main river and the vast size of the drainage (330,000 square miles), one-third of which is in Canada, accurate inseason assessment of the escapement immediately past the intensive downriver fishery is very difficult with the present available technology and funding. Management is also hampered by the variable run timing and pattern of entry into the lower fishery. Comparisons of catch data between years is thus made difficult.

New research projects are underway and other programs are planned, once additional funding becomes available, to obtain the biological information necessary for better management of the salmon runs. For example, a comprehensive tag-recovery program was begun in 1976 to determine the relative timing and distribution of fall chum stocks through the commercial fishery. If individual stocks can be identified from this program and scale analysis studies, then the fishery can be more effectively regulated in order to achieve the proper balance between catch and escapement. Future salmon studies include expansion of the test fishing program, sonar assessment of run strength in the main river, and upgrading escapement documentation in tributary streams.

As a result of the difficulty in obtaining the necessary biological information, the mixed stock situation, increased effort and efficiency of the commercial fishery, allocation problems, and because of the need to provide for subsistence which has been designated the highest priority by the Legislature, the management of the Yukon River salmon runs must take a conservative approach. This can be achieved by establishing harvest guidelines, mesh size restrictions, reduced weekly fishing periods, fishing season closures, etc. During the fishing season if it becomes apparent that the run is substantially smaller-or-larger than needed for escapement and subsistence requirements, then the commercial harvest rates will be adjusted through the use of the emergency order, or less frequently emergency regulation authority.

Also affecting management is the interception of western Alaskan salmon (including Yukon River stocks) by the Japanese high seas mothership gillnet fishery in the Bering Sea. King salmon catches by this fishery have averaged 231,000 fish annually since 1966 and reached a peak catch of 450,000 kings in 1969. In some years the Japanese catch has exceeded the total western Alaskan catch (commercial and subsistence). The majority of kings taken are immature (4 year olds) averaging 6 pounds each whereas most of the adults (mostly 6 year olds) taken by Alaskan fishermen average 20-25 pounds. Based on tagging and scale analysis studies it is estimated more than 80% of the Japanese catches of king salmon are of western Alaska origin.

Western Alaskan chum salmon are also believed to be intercepted in substantial numbers by the Japanese fishery in the Bering Sea. This fishery annually harvests 2-4 million chums; however the degree of interception is unknown because of limited tagging studies.

An International treaty (the I.N.P.F.C.) has been recently renegotiated to afford increased protection for western Alaskan salmon stocks. Improved Yukon River king salmon returns may be expected as a result of reduced high seas interceptions.

STATUS OF STOCKS AND FISHERY:

King Salmon: The Yukon River commercial king salmon fishery in Alaska dates back to 1918. Since 1961 commercial catches have ranged from 63,700 to 129,700 fish and the recent 5 year average (1975-79) is 95,100. In addition to the Alaskan catch, the commercial fishery at Dawson (Yukon Territory) harvests 2-3,000 kings annually (recent 10 year average).

Throughout the Yukon River drainage approximately 15-25,000 kings are taken annually for subsistence use.

In recent years the character of the lower Yukon king salmon commercial fishery, which accounts for 95% of the catch, has changed. During the period 1961-72 the commercial catch of kings in the lower Yukon area averaged 101,500 fish annually. The catch during this period was taken almost exclusively with 8-8 1/2 inch mesh gill nets which are selective toward older age fish, especially large fecund females. Beginning in 1973 a six inch or smaller maximum mesh size regulation was implemented during the period late June - early July in order to maximize the harvest of summer chums. This regulation coupled with reduced fishing time and lower harvest goals resulted in a 22% reduction in the average annual (1973-79) catch to 79,600 kings taken with 8-8 1/2 inch mesh gill nets in the lower Yukon area. An additional 5,800 kings, mostly small males, were taken with 6 inch or smaller mesh gill nets annually during 1973-79. These regulatory changes should improve both the quantity and quality (i.e. more larger sized, female spawners) of the escapement.

