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YUKON AREA

STAFF

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

FAIRBANKS FIELD OFFICE--1300 College Road 99701
Frederick M. Andersen (Yukon Assistant 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.

The Yukon district was given area status in 1971. This report utilizes both the nomenclatures, i.e. "Yukon district" and "Yukon area" interchangeably.

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, 1978. This section presents a detailed 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.

Catch data for 1978 is preliminary. Final 1978 catch data, with only minor revisions anticipated, will be presented in the Appendix Tables of the 1979 Annual Management Report.

AREA INTRODUCTION

Description of Area

The area (district) 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 (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 (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 Andreafsky River system located approximately 100 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 June and early 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.

Other species common to the freshwater and coastal marine habitats include: sheefish, several species of whitefish, Arctic char, lake trout, grayling, burbot, suckers, sculpins, blackfish, sticklebacks, lampreys, smelt, capelin, herring, 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.

Subdistrict Boundaries

The present subdistrict boundaries were established in 1961 and redefined in 1962, 1974 and 1978. The commercial fishing area is divided into six subdistricts for management and regulatory purposes (Figure 2). The Lower Yukon area includes the coastal waters of the district and that portion of the drainage from the mouth to the Bonasila River (lower three subdistricts). 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 subdistricts). The subdistricts are further subdivided into statistical areas for management purposes. Figures 3, 4, and 5 present the lower three subdistrict statistical area charts. Figures 6, 7 and 8 present the upper three subdistrict statistical area charts. Yukon River mileages are presented in Table 2.

Commercial Fishery History and Description

Historical Catch Trends and Status of Stocks

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

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

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

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

Under 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). The greatest catch ever made in the district was 129,706 king salmon in 1967. Catches have declined since 1970, averaging 89,349 fish annually (1971-1977), because of below average runs and regulatory restrictions.

In 1975 the king salmon commercial catch of 63,000 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. With the exception of 1971, 1977 and 1978, escapements have not reached the levels observed during 1960-61.

In recent years the decline of the Yukon River king salmon is believed to be partially attributed to the Japanese high seas fishery. The high seas king salmon catches have averaged 284,000 fish annually during the period 1966-1976. A record 554,000 kings were taken in this fishery in 1969. In some years the Japanese catch has exceeded the total western Alaskan catch (subsistence and commercial). 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 has been recently negotiated to afford increased protection for western Alaskan salmon stocks. Improved Yukon River king salmon returns beginning in 1980 can be expected as a result of reduced high seas interceptions.

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 645,553 during the period 1971-1977. The largest chum salmon catch in the history of the Yukon River commercial fishery occurred in 1978 when 1,288,015 fish were taken (Appendix Tables 1 and 8).

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 1978 a record 1,053,166 fish were harvested. The majority of the harvest takes place in subdistricts 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 fishery as demonstrated by tagging studies. Annual catches of this interception fishery range from 200-400,000 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 1968). During the 1961-1968 period, catches averaged 41,378 annually and since 1968 (1969-1977) catches have averaged 207,205. 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 subdistricts. The majority (approximately 80%) of the fall chum commercial catches are taken presently in the lower three subdistricts.

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 and 1975 while small runs occurred in 1973, 1976 and 1978. 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 a 250,000 maximum fall chum salmon harvest until future returns from current levels of harvest can be evaluated. Beginning with the 1974 season the Alaska Board of Fish and Game established quotas of 200,000 chum salmon for the lower three subdistricts (combined) and 50,000 combined chum and coho salmon for the upper three subdistricts.

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 18,938 fish during the periods 1961-1965, 1966-1970, and 1971-1977, respectively.

Commercial salmon catches by subdistrict since 1960 are presented in Appendix Table 2.

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 13). 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 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 12). Salmon are processed at shore based or floating operations and also transported via aircraft outside the district for processing. In recent years, 1973-77, the wholesale value of the pack has averaged 6.5 million dollars.

Lower Yukon Area

The lower Yukon area consists of three subdistricts: subdistrict 334-10 (mouth to Anuk River including Black River); subdistrict 334-20 (Anuk River to Toklik); subdistrict 334-30 (Toklik to the mouth of the Bonasila River) (Figures 3, 4 and 5).

Since the onset of the commercial fishing in 1918, the majority of the Yukon River harvest has occurred in the lower river area (primarily subdistricts 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 subdistricts 334-10 and 334-20, these fisheries have been regulated by scheduled weekly fishing periods. The king salmon season in these two subdistricts opens June 10 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. 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 subdistricts 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 655 fishing vessels operated in the lower Yukon area in 1978. With the advent of the Limited Entry program, fishing effort has apparently stabilized at the 1978 levels.

Since 1970 subdistrict 334-10 and 334-20 commercial king salmon catches have averaged 77,795 fish annually (1971-1977) (Appendix Table 2).

In subdistrict 334-30 the commercial salmon fishing season opens June 10 and is allowed four days a week until the 2,000 king salmon quota is taken.

Excluding the 1920's, sale of other species of salmon captured during the king salmon season in the area of the present lower two subdistricts 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 subdistricts 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.

Since 1961 the commercial fishing season in the lower Yukon subdistricts 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. Use of small mesh gill nets in early July allowed a greater harvest of summer chums and also minimized the king salmon catch. Beginning with the 1976 fishing season a regulation was promulgated which established a flexible range of dates from June 27 to July 5 after which only gill nets of 6 inch or less mesh gill nets may be used.

In recent years (1973-77) the lower Yukon area commercial summer chum salmon catch has averaged 425,584 fish annually (Appendix Table 8).

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 183,051 fish annually (1969-77). Beginning in 1974 a 200,000 chum salmon quota system (after mid-July) was implemented for the combined lower three subdistricts. Also fishing time was reduced from four to three days a week in subdistricts 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.

The harvest of coho salmon in the lower Yukon area is dependent upon the duration of the fishing season (usually related to when the 200,000 chum quota is taken). Cohos peak during mid to late August. Lower Yukon coho salmon catches since 1970 have averaged 18,247 annually (1971-77).

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 and Emmonak to Anchorage for further processing. Mild curing and hard salting operations are located at Black River, Chuloonawick 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 subdistricts: Subdistrict 334-40 extends from the mouth of the Bonasila River upstream approximately 350 miles to the mouth of Illinois Cr. near Kallands, subdistrict 334-50, from the mouth of Illinois Cr. upstream to the U.S./Canadian border (approximately 550 miles) and subdistrict 334-60, the Tanana River drainage, of which the lower 225 miles is open to commercial fishing (Figure 6, 7 and 8).

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

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 subdistricts 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 subdistricts 334-50 and 334-60. The summer run of chum salmon is of paramount importance in subdistrict 334-40 and comprise in excess of 70% of the total upriver commercial harvest. 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 subdistricts 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 - 1977. During the same period, the upper-Yukon subdistricts have had an average of 182 participating fishermen or approximately 20% of the district total. Final implementation of the Limited Entry Program is expected to stabilize year-to-year fishing effort at a slightly lower level.

King salmon are of minor importance to the commercial fisheries in the three upper drainage subdistricts having a total quota allocation of 5,000 kings. Regulations allow quotas of 1,000 kings in subdistricts 334-40 and 334-60 and 3,000 in subdistrict 334-50. Normally the king salmon quota is not taken in subdistrict 334-40, as most fishermen retain them for subsistence purposes. In subdistrict 334-60, the king salmon quota 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 subdistrict 334-50, however, there is considerable set gillnet effort directed towards the capture of king salmon.

Unlike the lower river fisheries, relatively few summer chum salmon are taken commercially in the subdistricts 334-50 and 334-60. 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 Unalakleet, 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 in a fresh-frozen state. 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, sheefish, blackfish and burbot. Sheefish, pike, char and "tomcod" (saffron cod) are frequently taken through the ice by hand lines.

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

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

The Department's subsistence fishery surveys (personal interview, catch calendar, and/or catch questionnaires) obtain catch, effort and other associated data from villages and fish camps along the main river in Alaska, including portions of the Tanana River and Chandalar 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 56, a decrease of 113 since 1961. However, because of the expansion of the upper Yukon commercial fishery, beginning in 1973, the amount of fishwheel gear has increased 189 units in 1978).

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 6.0 in 1977. 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 16).

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 16). However, during 1974-1977 the subsistence chum salmon catches, utilized mainly for dog food, have increased, averaging 254,543. This increase can be attributed to above average size runs, especially summer chums and subsistence roe sales (1974-1977) 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 1961-1977 generally averaging 15-20,000 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 fishery resources for subsistence purposes. This is illustrated by the catch data presented in Appendix Tables 17 and 18 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, 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 subdistricts and may balance any immediate decline in subsistence utilization with the result that present regulations will be maintained for 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 catch quotas, reduced weekly fishing periods, fishing season closures, etc.

The basic regulation that governs the commercial salmon harvest in the district is the scheduled weekly fishing period and/or quotas. Commercial fishing is normally allowed for a total of from three to five days a week during the open season which depends on the subdistrict and species involved. Season catch quotas are utilized for the king salmon fisheries of the upper four subdistricts and the fall chum fishery throughout the district. 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 1978 is presented in Attachment 1. Also presented are 1978 regulation changes promulgated by the Board of Fisheries during its December, 1977 meeting (Attachment 2). A complete list of Yukon district current commercial and subsistence fishing regulations are presented in Attachment 3. A copy of the 1978 Yukon Area 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 to the Yukon area includes three positions--one area management biologist, one assistant area management biologist and one research biologist. In addition approximately 15 summer 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 management and research program from July 1, 1977 through June 30, 1978 were approximately \$214,000. State and federal funds provided \$189,600 and \$24,400 respectively of this budget.

In addition to the salmon 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 must often use 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 is 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 1978 and includes a summary of objectives, procedures and results for each.

AREA REPORT, 1978

Area Season Summary, 1978

In 1978 king salmon run was judged to be strong; however, both the summer chum and coho salmon runs were considered average and the fall chum salmon run was below average to average in magnitude based on comparable catch and escapement data.

In 1978 there were 97,602 kings; 25,960 cohos; and 1,288,829 chums, totaling 1,412,391 salmon taken commercially. This was the largest harvest recorded for chum salmon and for all species combined (Appendix Table 1). Tables 4 and 5 present 1978 commercial salmon catches by fishing season and statistical areas. Tables 7 through 12 present daily catch data for each subdistrict.

In 1978 the king salmon catch was 13,200 fish above the previous five year average of 84,419 fish. The 1978 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 1978 commercial chum salmon catch exceeded the previous five year average by 499,700 fish. The harvest was composed of 1,045,092 summer and 243,737 fall chums (Appendix Table 8).

In 1978 the commercial coho salmon catch exceeded by 32 percent the previous five year average of 19,626 fish.

Subsistence harvests in 1978 in the Yukon area (excluding Yukon Territory) were estimated at 30,785 king and 318,980 chum and coho salmon combined.

In 1978 a total of 766 CFEC gill net permits and 163 fishwheel permits were issued in the area. Table 6 shows the residency of all persons issued C.F.E.C. permits for 1978. 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 mild curing hard salting. The majority of the chum and coho salmon were fresh/frozen. Production of salmon roe totaled 261,422 pounds in 1978, including 38,033 pounds of salmon roe purchased from commercial fishermen in the upper Yukon area. Commercial salmon production data is presented in Appendix Table 12. All buyers and processors operating in the Yukon district during 1978 are listed in Table 3.

Yukon district commercial fishermen received a record \$5,314,700 for their catches in 1978. In addition, a minimum estimate of \$1,085,700 in wages was earned by processing plant employees and tenderboat operators. The latter figure was obtained from information supplied by a majority of the buyers and processors. The first wholesale value of the 1978 pack was estimated at a record \$14,194,800 (Appendix Table 13).

Average fish prices and salmon weights from 1960-1978 are presented in Appendix Tables 14 and 15, respectively.

Commercial Fishery, 1978

Lower Yukon Area

The 1978 lower Yukon (subdistricts 334-10, 334-20 and 334-30) commercial salmon catch totaled 955,368 fish which was comprised of 93,142 king; 839,371 chum (641,133 summer and 198,238 fall chums) and 22,855 coho salmon.

Lower Yukon fishing effort, in terms of the actual number of participating fishing vessels, increased significantly especially in subdistricts 1 and 2 during the "fall season" (+24%). In 1978 a total of 693 CFEC

gillnet permits were issued for the lower Yukon area (675 permits in 1977).

King Salmon: The timing of the king salmon runs entering the mouth of the Yukon River was very early and was attributed to the early breakup of the lower river ice cover (the main river was clear of ice by May 20) and also the relatively ice-free conditions in the Bering Sea. The first reported king salmon caught in the lower river occurred near Emmonak (mile 24) by local subsistence fishermen on May 26. Kings were entering the river before this date however, as the first king salmon caught upriver occurred on May 22 at Grayling (Mile 336).

During late May and during the first week of June subsistence fishermen in the lower river made excellent king salmon catches. Test fishing catches at Flat Island in the south mouth were also high, especially during June 2-4. The commercial fishing season in subdistricts 334-10 and 334-20 was open early by emergency order on June 8 for a special 24 hour fishing period before the normal June 10 opening date - because of the strong early run of kings in the main river as evidenced by subsistence and test fishing catch data. The strong early run segment (before June 8) was essentially unharvested except later by Marshall fishermen, and contributed significantly to upriver escapements.

Overall throughout the season, the king salmon run was judged above average in magnitude and probably was one of the largest runs of kings since statehood. This assessment was based on analysis of comparative catch data and subsequent spawning ground surveys throughout the drainage. The king salmon run this year was the return from the 1972 parent year run (6 year olds) and also probably was composed of substantial numbers of 7 year old fish from the 1971 brood year. The larger size fish this year (23.8 lbs) reflected the high proportion of 6 year olds (72%) in the run.

Comparative subdistrict 334-10 commercial king salmon catch data is presented in Appendix Table 5 and 6.

Peak commercial king salmon catches in subdistrict 334-10 were made during the periods June 15-17 (17,605) and June 22-24 (14,456). In subdistrict 2 king salmon catches were good throughout the early season (3,200-7,800 per period). A record 32,335 kings were taken in subdistrict 334-20.

The distribution of king salmon catches in the delta area ranged from very good in the middle mouth (19,711) and north mouth (3,387) to very poor at Black River where unfavorable winds and water level conditions resulted in a catch of only 1,097 fish (vs. 10,829 in 1977) (Appendix Table 7).

The early season ("king salmon season") - no mesh size restrictions - ended after June 27 in subdistricts 1 and 2 when by emergency order only gillnets of 6 inch or less mesh size were allowed. This action minimized the catch of the late run of kings and provided for increased catch efficiency of the more abundant summer chums. The commercial fishery season in subdistrict 3 was closed after one week of fishing by emergency order on June 17 when the 2,000 king salmon quota was taken.

Summer Chum Salmon: The summer chum salmon run was also early and the first fish was caught on May 26 near Emmonak in the south mouth area by a subsistence fisherman. The peak of the summer chum run (based on test fishing catches) on the lower river occurred during June 10-18.

A total of 278,259 summer chums were taken during the king salmon season (no mesh size restrictions) in the lower Yukon area. The majority of the catch (362,874) was taken during the fall or second season with 6 inch or less mesh gillnets (8,415 kings were taken incidentally during the fall season). In subdistrict 334-30 a record 24,454 summer chums were taken by 28 fishermen during the fall season which was opened by emergency order on July 6.

Comparative summer chum salmon catch data for subdistricts 334-10 and 334-20 are presented in Appendix Table 9.

Fall Chum Salmon: The first fall chum was taken in the lower portion of subdistrict 334-10 during the fishing period July 10-11. During subsequent fishing periods the proportion of fall chums in the catch slowly increased until the July 24-25 fishing period when the catch was almost exclusively fall chums. Fall chums characteristically exhibit very erratic run timing in the lower Yukon River. For example, peak commercial catches in subdistrict 334-10 occurred during the periods July 24-25 (52,830), July 30-August 1 (14,421) and August 21-22 (21,929). The July 24-25 catch was the largest 24 hour period fall chum catch ever taken. A total of 190,158 chums was taken toward the 200,000 chum quota, in effect for the lower three subdistricts combined. The breakdown of the quota catch was as follows: subdistrict 334-10 (127,947), subdistrict 334-20 (51,646) and subdistrict 334-30 (10,565).

Based on evaluation of commercial and test fishing (south mouth only) data in the lower Yukon River the strength of the run appeared to be below average. The fall chum run appeared to peak later in 1978 as compared to other years.

Comparative fall chum salmon catch data for subdistrict 334-10 is shown in Appendix Tables 10 and 11.

In accordance with strategy outlined in the 1978 Yukon Area Salmon Management Plan, fishing time restrictions were placed on the lower Yukon fall season fisheries. In subdistricts 334-10 and 334-20 fishing time was maintained at 2-1/2 days/week after July 10 instead of the usual 3 days a week schedule by emergency order. Effective the following dates weekly fishing time was reduced in the lower Yukon area: subdistrict 334-10 from 2-1/2 to 2 days (July 20), subdistrict 334-20 from 2-1/2 to 2 days (July 19) and subdistrict 334-30 from 4 to 3 days (July 24). The above fishing time reductions provided for more balanced harvests of the fall chum salmon run by allowing fishing over a greater period of time; provided for a more equitable allocation of the 200,000 fish quota between the lower three subdistricts; and allowed fishing for the later arriving coho salmon run (because of the longer season).

Coho Salmon: The first coho salmon caught in the lower Yukon area occurred during the fishing period of July 27-28 in subdistrict 334-10. Peak commercial catches were taken during the period of August 21-22. Test fishing data indicate that the coho run peaked about one week later than in 1977. Lower river comparative catch data indicate that 1978 coho salmon run was average in run magnitude.

A total of 12 processors operated in the lower Yukon area during 1978. Two new processors operated this year: Norton Sound Fisheries Co-op (Emmonak) and Trinity Seafoods (St. Marys). Most of the catch was processed as either a fresh/frozen product with the balance canned and mild cured/hard salted.

Upper Yukon Area

During 1978, a record total of 457,023 salmon of all species was harvested in the upper Yukon area. Of this 4,460 were kings; 449,458 chums and an estimated 3,105 coho salmon (Table 4). These figures represent 32% of the Yukon district production during 1978 and was 78% higher than the previous record upper-Yukon catch made in 1975.

A total of 159 fishwheel and 69 set gillnet Commercial Fishery Entry Permits were issued for the 1978 season.

Actual numbers of fishermen making deliveries at least once during the season totaled 173. Due to further implementation of the Limited Entry Program, participation was approximately 8% below 1977 levels. Participation by subdistrict was as follows: subdistrict 334-40, 82; subdistrict 334-50, 53 and subdistrict 334-60, 38 fishermen.

King Salmon: Analysis based on district wide commercial and subsistence harvests and documented escapements throughout the drainage indicate that the 1978 king salmon run to be the strongest since the early 1960's.

Because of the relatively low commercial (1,000) king salmon quota in subdistrict 334-4 (Figure 6) and the tendency of fishermen in that area to retain king salmon for personal use, the 1978 commercial harvest of 701 kings does not reflect actual run size. Of this total, 276 kings were taken in section 334-41 (Bonasila River to Cone Point) and the remaining 425 were harvested in section 334-42 (that portion of the drainage from Cone Point upstream to the mouth of Illinois Creek near Kallands). The peak of the king salmon run through subdistrict 334-40 occurred during the week ending July 7, when 269 kings were delivered by 71 fishermen.

In contrast to subdistrict 334-40, where kings are harvested only incidentally, the summer fishery in subdistrict 5 targets on king salmon. A total of 45 fishermen made deliveries of 3,115 kings during the king salmon season. Catches exceeded the 3,000 king salmon quota during the week ending July 16 and the season was closed by emergency order on July 17. The run peaked during the same week and subsistence fishermen reported large catches being made as late as the last week of July.

In the Tanana River subdistrict (334-60) a total of 644 kings were reported taken by 35 fishermen during the 1978 commercial fishing season.

The majority (544) of these fish were harvested by fishermen in the Fairbanks area. It is thought that king salmon caught elsewhere in the subdistrict were refused by processors and buyers in order that the commercial fishery remain open for the more abundant summer chums. The 1978 run peaked during the period July 5 through July 15, approximately ten days earlier than normal.

Prices paid for king salmon during the 1978 season ranged from \$.50 to \$1.25 per round weight pound and the weighted average for three upriver subdistricts was \$.89 per pound. Average weight was 19.7 pounds.

Summer Chum Salmon: The first commercial landings of summer chum salmon were made in the Anvik area of subdistrict 334-40 during the week ending June 16. The run peaked during the period July 3-7 with approximately 118,000 chums being taken by 71 fishermen. The total subdistrict 334-4 summer chum catch of 364,387 exceeded the previous record harvest for the subdistrict of 211,277 made in 1976 (Appendix Table 8).

Summer chum salmon in subdistrict 334-5 are not abundant, generally of poor quality and are usually retained for personal use rather than sold. During 1978, approximately 5,000 summer chums (averaging 7.4 lbs.) were harvested commercially in the subdistrict 5; most of these were taken in the lower 100 miles (Tanana to Hess Cr.) of the area.

Fishermen in the Tanana River subdistrict (334-60) made a record catch of 34,676 summer chums during the 1978 season. This total more than doubles the previous record catch made in 1974. A total of 35 fishermen made deliveries in 334-60 during the summer season and catches peaked during the last week of July. Summer chum salmon in this subdistrict averaged 6.7 lbs. and sold for an average of \$2.00 per fish.

Fall Chum Salmon: As mentioned previously, the fall run of chum salmon is the primary target species of the upriver Yukon fisheries with the exception of statistical area 334-41 of subdistrict 334-40. During 1978, a total of 45,499 fall chum salmon was harvested commercially from the three upper Yukon subdistricts. The fall run was approximately ten days to two weeks late and was spread out over a longer period of time than is normal.

Catches of fall chum salmon by subdistrict are as follows: subdistrict 334-40, 11,230; subdistrict 334-50, 21,010 and subdistrict 334-60, 13,259.

Although average weight and prices varied between widely distributed sampling stations and processors, calculated average weight for fall chum salmon during 1978 was 7.4 lbs. and average exvessel price was \$1.88 per fish.

In order to spread out the harvest on the various spawning stocks, fishing time was reduced in all three upper Yukon subdistricts from five to four days per week.

The Alaska Board of Fisheries promulgated a regulation at their fall meeting 1977 which closed the commercial fishing season in statistical 334-41 of subdistrict 334-40 effective August 1. For this reason, no commercial harvest of fall chums occurred in this portion (Anvik to Koyukuk) of subdistrict 334-40 in 1978. The total harvest of fall chums in statistical area 334-42 (Galena to Ruby) was 11,230. Based on commercial catch data, the run peaked during the week ending September 8 and the season was closed by emergency order on September 8.

The season was re-opened for the fall fishery in subdistrict 334-50 on August 16. Because of the protracted, erratic nature of the 1978 run, the season lasted approximately two weeks longer than normal. The peak of migration through the fishery occurred during the first week of September when 35 fishermen delivered 7,339 fall chums. A total of 43 fishermen participated in the fall fishery in this subdistrict and of the eight processors who operated in this area during the king salmon season, only four purchased fish during the fall run.

The fall chum run to the upper Yukon River drainage, based on commercial and subsistence harvests and on documented escapements was judged to be below average.

As directed by the Alaska Board of Fisheries, the re-opening of the commercial fishing season in subdistrict 334-60 (the Tanana River) was delayed until harvestable numbers of fall chums had become distributed throughout the subdistrict. This strategy is employed to insure that no one spawning stock sustains the brunt of harvest and secondarily, to prevent the bulk of the catch being made in the Manley Hot Springs area before appreciable numbers of salmon reach Nenana and Fairbanks. The season was re-opened on September 12, on a reduced (four days per week) schedule. Commercial fishing was allowed for only seven days before the quota was met and the season closed by emergency order on September 21, 1978. The total harvest was 16,235 salmon, of which 3,066 were cohos. The fall chum salmon run into the Tanana River drainage, based on catch and escapement data, was judged to be above average.

Coho Salmon: This species, because of its relatively low abundance and late arrival, is only of minor importance to the upriver commercial and subsistence fisheries. During 1978 an estimated 3,105 cohos were commercially harvested in the upper Yukon area, virtually all of which were taken in the Tanana River.

Salmon Roe Sales *

Based on regulatory proposals submitted by fishermen's groups and Advisory Committees in the lower Yukon and Kuskokwim River areas in the fall of 1977 and on recommendations by the Department, the Board of Fisheries prohibited the sale of subsistence caught salmon roe (which had been legal for the period 1974-1977) in the Yukon and Kuskokwim districts. The Board's action reflected their concern that the policy of affording subsistence fishing the highest priority use is being threatened by overfishing, wastage and other abuses associated with subsistence roe sales. Continuation of such sales would have required additional restrictions to be placed on existing subsistence and commercial fisheries, and may even impact maintenance of salmon stocks which are

currently being harvested at or near the maximum allowable rate.

Salmon roe, lawfully taken by licensed commercial fishermen during the salmon fishing season is still legal to sell and such roe sales occurred in all three upper Yukon subdistricts during 1978. In most instances, (chum) salmon roe exceeds the value of the fish and for this reason relatively large amounts of roe were sold separately.

Fishermen in section 334-41 of subdistrict 334-40 accounted for the majority of roe sales which in the Yukon district during 1978. Lesser amounts of salmon roe were sold in subdistricts 334-50 and 334-60 and no roe sales by commercial fishermen occurred in the three lower river subdistricts. The table below presents roe production data for 1978:

Upper Yukon area salmon roe sales by commercial fishermen, 1978 ^{1/}

Subdistrict	King Salmon Season			Fall Season			Total
	King	Chums	Subtotal	King	Chum ^{2/}	Subtotal	
4	330	18,641	18,971	0	0	0	18,971
5	1,071	606	1,677	0	5,220	5,220	6,897
6	242	8,236	8,478	0	3,687	3,687	12,165
Totals	1,643	27,483	29,126	0	8,907	8,907	38,033

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

^{2/} Includes some coho roe.

Poundage figures for chum and coho salmon roe sold during the quota period (after August 15) was converted to numbers of fish (based on average weekly roe weight and sex ratios) and applied against the quotas. Roe sold during the fall season represented 20% of the allowable harvest in subdistricts 334-50 and 334-60 respectively.

The 38,000 lbs. of salmon roe sold during 1978 represents approximately 49% of the annual 1974-1977 average. Illegal sales of subsistence caught salmon roe is thought to account for a portion of the 1978 production and was probably channeled through commercial fishermen for resale.

* Refer to the 1977 Yukon Annual Management Report for an analysis of subsistence salmon roe sales (pgs. 24-28).

Subsistence Fishing, 1978

During 1978 an estimated 33,203 kings and 303,214 chums (including a small number of pink salmon) and 7,787 coho salmon were taken for subsistence purposes in the Yukon River drainage (including Yukon Territory catches). In addition, an estimated 488 kings, and 19,207 salmon of other species were harvested by residents of Hooper Bay and Scammon Bay located on the coast, south of the Yukon River mouth.

The harvest of king salmon during 1978 exceeded the previous 17 year average (of 21,385) by 55% due to the unusually large run to the Yukon River experienced in 1978.

Table 14 presents 1978 catch data for each Yukon River community and Appendix Table 16 shows comparative Yukon River drainage subsistence catch data for the period 1961 through 1978. Subsistence salmon catches by village for the years 1961-1978 are presented in Appendix Tables 17 and 18.

Lower Yukon Area

An estimated total of 13,112 king and 58,203 salmon of other species were harvested by 397 subsistence fishermen in subdistricts 334-10, 334-20 and 334-30 of the Yukon district. Due to the early breakup of the Yukon River, subsistence fishermen experienced good fishing on the early king salmon run prior to opening of the commercial fishing season.

These figures do not include 488 kings and 19,207 "small salmon" taken by 76 fishing families in the coastal villages of Scammon and Hooper Bay, nor do they include an estimated 9,100 lbs. of herring taken at Hooper Bay. In addition, approximately 1,217 whitefish and 2,599 sheefish were taken for subsistence purposes during the 1978 salmon season.

Upper Yukon Area

Not including domestic harvests made in the Yukon Territory, a total of 17,185 king and 241,570 chum and coho combined were harvested by 588 subsistence fishing families in the three upper Yukon subdistricts. These figures represent 57% and 81% of the district total king, chum and coho salmon respectively. Catches for each lower Yukon subsistence fishing family averaged 33 kings and 147 small salmon in 1978 whereas families in the upper part of the drainage averaged approximately 29 kings and 411 small salmon. These figures demonstrate the aforementioned greater dependence on subsistence salmon fishing than is demonstrated by fishermen in the lower river. This, in part, can be attributed to the larger number of dog teams in the Interior.

A total of 189 fishwheels were operated by subsistence fishermen in 1978.

Permits are required in four areas of the upper Yukon River drainage: 1) The Tanana River drainage upstream of the Wood River confluence; 2) the upper Yukon drainage from Hess Creek upstream to the mouth of Dall River; 3) that portion of the Middle Fork of the Koyukuk River drainage from the mouth of Dry Gulch and the Hammond River confluence and; 4) between the mouths of the Rodo and Nowitna rivers of subdistrict 334-40.

In the upper Tanana River drainage, subsistence fishermen are limited to a catch of 5 kings and 75 chum and coho salmon combined. In 1978, a total of 159 permits were issued, and catches were reported by 126 fishermen. Reported harvest for the Fairbanks area was 126 kings and 3,917 chum and coho salmon combined.

In the Yukon River permit fishery a total of 57 subsistence permits were issued. Of these 9 were obtained by residents of Stevens Village (see Table 13) and the remainder were issued to Fairbanks area residents. Total reported catches for this area were 1,333 kings and 9,735 chums.

A total of 14 permits were issued for the subsistence harvest of whitefish and other non-salmon species for various locations in the upper Yukon drainage. Only 6 fishermen reported harvests which totaled 2,740 whitefish, 415 suckers, 157 burbot and 34 pike.

No subsistence fishing permits were issued for the Rodo River - Nowitna River area nor were there any issued for the Middle Fork of the Koyukuk River.

In addition, 70 permits were issued allowing collection of salmon carcasses in the vicinity of the Delta River; 43 fishermen reported harvesting 2,517 chum salmon carcasses.

Enforcement, 1978

Lower Yukon Area

Enforcement activities of the Division of Fish and Wildlife Protection consisted of a 2-man crew equipped with a river skiff based at Emmonak. Boat and aircraft patrols were made periodically in the lower Yukon River area and as far upriver to the village of Anvik. In general compliance with regulations was good. The major enforcement problem concerned fishing during closed periods.

Upper Yukon Area

Compliance with commercial and subsistence fishing regulations was much improved over previous years. A total of nine citations were issued in 1978 and three verbal warnings. The most common violations were commercial and subsistence fishing during a closed period. The illegal sale of subsistence caught fish and roe continues to be a problem however, particularly in the Tanana River subdistrict.

Escapement, 1978

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 15 presents aerial survey escapement data for all streams surveyed in 1978.

Appendix Table 19 presents comparative king salmon escapement data for selected tributaries during the 1959-1978 period. In 1978, king salmon escapements into the major spawning areas ranged from average to

above average. Record escapements were documented in the East Fork of the Andreafsky River (2,487), Nulato River (920), Chena River (1,726) and Salcha River (3,499).

In the Yukon Territory, surveys indicated average to above average king salmon escapement levels. The Whitehorse Dam Fishway count of 725 kings was the largest recorded since 1971. 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. Alternate index areas should be established elsewhere to better monitor escapements.

Appendix Tables 20 and 21 present comparative summer and fall chum salmon escapements for selected streams. Summer chum escapements were generally good throughout the drainage. In 1978, a total of 549,824 summer chums were documented in selected tributaries throughout the drainage. A minimum of 251,399 chums were documented in the Anvik River system. In the Andreafsky River (East and West Fork), aerial surveys indicated good escapements as 184,371 chum salmon spawners were enumerated in this system.

During the past seven years the Department has conducted intensive surveys of fall chum and coho salmon spawners in the upper Yukon River drainage. Several major previously undocumented spawning areas have been identified in recent years. In 1978, escapements of fall chums were average to above average in the Tanana River system but below average elsewhere. In the Yukon Territory, a total of only 15,000 fall chums was enumerated in the Fishing Branch River, a tributary of the Porcupine River, in 1978 compared to the exceptionally large escapement of 353,282 documented in 1975.

Tanana River drainage coho escapements, as indicated by surveys of the Clearwater Lake and Delta Clearwater River systems, ranged from average to above average in 1978, but below average in magnitude in the Nenana River. Comparable coho salmon escapement data is presented in Appendix Table 22.

OUTLOOK FOR 1979

King Salmon

It is difficult to predict the relative magnitude of the 1979 Yukon River king salmon run. The majority of the king salmon expected to return in 1979 will probably be composed of six-year-old fish originating from the 1973 brood year. There are indications, however based on commercial catch and escapement data, that the 1973 brood year run was below average in magnitude. Escapement of king salmon in the Salcha and Chena Rivers was especially poor in 1973 and was attributed to poor survival of the 1967 brood year as a result of the August 1967 Tanana River flood. Seven-year-old fish (1972 brood year) are expected to contribute substantially to the return in 1979 based on the strong return of six-year-olds (approximately 72%) in 1978. Five-year-olds (1974) brood year should also contribute significantly to the run in 1979.

The Japanese mothership fisheries in the high seas during recent

years may possibly affect the numbers of king salmon returning to western Alaska in 1979. Most of the high seas king salmon harvest is composed of immature four-year-old fish, which normally return as six-year-olds two years later. Scale analysis studies conducted by the National Marine Fisheries Service indicate that the majority (in excess of 80%) of the king salmon intercepted by the Japanese mothership fishery originated from western Alaska rivers (including the Yukon River). Japanese mothership Bering Sea king salmon catch data is presented in Appendix Table 23. The I.N.P.F.C. Treaty has been recently renegotiated to afford increased protection for western Alaskan salmon stocks. Improved Yukon River king salmon returns beginning in 1980 can be expected as a result of reduced high seas interceptions.

In summary, based on available brood year run size data, the 1979 run of kings is expected to be below average to average magnitude. If a poor run develops, fishing time restrictions may be required during the 1979 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 70 - 80 thousand fish. This guideline harvest has been revised downward from the previously established limit of 90 - 105,000 kings in view of recent below average size runs and the necessity to provide for adequate escapements.

Summer Chum Salmon

Normally, Yukon River summer chum runs are primarily composed of four-year-old fish. The return of four-year-olds in 1979 will be dependent on the strength of the 1975 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 1975 was substantially above average in magnitude. The contribution of five-year-old fish (1974 brood year) in 1979 is expected to be significant.

In summary, it is expected that the magnitude of the 1979 Yukon River summer chum run will be above average. The expected commercial harvest should total 750,000-1,500,000 fish. If the summer chum run in 1979 is below average in magnitude, fishing time restrictions will be necessary to insure adequate escapements.

Fall Chum Salmon

Four-year-old fish from the 1975 brood year are expected to be the predominant age class of the 1979 run. Escapements of fall chums in 1975 were judged to be substantially above average in abundance (Appendix Table 21). Also the return of five-year-olds (1974 brood year) are expected to contribute significantly to the return in 1979.

In summary, the magnitude of the 1979 Yukon River fall chum is expected to be above average. The expected commercial harvest should approach or exceed 250,000 fish. If the fall chum run in 1979 is below average in magnitude, fishing time restrictions will be necessary in order to provide for adequate escapements.

Coho Salmon

Four-year-old fish (1975 brood year) are the dominant age class.

Adequate escapement information for coho salmon is lacking but surveys in the Tanana River system indicated above average escapements in 1975. The return in 1979 is expected to be of similar magnitude. The coho salmon catch is expected to total 20,000-30,000 fish, depending on amount of fishing effort exerted on the fall chum run and the duration of the fishing season.



YUKON RIVER BASIN
(330,000 square miles)

FIGURE 1

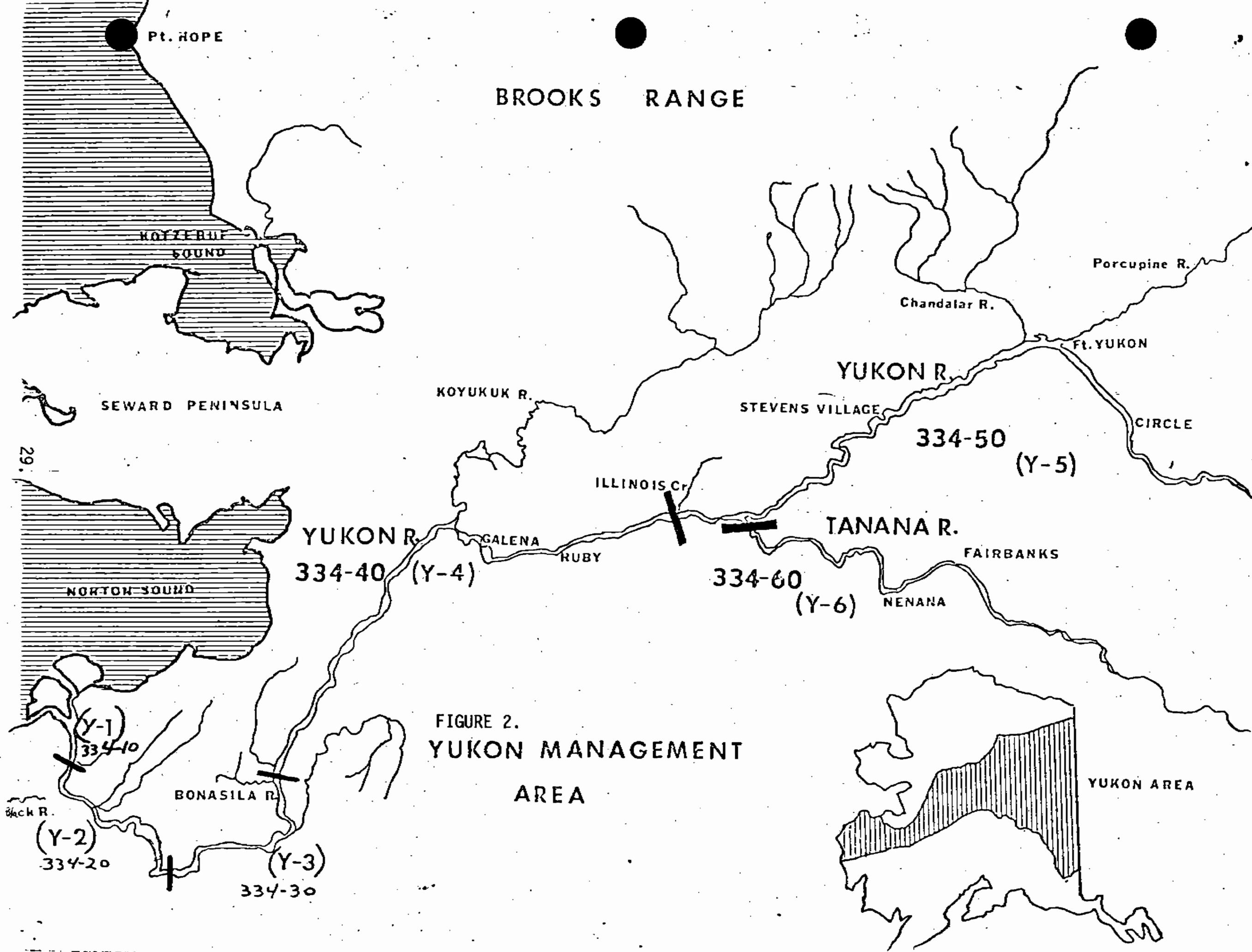
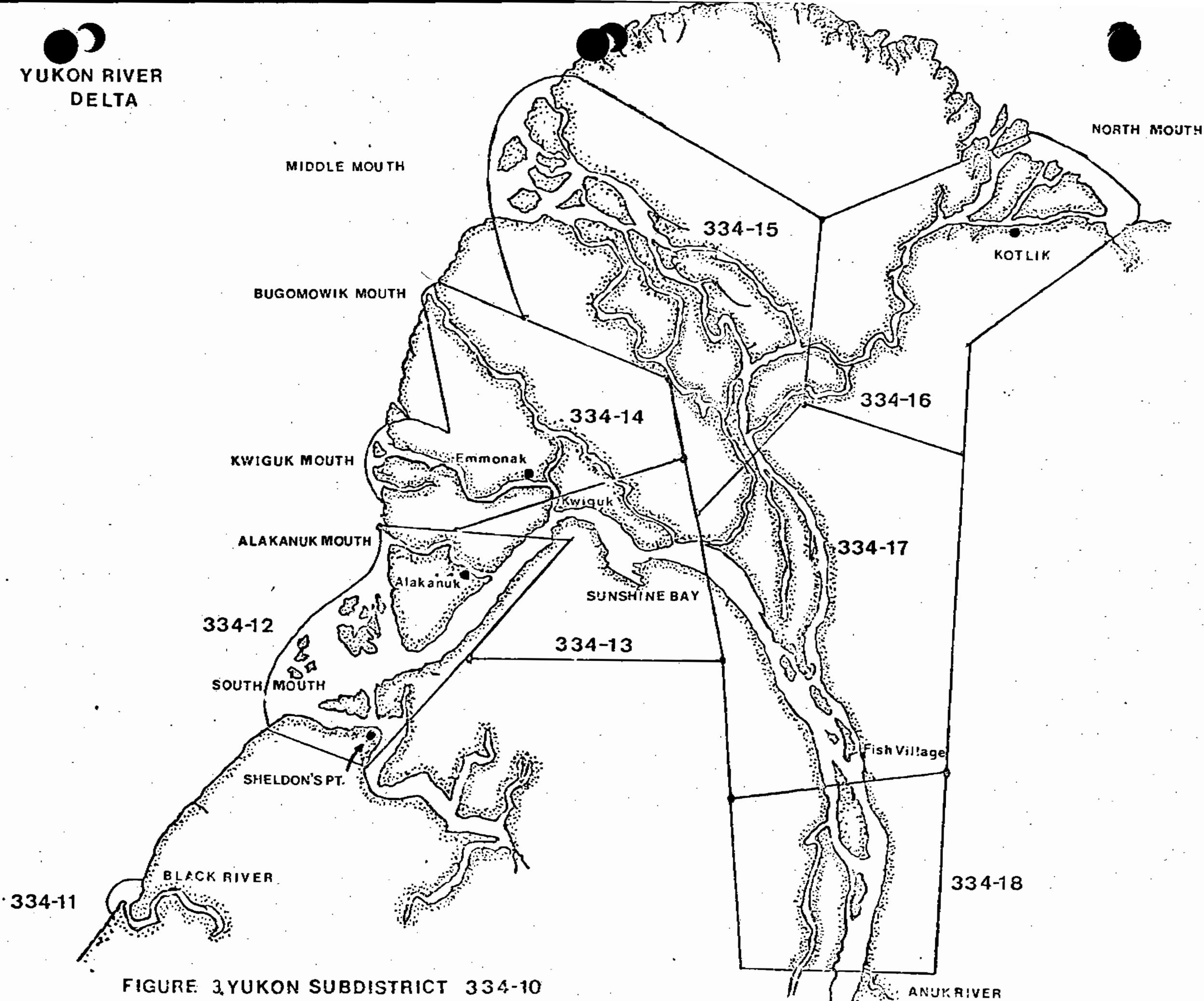


FIGURE 2.
YUKON MANAGEMENT
AREA

**YUKON RIVER
DELTA**



30.