In 1979 the magnitude of the Yukon River king salmon run was one of the largest runs since statehood. Due to an unusually early breakup of the river ice and the absence of ice in the Bering Sea, the king salmon run was very early. Subsistence fishermen in the lower Yukon area began making good catches of kings in late May and early June. In accordance with management plan strategy, the lower Yukon commercial fishing season was open early on June 3 and 4 in the lower two districts prior to the normal June 10 season opening because of the strong early run. Commercial catches were good throughout June and continued through early July when 24,500 kings were taken incidentally with small mesh (5-1/2-6 inch) gill nets. Upriver fishermen reported very good catches also. The overall area commercial catch totaled 129,100 kings, the second highest on record. Also 35,200 kings were taken for subsistence. Escapements were generally excellent in nearly all streams surveyed. Record escapements were observed in the Salcha, Gisasa, Nulato and Nisutlin Rivers. Escapements of kings past the Whitehorse Dam Fishway in Canada were the largest since 1962.

Spawning populations of king salmon are widely distributed throughout the drainage and have been documented in the Archuelinguk River located 85 miles from the mouth of the Yukon River and as far upstream as the headwaters of the drainage in the Yukon Territory of Canada, nearly 2,000 miles from the mouth. Major spawning streams in Alaska include the Andrafsky, Anvik, Nulato, Salcha and Chena rivers. In the Canadian portion of drainage, important systems include the Big Salmon and Nisutlin Rivers.

Commercial fishing effort has increased sharply since 1961. License registration for set gill nets has more than doubled while drift gill net gear has tripled in number. In excess of 150 units of fishwheel gear are also fished (upper Yukon area only). With the advent of the Limited Entry Program, fishing effort has apparently stabilized. In the lower Yukon area 726 CFEC gill net permits (including transfers) were issued, while in the upper Yukon area 74 gill net and 170 fishwheel permits were issued.

Yukon River king salmon runs during 1972-76 have generally declined in magnitude based on available comparative catch and escapement data. Countering this trend, good runs occurred in 1977, 1978 and 1979 when 96,400, 97,600 and 129,100 kings were commercially harvested. Escapements into key survey streams were also strong especially in 1978 and 1979 when record escapements were documented.

Restrictions placed on the commercial fishery during the 1970's have generally resulted in improved escapements compared to the 1963-69 period. Escapements in 1971 and 1977-79, were excellent and were similar to the levels observed during the early 1960's prior to maximum development of the commercial fishery.

Summer Chum Salmon: Prior to the mid 1960's summer chums were used primarily for subsistence purposes, mostly for sled dog food. As the snow machine replaced the dog sled, subsistence fishing for summer chums declined. Beginning in 1967 commercial fishing regulations regarding summer chums were gradually liberalized. As a result of regulation changes (e.g. mesh size specifications and earlier openings of the fishing season), increased fishing effort and processor facilities, development of Japanese markets and the occurrence of very large runs in recent years, the Yukon River summer chum salmon commercial harvest has increased sharply. Only 11,000 summer chums were taken commercially in 1967 while a record 1,045,100 fish were harvested in 1978. The recent 5 year average commercial harvest (1975-79) is 744,800 fish. The majority of the commercial harvest takes place in districts 1, 2 and 4. It is estimated that 175,000 summer chums are taken annually (1975-79 average) for subsistence in the Yukon River drainage.

The 1979 summer chum salmon run was considered below average in magnitude, based on comparable catch and escapement data, and was significantly smaller than the strong 1975 parent year run. The 1979 commercial catch totaled 803,500 fish. Lower Yukon area catches were above average but upper Yukon catches were below average. An additional 196,200 summer chums were taken for subsistence. Escapements were generally below average in most tributary streams except in the Tanana River drainage where escapements were average to above average.

Summer chums exhibit similar run timing as the kings, entering the lower river during June and early July. Major 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 Yukon River runs of 3.2 and 1.5 million summer chums in 1970 and 1971, respectively. The total Yukon River summer chum salmon run in 1975 was estimated to be in excess of 5 million fish based on commercial and subsistence catch documentation and aerial survey estimates. An escapement of over one million summer chums was estimated in 1975 in the Anvik River. Overall, Yukon River summer chum escapements have been good in recent years, however escapements in that portion of the drainage upstream of the Koyukuk River mouth have been variable.