FIGURE 3. YUKON SUBDISTRICT 334-10

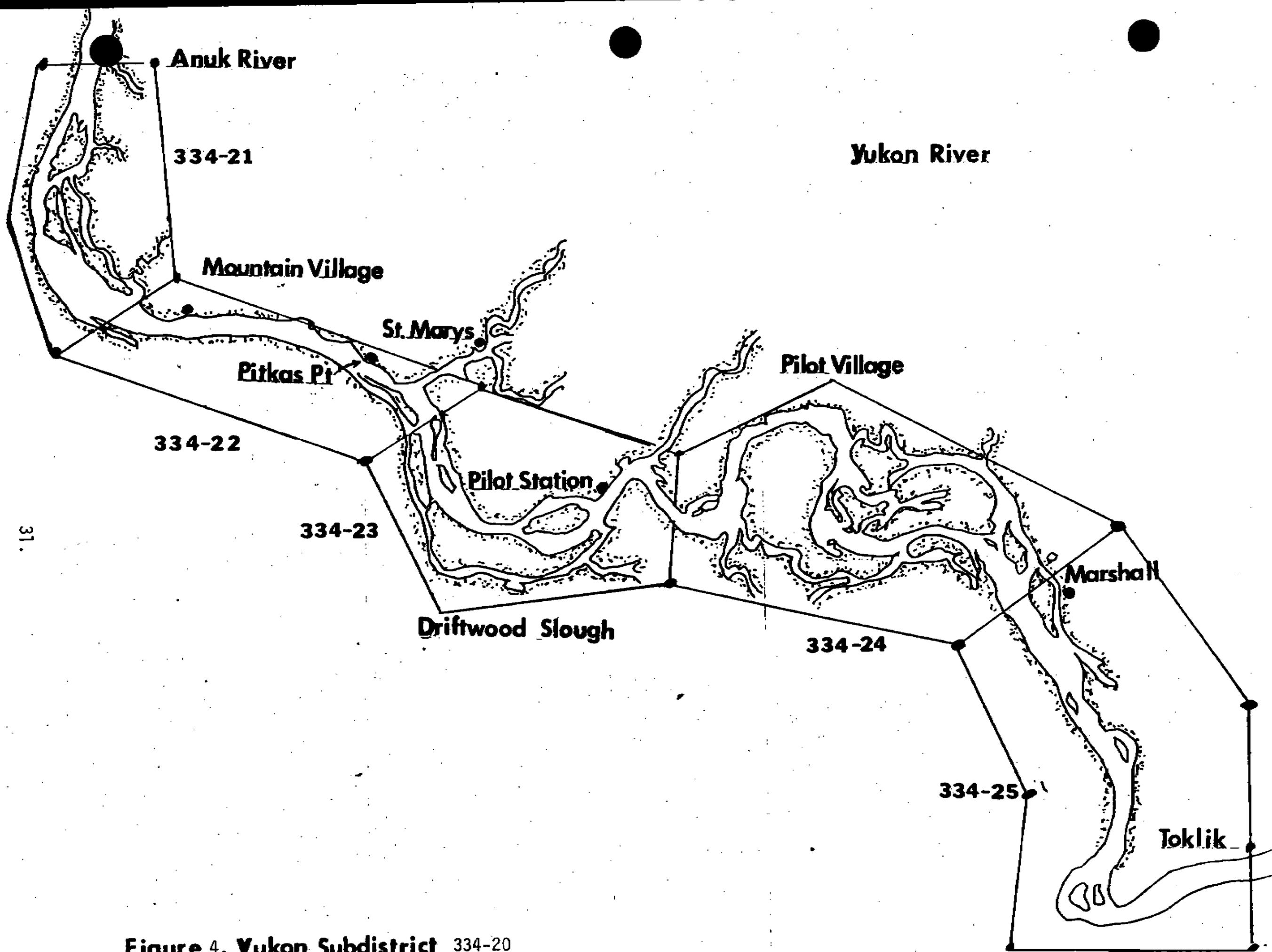


Figure 4. Yukon Subdistrict 334-20

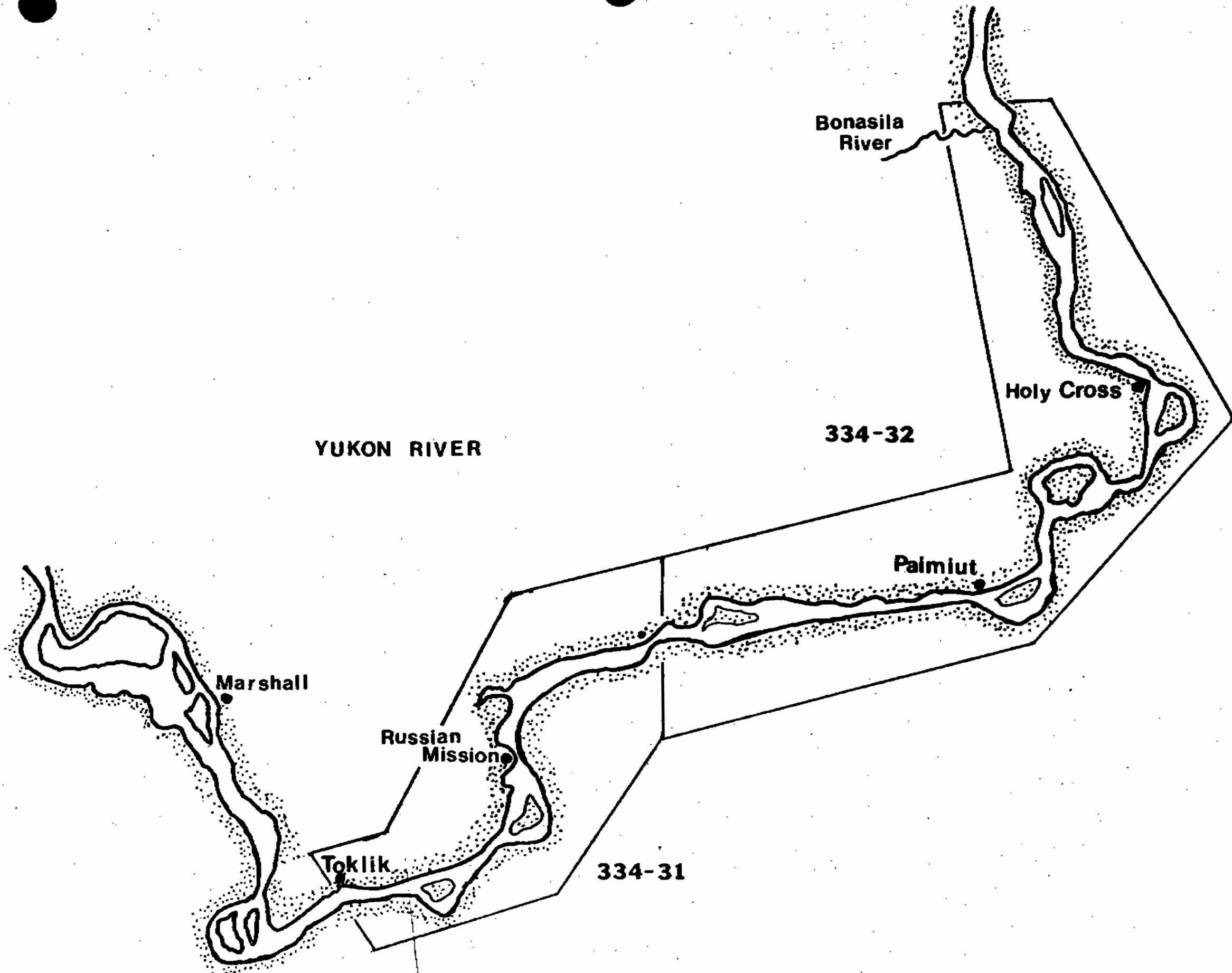


FIGURE 5. YUKON SUBDISTRICT 334-30-

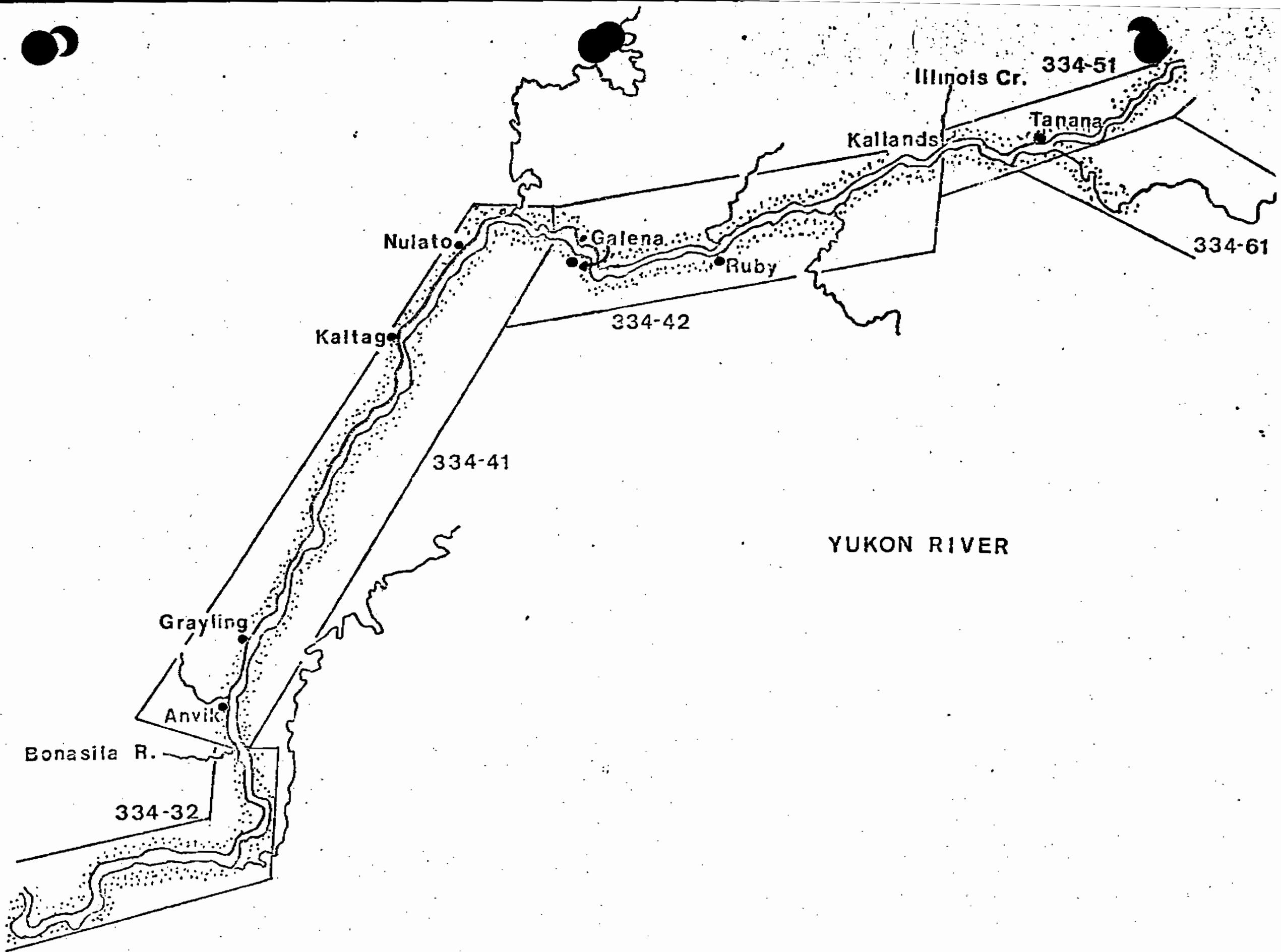


FIGURE 6. YUKON SUBDISTRICT 334-40

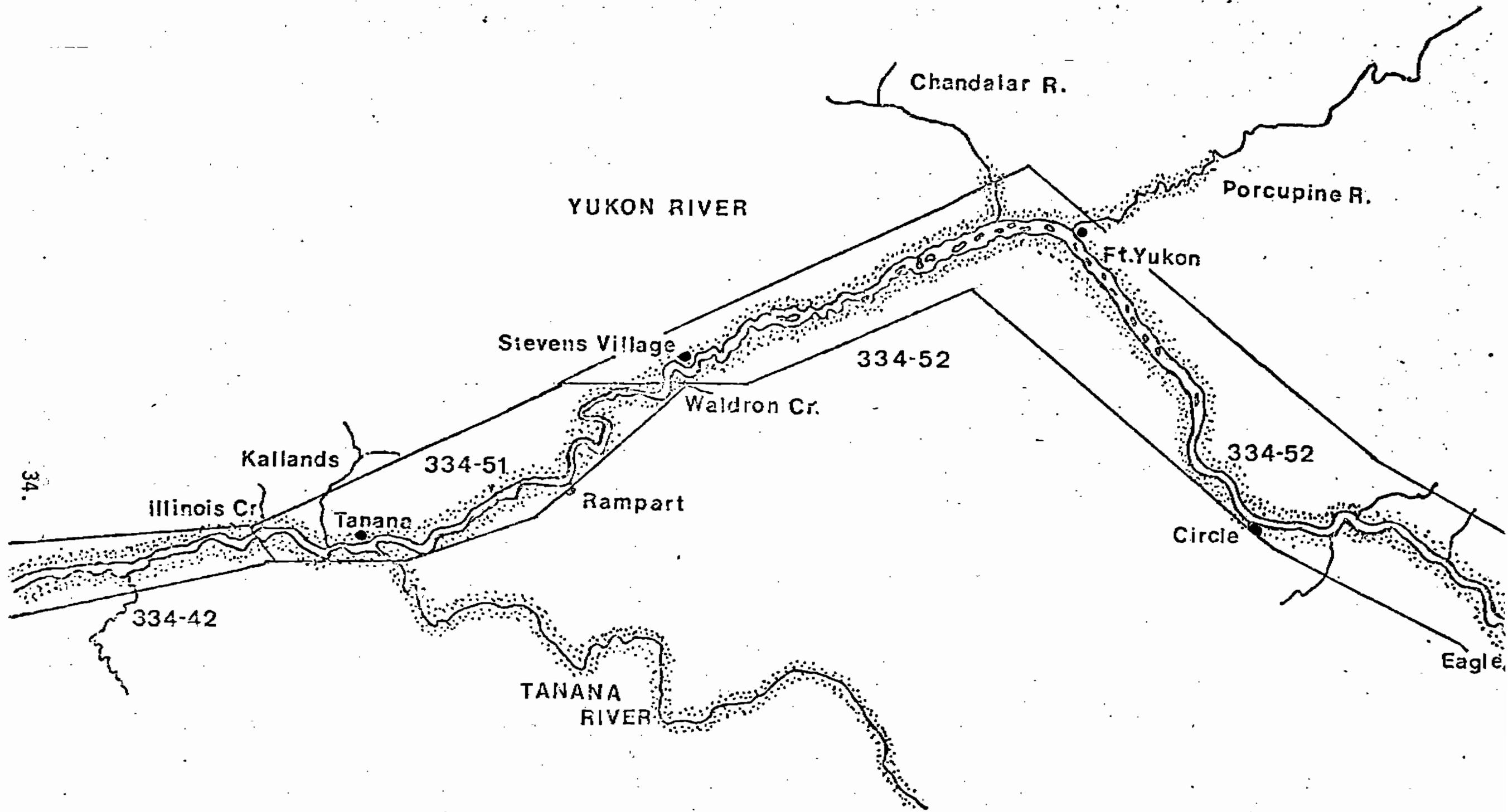
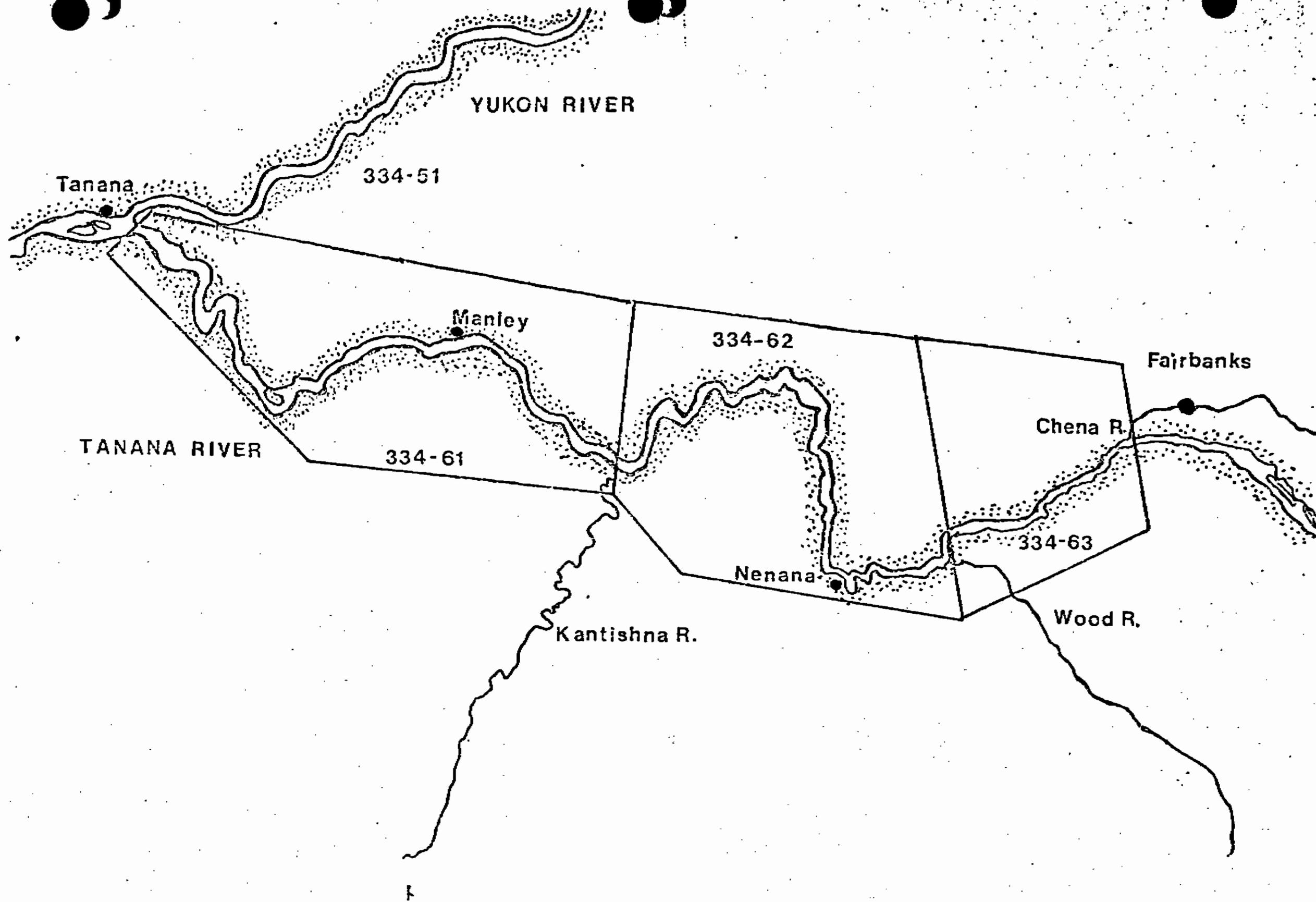


FIGURE 7. YUKON SUBDISTRICT 334-50



35.

FIGURE 8. YUKON SUBDISTRICT 334-60

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 (Subdistrict 1/2 Boundary)	63
Patsys Cabin	71
Mountain Village	87
Old Andreafsky	97
Pitkas Point	103
Mouth, Andreafsky River	104
St. Marys	107
Pilot Station	122
Mouth, Atchuelinguk (Chulinak) River	126
Pilot Village	138
Marshall (Fortuna Ledge)	161
Upstream Mouth Owl Slough (Subdistrict 2/3 Boundary)	163
Ingrihak	170
Ohogamut	185
Kakamut	193
Russian Mission	213
Dogfish village	227
Paimuit	251
Mouth, Innoko River (South Slough)	274

Shageluk	328
Holikachuk	383
Holy Cross	279
Mouth, Koserefski River	286
Mouth, Bonasila River (Subdistrict 3/4 Boundary)	306

Anvik	317
Mouth, Anvik River	318
Grayling	336
Mouth, Thompson Creek	349
Blackburn	370
Eagle Slide	402
Mouth, Rodo River	447
Kaltag	450
Mouth, Nulato River	483
Nulato	484
Koyukuk	502
Mouth, Koyukuk River	508
Mouth, Gisasa River	564
Huslia	711
Mouth, Dakli River	755
Mouth, Hogatza River	780
Hughes	881
Mouth, Kanuti River	935
Alatna (Mouth, Alatna River)	956
Allakaket	956
Mouth, South Fork	986
Mouth, John River	1,117
Bettles	1,121
Middle Fork	1,141
Cold Foot	1,174
Wiseman	1,186

Bishop Rock	514
Prospect Point	519
Galena	530
Whiskey Creek	555
Mouth, Yuki River	562
Ruby	581
Mouth, Melozitna River	583
Horner Hot Springs	605
Kokrines	608
Mouth, Nowitna River	612
Birches	647
Kallands - Mouth of Illinois Creek (Subdistrict 4/5 Boundary)	664
Mouth, Tozitna River	681
Tanana Village	695
Mouth, Tanana River (Subdistrict 5/6 Boundary)	695
Manley Hot Springs	765
Mouth, Kantishna River	793
Mouth, Toklat River	838
Mouth, Sushana River	850
Mouth, Bearpaw River	887
Outlet, Lake Minchumina	959

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

Mouth, Kandik River	1,135
Mouth, Nation River	1,166
Mouth, Tatonduk River	1,186
Mouth, Seventymile River	1,194
Eagle	1,213
U.S.-Canadian Border	1,224
<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 district processors and associated data, 1978.