Fall Chum Salmon: The commercial fishery for fall chum salmon in the Yukon River began in the early 1960's, however the fishery has undergone recent expansion since 1968. Commercial catches have ranged from 8,300

in 1964 to 362,500 in 1979 and the recent 5 year average (1975-79) harvest is 256,700 fish. In the face of increasing fishing effort and catches, the Department established a 250,000 maximum harvest limit for the entire river until future returns from current levels of harvest can be evaluated. This maximum harvest was used beginning in 1974 as a basis for establishing district quotas.

In recent years, as additional information has become available (comparative catch and escapement data), it has been evident that the size of the Yukon River fall chum runs has fluctuated sharply depending on brood year run strength and environmental factors. In order to provide for more flexible management of the variable fall chum runs, the Board of Fisheries replaced the rigid quotas with guideline harvest levels (range of 147,500 to 322,500) and reduced fishing time effective for the 1979 fishing season.

In 1979 the fall chum salmon run was exceptionally strong as evidenced by record catches and good escapements. The 1979 commercial catch exceeded the previous high catch in 1974 by 49%. The large 1979 catch, aside from the run magnitude, was attributed to flexible guideline harvest levels which allowed an increased catch in proportion to run size. Lower Yukon catches totaled 221,100 fish, up 12% compared to the previous 5 year average. Catches in the upper Yukon area totaled 141,400 fall chums, up 2-1/2 times from the previous five year average. Also a very large catch of 246,300 fall chums were taken for subsistence. Escapements in the Tanana River were at record levels and were especially large in the Toklat River where 172,000 spawners were documented. However, escapements to the Fishing Branch River, a tributary of the Porcupine River, totaled 44,100 fish, down considerably from the 1975 parent year escapement of 353,300.

Because of their good quality (bright, silvery appearance, large size, robust body shape and high oil content) which is related to their upriver spawning destinations, fall chums are in great demand and are harvested in all fishing districts. Fall chums are of less importance for subsistence than summer chums throughout the Yukon River drainage except upstream of the mouth of the Koyukuk River where it is estimated that fall chums comprise 60-75% of the total subsistence harvest. The annual subsistence catch of fall chums in the Yukon River drainage is approximately 120,200 fish (1975-79 average).

Fall chums enter the lower Yukon River beginning in mid-July and continue through early September. Major spawning areas are located in the Tanana River (Toklat River, Delta River and the upper Tanana River near Big Delta) and the Porcupine River (Sheenjek and Fishing Branch Rivers) drainages. Tagging studies indicate that the early run (mid July-early August) of fall chums is bound for the Porcupine River system and Yukon Territory systems. The late run of fall chums (mid August-early September) is believed destined primarily for the Tanana River. Tanana River drainage escapements in general appear more stable and experience less fluctuation than the Porcupine River system. For example, recent escapements to the Fishing Branch River have ranged from 353,000 (1975) to 13,000 (1976).

Coho Salmon: This species is of minor importance in both the commercial and subsistence fisheries. The commercial catch since 1961 have ranged from 350 to 38,000 and the recent 5 year average (1975-79) is 17,700 fish. Cohos first enter the lower Yukon River about one week later than fall chums and the run peaks during late August. Spawning occurs discontinuously throughout the drainage with the largest spawning concentrations documented in the tributaries of the upper Tanana River drainage.

The commercial harvest of cohos is dependent upon fishing effort exerted on the more numerous fall chums. Consequently, no specific management strategy has been developed for coho salmon. Future expansion of the coho fishery appears unlikely at this time.

OUTLOOK FOR 1980

King Salmon: In most years the dominant age class returning are 6 year old fish, however 5 and 7 year old fish may also contribute substantially to the run. The 1974 brood year run (6-year olds) was below average to average in abundance as indicated by comparative catch and escapement data. However, survival (favorable environmental conditions and possible reduced high seas fishery interceptions) of the 1974 brood year was apparently excellent based on the large number of 5 year olds returning in 1979. Therefore a large "carryover" of 6 year old fish may occur in 1980. Seven year old fish (1973 brood year) are not expected to contribute substantially to the return in 1980. Five year olds (1975 brood year) may contribute significantly to the return in 1980 because of average brood year run strength.

In summary, based on evaluation of brood year run size data, it is expected that the 1980 Yukon River king salmon run will be average in magnitude. The expected commercial catch should not exceed 80-90,000 unless an exceptionally large run is indicated.