Commercial operator (Processing location/buying station)	Product	Subdistrict
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
Akers & Co., Inc. Chulooawick, Alaska 99587 via Emmonak, Alaska (Kwikpakak Slough)	Mild cured salmon Kings Chums Salmon Roe	1
Norton Sound Fishermen's Co-op Box 10 Unalakleet, AK 99684 (Emmonak)	Fresh Salmon King Chum Salmon Roe	1
Schenk Seafood Sales, Inc. P. O. Box 984 Bellingham, Washington 98225 (Kwikluak Pass near Alakanuk)	Frozen salmon Kings Cohos Chums Salmon Roe	1

Table 3. Yukon district processors and associated data, 1978 (Continued).

Commercial operator (Processing location/buying station)	Product	Subdistrict
Trinity Seafoods Inc. 6550 Imlach Way Anchorage, AK 99502	Frozen Salmon Chums Kings Cohos	1 & 2
Azachorak Corp, DBA The Village Cannery Mountain Village, Alaska 99632 (Mt. Village)	Hard salt, frozen & canned (#1/2 flats) salmon Kings Chums Salmon Roe	
Boreal Fisheries 24320 - 70th Ave. East Graham, Washington 98338 (Old Andreafsky)	Fresh salmon Kings Chums Cohos Salmon Roe	2
Maserculia 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 c/o Joe Parent Kalskag, AK 99607 (Russian Mission)	Fresh salmon Kings Chums Salmon Roe	3

Table 3. Yukon district processors and associated data, 1978 (Continued).

Commercial operator (Processing location/buying station)	Product	Subdistrict
Clark Fishing Enterprises Box 517 Aniak, AK (Ingrihak-Paimuit)	Fresh salmon Kings Salmon Roe	3 & 4
Grayling Air Service Grayling, Alaska 99590 (Grayling - Anvik)	Fresh Salmon Chums Salmon Roe	4
Huntington Ventures Sidney Huntington Galena, AK 99741 (Nulato, Galena)	Fresh Salmon Chums Salmon Roe	4
Ingalik Ken W. Chase Anvik, Alaska 99558 (Anvik)	Fresh Salmon Chums Salmon Roe	4
Byron Walton Anvik, Alaska 99558 (Anvik)	Fresh Salmon Kings Chums Salmon Roe	4
Kallands Fisheries ^{1/} Reinhard Rupprecht Box 51 Nenana, Alaska 99760 (Kallands)	Fresh Salmon Kings Chums Coho	4

Table 3. Yukon district processors and associated data, 1978 (Continued).

Commercial operator (Processing location/buying station)	Product	Subdistrict
Kemp-Palucci Seafoods Inc. Box 252 Bethel, AK 99559 (Anvik)	Salmon Roe	4
Quality Aircraft Larry Thompson Box 4-1583 Anchorage, AK 99501 (Kaltag)	Fresh Salmon Chums Salmon Roe	4
Al Wright ^{1/} Chena Marina Fairbanks, AK (Hess Cr.)	Fresh Salmon Kings Chums	5
Alaska Fish Co. Claire Latspeich SR Box 20962 Fairbanks, AK 99701 (Rampart)	Fresh Salmon Kings Salmon Roe	5
Arctic Diving Charles Anderson 1321 Karen St. Fairbanks, AK 99701 (Tanana, Fairbanks)	Fresh Salmon Kings Chums Cohos Salmon Roe	4, 5 & 6
Aurora Seafoods Joe Schruf 1260 Aurora Fairbanks, AK 99701	Fresh Salmon Kings Chums	5

Table 3. Yukon district processors and associated data, 1978 (Continued).

Commercial operator (Processing location/buying station)	Product	Subdistrict
Wallys Fish Wagon <u>1</u> / Walter Carlo Tanana, AK 99777 (Tanana)	Fresh Salmon Kings Chums	5
Interior Fisheries J. L. Wood SRA Box 108 Anchorage, AK 99502 (Manley, Tanana, Rampart)	Fresh Salmon Kings Chums Cohos	5 & 6
William Straub <u>1</u> / Circle, Alaska (Circle)	Fresh Salmon Kings	5
Gurtler Enterprises <u>1</u> / Manley Hot Springs, AK 99756 (Manley)	Fresh Salmon Kings	6
Terrence Clark Clear, AK (Nenana)	Fresh Salmon Kings Chums Cohos Salmon Roe	6
Nenana Reefer Edmund Lord Nenana, AK 99760	Fresh Salmon Chums Cohos Salmon Roe	6

Table 3. Yukon district processors and associated data, 1978 (Continued).

Commercial operator (Processing location/buying station)	Product	Subdistrict
Henry Ketzler <u>1/</u> Box 35 Nenana, Alaska 99760 Nenana	Fresh Salmon Kings Chums	6
Katherine Ludecker <u>1/</u> 4-1/2 Chena Pump Rd. Fairbanks, AK 99701 (Fairbanks)	Fresh Salmon Kings Chums	6
Don Simpson <u>1/</u> SR 20033 Fairbanks, AK 99701 (Fairbanks)	Fresh Salmon Kings Chums	6

1/ Processes own catch and sells directly to public.

Table 4. Commercial salmon catches by species and subdistrict, Yukon district, 1978.

Subdistrict	Kings	Summer Chums	Fall Chums	Total Chums	Cohos	Total
334-10						
King Salmon Season (6/8-6/27)	53,198	195,924	-	195,924	-	249,122
Fall or Second Season (6/29-8/29)	4,692	192,568	135,065	327,633	16,262	348,587
(Before Quota Period 6/29-7/15)	(4,327)	(179,717)	(19,969)	(199,686)	-	(204,013)
(After Quota Period 7/16-8/29)	(365)	(12,851)	(115,096)	(127,947)	(16,262)	(144,574)
Total 334-10	57,890	388,492	135,065	523,557	16,262	597,709
334-20						
King Salmon Season (6/8-6/26)	28,872	79,588	-	79,588	-	108,460
Fall or Second Season (6/28-8/28)	3,463	145,852	51,646	197,498	5,835	206,796
(Before Quota Period 6/28-7/18)	(3,343)	(145,852)	-	(145,852)	-	(149,195)
(After Quota Period 7/19-8/28)	(120)	-	(51,646)	(51,646)	(5,835)	(57,601)
Total 334-20	32,335	225,440	51,646	277,086	5,835	315,256
334-30						
King Salmon Season (6/12-6/17)	2,657	2,747	-	2,747	-	5,404
Fall or Second Season (7/6-8/26)	260	24,454	11,527	35,981	758	36,999
Before Quota Period (7/6-7/21)	(250)	(24,454)	-	(24,454)	-	(24,704)
After Quota Period (7/22-8/26)	(10)	-	(11,527)	(11,527)	(758)	(12,295)
Total 334-30	2,917	27,201	11,527	38,728	758	42,403
Total Lower Yukon	93,142	641,133	198,238	839,371	22,855	955,368
334-40						
King Salmon Season (6/15-8/15)	701	364,387	-	364,387	-	365,088
Fall Season (8/16-9/8)	-	-	11,230	11,230	32	11,262
Total 334-40	701	364,387	11,230	375,617	32	376,350
334-50						
King Salmon Season (6/20-7/17)	3,115	4,897	-	4,897	-	8,012
Fall Season (8/16-9/21)	-	-	21,010	21,010	7	21,017
Total 334-50	3,115	4,897	21,010	25,907	7	29,029
334-60						
King Salmon Season (6/26-8/9)	644	34,675	-	34,675	-	35,319
Fall Season (9/12-9/23)	-	-	13,259	13,259	3,066	16,325
Total 334-60	644	34,675	13,259	47,934	3,066	51,644
Total Upper Yukon	4,460	403,959	45,499	449,458	3,105	457,023
GRAND TOTAL 334	97,602	1,045,092	243,737	1,288,829	25,960	1,412,391

Table 5. Yukon district commercial salmon catches by statistical area, 1978.

Statistical Area	King Salmon Season ^{1/}		Fall Season ^{2/}			Total		
	King	Chum	King	Chum	Coho	King	Chum	Coho
334-11	1,097	2,634	57	2,474	0	1,154	5,108	0
12	10,829	85,836	1,346	109,863	5,057	12,175	195,699	5,057
13	3,760	40,758	368	26,639	1,151	4,128	67,397	1,151
14	3,991	24,744	381	32,576	1,196	4,372	57,320	1,196
15	19,711	24,493	1,086	55,334	2,213	20,797	79,827	2,213
16	3,387	305	241	5,437	511	3,628	5,742	511
17	6,590	12,315	832	63,121	3,996	7,422	75,436	3,996
18	3,833	4,839	381	32,189	2,138	4,214	37,028	2,138
Subtotal 334-10	53,198	195,924	4,692	327,633	16,262	57,890	523,557	16,262
334-21	8,439	8,814	429	39,276	97	8,868	48,090	97
22	5,830	42,811	1,860	88,330	3,270	7,690	131,141	3,270
23	4,594	10,919	492	20,484	1,802	5,086	31,403	1,802
24	7,781	14,504	658	46,296	666	8,439	60,800	666
25	2,228	2,540	24	3,112	0	2,252	5,652	0
Subtotal 334-20	28,872	79,588	3,463	197,498	5,835	32,335	277,086	5,835
334-31	666	1,852	81	18,378	492	747	20,230	492
32	1,991	895	179	17,603	266	2,170	18,498	266
Subtotal 334-30	2,657	2,747	260	35,981	758	2,917	38,728	758
Total Lower Yukon	84,727	278,259	8,415	561,112	22,855	93,142	839,371	22,855
334-41	276	309,484	0	0	0	276	309,484	0
42	425	54,903	0	11,230	32	425	66,133	32
Subtotal 334-40	701	364,387	0	11,230	32	701	375,617	32
334-51	2,874	4,897	0	20,673	7	2,874	25,570	7
52	241	0	0	337	0	241	337	0
Subtotal 334-50	3,115	4,897	0	21,010	7	3,115	25,907	7
334-61	38	2,038	0	4,704	521	38	6,742	521
62	62	27,891	0	8,036	2,450	62	35,927	2,450
63	544	4,746	0	519	95	544	5,265	95
Subtotal 334-60	644	34,675	0	13,259	3,066	644	47,934	3,066
Total Upper Yukon	4,460	403,959	0	45,499	3,105	4,460	449,458	3,105
Grand Total	89,187	682,218	8,415	606,611	25,960	97,602	1,288,829	25,960

^{1/} King Salmon Season

334-10 6/8-6/27
 334-20 6/8-6/26
 334-30 6/12-6/17
 334-41 6/15-8/1
 334-42 6/15-8/15
 334-50 6/20-7/17
 334-60 6/26-8/9

^{2/} Fall Season

334-10 6/29-8/29
 334-20 6/28-8/28
 334-30 7/6-8/26
 334-41 Closed
 334-42 8/16-9/8
 334-50 8/16-9/21
 334-60 9/12-9/23

Table 6. Yukon district Commercial Fisheries Entry Commission permits issued by residence, 1978.

Subdistrict	Residence	Gillnet Permits	Fishwheel Permits
334-10, 334-20 and 334-30	Emmonak	101	
	Mountain Village	100	
	Alakanuk	97	
	Kotlik	79	
	St. Marys	59	
	Marshall	49	
	Pilot Station	48	
	Scammon Bay	40	
	Sheldons Point	22	
	Holy Cross	19	
	Russian Mission	18	
	Pitkas Point	15	
	Unalakleet	15	
	Stebbins	8	
	Anchorage	5	
	Shaktoolik	3	
	Everett, WA.	2	
	Aniak	1	
	Bethel	1	
	Chuloonawick	1	
	Delta Junction	1	
	Hooper Bay	1	
	Iliamna	1	
	Nome	1	
Palmer	1		
Paxson	1		
Puyallup, WA.	1		
Sitka	1		
St. Michael	1		
Wasilla	1		
Subtotal Lower Yukon		693	0
334-40	Anvik	4	6
	Grayling	2	7
	Kaltag	4	10
	Nulato	0	12
	Koyukuk	0	3
	Galena	6	21
	Ruby	4	15
	Other	3	7
Subtotal		23	81
334-50	Tanana	13	22
	Rampart	5	3
	Fairbanks	9	3
	Stevens Village	2	2
	Fort Yukon	0	1
	Circle	1	1
	Eagle	2	1
	Other	6	8
Subtotal		38	41
334-60	Manley	1	4
	Nenana	3	23
	Fairbanks	2	10
	Other	1	2
Subtotal		7	39
Subtotal Upper Yukon		68	161
Grand Total		761	161

Table 7. Commercial salmon catches from subdistrict 334-10, Tubon district, drift and set gill nets combined, 1978.

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
6/8	6		415		1,381	415		1,381
6/9	18		2,052		4,092	2,467(0.35)		5,473(0.78)
	24	292	2,467(0.35)		5,473(0.78)			
6/12	6		899		852	3,368		6,325
6/13	18		4,234		4,821	8,300(0.56)		11,246(0.79)
	24	330	5,833(0.73)		5,773(0.72)			
6/15	6		4,067		19,049	12,367		26,295
6/16	24		8,650		38,351	21,017		61,646
6/17	6		4,868		8,256	26,905(0.91)		70,602(2.48)
	36	377	17,605(1.29)		59,366(4.37)			
6/19	6		1,923		10,400	27,828		81,002
6/20	18		5,564		18,169	33,392(0.91)		99,171(2.70)
	24	345	7,487(0.90)		28,569(3.45)			
6/22	6		2,999		19,525	36,391		118,696
6/23	24		7,786		38,619	44,176		157,315
6/24	6		3,672		11,015	47,848(0.96)		168,330(3.37)
	36	365	14,456(1.10)		69,159(5.26)			
6/26	6		1,371		6,423	49,219		175,753
6/27	18		3,879		21,171	53,198(0.92)		195,924(3.40)
	24	317	5,350(0.70)		27,594(3.62)			
Subtotal 1/	168	429	53,198(0.92)		195,924(3.40)			
6/29	6		448		19,279	448		19,279
6/30	24		1,066		39,424	1,514		58,703
7/1	6		471		13,431	1,985(0.18)		72,334(6.79)
	36	298	1,985(0.18)		72,334(6.78)			
7/3	6		188		9,497	2,150		81,831
7/4	18		767		39,399	2,917(0.16)		121,230(6.86)
	24	292	932(0.13)		48,896(6.97)			
7/6	6		99		3,098	3,016		124,328
7/7	24		436		14,889	3,451		139,217
7/8	6		130		3,307	3,581(0.13)		142,524(5.34)
	36	261	664(0.07)		21,294(2.38)			
7/10	6		124		9,116	3,706		151,639
7/11	18		336		39,846	4,040(0.12)		162,485(5.54)
	24	260	459(0.07)		39,981(8.40)			
7/13	6		32		3,822	4,072		166,307
7/14	24		228		12,566	4,298		198,872
7/15	6		29		814	4,327(0.10)		199,686(4.70)
	36	266	287(0.03)		17,281(1.80)			
7/17	6		32		3,333	4,359		203,019
7/18	18		54		2,898	4,423(0.09)		205,977(4.46)
	24	164	86(0.02)		6,231(1.70)			
7/20	6		19		626	4,442		206,603
7/21	18		69		4,443	4,511(0.09)		211,046(4.15)
	24	193	88(0.01)		5,069(1.09)			
7/24	6		21		16,996	4,532		222,764
7/25	18		67		36,238	4,599(0.08)		263,876(4.56)
	24	299	88(0.01)		52,830(7.36)			
7/27	6		3		529	4,602		264,396
7/28	18		24	4	2,316	4,628(0.07)	4(+)	266,711(4.27)
	24	189	27(+)	4(+)	2,330(0.62)			
7/31	6		5	30	5,600	4,631	34	272,311
8/1	18		21	31	8,821	4,652(0.07)	65(+)	281,132(4.06)
	24	277	26(+)	61(0.01)	14,421(2.17)			
8/3	6		7	1	66	4,662	68	281,198
8/4	18		7	6	332	4,659(0.06)	71(+)	281,530(3.98)
	24	66	7(+)	6(+)	398(0.25)			
8/7	6		2	2	48	4,659	73	281,578
8/8	18		2	230	1,349	4,661(0.06)	303(0.02)	282,927(3.85)
	24	117	2(+)	232(0.08)	1,397(0.50)			
8/10	6		5	47	547	4,666	350	283,474
8/11	18		2	96	1,059	4,668(0.06)	446(0.02)	284,532(3.74)
	24	104	7(+)	143(0.06)	1,806(0.64)			
8/14	6		2	130	560	4,670	576	285,092
8/15	18		7	318	786	4,677(0.06)	894(0.04)	285,878(3.57)
	24	166	9(+)	448(0.11)	1,346(0.34)			
8/17	6		5	326	1,502	4,677	1,220	287,380
8/18	18		5	326	8,668	4,682(0.05)	3,909(0.14)	296,048(3.50)
	24	189	5(+)	2,659(0.66)	10,170(2.24)			
8/21	6		3	1,476	5,663	4,682	5,385	301,711
8/22	18		3	5,963	16,266	4,685(0.05)	11,348(0.34)	317,977(3.50)
	24	263	3(+)	7,439(1.18)	21,929(3.47)			
8/24	6		3	1,174	2,141	4,688	12,522	320,118
8/25	18		1	1,618	2,308	4,689(0.05)	14,140(0.37)	322,424(3.36)
	24	214	4(+)	2,792(0.84)	4,447(0.87)			
8/28	6		1	478	1,741	4,690	14,616	324,165
8/29	18		2	1,646	3,488	4,692(0.05)	16,262(0.41)	327,633(3.32)
	24	111	3(+)	2,122(0.80)	5,209(1.96)			
Subtotal 2/	468	429	4,692(0.05)	16,262(0.41)	327,633(3.32)			
GRAND TOTAL	636	429	57,890	16,262	523,567			

1/ King salmon season (6/8-6/27).
2/ Fall season (6/29-8/29).

Table 8. Commercial salmon catches from subdistrict 334-20, Yukon district, drift and set gill nets combined, 1978.

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
6/8	6		890		657	890		657
6/9	18		3,894		5,594	4,784(1.28)		6,251(1.67)
	24	156	4,784(1.28)		6,251(1.67)			
6/11	6		469		955	5,253		7,206
6/12	18		2,709		7,220	7,962(1.13)		14,426(2.04)
	24	138	3,178(0.95)		8,175(2.46)			
6/14	6		523		1,192	8,485		15,618
6/15	24		2,602		8,442	11,087		24,060
6/16	6		1,168		2,784	12,255(0.97)		26,844(2.12)
	36	156	4,293(0.76)		12,418(2.21)			
6/18	6		1,295		6,072	13,550		32,916
6/19	18		6,475		20,930	20,025(1.20)		53,846(3.21)
	24	170	7,770(1.90)		27,002(6.61)			
6/21	6		780		2,308	20,805		56,154
6/22	24		2,079		3,662	22,884		59,816
6/23	6		1,288		1,961	24,172(1.11)		61,777(2.83)
	36	141	4,147(0.81)		7,931(1.56)			
6/25	6		1,117		4,790	25,289		66,567
6/26	18		3,583		13,021	28,872(1.13)		79,588(3.12)
	24	154	4,700(1.27)		17,811(4.81)			
Subtotal ^{1/}	168	204	28,872(1.13)		79,588(3.12)			
6/28	6		301		9,629	301		9,629
6/29	24		767		26,558	1,068		36,187
6/30	6		250		10,277	1,318(0.26)		46,464(9.35)
	36	138	1,318(0.26)		46,464(9.35)			
7/2	6		231		10,666	1,549		57,130
7/3	18		635		18,139	2,184(0.28)		75,269(9.50)
	24	123	866(0.29)		28,805(9.75)			
7/5	6		185		7,282	2,369		82,551
7/6	24		400		15,149	2,769		97,700
7/7	6		168		9,961	2,937(0.23)		107,661(8.54)
	36	130	753(0.16)		32,392(6.92)			
7/9	6		9		1,329	2,946		108,990
7/10	18		76		6,980	3,022(0.21)		115,970(8.08)
	24	73	85(0.04)		8,309(4.74)			
7/12	6		93		4,999	3,115		120,969
7/13	24		134		12,390	3,249		133,359
7/14	6		41		5,249	3,290(0.17)		138,608(7.35)
	36	125	268(0.05)		22,638(5.03)			
7/16	6		16		1,761	3,306		140,369
7/17	18		37		5,483	3,343(0.16)		145,852(7.10)
	24	71	53(0.03)		7,244(4.25)			

Table 9. Commercial salmon catches from subdistrict 334-30, Yukon district, drift and set gill nets combined, 1978.

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		15		78	15		78
6/13	24		750		966	765		1,044
6/14	18		404		789	1,169(1.35)		1,833(2.12)
	48	18	1,169(1.35)		1,833(2.12)			
6/15	6		0		0	1,169		1,833
6/16	24		818		592	1,987		2,425
6/17	18		670		322	2,657(1.42)		2,747(1.47)
	48	21	1,488(1.47)		914(0.90)			
Subtotal ^{1/}	96	22	2,857(1.42)		2,747(1.47)			
7/6	6		0		0	0		0
7/7	24		61		2,594	61		2,594
7/8	18		47		4,392	108(0.16)		6,986(10.39)
	48	14	108(0.16)		6,986(10.39)			
7/10	6		0		0	108		6,986
7/11	24		12		974	120		7,960
7/12	18		68		6,069	188(0.13)		14,029(9.43)
	48	17	80(0.09)		7,043(8.63)			
7/13	6		5		838	193		14,867
7/14	24		8		1,843	201		16,710
7/15	18		2		1,605	203(0.10)		18,315(9.08)
	48	11	15(0.02)		4,286(8.11)			
7/17	6		4		239	207		18,554
7/18	24		8		988	215		19,542
7/19	18		29		3,370	244(0.10)		22,912(9.18)
	48	10	41(0.08)		4,597(9.57)			
7/20	6		4		999	248		23,911
7/21	24		2		543	250		24,454
7/22	18		10		962	260(0.09)		25,416(8.83)
	48	8	16(0.04)		2,504(6.52)			
8/3	6				0	260		25,416
8/4	24				240	260		25,656
8/5	6				164	260(0.08)		25,820(7.88)
	36	11			404(1.02)			
8/7	6				0	260		25,820
8/8	24				744	260		26,564
8/9	6				150	260(0.07)		26,714(7.28)
	36	11			894(2.26)			
8/10	6				0	260		26,714
8/11	24				113	260		26,827
8/12	6				45	260(0.06)		26,872
	36	11			158(0.40)			
8/14	6				0	260	0	26,872
8/15	24			8	552	260	8	27,424
8/16	6			1	204	260(0.05)	9(0.01)	27,628(5.81)
	36	19		9(0.01)	756(1.10)			
8/17	6				0	260	9	27,628
8/18	24				548	260	9	28,176
8/19	6				258	260(0.05)	9(0.01)	28,434(5.41)
	36	14			806(1.60)			
8/21	6			0	40	260	9	28,474
8/22	24			97	2,382	260	106	30,856
8/23	6			0	0	260(0.05)	106(0.06)	30,856(5.29)
	36	16		97(0.17)	2,422(4.20)			
8/24	6			17	1,522	260	123	32,378
8/25	24			485	2,565	260	608	34,943
8/26	6			150	1,038	260(0.04)	758(0.29)	35,981(5.40)
	36	23		652(0.78)	5,125(6.18)			
Subtotal ^{2/}	492	28	260(0.04)	758(0.29)	35,981(5.40)			
Grand Total	588	28	2,917	758	38,728			

^{1/} King Salmon season (6/12-6/17)

^{2/} Fall season (7/6-8/26)

Table 10. Commercial salmon catches, Subdistrict 334-40, Yukon district, set gill nets and fishwheel catches combined, 1978.

Period ending	Fishermen	King	Chum	Coho	Total
6/16	5	2	1,879	-	1,881
6/23	56	68	40,034	-	40,102
6/30	63	96	93,337	-	93,433
7/7	71	269	116,790	-	117,059
7/14	75	204	78,438	-	78,642
7/21	54	52	19,672	-	19,724
7/28	23	10	9,653	-	9,663
8/4	25	-	2,406	-	2,406
8/11	9	-	1,186	-	1,186
8/15	15	-	992	-	992
Subtotals ^{1/}	80	701	364,387	0	365,088
8/18	15	-	1,289	-	1,289
8/25	8	-	506	-	506
9/1	10	-	2,094	7	2,101
9/8	22	-	7,341	25	7,366
Subtotals ^{2/}	24	0	11,230	32	11,262
Grand Total	82	701	375,617	32	376,350

^{1/} King salmon season (6/15-8/15)

^{2/} Fall season (8/16-9/8)

Table 11. Commercial salmon catches, Subdistrict 334-50, Yukon district, set gill nets and fishwheel catches combined, 1978.

Period ending	Fishermen	King	Chum	Coho	Total
6/25	10	292	19	-	311
7/2	27	688	779	-	1,467
7/9	36	991	2,155	-	3,146
7/16	40	1,144	1,944	-	3,088
7/23		Season Closed			
7/30		Season Closed			
8/6		Season Closed			
8/13		Season Closed			
Subtotal ^{1/}	45	3,115	4,897	0	8,012
8/20	26	-	2,284	-	2,284
8/27	32	-	2,610	-	2,610
9/3	29	-	2,290	-	2,290
9/10	35	-	7,339	6	7,345
9/17	21	-	5,519	1	5,520
9/24	9	-	968	-	968
Subtotal ^{2/}	43	0	21,010	7	21,017
Grand Total	53	3,115	25,907	7	29,029

^{1/} King salmon season (6/20-7/17)

^{2/} Fall season (8/16-9/21)

Table 12. Commercial salmon catches, Subdistrict 334-60, Yukon district, set gill nets and fishwheel catches combined, 1978.

Period ending	Fishermen	King	Chum	Coho	Total
7/1	3	65	30	-	95
7/8	11	338	422	-	760
7/15	24	101	2,806	-	2,907
7/22	25	114	7,783	-	7,897
7/29	28	16	11,611	-	11,627
8/5	26	10	8,297	-	8,307
8/12	19	-	3,726	-	3,726
Subtotal ^{1/}	35	1,644	34,675	0	35,319
8/19		Season Closed			
8/26		Season Closed			
9/2		Season Closed			
9/9		Season Closed			
9/16	29	-	9,269	1,748	11,017
9/23	21	-	3,990	1,318	5,308
Subtotal ^{2/}	30	0	13,259	3,066	16,325
Grand Total	38	644	47,934	3,066	51,644

^{1/} King salmon season (6/26-8/9)

^{2/} Fall season (9/12-9/23)

Table 13. Yukon River subsistence salmon catch data, 1978 (includes Canadian catches). ^{1/}

Village	Survey Date	Fishing Families	Dogs ^{2/}	Snow Machines ^{2/}	Kings	Summer Chums	Fall Chums	Coho	Subtotal	Total All Salmon	8 1/2" Nets	5 1/2" Nets	Fishwheel
Sheldons Pt.	7/31	18	71	20	546	3,385	0	35	3,420	3,966	2	21	0
Atkanuk	8/2	72	125	107	1,125	9,408	148	27	9,583	10,708	4	97	0
Emmonak	8/25	63	91	85	2,738	9,601	83	142	9,826	12,564	18	71	0
Aprona Pass	8/6	3	4	4	64	468	0	5	473	537	0	3	0
Kotlik	0/6	37	69	33	773	8,035	159	933	9,127	9,900	3	60	0
Subtotal		193	360	249	5,246	30,897	390	1,142	32,429	37,675	27	252	0
Mt. Village	8/9	52	87	74	817	6,362	556	2	6,920	7,737	8	66	0
Pitka's Pt.,	8/10	51	126	52	1,314	9,494	311	292	10,097	11,411	15	53	0
St. Marys													
Pilot Station	8/12	38	58	39	1,027	3,810	189	1	4,000	5,027	18	35	0
Marshall	8/11	27	145	34	806	2,018	241	303	2,562	3,368	15	23	0
Subtotal		168	416	199	3,964	21,684	1,297	598	23,579	27,543	56	177	0
Russian Mission	8/12	18	62	23	1,498	856	177	223	1,256	2,754	15	13	0
Holy Cross	8/13	18	41	23	2,404	850	89	0	939	3,343	20	12	0
Subtotal		36	103	46	3,902	1,706	266	223	2,195	6,097	35	25	0
Subtotal Lower Yukon		397	879	494	13,112	54,287 ^{3/}	1,953	1,963	58,203	71,315	118	454	0
Anvik	8/14	13	99	22	180	15,883	118	20	16,021	16,201	6	7	6
Grayling	8/14	27	184	35	292	18,365	459	0	18,824	19,116	1	14	7
Kaltag	8/16	28	277	31	127	18,127	1,149	15	19,291	19,418	0	17	16
Nulato	8/17	28	249	39	1,354	8,589	477	0	9,066	10,420	7	18	10
Koyukuk	8/19	12	119	11	518	4,857	411	0	5,268	5,786	4	6	2
Galena	9/1	24	179	41	945	8,930	3,013	2	11,945	12,890	13	14	14
Ruby	9/2	14	237	20	1,539	11,568	3,033	108	14,709	16,248	2	6	13
Subtotal		146	1,344	199	4,955	86,319	8,660	145	95,124	100,079	33	82	68
Tanana	9/29	53	430	43	1,851	9,297	12,682	704	22,683	24,534	28	14	27
Rampart	9/28	15	102	16	987	1,135	1,584	52	2,771	3,758	14	18	8
Fbks Fish Camp ^{4/}		42			1,333	6,055	3,680	0	9,735	11,068	9	38	8
Stevens Village	10/3	19	146	10	1,845	1,766	4,947	12	6,725	8,570	16	12	3
Beaver	10/5	8	25	8	558	102	1,591	24	1,717	2,275	5	6	0
Ft. Yukon	10/7	31	301	37	2,642	2,471	18,932	177	21,580	24,222	7	19	26
Circle	10/10	8	24	9	212	39	820	0	859	1,071	4	3	2
Eagle	10/9	33	80	4	963	163	4,863	1	5,027	5,990	26	34	1
Subtotal		209	1,108	127	10,391	21,028	49,099	970	71,097	81,488	109	144	75
Main River Totals		752	3,331	820	28,458	161,634	69,712	3,078	224,424	252,882	260	680	143
Huslia	8/18	23	164	31	132	8,556	100	0	8,656	8,788	1	21	0
Hughes	8/18	12	140	10	216	6,387	175	0	6,562	6,771	0	17	0
Alatna	8/18	2	18	3	7	672	9	0	681	688	0	3	0
Allakaket	8/18	19	165	19	239	8,125	1,708	0	9,833	10,072	0	39	0
Koyukuk River Totals		56	487	63	594	23,733	1,992	0	25,725	26,319	1	80	0
Veretie	10/5	9	93	9	14	0	2,606	0	2,606	2,620	0	19	1
Chandalar River Totals		9	93	9	14	0	2,606	0	2,606	2,620	0	19	1
Manley	10/11	20	255	8	298	3,601	10,620	1,273	15,494	15,792	5	23	8
Nenana	10/9	22	240	28	807	5,440	19,255	2,930	27,625	28,432	6	5	29
Fairbanks ^{5/}		126			126	2,729	682	506	3,917	4,043	40	118	8
Tanana R. Totals		168	495	36	1,231	11,770	30,567	4,709	47,036	48,267	51	140	45
Old Crow ^{6/}					0	0	5,000	0	5,000	5,000			
Porcupine R. Totals					0	0	5,000	0	5,000	5,000			
Yukon Territory Villages: ^{6/}													
Pelly					500		132		132	632			
Mayo-Stewart R.					105		0		0	105			
Johnsons Crossing (TealIn)					600		0		0	600			
Dawson					421		728		728	421			
Carmacks					1,280		350		350	1,280			
Y. T. Villages Total					2,906		6,210		6,210	9,116			
Grand Total Yukon River ^{8/}		985	4,406	928	30,297	197,137	94,867	7,787	299,791	330,088	312	919	189

1/ Expanded catch data 1/79.
 2/ Data from fishing families only.
 3/ Includes 1,478 pinks taken in subdistricts 1,203.
 4/ Fishermen from Fbks who obtained permits for the area between Hess Creek and Dall River.
 5/ From catch reports turned in by permittees (subsistence permits required for the Tanana R. drainage upstream of Wood River).
 6/ Data obtained from Environment Canada - Fisheries Service (Whitehorse).
 7/ Not included are catches of 488 kings, 16,809 summer chums, 665 fall chum, 89 coho and 1,644 pinks taken at coastal villages of Hooper Bay and Scammon Bay.
 8/ Not included are catches of 50,849 whitefish and 6,839 sheefish from Yukon River villages.

Table 14. Aerial survey salmon escapement estimates ^{1/}, Yukon River drainage, 1978.

Stream (drainage)	Date	Rating	Kings	Cohos	Summer Chums	Fall Chums	Pinks
<u>Archuelinguk (Mt. Village) R.</u>	7/15	Poor	3	-	1,322	-	1,415
<u>Andreafsky River</u>							
West Fork	7/14	Fair	1,062	-	57,321	-	980
East Fork	7/11+28	Good	2,487	-	127,050	-	10
			<u>3,549</u>	<u>-</u>	<u>184,371</u>	<u>-</u>	<u>990</u>
<u>Anvik River drainage</u>							
Tower & Sonar count	6/22-7/21	-	1,041	-	166,102	-	249
Lower drainage below tower (including Yellow River) ^{2/}	7/14-15	Good	72	-	85,237	-	-
Tower to Beaver Creek	7/19	-	168	-	-	-	-
Total Anvik River drainage			1,281	-	251,339	-	249
<u>Thompson Creek</u>	7/15	Poor	-	-	625	-	-
<u>Simon Creek</u>	7/15	Good	-	-	4,272	-	-
<u>Rodo River</u>	7/15	Good	37	-	17,845	-	-
<u>Nulato River (main stem)</u>	7/26	Good	-	-	4,750	-	-
North Fork	7/26	Good	498	-	36,909	-	-
South Fork	7/26	Good	422	-	12,821	-	-
Subtotal			<u>920</u>	<u>-</u>	<u>54,580</u>	<u>-</u>	<u>-</u>
<u>Koyukuk River drainage</u>							
Gisasa River	7/13	Poor	45	-	9,280	-	-
Dakli River	7/25	Fair	2	-	1,309	-	-
Wheeler Creek	7/26	Fair	-	-	1,400	-	-
			<u>2</u>	<u>-</u>	<u>1,709</u>	<u>-</u>	<u>-</u>
<u>Hogatza River</u>							
Clear Creek	7/25	Fair	-	-	2,716	-	-
Caribou Creek	7/25	Fair	-	-	2,386	-	-
			<u>-</u>	<u>-</u>	<u>5,102</u>	<u>-</u>	<u>-</u>
<u>South Fork Jim River</u>	8/8	Fair	98	-	2,190	-	-
Jim River	8/8	Fair	56	-	1,231	-	-
			<u>154</u>	<u>-</u>	<u>3,421</u>	<u>-</u>	<u>-</u>
Total Koyukuk R. drainage			201	-	20,512	-	-
<u>Melozitna River</u>							
Fox Creek	7/13	Fair	-	-	309	-	-
Turnaround Creek	7/13	Fair	-	-	196	-	-
Blacksand Creek	7/13	Fair	1	-	1,054	-	-
Melozl Hot Springs Creek	7/13	Fair	8	-	4,012	-	-
			<u>9</u>	<u>-</u>	<u>5,571</u>	<u>-</u>	<u>-</u>
<u>Tozitna River</u>	7/20	Poor	194	-	2,262	-	-
<u>Tanana River drainage</u>							
Kantishna River drainage							
Toklat River ^{4/}	10/24-27	Fair	-	200	-	20,000	-
Sushana Creek ^{4/}	10/24-27	Fair	-	-	-	5,000	-
Geiger Creek ^{4/}	10/24-27	Fair	-	-	-	10,000	-
Subtotal			<u>-</u>	<u>200</u>	<u>-</u>	<u>35,000</u>	<u>-</u>
Nenana River	10/13	Good	-	350	-	-	-
Clear Creek ^{2/}	7/25	Good	56	-	5	-	-
Seventeen Mile Slough	7/21+10/13	Good	30	466	-	-	-
Subtotal			<u>86</u>	<u>816</u>	<u>5</u>	<u>-</u>	<u>-</u>
<u>Chatanika River ^{2/}</u>	8/1	Good	8	-	171	-	-
<u>Chena River</u>	7/28+8/9	Good-Fair	1,726	-	1,609	-	-
<u>Salcha River drainage</u>	7/28	Good	3,499	-	5,405	-	-

Table 14. (Cont'd) Aerial survey salmon escapement estimates ^{1/}, Yukon River drainage, 1978.

Stream (drainage)	Date	Rating	Kings	Cohos	Summer Chums	Fall Chums	Pinks
Upper Tanana River drainage							
Benchmark #735 Slough	10/30	Poor	-	-	-	1,705	-
Delta River	10/30	Fair	-	-	-	10,051	-
Tanana River (bridge to island)	10/30	Fair	-	-	-	5,700	-
Bluff Cabin Slough	10/30	Good	-	-	-	5,340	-
Clearwater Lake and outlet ^{2/} , ^{5/}	10/26	Good	-	570	-	-	-
Delta Clearwater River ^{2/} , ^{5/}	10/26	Good	-	4,798	-	-	-
One Mile Slough	10/30	Fair	-	-	-	475	-
Subtotal Upper Tanana River			-	5,368	-	23,271	-
Subtotal Tanana River drainage							
<u>Morelock Creek</u>	8/3	Poor	-	-	35	-	-
Porcupine River drainage							
Sheenjek River	10/3	Poor	2	-	-	14,610	-
Fishing Branch River	10/13	Good	-	-	-	15,000	-
Subtotal Porcupine River drainage			2	-	-	29,610	-
Yukon Territory Streams							
Whitehorse Fishway ^{3/}	7/25-8/30	-	725	-	-	-	-
Takhini River	8/17	Poor	115	-	-	-	-
Nordenskjold River	8/17	Poor	17	-	-	-	-
Nisutlin River	8/18	Fair-Poor	375	-	-	-	-
Nisutlin Lake outlet	8/18	Fair-Poor	109	-	-	-	-
Big Salmon River	8/19	Good	1,150	-	-	-	-
Little Salmon River	8/16	Good	330	-	-	-	-
Tatchun Creek ^{3/} , ^{4/}	8/29	-	200	-	-	-	-
Subtotal			3,021	-	-	-	-
TOTAL YUKON RIVER DRAINAGE			14,536	6,384	549,824	87,881	2,654

- ^{1/} Only peak estimates listed; carcasses included
- ^{2/} Boat survey
- ^{3/} Data supplied by Environment Canada-Fisheries Service, Whitehorse
- ^{4/} Foot survey
- ^{5/} Data furnished by Division of Sport Fish

Appendix Table 2. Commercial salmon catches by species and subdistricts, Yukon district, 1960-1978.

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	2,872	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

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 ^{1/}	-	-	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

Appendix Table 2. (Continued) Commercial salmon catches by species and subdistricts, Yukon district, 1960-1978

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	641,663	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
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	116,061	993,402
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	23,774	690,934	184,891	31,068	25,203	241,162	932,096
1978	597,709	315,256	42,403	955,368	376,350	29,029	51,644	457,023	1,412,391

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

Appendix Table 3. Yukon district commercial, vessel and gill net licenses issued and numbers of fishwheels operated by subdistrict, 1960-1978.

COMMERCIAL									
Year	Lower Yukon Area ^{1/}				Upper Yukon Area				Totals
	334-10	334-20	334-30	Subtotals	334-40	334-50	334-60	Subtotals	
1960	193	96		289				18	307
1961	238	130	26	394				18	412
1962	321	148	46	515				21	536
1963	285	131	30	446				6	452
1964	319	119	31	469				20	489
1965	327	143	34	504				38	542
1966	393	143	21	557				21	578
1967									607
1968				563				22	585
1969	406	131	32	569				30	599
1970	393	164	33	590				38	628
1971	459	162	37	658				57	715
1972	473	193	43	709				56	765
1973	515	206	50	771				101	872
1974	460	232	55	747	39	45	69	153	900
1975	553	243	51	847	159	100	84	343	1,190
1976	599	299	56	954	120	84	71	275	1,229
1977	515	283	64	862	124	80	46	230	1,092

DRIFT GILL NETS									
Year	Lower Yukon Area ^{1/}				Upper Yukon Area				Totals
	334-10	334-20	334-30	Subtotals	334-40	334-50	334-60	Subtotals	
1960	2	44		46					46
1961	17	86		103					103
1962	55	98	24	177					177
1963	24	85	5	114					114
1964	65	89	5	159					159
1965	62	98	4	164					164
1966	97	88	4	189					189
1967	135	109	5	249					249
1968	111	104	8	223					223
1969	142	100	10	252					252
1970	110	127	16	253					254
1971	140	134	19	293					295
1972	155	142	17	314					319
1973	165	151	18	334					335
1974	109	168	21	298					298
1975	117	181	13	311					311
1976	166	193	22	381					381
1977	142	174	28	344					344

FISHING VESSEL									
Year	Lower Yukon Area ^{1/}				Upper Yukon Area				Totals
	334-10	334-20	334-30	Subtotals	334-40	334-50	334-60	Subtotals	
1960	186	33		219				10	229
1961	210	112	18	340				10	350
1962	320	127	31	478				12	490
1963	272	113	22	407				8	415
1964	314	101	24	439				13	452
1965	322	111	26	459				28	487
1966	365	113	18	496				21	517
1967	381	126	22	529				20	549
1968	340	124	26	490				23	512
1969	361	93	24	478				25	503
1970	349	143	27	519				30	549
1971	416	145	29	590				44	634
1972	426	153	35	614				47	661
1973	458	167	38	663				77	740
1974	438	189	42	669	30	34	46	110	779
1975	511	197	36	744	116	77	51	244	988
1976	513	203	36	752	92	70	48	210	962
1977	411	187	37	635	90	51	32	173	808

FISHWHEELS ^{2/}									
Year	Lower Yukon Area ^{1/}				Upper Yukon Area				Totals
	334-10	334-20	334-30	Subtotals	334-40	334-50	334-60	Subtotals	
1960									
1961									
1962									
1963								13	13
1964								3	3
1965								7	7
1966								29	29
1967								17	17
1968								10	10
1969								15	15
1970								17	17
1971								26	26
1972								26	26
1973								57	57
1974								85	85
1975								169	169
1976								169	169
1977								127	127

SET GILL NETS									
Year	Lower Yukon Area ^{1/}				Upper Yukon Area				Totals
	334-10	334-20	334-30	Subtotals	334-40	334-50	334-60	Subtotals	
1960	183	59		242				2	244
1961	217	101	19	337				1	338
1962	303	117	14	434				4	438
1963	259	101	21	381				4	385
1964	277	100	28	405				12	417
1965	292	98	23	413				13	426
1966	345	101	17	463				12	475
1967	333	72	21	426				5	431
1968	314	62	26	402				18	420
1969	346	62	15	423				16	439
1970	345	105	24	474				27	501
1971	399	115	30	544				27	571
1972	439	130	36	605				30	635
1973	450	159	30	639				41	680
1974	423	158	36	617	13	27	27	67	684
1975	506	161	33	700	54	65	21	140	840
1976	488	153	28	669	31	50	19	100	769
1977	416	136	34	586	22	36	6	64	650

^{1/} Distribution of licenses by subdistrict represents that at the beginning of the fishing season (June 1); some fishermen transfer to other subdistricts during the season.
^{2/} Fishwheels are legal types of gear but license fees are not required. Number of fishwheels operated each year obtained from commercial and fishing vessel license application forms where fishermen indicated type of gear to be operated.
^{3/} Fishwheels were operated in the vicinity of Kaltag and Muleto. Beginning in 1974, these villages are in subdistrict 334-40.