Summer Chum Salmon: Normally the Yukon River summer chum (dog salmon) runs are composed of four year old fish, although in some years five year old fish are present in large numbers. The return of four year olds in 1980 will be dependent on the strength of the 1976 brood year and the survival of the resulting offspring. Based on the available catch and escapement data, the 1976 summer chum run was considered average to above average in magnitude. The return of five-year-old (1975 brood year) fish is not expected to contribute significantly to the run in 1980 because of the poor return of four-year-old fish in 1979.

In summary, the magnitude of the Yukon River summer chum run in 1980 is expected to be average. The expected commercial harvest should total 600,000-1,200,000 fish for the entire river.

Fall Chum Salmon: Similar to the summer run, the majority of the fall chums returning each year are four year old fish. Based on comparative catch and escapement information, the 1976 brood year run (4 year olds) was generally considered below average in magnitude. The return of five year olds (1975 brood year) may possibly contribute to the return in 1980 based on the large return of 4 year old fish in 1979.

In summary, the 1980 Yukon River fall chum salmon run is expected to be below average to average in magnitude. Based on 1976 brood year escapement data, a below average run is expected in the upper Yukon River drainage upstream of the Tanana River confluence. The Tanana River return of fall chums in 1980 is expected to be average in magnitude. The expected commercial harvest should approximate 235,000 fish, the midpoint of the guideline harvest level for the entire river.

Coho Salmon: The coho salmon run annually is much smaller than the fall chum run, and the harvest is dependent on the duration of the fishery for fall chums. The harvest is expected to total 20-30,000 fish for the entire river.

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

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

The lower Yukon River king and summer chum fisheries (set and drift gill nets only) are primarily regulated by scheduled weekly fishing periods. The fishing schedule is normally two periods a week, totaling 2-1/2 days (24 and 36 hour periods) which allows effort to be distributed throughout the run. Fishing periods may be changed by emergency order depending on the strength of the run as indicated by analysis of comparative catch statistics. The fishing season usually opens by regulation on June 10 which affords protection to the early part of the king salmon run. Later in the season during late June-early July only six inch maximum mesh size gillnets may be operated (there is no mesh size restrictions earlier in the season) which allows the harvesting of the normally more abundant summer chums while affording protection to the late king run.

A maximum commercial harvest of 80-90,000 king salmon for the entire river in Alaska has been established. This harvest should not be exceeded unless an exceptionally large run is indicated, as such occurred in 1977-79. In districts 1 and 2, the combined harvest should not exceed 73-83,000 kings (including approximately 5-8,000 taken with six inch or smaller mesh gill nets). The district 3 king salmon fishery is governed by a 1,800-2,200 guideline harvest level. (The upper Yukon districts are limited by a combined 4,500-5,500 king salmon guideline harvest level).

If the king salmon run is small, fishing time in districts 1 and 2 will be initially reduced from 2-1/2 to 2 days a week not later than June 20-25 (the peak of normal run timing). Additional reductions in fishing time or an early closure of the season may be necessary if indicated low abundance of kings continues in order to provide for adequate escapements and subsistence requirements.

A reduction in fishing time, because of a poor king run, is favored instead of complete season closure in June as this would prevent any

harvest of summer chums. Achievement of an optimum harvest of summer chums while providing protection of king salmon, especially during small king runs, is a complex problem facing management.

An additional option other than a season closure is the regulation which allows by emergency order a changeover to 6 inch or less mesh nets during June 27-July 5. This regulation allows harvesting of the more abundant chums during this period and minimizes the catch of kings. It should be clearly stated that the Department recognizes the importance of the long established king salmon fishery. The intention of the 6 inch or less maximum mesh size regulation in the lower two districts is to allow an optimum harvest of chum salmon after a normal harvest of king salmon, consistent with spawning ground and subsistence fishery requirements, has been made.

In some years, because of an early breakup, substantial numbers of king salmon are present in the lower river during late May - early June. It may be desirable to allow a limited harvest on this early segment of the run in order "to spread" the catch over most of the entire run. Often during "early years" the run is essentially over by late June. If an exceptional early breakup and run occurs (as in 1978 and 1979), test fishing and subsistence catches will be closely monitored. An early opening (before June 10) of the season in districts 1 and 2 with restricted fishing time (24 hour fishing periods) may be allowed by emergency order only if large, sustained test fishing or subsistence fishing catches are occurring.

In district 3 the changeover date to gillnets of 6 inch or smaller mesh will normally take place after a date between July 5-15 following the closure of the king salmon season. The reopening of the commercial fishing season will be dependent on the timing of the salmon runs in order to minimize the incidental capture of the late run of kings which are traditionally utilized for subsistence in this district.

In districts 1 and 2, after the changeover to gill nets of 6 inch or smaller mesh, fishing will remain at the normal 2-1/2 day a week schedule if the run is of average magnitude in order to provide for upriver escapement and fishery requirements. In recent years the summer chum run has become fully exploited especially with the expansion of the upper Yukon area fishery. Fishing time in subdistricts 1 and 2 may be increased to 3 days a week if the magnitude of the summer chums is above average. If the summer chum run is judged considerably below average, then a reduction in fishing time or a season closure in districts 1 and 2 may be required during late June-mid July.

Fall Chum and Coho Salmon: Effective for the 1979 fishing season the Board of Fisheries made two important regulation changes affecting the lower Yukon fall chum and coho salmon fisheries: establishing guideline harvest levels and reducing fishing time.

The 200,000 chum quota in effect after mid July for districts 1, 2 and 3 combined was replaced by a flexible guideline harvest of 120,000 to 220,000 chums. In those years when the fall chum run is of average magnitude, the harvest should approximate 170,000 fish, the midpoint of guideline harvest level range. This midpoint harvest level represents 30,000 less fish than the previous 200,000 quota as the Board of Fisheries reallocated 30,000 additional fish to the upper Yukon area. If the fall

run is substantially below or above average then the harvest will likely be at the lower (120,000) or higher (220,000) range of the guideline harvest level.

The Board of Fisheries also reduced weekly fishing time in all lower Yukon districts by one day. In districts 1 and 2 (after July 15) allowable fishing time was reduced 3 to 2 days per week and in district 3 fishing time (after July 25) was reduced from 4 to 3 days per week. Similar reductions in fishing time were also implemented by emergency order in 1977 and 1978.

The reduction in fishing time will help minimize overharvesting of certain run segments (especially the early portion); spread out the effort over a greater portion of the season; and result in more balanced harvests between districts in the lower Yukon area. A reduced fishing schedule will also minimize the possibility of processors being "swamped" with huge deliveries (up to 75,000 fish taken during a single fishing period in district 1) that have occurred in the past. Furthermore, extension of the season would provide for additional harvest of the coho salmon run which peaks later (after August 15).

If a poor early run of fall chums (Porcupine River stocks) develops, as indicated by below average catches before July 25, then fishing time restrictions (followed by a season closure if the run continues to be poor) may be implemented by emergency order. The season would be reopened or the normal fishing schedule resumed on August 10-15 when the Tanana River run is occurring.

In districts 1 and 2 the normal fishing schedule during the fall chum run of two 24 periods per week also affects subsistence fishing since during the closed commercial periods subsistence fishing is prohibited. An additional fishing period each week for subsistence may be allowed beginning on or about August 10 by emergency order. Continuation of these special subsistence fishing periods during the season will be based on available enforcement surveillance by Protection officers and if violations are minimal. After August 20, if the commercial fishing season has closed, subsistence fishing will be allowed seven days a week by regulation.

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

King and Summer Chum Salmon: As in the lower Yukon area, the king and summer chum (dog) salmon runs in the upper Yukon area exhibit similar run timing. The upper Yukon area commercial king salmon fishery is primarily regulated by a 4,500-5,500 fish guideline harvest level (adopted by the Board of Fisheries in December, 1978 to replace the previous quotas) apportioned to the various districts. Presently there are no guideline harvest levels established specifying the numbers of summer chums that may be taken. The management of the summer chum salmon fishery is based on in-season assessment of run strength.

In subdistrict 4-A of district 4, where the majority of the summer chum harvest is taken in the upper Yukon area, the weekly fishing schedule was reduced from a single 5 day period to two-2 day periods by

the Board effective for the 1979 season. This action was taken because of increased fishing effort and the necessity to provide for balanced harvests and escapements for the various run segments. Effective for the 1980 season the Board also reduced fishing time to two-2 day periods a week in subdistrict 4B of district 4, subdistrict 5A of district 5 and in district 6.