Appendix Table 4 . Actual number of commercial salmon fishing vessels by subdistrict, Yukon district, 1971-1978 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
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
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	---	---	---	27	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

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. Comparative commercial king salmon catch data, Yukon district, 1960-1978 ^{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

	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)	7,282 (0.44)
	1974	86,256 (0.80)	29,808 (0.60)	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 (0.87)	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)

^{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 6 . Comparative King Salmon commercial catch data by date, Kingsalmon season, subdistrict 334-10, Yukon District, 1961-1978.

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
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)						3.5(0.46)				
6/6										0.01(0.03)			0.3(0.15)					
6/7							21.3(0.85)		8.1(0.34)									
6/8	3.6(0.32)		4.7(0.45)					1.4(0.18)						11.0(0.60)				
6/9					0.6(0.17)								2.8(0.25)					2.5(0.35)
6/10							37.9(0.98)			0.5(0.16)		0.04(0.08)						
6/11			16.9(0.87)		4.1(0.31)	0.6(0.16)		11.3(0.62)	26.8(0.75)						0.2(0.09)			
6/12											0.03(0.15)			25.7(0.82)				
6/13										3.0(0.32)			9.4(0.44)					8.3(0.56)
6/14		8.0(0.57)					62.7(1.18)		41.7(0.79)			1.04(0.17)			0.6(0.11)		0.04(0.05)	
6/15	46.6(1.61)		34.3(1.14)			4.8(0.38)		25.7(0.76)						36.8(0.84)				
6/16					19.3(0.85)						1.2(0.29)		21.5(0.59)		0.1(0.06)			
6/17				0.2(0.11)			66.5(0.99)		47.9(0.75)	8.4(0.48)		4.5(0.24)						25.9(0.91)
6/18						23.1(0.86)									1.7(0.17)		2.6(0.41)	
6/19			50.3(1.27)		42.7(1.22)			31.8(0.69)	58.3(0.82)	32.7(1.07)	5.1(0.30)			55.6(0.99)	3.3(0.27)			33.4(0.91)
6/20				9.5(0.88)									30.6(0.65)					
6/21		27.5(0.76)					83.4(1.02)					21.5(0.68)			7.4(0.39)		13.0(0.92)	
6/22	66.6(1.42)		56.8(1.13)			40.9(1.00)		56.7(0.90)						58.5(0.96)				
6/23					69.1(1.47)					18.2(0.61)			42.6(0.68)			12.9(0.49)		47.8(0.96)
6/24				37.0(1.80)			90.0(1.02)		66.3(0.85)	39.3(0.97)		37.8(0.77)						
6/25						54.4(1.06)									24.5(0.75)		39.3(1.50)	
6/26			72.0(1.23)		77.2(1.32)			70.3(0.94)		50.2(1.07)	40.7(0.88)			65.7(0.90)	28.3(0.69)			53.2(0.92)
6/27				48.5(1.54)			104.3(1.02)						52.8(0.70)		34.3(0.83)			
6/28		62.3(0.95)				66.7(1.08)			70.6(0.83)									57.0(1.62)
6/29	79.0(1.23)		83.1(1.22)		81.0(1.18)			77.9(0.90)						69.5(0.80)				
6/30										75.3(1.29)					42.1(0.76)			
7/1				55.3(1.38)						55.0(0.99)		68.1(0.86)			41.6(0.83)		65.7(1.54)	
7/2						70.8(1.01)									56.4(0.87)			
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 7. King salmon catches by statistical areas, subdistrict 334-10 of the Yukon district 1965-1978 ^{1/}

Statistical Area	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
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	1,097
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	10,829
13 (Sunshine Bay)	8,137	5,460	6,203	7,997	9,635	5,258	7,135	3,435	4,302	6,863	8,167	6,574	7,623	3,760
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	3,991
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	15,101	19,711
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	3,387
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	6,590
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	3,833
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	53,198

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

Appendix Table 8. Comparative summer and fall chin salmon commercial catches, Yukon district, 1971-1978.

Year	SUMMER CHUMS					FALL CHUMS					TOTAL CHUMS																	
	Lower Yukon Area			Sub Total	Total	Lower Yukon Area			Sub Total	Total	Lower Yukon Area			Sub Total	Total													
	334-10	334-20	334-30			334-40	334-50	334-60			334-40	334-50	334-60															
1961	-	-	-	-	-	42,577 ^{1/}	-	-	42,577	-	-	-	-	42,577	42,577	-	-	42,577	-	-	-	-	42,577					
1962	-	-	-	-	-	53,160 ^{1/}	-	-	53,160	-	-	-	-	53,160	53,160	-	-	53,160	-	-	-	-	53,160					
1963	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
1964	-	-	-	-	-	8,347	-	-	8,347	-	-	-	-	8,347	8,347	-	-	8,347	-	-	-	-	8,347					
1965	-	-	-	-	-	22,936	-	-	22,936	-	-	-	-	22,936	22,936	-	-	22,936	-	-	-	-	22,936					
1966	-	-	-	-	-	69,836	-	1,209	71,045	-	-	-	-	71,045	69,836	-	1,209	71,045	-	-	-	-	71,045					
1967	9,697	1,425	57	11,179	11,179	36,451	-	1,823	38,274	-	-	-	-	38,274	46,148	1,425	1,880	49,453	-	-	-	-	49,453					
1968	12,995	1,407	88	14,470	14,470	49,857 ^{1/}	-	3,068	52,925	-	-	-	-	52,925	62,852	1,407	3,136	67,395	-	-	-	-	67,395					
1969	55,545	5,024	-	60,569	60,569	128,856	-	1,722	130,588	-	-	-	-	131,291	184,411	5,024	1,722	191,157	-	-	-	-	191,860					
1970	119,832	17,536	-	137,368	137,368	200,308	4,858	3,285	208,449	-	-	-	-	209,356	320,138	22,394	3,285	345,817	-	-	-	-	346,724					
1971	93,928	6,112	50	100,090	100,090	188,533	-	-	188,533	-	-	-	-	189,594	282,461	6,112	50	288,623	-	-	-	-	289,684					
1972	114,234	20,907	527	135,668	135,668	138,711	12,898	1,313	150,922	-	-	-	-	152,176	250,945	33,806	1,840	286,590	-	-	-	-	287,844					
1973	221,644	63,737	463	285,844	285,844	173,783	45,304	-	219,087	-	-	-	-	232,090	395,427	109,041	463	504,931	-	-	-	-	517,934					
1974	479,564	72,281	1,605	553,440	553,440	29,701	4,462	16,607	60,770	604,210	161,498	83,540	852	215,990	9,213	23,951	24,004	57,568	273,158	641,052	125,821	2,157	769,030	38,914	28,013	41,411	108,338	877,368
1975	435,266	99,944	-	535,200	535,200	165,169	13,137	14,858	192,956	728,156	148,489	51,686	5,990	206,715	13,552	27,207	18,682	89,441	265,156	883,715	151,610	5,590	740,915	178,721	40,344	33,333	252,397	993,312
1976	269,523	99,747	10,254	379,524	379,524	211,277	860	6,566	218,703	598,227	112,693	21,212	4,250	138,158	1,742	5,387	17,998	25,127	163,282	382,216	120,959	14,504	517,679	213,019	6,247	24,564	243,830	761,509
1977	263,395	107,057	3,439	373,891	373,891	169,569	1,153	4,328	175,047	548,958	122,577	51,894	15,851	190,422	19,996	25,695	18,626	58,317	248,739	385,972	159,051	19,310	564,333	183,565	26,848	22,951	233,264	797,697
1978	388,492	225,440	27,201	641,133	641,133	364,387	4,897	34,675	403,959	1,045,092	135,068	57,646	11,627	198,238	11,230	21,010	13,258	45,499	243,737	523,557	277,096	38,728	839,371	375,617	25,907	47,934	449,458	1,288,829

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

Appendix Table 9. Comparative commercial summer chum salmon catch data, subdistricts 334-10 and 334-20, Yukon district, 1967-1978.

Year	Subdistrict 334-10					Subdistrict 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	5,924	(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	191,040	(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)	6/8-6/14	13.5	44,376	218,196	(4.92)

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

Appendix Table 10. Comparative commercial coho and chum salmon catch data for the fall season, subdistrict 334-10 Yukon district, 1961-1978

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	<u>2/</u>	<u>2/</u>	350 (<u>2/</u>)	22,936 (<u>2/</u>)
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)

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

^{2/} Information not available.

Appendix Table 11. Comparative fall chum salmon commercial catch data by date, fall season, subdistrict 334-10, Yukon district, 1969-1978.

Date	Cumulative catch 1/ (Cumulative catch/boat hour)									
	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
7/18		16.1(1.86)			16.4(1.26)					6.3(1.70)
7/19	3.8(1.10)			18.6(1.91)					21.4(3.72)	
7/20						12.1(1.57)				11.4(1.36)
7/21			8.2(1.05)		53.6(2.03)			6.9(0.73)		
7/22		29.6(1.67)		45.8(2.23)					23.4(2.54)	
7/23	29.7(3.75)						12.9(1.51)			
7/24			31.9(1.71)			24.7(1.76)		9.7(0.60)		
7/25		30.4(1.54)			67.4(1.91)					64.2(4.14)
7/26	44.5(3.48)			54.8(1.88)			37.0(2.33)		33.1(2.38)	
7/27						59.0(2.81)				
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)	
7/30	57.0(3.24)						55.9(2.54)			
7/31			53.5(1.48)			86.9(3.16)		79.5(2.24)		
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)				
8/4			89.6(1.94)		127.9(1.84)			87.3(1.98)		81.8(2.89)
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)		
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)
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)
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)	
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 at this date.

Appendix Table 12. Commercial salmon pack by species and type of processing, Yukon district, 1960-1978.^{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	88,816	3,079,300	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

^{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 13. Dollar value estimates of Yukon district commercial fishery, 1960-1978^{1/}

Year	Gross value of catch to fishermen	Wages earned ^{2/}	Total income to district	Wholesale value of pack ^{3/}	Tax revenues to state
1960	\$	\$	\$	\$	\$
1961	437,000			1,292,300	37,500
1962	361,900			1,275,250	50,400
1963	412,300			1,550,400	42,000
1964	354,400			1,203,800	35,000
1965	542,300			1,412,700	42,000
1966	454,500			1,308,100	37,000
1967	606,400	250,000	856,400	1,864,800	41,700
1968	535,000	264,000	799,000	1,655,200	47,000
1969	519,200	234,000	753,000	1,976,200	40,000
1970	623,100	185,800	808,900	2,113,100	45,000
1971	783,000	357,700	1,140,700	2,106,600	42,000
1972	784,000	445,400	1,229,400	2,405,200	45,300
1973	1,217,000	585,800	1,802,900	4,453,900	62,800
1974	1,921,000	500,100	2,421,100	6,035,900	84,100
1975	1,793,900	596,600	2,390,500	4,939,700	87,100
1976	2,151,000	687,600	2,838,600	6,815,500	96,900
1977	4,068,700	850,000	4,918,700	10,499,400	151,000
1978	5,314,700	1,085,700	6,400,400	14,194,800	179,400

^{1/} Information not available for 1960 and wages earned during 1961-1966.

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

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

Appendix Table 14. Estimated mean prices paid to fishermen, Yukon district, 1961-1978 ^{1/}

Price Per Fish

<u>Year</u>	<u>King</u>	<u>Coho</u>	<u>Chum</u>
1961	\$3.50	\$	\$
1962	3.50		
1963	3.50		
1964	3.75	.50	.25
1965	4.50		.35
1966	4.50	.50	.35
1967	4.50	.50	.35
1968	4.64	.50	.50
1969	4.60	.55	.50
1970	5.00	.84	.61
1971	5.34	.82	.64
1972	5.90	.92	.75
1973	7.45	1.27	1.18
1974	9.00	1.75	1.40
1975	9.24	1.50	1.36
1976	11.28	1.63	1.50
1977	20.00	3.76	2.67
1978	20.71	3.05	2.56

Price Per Pound

<u>Year</u>	<u>King</u>	<u>Coho</u>	<u>Chum</u>
1964	.17		.03
1965	.20		.05
1966	.20		.05
1967	.19	.07	.05
1968	.18		.06
1969	.19	.08	.08
1970	.22	.12	.09
1971	.24	.12	.10
1972	.24	.13	.11
1973	.30	.18	.16
1974	.38	.25	.21
1975	.42	.21	.20
1976	.52	.24	.22
1977	.86	.49	.38
1978	.87	.43	.36

^{1/} Information not available for some species.

Appendix Table 15. Mean weights and numbers of salmon per case, Yukon district, 1962-1978 1/

<u>Year</u>	<u>Mean round weight in pounds 2/</u>			<u>Mean no. of fish/case 3/</u>		
	<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			

1/ Information is not available for some species.

2/ Based on age-length-weight samples or fish ticket entries.

3/ Standard 48 lb. case.

Appendix Table 16. Yukon River comparative subsistence catch and effort data, 1961-1978 (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	403,766	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	22,677	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	26,499	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	262,824	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

Year	Fishing Families surveyed	People in fishing families ^{1/}	Snowmachines ^{1/}	Sled dogs ^{1/}	Gear operated ^{1/}	
					Gill nets	Fishwheels
1961	624	3,628 (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

^{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 17. Comparative Yukon River King salmon subsistence catches by village, 1961-1978.

Village	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
Mouth to Anuk River																		
Sheldons Point	180	116 1/2	921 1/2	52	49	127	755	30	728	1,093	882	462	165	283	108	122	302	546
Alakarak	165	53	81	87	177	263	287	205	852	589	1,116	647	461	569	130	363	213	1,125
Emmonak-Kariguk	137	21	120	63	145	160	541	42	810	151	627	300	1,071	208	55	398	62	2,738
Aproka Pass & vicinity	179	181	293	73	281	645	959	147	238	23	42	37	106	5	0	-	-	64
Kotlik-Hamilton	111	35	195	63	131	47	162	53	551	394	328	342	1,008	394	204	472	173	773
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
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
Pitkas Point - St. Marys	1,810	391	1,254	521	826	499	993	168	737	575	1,915	1,517	1,270	878	438	1,239	576	1,314
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
Marshall	1,265	503	2,012	290	942	350	306	365	564	598	985	713	1,163	1,068	436	694	364	806
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
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
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
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
Bonasilla R. to Illinois Cr.																		
Arvik	22	51	163	153	118	144	54	114	71	67	152	72	67	111	83	84	67	180
Grayling	25 2/3	37 2/3	197 2/3	124	246	85	199	208	187	155	416	185	516	547	100	117 2/3	149	292
Kaitag	33	224	102	330	57	47	199	60	232	124	154	83	148	616	192	57	216	127
Muleto	513	171	835	355	305	218	578	209	771	734	470	364	307	1,161	1,119	968	1,531	1,354
Koyukuk	483	423	629	209	228	93	262	398	357	30	410	417	564	604	50	437	752	518
Galena	626	123	282	158	280	407	210	456	263	313	574	608	510	706	1,294	435	1,155	945
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
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	4,665	4,955
Illinois Cr. to U.S. Can. Border																		
Tanana	2,879	332	1,414	329	624	421	151	627	683	361	428	1,461	965	789	80	1,338	858	1,851
Rampart	605	1,438	1,231	990	1,041	869	368	922	321	150	1,190	1,457	2,614 3/4	452	517	581	1,194	987
Stevens Village	650	831	1,073	325	910	620	534	787	350	851	750	1,002 3/4	1,027 3/4	590 3/4	362	643 1/2	1,252 1/2	3,178
Beaver	185	442	491	710	480	31	210	495	458	773	777	241	358	34	168	188	299	558
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
Circle	496	393	250	1,200	-	-	-	-	-	-	666	345	225	406	15	528	304	212
Eagle	875	400	500	17	100	-	-	-	-	-	111	353	421	66	20	633	1,171	963
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
Innoko River																		
Shegaluk																		
Holikachuk																		
Subtotal																		

77.

	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
Koyukuk River																		
Hustle	-	100	32	112	9	-	7	35	16	12	5	1	35	69	23	21	50	132
Hughes	-	-	47	18	-	-	65	82	10	116	378	27	32	10	25	155	72	216
Aiatna	-	-	-	-	-	-	-	1	8	2	0	3	1	17	0	0	1	7
Alliakakot	-	-	85	-	-	-	70	3	15	128	268	25	73	138	151	231	172	239
Subtotal	-	100	164	130	9	-	142	121	49	258	651	56	141	234	199	407	295	594
Tanana River																		
Minto-Manley Hot Springs	347	92	325	468	276	146	-	12	76	138	7	99	58	176	213	326	752	298
Menana	310	115	213	194	157	272	252	462	465	357	2,357	887	683	1,431	533	864	742	807
Fairbanks	-	-	-	-	-	-	-	-	-	132	98	190	26	38	32	31	67	126
Subtotal	657	207	538	662	433	418	252	474	541	627	2,462	1,176	767	1,645	778	1,221	1,561	1,231
Chandalar River																		
Yenetla	-	-	-	-	-	-	-	-	7	10	-	-	-	-	-	-	-	9
Subtotal	-	-	-	-	-	-	-	-	7	10	-	-	-	-	-	-	-	9
Porcupine River																		
Canyon Village	-	-	17	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chalkytsi & Kavinjik R. Fish Camp	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Old Crow, Y.T.	-	-	44	-	94	65	43	28	27	8	9	-	20	100	100	23	29	-
Subtotal	-	-	63	37	94	65	43	28	27	8	9	-	20	100	100	23	29	-
Yukon Territory Villages 5/																		
Dawson	2,231	2,000	1,500	3,476	351	50	50	100	-	40	-	-	-	-	-	500	531	421
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	-	508	120	150	200	-	120	-	38	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
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
Total:	31,864	21,610	32,970	22,877	19,723	14,272	19,661	15,006	15,000	15,974	27,953	21,868	26,459	23,137	15,466	19,329	20,380	30,297

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 18. Comparative Yukon River chum salmon subsistence catches by village, 1961 - 1978 7/

Village	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
Mouth to Anuk River																		
Sheldon's Point	12,683	10,899 1/2	32,577 1/2	8,701	10,884	3,007	2,757	8,693	5,573	4,238	4,355	3,554	2,720	6,247	1,459	2,033	1,327	3,420
Alakanuk	8,932	5,747	17,953	11,333	21,473	9,830	9,964	14,184	15,806	10,994	7,895	5,896	6,551	12,743	3,656	10,866	6,591	9,583
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	5,335	8,397	7,503	9,826
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
Subtotal	49,005	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	22,996	32,429
Anuk River to Owl Slough																		
Mountain Village	7,373	8,331	10,106	13,593	11,475	7,548	8,305	7,312	10,676	4,855	8,214	6,909	7,524	11,661	6,720	8,278	11,368	6,920
Pitkas Point - St. Marys	8,771	10,510	7,001	12,508	14,130	8,460	9,790	9,166	11,586	14,604	13,533	11,072	9,201	14,478	8,644	12,060	12,347	10,097
Pilot Station	6,805	13,926	5,553	10,776	7,865	5,987	6,520	4,770	7,515	5,882	4,171	7,026	6,474	8,667	7,849	5,498	5,708	4,000
Marshall	5,992	6,595	8,023	10,125	6,631	3,640	3,070	3,530	6,606	4,910	6,154	6,174	4,934	6,763	5,710	3,938	2,896	2,562
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
Owl Slough to Nonaslie R.																		
Kosstan Mission	4,098	9,994	5,354	10,068	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
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
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
Nonaslie R. to Illinois Cr.																		
Aerik	61,906	43,404 1/2	28,064 1/2	34,341	37,179	14,239	20,793	10,020	8,925	9,924	8,121	3,689	20,850	29,261	30,924	26,660	23,847	16,021
Grayling	56,284 1/2	32,737 1/2	18,358 1/2	23,784	36,436	11,437	22,852	8,225	18,037	12,548	6,900	6,428	12,778	27,421	26,476	27,500 2/3	17,102	18,824
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
Beloto	63,163	27,948	37,747	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
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
Galena	10,585	1,673	6,731	3,100	2,741	8,296	2,650	1,079	2,422	3,179	2,015	1,363	4,612	8,307	11,500	13,435	5,527	11,945
Ruby-Kokrines	15,654	18,243	15,585	30,122	17,603	6,530	10,690	2,382	5,201	8,068	13,356	6,725	12,932	19,235	8,820	10,777	4,349	14,709
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
Illinois Cr. to U.S.-Canadian Border																		
Yanana	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
Rampart	11,722	6,962	11,209	14,963	13,462	4,056	15,763	2,636	8,935	5,252	11,436	3,674	8,966 1/2	1,527	8,117	14,175	10,056	2,771
Stevens Village	3,490	4,365	8,247	6,979	7,348	1,900	3,146	2,022	2,725	8,292	7,957	3,118 1/2	8,078 1/2	6,728 1/2	2,297	1,170 1/2	4,926 1/2	16,460
Beaver	2,975	2,334	12,119	11,359	3,274	4,136	4,292	3,619	1,965	2,378	1,870	3,187	1,372	1,983	1,270	517	716	1,717
Fort Yukon	13,252	10,255	31,219	19,407	19,402	3,960	8,983	6,564	3,338	6,364	3,498	1,497	3,074	142	19,458	1,143	13,630	21,580
Circle	992	800	100	2,300	-	-	-	-	-	-	2,940	782	692	1,266	1,283	153	203	859
Eagle	150	100	125	1,582	256	-	-	-	-	-	490	587	2,109	66	1,625	1,141	7,432	5,027
Subtotal	45,358	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	80,592	39,891	56,753	71,097
Imvoko River																		
Shapeluk	-	3,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,577
Holikachuk	-	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	-	3,600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,577
Koyukuk River																		
Nestla	-	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
Rughes	-	-	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
Alatna	-	-	-	-	-	-	170	99	830	1,226	689	490	27	3,510	980	660	270	681
Allakatat	-	-	1,972	-	-	-	3,929	1,391	3,254	7,759	8,773	867	2,465	7,034	6,609	4,215	3,686	9,833
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

Appendix Table 18 - Comparative Yukon River chin salmon subsistence catches by village, 1961 - 1978.
(Continued)

Village	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
Tanana River																		
Minto-Manley Hot Springs	6,486	17,228	15,493	17,628	11,358	7,152	22	740	330	540	8	8	2	20	6,000	8,600	16,192	15,494
Renana	6,426	13,821	13,599	11,129	7,363	12,023	3,517	6,095	3,247	11,398	19,007	20,864	14,154	26,340	26,634	14,345	24,167	27,625
Fairbanks	-	-	-	-	-	-	-	-	-	1,072	6,655	8,608	1,657	2,958	1,615	2,826	725	3,917
Subtotal	12,912	31,049	29,092	28,757	18,721	19,175	3,539	6,795	3,577	13,010	24,670	29,478	15,818	29,318	34,249	26,571	41,084	47,036
Chandalar River																		
Venette	-	1,000	200	-	9,856	1,098	2,626	551	3,116	2,400	801	50	410	---	2,401	508	1,660	2,606
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
Porcupine River																		
Canyon Village	-	210	1,566	2,316	1,531	-	-	-	-	-	-	-	-	-	-	-	-	500
Chalkytsik - Kevijit R. Fish Camp	-	580	64	742	1,438	-	-	-	-	-	-	-	-	-	-	-	-	-
Old Crow, Y.T.	-	2,800	20,000	-	7,535	7,175	11,768	10,000	3,411	620	100	5,000	5,827	7,000	11,600	3,125	5,592	5,000
Subtotal	-	3,610	21,630	3,058	10,504	7,175	11,768	10,000	3,411	620	100	5,000	5,827	7,000	11,600	3,125	6,192	5,000
Yukon Territory Villages 5/																		
Dawson	725	3,000	1,500	3,331	-	50	50	50	-	60	-	-	-	-	-	-	-	728
Stewart River	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nayo-Stewart Crossing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fraser Falls	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Burwash-Kluane R.	-	-	-	-	-	-	250	200	760	-	100	2,000	199	32	-	-	-	-
Fort Selkirk	-	-	-	-	1,000	450	1,000	500	500	500	-	-	-	-	-	-	-	-
Pelly	-	1,500 4/	1,500 4/	-	100	-	-	50	300	-	-	-	-	14	-	100	650	132
Faro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ross River	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minto	-	-	-	600	823	450	50	100	100	-	-	-	327	-	-	-	-	-
Tatchum Creek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carmacks	-	2,000	2,500	250	260	100	500	200	400	50	-	-	887	1,590	-	200	780	350
Lake Laberge-Whitehorse	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Takhini	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
McClintock R.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carcross	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Teal-In-Johnson's Crossing	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
Subtotal	5,800	6,500	5,500	4,181	2,265	1,425	1,832	1,100	2,089	580	13,908	3,800	1,111	1,636	6,500 6/	300	2,929	1,210
Total:	412,889 5/	358,441 5/	421,625	485,621	458,931	214,611	288,577	189,807	213,754	223,205	228,849	161,008	219,275	323,834	300,379	262,622	267,127	299,791

1/ Includes Black River catches.

2/ Includes Shageluk-Holkachuk fish camp catches.

3/ Includes New Minto 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 19. Comparative Yukon River drainage king salmon escapement estimates, 1959-1978 1/

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
Andreafsky River																				
East Fork		1,020	1,003	675 2/		867		361		390	231 2/	665	1,904	798	825		993	818	2,008	2,487
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	1,862
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
Anvik River Drainage																				
Tower Count														1,104	517	471	548	958	1,261	1,041
Below Tower Site (Includes tributaries)														68	96 2/		172 3/	198 3/4/	93	240
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
Total (Best estimate of escape- ments, combined tower, aerial and boat surveys).		1,950	1,226				650 2/	638	336 2/	297 2/	296 2/	368		1,172	613	471	720	1,155	1,354	1,280
Mulato River																				
North Fork (including main river)		483	376													55	123	471	286	490
South Fork		273	167													23	81	177	201	420
Total		756	543													78	204	648	487	910
Gisasa River		300	266 2/													161	385	332	255	400
Tozitna River		106 2/															202	42 2/	123	190
Chena River		132			137								193 2/ 3/	138 2/3/	21	1,035 3/	316 3/	531	563	1,720
Satcha 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	3,449
Tatchum Creek												100 2/	100	97		192	175	52	150	200
Nisutlin River (Sidney Creek-100 Mile Cr.)									407	105	615	640	317	36 2/	48 2/	249	102	77	37	
Whitehorse Dam (Fishway Counts)	1,054	660	1,068	1,500	484	587	903	563	533	407	334	825	856	392	228	273	313	121	277	72

- 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.

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Appendix Table 20. Comparative Yukon River drainage summer chin salmon escapement estimates, 1958-1978 1/

	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	
Andreafsky River			3,830	8,110	18,040		12,810	14,670 2/	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	
East Fork					19,530				18,145		74,800 2/	159,500	91,710 2/	71,745	25,573	51,835	33,258	235,954	118,420	63,120	57,321	
West Fork					37,570				43,764		92,700	278,500	175,800	169,840	67,033			459,439	223,767	175,842	184,371	
Total																						
Anvik River Drainage																						
Tower Count															108,342	71,475	201,277	601,680	237,851	162,514	166,102	
Below Tower Site (indicates tributaries)															137,515	15,190		211,130	168,315	100,240	85,237	
Above Tower Site (includes tributaries)															74,118	70,966		634,355	243,695			
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	
Rodo River		3,000	3,483														16,137	25,335	38,258	16,118	17,845	
Wajito River																						
North Fork (including main river)	40,000																	22,144	87,280	39,690	58,275	41,659
South Fork	2,500			1,1560														29,016	51,215	9,230	11,385	12,821
Total	42,500																	51,160	138,495	48,920	69,660	54,480
Gigase River			400															22,022	56,904	21,342	2,204	9,280
Tagitna River																		1,823	3,512	725 2/	761	2,262
Chena River					469 3/	898									670	79	4,350 3/	2,702 3/	685	610	1,609	
Salcha River				670	1,152	1,161	250 2/	2,378	2,200		3,790	428 2/	7,879	306 2/	947 2/	290	8,040 1/	7,573	6,474	677	5,405	

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.

Appendix Table 21. Comparative Yukon River drainage fall chum salmon aerial survey escapement estimates, 1971-1978 1/

	1971	1972	1973	1974	1975	1976	1977	1978	
TANANA RIVER DRAINAGE									
Bear Paw River	-	-	1,530	2,996	1,657	-	-	-	
Toklat River drainage	-	1,000 2/	6,957	34,310	42,418	35,224	25,000	35,000	
Upper Toklat River 3/	-	-	-	-	35,867	2,000 2/	-	-	
Lower Toklat River	-	-	-	-	-	-	-	-	
Subtotal Toklat R. drainage	-	-	6,957	34,310	78,285	37,224	25,000	35,000	
UPPER TANANA RIVER DRAINAGE									
Benchmark #735 Slough	-	5,255	127 2/	1,450	-	336	1,270	1,705	
Delta River	-	3,650	7,971	4,010	3,946 7/	5,526	17,925	10,051	
Upper Tanana River 4/	-	8,350	5,635	4,567	-	4,979	3,725	5,700	
Bluff Cabin Slough	-	6,040	3,450	4,840	5,000 2/	3,197	6,491	5,340	
Delta Clearwater Slough (1 Mile Slough)	-	-	1,720	1,235	745 2/	1,552	1,900	475	
Subtotal Upper Tanana R. drainage	-	23,295	18,903	16,102	9,691	15,590	31,311	23,271	
CHANDALAR RIVER	-	-	-	17,455	6,345 2/	58 2/	4,183	-	
PORCUPINE RIVER DRAINAGE									
Sheenjek River	-	-	1,175	40,507	78,060	12,023	20,506	14,610	
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	
Subtotal Porcupine R. drainage	250-300,000	35,125	17,162	73,032	431,342	25,473	53,006	29,610	
TOTAL	-	250-300,000	59,420	44,552	143,895	527,320	78,345	113,500	87,881

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.

Appendix Table 22. Comparative Yukon River drainage coho salmon aerial survey escapement estimates, 1971-1978 ^{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>Nenana River drainage</u>								
<u>Lost Slough</u>								
East Bank 1 mile below Anderson	-	-	-	900	116	118	524	350
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
Subtotal Nenana R. drainage	-	-	-	1,415	1,899	360	2,001	816
<u>Delta Clearwater River</u>	3,000	632 ^{3/}	1,982	3,950	5,100 ^{3/}	1,920	4,793 ^{3/}	4,798 ^{3/}
<u>Clearwater Lake and Outlet</u>	-	417	249 ^{2/}	560	1,530	460 ^{3/}	730 ^{3/}	570 ^{3/}
<u>Richardson Clearwater River</u>	-	527 ^{2/}	175	235	4 ^{2/}	80 ^{2/}	327	-

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

APPENDIX TABLE 23. Western Alaska king salmon catch compared to Japanese mothership catch in the Bering Sea, 1960-1976. ^{1/}

	Yukon Area ^{2/}	A-Y-K Region ^{3/}	Total Western Alaska ^{4/}	Japanese Mothership Bering Sea
1960	78,647	93,017	220,031	142,000
1961	155,570	201,358	295,514	10,000
1962	120,381	156,413	245,960	-
1963	152,247	209,456	279,426	42,000
1964	119,672	171,070	317,598	204,000
1965	140,086	189,888	314,086	116,000
1966	109,643	184,268	275,382	122,000
1967	151,554	243,328	370,244	70,000
1968	123,846	201,319	316,625	293,000
1969	106,891	214,606	351,860	450,000
1970	99,290	235,510	387,125	404,000
1971	138,936	229,379	359,223	157,000
1972	114,224	216,428	291,798	220,000
1973	99,537	193,069	248,872	32,000
1974	120,868	177,988	238,789	234,000
1975	84,703	161,909	196,709	200,000 ^{5/}
1976 ^{5/}	107,636	221,680	331,081	126,000

^{1/} Catch data presented in numbers of fish.

^{2/} Commercial and subsistence catch data combined (includes Canadian catches).

^{3/} Commercial and subsistence catch data combined.

^{4/} Combined commercial and subsistence catches of AYK region and Bristol Bay area plus North Alaska Peninsula commercial catches.

^{5/} Preliminary data.

Attachment 1. List of Yukon area emergency orders issued, 1978.

<u>Number</u>	<u>Effective Date</u>	<u>Action Taken</u>	<u>Comments</u>
3-Y-01-78	June 4	Reinstate first weekly fishing period of 6:00 P.M. Sunday to 6:00 A.M. Tuesday (after July 10) in subdistrict 2.	Correct typographical error in 1978 Regulation Booklet.
3-Y-02-78	June 8	Open the commercial salmon fishing season in subdistricts 1 and 2 on June 8 for a special 24 fishing period.	Action taken because of a strong early run of kings entering the lower river prior to the normal June 10 season opening.
3-Y-03-78	June 17	Closure of commercial fishing season in subdistrict 3.	2,000 king salmon catch quota taken.
3-Y-04-78	June 28	Specify that only gillnets of 6 inch or less mesh size may be used in subdistricts 1 and 2.	Action taken to allow harvest of the more abundant summer chums and minimize catch of the late run of kings.
3-Y-05-78	July 6	Reopen commercial salmon fishing season and specify that only gill nets of 6 inch or less mesh size may be used in subdistrict 3.	Action taken to allow harvest of the more abundant summer chums and minimize catch of the late run of kings.
3-Y-06-78	July 10	Maintain weekly fishing schedule at 2-1/2 days instead of 3 days in subdistricts 1 and 2.	Action taken to provide for adequate escapements of the early portion of the fall chum salmon run.
3-Y-07-78	July 17	Closure of commercial fishing season in subdistrict 5.	3,000 king salmon catch quota taken.
3-Y-08-78	July 19	Reduce weekly fishing time from 2-1/2 to 2 days in subdistricts 1 and 2, and 4 to 3 days a week in subdistrict 3.	Action taken in order to provide for more balanced harvests and escapements of the fall chum run over a greater portion of the season.
3-Y-09-78	August 9	Closure of commercial fishing season in subdistrict 6.	Action taken to bolster summer chum salmon escapements.
3-Y-10-78	August 10	Reopen commercial fishing season in subdistrict 5 and reduce fishing time from 5 to 4 days per week.	Action taken as king salmon had passed through. Also fishing time reduced in order to provide for more balanced harvests and escapements of the fall chum run.
3-Y-11-78	August 11	Allow a special 24 hour fishing period for subsistence fishing only in subdistricts 1 and 2.	Action taken to provide for increased subsistence fishing time due to prolonged reduced fishing schedule of two days a week since July 19.
3-Y-12-78	August 14	Reduce weekly fishing time from 5 to 4 days a week in subdistrict 4.	Action taken to provide for more balanced harvests and escapements of the fall chum salmon run over a greater portion of the season.
3-Y-13-78	September 8	Closure of commercial fishing season in section 4-B of subdistrict 4.	10,000 combined chum and coho salmon quota taken.
3-Y-14-78	September 8	Reopen commercial fishing season in subdistrict 6 and reduce fishing time from 5 to 4 days per week.	Action taken as the fall chum run began entering the Tanana River. Fishing time reduced in order to provide for more balanced harvests and escapements over a greater portion of the season.
3-Y-15-78	September 21	Closure of commercial fishing season in subdistrict 5.	25,000 combined chum and coho salmon quota taken.
3-Y-16-78	September 21	Closure of commercial fishing season in subdistrict 6.	15,000 combined chum and coho salmon quota taken.

ATTACHMENT 2.

Summary of 1978
Yukon District Commercial and Subsistence Fishing Regulations
Promulgated by the Board of Fisheries at December, 1977 Meeting
in Anchorage

SECTION

SAAC 03.200.
FISHING DISTRICTS AND SUBDISTRICTS.
(e)(3)

SAAC 03.200.
FISHING DISTRICTS AND SUBDISTRICTS.
(e)(4)(A),(B)

SAAC 03.310.
FISHING SEASONS.
(a)(3)(B)(11)

SAAC 03.333.
FISHWHEEL SPECIFICATIONS AND OPERATION.

SAAC 03.350.
CLOSED WATERS.
(c)(1)

SAAC 03.360.
QUOTAS.
(1)(B)

SAAC 03.360.
QUOTAS.
(1)(C)

SAAC 03.370.
REGISTRATION AND REREGISTRATION.
(a),(b),(c),(d),(e),(f)

SAAC 03.610.
FISHING SEASONS, DISTRICTS AND SECTIONS.
(4)

SAAC 03.630.
GEAR.

SAAC 03.631.
GILL NET SPECIFICATIONS AND OPERATION.
(a),(b)

SAAC 03.632.
SEINE SPECIFICATIONS AND OPERATIONS.

SAAC 03.650.
CLOSED WATERS.
(c)

SAAC 03.660.
GUIDELINE HARVEST LEVELS.
(4)

SAAC 03.680.
POSSESSION OF SALMON.

SAAC 03.990.
RESTRICTIONS.
(e)(14)(A)

SAAC 03.990.
RESTRICTIONS.
(e)(15)

SAAC 03.990.
RESTRICTIONS.
(e)(17)

SAAC 39.890.
RESTRICTIONS.
(g)

ACTION TAKEN

Changed the subdistricts 2/3 boundary line from Owl Slough to Toklik.

Changed the sections 4A/4B boundary line of subdistrict 4 from Prospect Point to Cone Point.

Closed section 4-A of subdistrict 4 on August 1 to commercial salmon fishing.

Specified that the fishwheel vessel registrant is responsible for the operation of the fishwheel.

Redefined the closed waters area in the vicinity of Chris Point in the south mouth of the Yukon River.

Decrease the commercial king salmon catch quota from 3,000 to 2,000 fish in subdistrict 3.

Allocated the 10,000 combined chum and coho salmon quota in subdistrict 4 to section 4-B only.

Deleted reference to salmon net gear registration, clarify subdistrict registration and specify fishwheel vessel subdistrict registration.

Established the Cape Romanzof commercial herring fishing district.

Specified that herring may be taken for commercial purposes with purse seines, beach seines, and gill nets in the A-Y-K region.

Specified that commercial herring gill nets in the A-Y-K region may not be more than 3 inches in maximum mesh size. Also, established a maximum of 150 fathoms of herring gill nets in the aggregate that may be operated from any licensed fishing vessel.

Established that herring purse seines in the A-Y-K region may not be more than 850 meshes in depth and not more than 150 fathoms in length.

Established closed waters area for commercial herring fishing in the Cape Romanzof district (waters east of Point Smith).

Established a 350 metric ton guideline harvest level for commercial herring in the Cape Romanzof district.

Stipulated that in the A-Y-K region that salmon taken incidentally in conjunction with commercial herring fishing must be returned to the water.

Allowed 7 days a week subsistence fishing after August 20 in subdistricts 1, 2, and 3 following closure of the commercial salmon fishing season.

Established a 3 day-a-week subsistence fishing schedule following the closure of the commercial salmon fishing season in section 6-C of subdistrict 6.

Specified that commercial fishermen may not take salmon for subsistence purposes during the commercial fishing season by gill nets larger than 6-inch mesh after a date specified by emergency order between July 10 and 31 in subdistrict 4.

Prohibited the use of a line attached to a rod or pole for taking fish for subsistence purposes except where fishing through the ice in the Bristol Bay area and A-Y-K region.

Attachment 3 . List of 1978 Yukon area commercial and subsistence fishing regulations .

**ARTICLE 2.
FISHING DISTRICTS AND SUBDISTRICTS**

5 AAC 03.200. FISHING DISTRICTS AND SUBDISTRICTS.

(e) Yukon district: all waters including those draining into the Bering Sea between the latitude of Canal Point light and the latitude of the westernmost point of the Naskonat Peninsula;

(1) subdistrict 1: that portion of the Yukon River drainage from its mouth upstream to the mouth of the Anuk River and all waters of Black River including waters within one nautical mile of its mouth;

(2) subdistrict 2: that portion of the Yukon River drainage from the mouth of the Anuk River upstream to Toklik;

(3) subdistrict 3: that portion of the Yukon River drainage from Toklik upstream to the mouth of the Bonasila River;

(4) subdistrict 4: that portion of the Yukon River drainage from the mouth of the Bonasila River upstream to the mouth of Illinois Creek at Kallands

(A) section 4-A: that portion of the drainage from the mouth of the Bonasila River upstream to Cone Point;

(B) section 4-B: that portion of the drainage from Cone Point upstream to the mouth of Illinois Creek;

(5) subdistrict 5: that portion of the Yukon River drainage (excluding the Tanana River drainage) from the mouth of Illinois Creek to the U.S.-Canada border

(A) section 5-A: that portion of the drainage from the mouth of Illinois Creek upstream to a marker placed two miles downstream of Waldron Creek;

(B) section 5-B: that portion of the drainage from a marker placed two miles downstream of Waldron Creek upstream to the U.S.-Canada border;

(6) subdistrict 6: the Tanana River drainage

(A) section 6-A: that portion of the drainage from the mouth of the Tanana River upstream to the mouth of the Kantishna River;

(B) section 6-B: that portion of the drainage from the mouth of the Kantishna River upstream to the mouth of the Wood River;

(C) section 6-C: that portion of the drainage from the mouth of the Wood River upstream to the mouth of the Chena River.