If either a weak run of kings or summer chums develops during 1980 in the upper Yukon area then the Department would consider various restrictions. These restrictions would probably vary in each district because of the different types of fisheries and the importance of the species harvested.

Fishermen in district 4 usually retain their kings for subsistence rather than sell them in order to allow the commercial fishing season to remain open for the more abundant and commercially valuable summer chums. However, because of a substantial increase in fishing effort due to the rapid development of the commercial fishery, the total harvest of kings (commercial plus subsistence) may exceed traditional harvest levels in this district.

If the king salmon guideline harvest level (900-1,100 fish) is taken (before July 10) in district 4, the commercial fishing season would be closed by emergency order. The season would be reopened during the period July 10 to July 31 to fishing with gill nets of six inch or smaller mesh and fishwheels. This action would minimize additional harvest of large king salmon and still allow continued commercial fishing on the more abundant summer chums.

If the summer chum salmon run was below average in magnitude, then fishing time in district 4 would be reduced. A reduction in fishing time would lessen the harvest and allow the fishery to be "more spread out" over a greater portion of the run.

In district 5 kings are of greater importance and are mostly taken with gillnets for both commercial and subsistence purposes. Summer chums are not abundant and are mainly retained for subsistence. Once the king salmon guideline harvest level was taken in this district the fishery would be closed until the fall season.

If the king run was poor, then fishing time would be reduced in district 5.

In district 6 (Tanana River drainage) fishwheels are primarily used to harvest kings and summer chums for both commercial and subsistence purposes.

The escapement of king salmon to the Chena and Salcha Rivers, tributaries of the upper Tanana River drainage, were excellent in 1979. Aerial survey escapements estimates of 1,159 kings in the Chena River and 4,789 kings in the Salcha River (the largest ever recorded) were documented. The 1979 Salcha River king salmon escapement was composed of primarily age 4 (29.6%), 5 (38.9%) and 6 (31.1%) year old fish. The strong escapements in 1979 indicate that the stocks in the upper Tanana River drainage have recovered from the adverse effects of the 1967 August flood. In 1973 (1967 brood year) the documented escapement was only 21 kings in the Chena and 249 kings in the Salcha River.

Once the king salmon guideline harvest level was taken, then the commercial fishing season in district 6 would be closed. A season closure would also aid in bolstering summer chum salmon escapements since Tanana River drainage summer chum runs are usually not large. If subsistence summer chum catches taken during the season closure appear average or above average in abundance, then a reopening of the commercial season on a reduced fishing schedule would be considered.

Fall Chum and Coho Salmon: In the upper Yukon area fall chum and coho salmon are present during the period from mid-August through September. The commercial salmon fishery during this period is primarily regulated by a 27,500-102,500 combined chum and coho salmon guideline harvest level which is apportioned to three districts. This guideline harvest level, adopted by the Board of Fisheries for 1979, replaced the previous 50,000 quota. Unless there are indications that the fall chum run is either very small or very large, the midpoint of the guideline harvest level - 65,000 fish (subdistrict 4-B of district 4-25,000, district 5-25,000 and district 6-15,000) will be the expected catch. As in the lower Yukon area, cohos are of minor importance and are taken incidentally to the more abundant fall chums.

Also effective for the 1979 fishing season the Board reduced fishing time for the fall chum and coho fishery (after August 15) from 5 to 4 days a week in subdistrict 4-B of district 4, subdistrict 5-A of district 5 and district 6. Also the fishing schedule was split into two-2 day periods. Reducing the weekly fishing time will provide for better balanced harvests and escapements.

If a weak early run of fall chums (Porcupine River stocks) is indicated (based on lower Yukon area catches), then a closure of the season during August 1-15 in subdistricts 4-B and 5-A would be implemented by emergency order. In subdistrict 5-B, which is primarily a subsistence fishery, fishing time would be reduced from 7 to 5 days a week. The fishing season would reopen on August 15 in subdistricts 4-B and 5-A on a probable reduced fishing schedule.

In early September, when the Tanana River run is present, the normal 4 day a week fishing schedule in subdistrict 4-B would be resumed.

In district 6 a delay in the opening of the fall season will be implemented by emergency order to allow the fall chum run to distribute itself throughout the district. Balanced escapements of all Tanana River spawning stocks would be realized since the harvest would be "spread out" over a longer period of time. This strategy has been endorsed by the Board of Fisheries.

The lower end of the guideline harvest level may be taken in some districts if a weak run occurs. On the other hand, if the runs are large, then the upper end of the guideline harvest levels will be allowed to be taken or exceeded by providing for additional fishing time.

ENFORCEMENT

The Board of Fisheries at its December 1977 meeting adopted a public proposal to repeal regulations which administered the legislation pertaining to the sale of subsistence caught salmon roe. The 1978 Legislature did not pass a bill to allow continuation of subsistence roe

sales in view of the Board's action. Therefore, sale of subsistence roe is illegal.

At the April 1979 meeting the Board adopted a proposal requiring the immediate removal of the dorsal fin from subsistence caught salmon in district 6. This action was necessary for enforcement purposes in order to distinguish between subsistence caught and commercially taken salmon. In recent years subsistence caught salmon have illegally entered commercial channels.

Also the board adopted a proposal at its December, 1979 meeting to prohibit buyers and processors to receive for commercial purposes, barter or solicit to barter subsistence taken salmon or their parts. Further restrictions in the bartering of salmon or their parts may be implemented by emergency order for a specific time and area if circumvention of management programs is occurring because of illegal bartering activities.

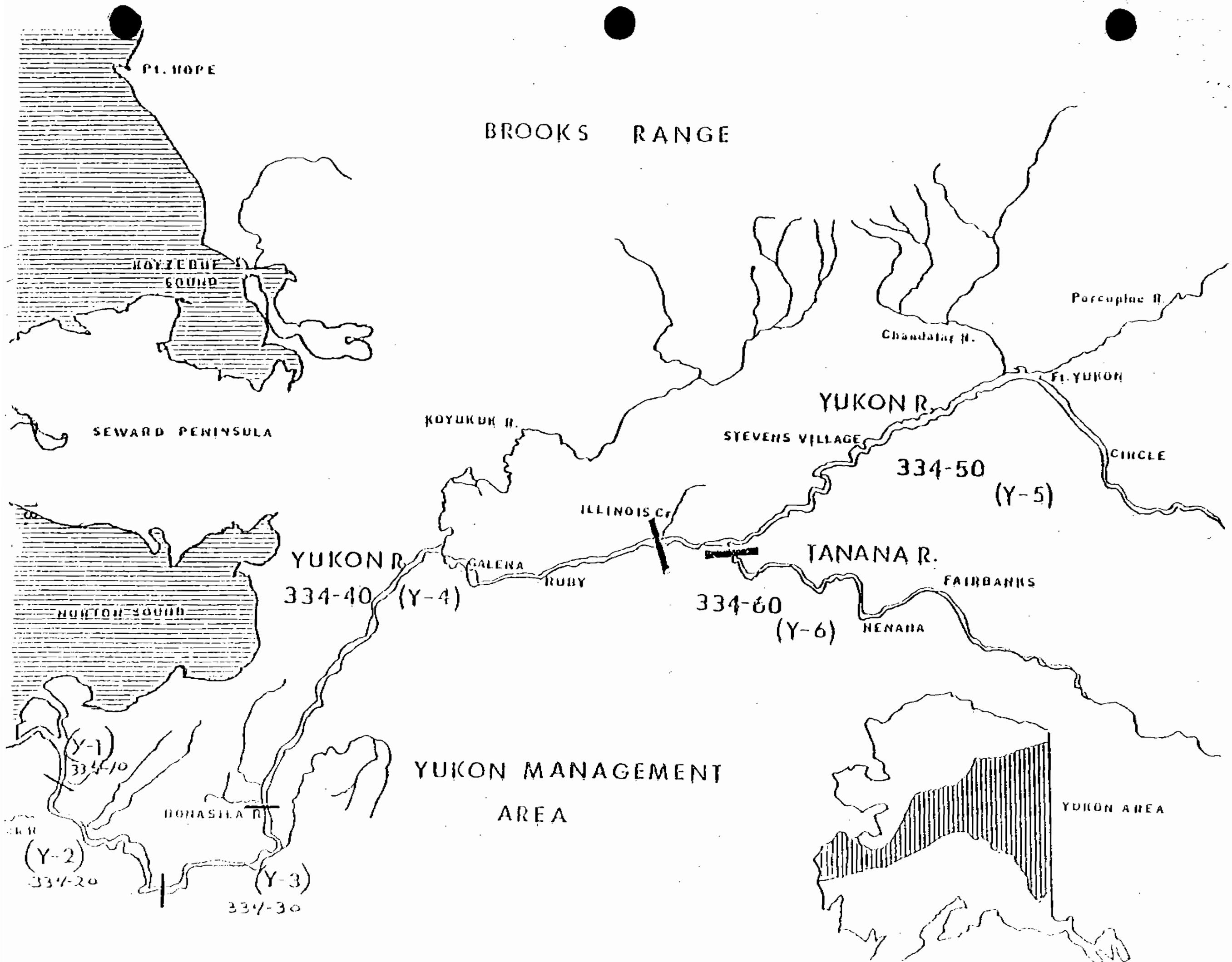
Fishermen are requested to report any instances of fishery violations to Department of Fish and Game or Division of Fish and Wildlife Protection (Dept. of Public Safety) personnel in order that follow-up action may be taken.

Questions or comments concerning the 1980 Yukon Area Salmon Management Plan should be directed to:

Mike Geiger
Yukon Area Management Biologist
Division of Commercial Fisheries
Alaska Dept of Fish and Game
333 Raspberry Road
Anchorage, Alaska 99502
Phone 344-0541

Fred Andersen
Upper Yukon Area Mgmt. Biologist
Division of Commercial Fisheries
Alaska Dept of Fish and Game
1300 College Road
Fairbanks, Alaska 99701
Phone 452-1531

Drew Crawford
Lower Yukon Assistant Area Mgmt. Biologist
Division of Commercial Fisheries
Alaska Dept of Fish and Game
P. O. Box 90
Bethel, Alaska
Phone 543-2433



Commercial salmon catch and effort data Yukon area, 1979

District	Fishing Vessels	Kings	Summer Chums	Fall Chums	Total Chums	Cohos	Total
1	425	76,269	390,351	101,124	491,475	11,244	578,988
2	210	41,357	176,937	94,042	270,979	2,920	315,256
3	22	5,108	43,440	25,955	69,395	-	74,503
Subtotal Lower Yukon	657	122,734	610,728	221,121	831,849	14,164	968,747
4	90	1,969	172,278	50,375	222,653	155	224,777
5	49	3,520	614	56,668	57,282	-	60,802
6	40	833	19,880	34,316	54,196	2,791	57,820
Subtotal Upper Yukon	179	6,322	192,772	141,359	334,131	2,946	343,399
Total	836	129,056	803,500	362,480	1,165,980	17,110	1,312,146

Commercial Salmon Catches, Yukon Area, 1961-1979.

	<u>Kings</u>	<u>Summer Chums</u>	<u>Fall Chums</u>	<u>Total Chums</u>	<u>Coho</u>	<u>Total</u>
1961	120,260		42,577	42,577	2,355	165,192
1962	94,374		53,160	53,160	22,925	170,460
1963	116,994				5,572	122,566
1964	93,587		8,347	8,347	2,446	104,380
1965	118,098		23,317	23,317	350	141,765
1966	93,315		71,045	71,045	19,254	183,614
1967	129,706	11,179	38,274	49,453	11,047	190,206
1968	106,525	14,470	52,925	67,395	13,303	187,224
1969	90,223	60,569	131,291	191,860	14,981	297,064
1970	80,269	137,368	209,356	346,724	12,245	439,238
1971	110,507	100,090	189,594	289,684	12,203	412,394
1972	92,840	135,668	152,176	287,844	22,233	402,917
1973	75,353	285,844	232,090	517,934	36,641	629,928
1974	97,919	604,210	273,158	877,368	16,240	991,527
1975	63,740	728,156	265,156	993,312	2,346	1,059,398
1976	88,671	598,227	163,282	761,509	5,197	855,377
1977	96,414	548,953	248,739	797,597	38,021	932,132
1978	97,602	1,045,092	243,737	1,288,329	25,960	1,412,391
1979	129,056	803,500	362,480	1,165,980	17,110	1,312,146