**ARTICLE 3.
SALMON FISHERY**

5 AAC 03.310. FISHING SEASONS. (a) Except as provided in secs. 320 - 370 of this chapter, salmon may be taken as follows:

(3) in the Yukon district

(A) in subdistricts 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;

(B) in subdistricts 4, 5 and 6 from June 15 through September 30

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

(ii) section 4-A closes August 1;

5 AAC 03.320. WEEKLY FISHING PERIODS.

(c) Yukon district

(1) subdistrict 1:

(A) June 10 through July 10, 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 10, 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;

(2) subdistrict 2:

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

(3) subdistrict 3: salmon may be taken from 6:00 p.m. Monday until 6:00 p.m. Wednesday and from 6:00 p.m. Thursday until 6:00 p.m. Saturday;

(4) subdistrict 4: salmon may be taken from 6:00 p.m. Sunday until 6:00 p.m. Friday;

(5) subdistrict 5: salmon may be taken from 6:00 p.m. Tuesday until 6:00 p.m. Sunday, except in section 5-B where salmon may be taken seven days a week;

(6) subdistrict 6: salmon may be taken from 6:00 p.m. Monday until 6:00 p.m. Saturday.

Attachment 3. List of 1978 Yukon area commercial and subsistence fishing regulations .

5 AAC 03.330. GEAR.

(b) In the Yukon district

- (1) in subdistricts 1, 2 and 3 set gill nets and drift gill nets may be operated;
- (2) in subdistricts 4, 5 and 6 set gill nets and fishwheels may be operated;
- (3) repealed (Eff. 3/26/76, Reg. 57);
- (4) an individual may have in operation not more than one fishwheel at any one time;
- (5) fishermen shall operate or assist in operating only one type of gear at any one time.

5 AAC 03.331. GILL NET SPECIFICATIONS AND OPERATION.

(c) In the Yukon district

- (1) the aggregate length of set gill net operated by an individual may not exceed 150 fathoms and the length of a drift gill net operated by an individual may not exceed 50 fathoms;
- (2) in subdistricts 1 and 2, salmon may be taken with gill nets of six-inch or smaller mesh after a date specified by emergency order between June 27 and July 5;
- (3) in subdistrict 3, salmon may be taken with gill nets of six-inch or smaller mesh after a date specified by emergency order between July 5 and 15.
- (4) in subdistrict 4, salmon may be taken with gill nets of six-inch or smaller mesh after a date specified by emergency order between July 10 and July 31.
- (e) In the Arctic - Yukon - Kuskokwim area, gill net gear shall not obstruct more than one-half the width of any waterway. In the intertidal zone this applies at any stage of the tide.

5 AAC 03.333. FISHWHEEL SPECIFICATIONS AND OPERATION.
Fishwheel baskets must be stopped by the operator 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.

5 AAC 03.334. IDENTIFICATION OF GEAR.

- (a) Each drift gill net in operation shall have at one end a red keg, buoy or cluster of floats plainly and legibly marked with the permanent registration number of the operator.
- (b) Each set gill net in operation shall have at each end a red keg, buoy or cluster of floats, or, in the case of set gill nets anchored to land, shall have a red keg, buoy or cluster of floats at the outer end of the net, which shall be plainly and legibly marked with the permanent registration number of the operator.
- (c) Each fishwheel in operation shall have plainly and legibly inscribed on it the permanent registration number of the operator. Numbers shall be at least six inches in height with lines at least one inch wide and shall be painted in contrasting colors. These numbers shall be placed on the side of the fishwheel facing midstream of the river.

5 AAC 03.335. MINIMUM DISTANCE BETWEEN UNITS OF GEAR.

(b) in the Yukon district

- (1) subdistrict 1: no part of a set gill net may be operated within 300 feet of any part of another set gill net;
- (2) subdistrict 2: no part of a set gill net may be operated within 200 feet of any part of another set gill net;
- (3) subdistricts 4, 5 and 6: it is unlawful to set commercial fishing gear within 200 feet of other operating commercial or subsistence fishing gear.

5 AAC 03.350. CLOSED WATERS.

(c) In the Yukon district

- (1) Acharon Channel of the south mouth area west of a line from a Department of Fish and Game shore marker below Chris Point bearing 285° to a Department of Fish and Game shore marker approximately 2½ nautical miles on the opposite side of the channel; this closed water area is also defined as west of a line established by series of yellow and green barrels placed by the department between shore markers;

Attachment 3. List of 1978 Yukon area commercial and subsistence fishing regulations .

(2) Kawanak Pass of the middle mouth area outside of buoys placed offshore from Kothlik Island;

(3) other waters farther than one nautical mile from any grassland bank;

(4) waters outside of one nautical mile from the mouth of Black River;

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

(6) Tanana River upstream of the mouth of the Chena River;

(7) tributaries of the Yukon and Tanana Rivers;

(8) all other waters of the district except in subdistricts 1 through 6.

5 AAC 03.360. QUOTAS. When the king salmon quotas have been attained in any subdistrict, the season in the subdistrict will be closed and a later season will be announced allowing fishing to attain quotas for the other species of salmon. Commercial catches are restricted to the following:

(1) in the Yukon district

(A) subdistrict 1, after July 15; subdistrict 2, after July 18; and subdistrict 3, after July 21: 200,000 chum salmon from the areas;

(B) subdistrict 3: 2,000 king salmon;

(C) subdistrict 4: 1,000 king salmon and after August 15 in section 4-B 10,000 chum and coho salmon combined;

(D) subdistrict 5: 3,000 king salmon and after August 15, 25,000 chum and coho salmon combined for the area;

(E) subdistrict 6: 1,000 king salmon and after August 15, 15,000 chum and coho salmon combined for the area;

5 AAC 03.370. REGISTRATION AND REREGISTRATION. (a) Simultaneously with the area registration specified in 5 AAC 39.120(c), each salmon net registrant shall indicate on the vessel license application or renewal form in which subdistrict the vessel is intended to be first used during the season.

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

(c) In the Yukon district, vessels registered to fish in subdistrict 3 may not transfer to subdistricts 1 or 2 until after July 10.

(d) In the Yukon district, vessels registered to fish in either subdistricts 1, 2 or 3 may not transfer to subdistricts 4, 5 or 6.

(e) In the Yukon district, vessels registered to fish in subdistricts 4, 5 or 6 may not transfer to another subdistrict.

(f) In the Yukon district, a fisherman may register a vessel in only one subdistrict, including a vessel used to take salmon with a fishwheel. Fishwheel vessel registrants shall register the vessel by indicating on the vessel license application or renewal form the single subdistrict selected.

ARTICLE 6. HERRING FISHERY

5 AAC 03.610. FISHING SEASONS, FISHING DISTRICTS AND SECTIONS. Herring may be taken in the following districts and sections where there is no closed season except as provided in this section and in sec. 650 of this chapter:

(4) Cape Romanzov district: all waters between 62° N. lat., and the latitude of Dall Point;

5 AAC 03.630. GEAR. Herring may be taken by purse seines, beach seines and gill nets.

5 AAC 03.631. GILL NET SPECIFICATIONS AND OPERATION. (a) The mesh size of gill nets may not be more than three inches.

(b) 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.

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

5 AAC 03.632. SEINE SPECIFICATIONS AND OPERATION. No seine may be more than 850 meshes in depth and no seine may be more than 150 fathoms in length.

5 AAC 03.650. CLOSED WATERS.

(c) 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 not set forth in sec. 610 of this chapter.

Attachment 3. List of 1978 Yukon area commercial and subsistence fishing regulations .

5 AAC 03.660. **GUIDELINE HARVEST LEVELS.** The following guideline harvest levels are established for the districts and sections specified:

(4) Cape Romanzov district: 350 metric tons;

5 AAC 03.680. **POSSESSION OF SALMON.** Salmon taken incidentally in conjunction with commercial herring fishing must be returned to the water.

**ARTICLE 9.
SUBSISTENCE FISHERY**

5 AAC 03.930. **GEAR.** (a) In the Arctic - Yukon - Kuskokwim area

(1) unless otherwise provided in this chapter, salmon for subsistence purposes may be taken only by gill net, beach seine or fishwheel, except that salmon may be taken by spear in the Holitna River drainage of the Kuskokwim district;

(2) whitefish and sheefish may be taken by spear, dip net, fyke net and other legal forms of gear.

5 AAC 03.980. **PERMITS.** (a) Fish may be taken for subsistence purposes without a permit except as provided in secs. 805 and 990 of this chapter and except in the following locations where a yearly permit must be secured from the local representative of the department:

(2) Yukon district

(A) Tanana River drainage above the mouth of the Wood River;

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

(C) Middle Fork drainage of the Koyukuk River system between Dry Gulch and the mouth of Hammond River;

(D) fish other than salmon may be taken by permit designating restrictive measures for the protection of salmon in subdistrict 4 between the mouths of the Rodo and Nowitna Rivers during June 15 to July 15;

(b) The number of fish taken for subsistence purposes may be limited under the terms of a permit.

(c) If a permit is required by secs. 930 - 990 of this chapter, the following stipulations apply: Permits shall be obtained from a local representative of the department prior to subsistence fishing. Permits shall be retained in the possession of the permittee and be readily accessible for inspection while taking or transporting the species for which the permit is issued. The permit may designate the time and area of fishing and the type and amount of fishing gear. Each subsistence fisherman shall keep accurate records of the catch involved, showing the number of fish taken by species, location and date of the catch, and such other information as the department may require.

Subsistence fishing reports shall be completed on forms provided by the department and submitted to the department office from which the permit was issued at a time specified by the department for each particular area and fishery. Only one permit will be issued to each household per year.

5 AAC 03.990. **RESTRICTIONS.**

(e) In the Yukon district

(1) during the weekly closures of the commercial salmon fishing season and for 24 hours before the opening and following the closure of the commercial salmon fishing season, salmon may not be taken in the following locations:

(A) subdistricts 1, 2 and 3;

(B) subdistrict 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. 980(a)(2)(D) of this chapter are effective;

(C) subdistrict 5 excluding the Tozitna River drainage and section 5-B;

(D) subdistrict 6 excluding the Kantishna River drainage and that portion of the Tanana River drainage upstream of the mouth of the Salcha River;

(2) repealed (Eff. 3/6/77, Reg. 61);

(3) in subdistricts 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 between June 27 and July 5;

(4) in subdistrict 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 between July 5 and July 15;

(5) during the weekly open 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;

Attachment 3. List of 1978 Yukon area commercial and subsistence fishing regulations.

(6) 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;

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

(8) 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 permit designating restrictive measures for the protection of other fishes (this permit may be obtained from the commissioner or his local representative):

(A) streams and within 500 feet of their stream mouths

(i) 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;

(ii) Dall River: closed June 10 through September 10;

(B) streams: Ray River;

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

(D) sloughs: Chena (Piledriver);

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

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

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

(C) Bonanza Creek;

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

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

(F) Middle Fork of the Koyukuk River system upstream from the mouth of the North Fork except between Dry Gulch and the mouth of Hammond River where subsistence fishing is allowed by permit only;

(G) North Fork of the Chandalar River system upstream from the mouth of Quartz Creek;

(10) 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 Geistle 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;

(11) 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;

(12) in the Yukon River drainage (excluding the Koyukuk River drainage) between the mouth of Rodo River to the mouth of the Nowitna River, fish other than salmon may be taken under authority of a permit designating restrictive measures for the protection of salmon during June 15 - July 15;

(13) in subdistricts 4, 5 and 6, salmon may not be taken for subsistence purposes by drift gill net;

(14) during any commercial fishing season closure of greater than five days in duration, salmon may not be taken during a two-day period each week in the following subdistricts:

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

(B) in subdistrict 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 5 AAC 03.980(a)(2)(D) are effective, salmon may not be taken from 6:00 p.m. Friday until 6:00 p.m. Sunday;

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

(D) in sections 6-A and 6-B of subdistrict 6, 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. Saturday until 6:00 p.m. Monday;

(15) in section 8-C of subdistrict 8 salmon may not be taken following the closure of the commercial salmon fishing season from 8:00 p.m. Monday until 8:00 p.m. Friday;

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

(17) in subdistrict 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 between July 10 and 31.

(g) In the Arctic - Yukon - Kuskokwim area

(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, the first initial, last name, and address of the operator must be plainly and legibly inscribed on an attached keg or buoy;

Attachment 3. List of 1978 Yukon area commercial and subsistence fishing regulations.

(A) this information must be plainly and legibly inscribed on a stake inserted in the ice that is attached to gear operated under the ice;

(B) kegs or buoys attached to gill nets operated in the Norton Sound and Kotzebue districts shall be any color except red;

(C) kegs or buoys attached to gill nets operated in any Kuskokwim subdistrict shall be any color but red during a commercial salmon fishing period;

(3) 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.

Attachment 4. Summary of special projects conducted in the Yukon Area by the Division of Commercial Fisheries, 1978.

1. YUKON RIVER TEST FISHING

- a. Location: Flat Island and Big Eddy (Kwikluak Pass near Emmonak) in the south mouth of the Yukon River.
- b. Objectives: Determine run timing and relative abundance of king and summer chum, fall chum and coho salmon in the south mouth channel of the Yukon River.
- c. Results:
 - 1) Flat Island: A total of 936 king and 3,539 summer chum salmon was taken in index set gillnets from May 29 through July 14. Peaks in the king salmon migration occurred during June 2-4 and June 10-11. Peaks in the summer chum migration occurred during June 10-18 and June 26-28.
 - 2) Big Eddy: A total of 1,998 fall chum and 348 coho salmon was taken in index set gillnets from July 15 through August 30. Peaks in the fall chum migration occurred during July 24-26, July 30-31 and August 20-21. Peaks in the coho salmon migration occurred during August 19-21.

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 1,061 fishing families were surveyed in the Yukon area and their catches totaled 33,691 king salmon and 330,208 other salmon. A total 1,000 river miles 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 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 1978 was estimated to be 1,281. Seven hundred and twenty-five king salmon were enumerated at the Whitehorse fishway in 1978. This was the largest count since 1971.

The 1978 expanded Anvik River tower and sonar count of summer chums was 166,102, 28% of the 1975 record count. Escapements of summer chums in other systems were also less than 1975, but overall escapements were considered average to above average throughout most of the Yukon River drainage.

Fall chum escapements in 1978 were above average in the Tanana River system but below average elsewhere. A total of 10,051 fall chums were observed in the Delta River, the second highest escapement documented. In the Fishing Branch River (Porcupine River drainage) the 1978 escapement was estimated at 15,000, substantially less than exceptionally large escapement of 353,282 documented in 1975.

4. COMMERCIAL SALMON CATCH SAMPLING

- a. Location: Various locations in the different subdistrict 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 1978. Detailed age, sex and size composition data has been compiled and will be presented in a subsequent separate report.

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

- a. Location: Yukon River drainage.
- b. Objectives: The primary objective of this study is to determine the relative timing and distribution of various stocks past the commercial fishery in order to provide for more effective management.
- c. Results: In 1978 a total of 9,668 fall chum and 124 coho salmon, captured with four fishwheels (located in the vicinity of the villages of Ruby and Tanana) were tagged during the period August 1 through September 22. A total of 4,690 (48.5%) tagged chum and 59 (47.6%) coho salmon were recovered. Results from the 1978 tagging project confirm the findings of the 1976 and 1977 tagging with respect to migration routes and timing of the Tanana River and upper Yukon stocks.

6. CAPE ROMANZOF HERRING PROJECT

- a. Location: Kokechik and Scammon Bay.

- b. Objective: Determine spatial and temporal distribution and relative abundance of spawning herring stocks. Collect age, sex, size and maturity information of herring.
- c. Results: A total of 1,621 herring were caught in sampling gill nets during the period May 24 through June 20. The majority of spawning occurred prior to May 22 and through June 2. A second run of herring spawned during June 14-19. Spawning generally occurred in rocky areas where Fucus seaweed occurred. The majority of the spawning populations was composed of age 4 and 6 year old fish.

ATTACHMENT 5. 1978 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: Michael Geiger
333 Raspberry Road
Anchorage 99502

Upper Yukon Area Biologist: Fred Andersen
1300 College Road
Fairbanks 99701

1978 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 1978 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 on an optimum sustained yield basis. The commercial fishery is regulated on the assumption that a harvestable salmon surplus, after providing for spawning and subsistence utilization requirements is available. Subsistence fishing has been designated by the Board of Fisheries as the highest priority use, however, where the dependence upon subsistence fishing has declined, the Department has liberalized regulations to allow development of commercial fisheries.

An important consideration that must be taken into account when discussing the Yukon River fisheries is the interception of western Alaskan salmon (including Yukon River stocks) by the Japanese high seas fishery. Japanese high seas king salmon catches have averaged 284,000 fish annually during the period 1966-1976. A record 554,000 kings were taken in 1969 by this fishery. 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 Alaskan origin. The Japanese fishery is intercepting western Alaskan kings at a higher rate than Bristol Bay sockeye (red) salmon.

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 beginning in 1980 may be expected as a result of reduced high seas interceptions.

Also it should be mentioned that western Alaskan chums are being intercepted by the U.S. fishery at South Unimak (Alaska Peninsula) as demonstrated by tagging studies. Annual catches of this interception fishery averages 200-400,000 chums.

Management is made difficult by the character of the salmon runs, the fisheries 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 concurrent 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 the escapement in the main river, and upgrading escapement documentation in tributary streams.

As a result of the difficulty in obtaining information, the mixed stock situation, effort and efficiency of the commercial fishery, and the need to provide for subsistence utilization, the management of the Yukon River salmon runs must take a conservative approach. This can be achieved by establishing harvest guidelines, mesh size restrictions, area catch quotas, 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.

OUTLOOK FOR 1978

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 1972 brood year run (6-year olds) was average in abundance as indicated by comparative catch and escapement data. Seven year old fish (1971 brood year) are expected to contribute substantially to the return in 1978 based on the strong return of 6 year olds (approximately 75%) in 1977. Five year olds (1973 brood year), however, are not expected to be abundant in 1978 because of below average brood year run strength.

In summary, based on evaluation of brood year run size data, it is expected that the 1978 Yukon River king salmon run will be average in magnitude. The expected commercial catch should approach the upper range of the 70-80,000 guideline harvest level.

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 1978 will be dependent on the strength of the 1974 brood year and the survival of the resulting offspring. Based on the available catch and escapement data, the 1974 summer chum run was considered above average in magnitude. Also the return of five-year-old (1973 brood year) fish is expected to contribute significantly to the run in 1978.

In summary, the magnitude of the Yukon River summer chum run in 1978 is expected to be average to above average. The expected commercial harvest should total 500-700,000 fish, similar to recent years (1974-

77).

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 1974 brood year run (4 year olds) was generally considered above average in magnitude. It is expected that the return of three year olds (1975 brood year) and five year olds (1973 brood year) will also contribute significantly to the return in 1978.

In summary, the 1978 Yukon River fall chum salmon run is expected to range from average to above average in magnitude. The expected commercial harvest should approach or exceed the upper end of the 250,000 quota level.

Coho Salmon: The coho salmon run annually is much smaller than the fall chum run. The coho run is of minor importance and the harvest is dependent on the duration of the fishery for fall chums. The expected harvest is expected to total 10-20,000 fish.

MANAGEMENT STRATEGY, LOWER YUKON (SUBDISTRICTS 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. However, chum salmon are more abundant than king salmon, and during most recent years additional numbers could have been harvested.

A commercial guideline harvest of 70-80,000 king salmon for the entire river in Alaska has been established. Adhering to this guideline harvest level is essential in order to provide for additional escapements necessary due to recent declines in the run and increasing fishing effort. This guideline harvest should not be exceeded unless an exceptionally large run is indicated. In subdistricts 1 and 2, the combined harvest

should not exceed 63-73,000 kings. The subdistrict 3 king salmon harvest is governed by the 2,000 season catch quota. (The upper Yukon subdistricts are limited by a combined 5,000 king salmon quota).

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

A reduction in fishing time is favored instead of complete early season closure in June which would preclude any harvest of summer chums. Achievement of an optimum harvest of summer chums while providing protection of king salmon is a complex problem facing management.

An additional option other than a season closure would be a changeover to 6 inch or less mesh nets during late June - early July, which would allow harvesting of the more abundant chums during this period and minimize 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 subdistricts is to allow an optimum sustained yield of chum salmon after a normal harvest of king salmon, consistent with spawning ground and subsistence fishery requirements, has been made.

In subdistrict 3 the changeover date to gillnets of 6 inch or smaller mesh will take place after a date between July 5-15 following the closure of the king salmon season. The reopening of the season will be dependent on the timing of the salmon runs, in order to minimize the incidental capture of the late run of kings, and also dependent on the market quality of summer chums.

The Yukon River summer chum salmon run appears to be in healthy condition and additional harvests may be warranted during years of high

abundance. If the summer chum run is judged to be considerably below average as the season progresses in 1978 then a reduction in fishing time in late June - mid-July may be required.

Fall Chum and Coho Salmon: The Yukon River fall chum and coho salmon fishery which began in the early 1960's, never really became developed until 1969. Fall chums are of good quality throughout most of the river and are in high demand. In the face of increasing fishery 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 later used as a basis for establishing quotas (200,000 fall chums in the lower three subdistricts combined; and 50,000 combined chum and coho salmon allocated among the three upper subdistricts).

The above quotas are based on average or better runs and therefore do not represent "guaranteed" catches. If the runs are considerably above average, then catches may exceed the 200,000 quota for the lower Yukon area because of the difficulty in adhering to a predesignated catch level when salmon are readily abundant. On the other hand, if the fall chum run is considerably below average in magnitude then fishing time reductions or an early season closure would be required. This would be necessary in order to provide for adequate escapements and may result in catches substantially smaller than the 200,000 quota.

The present published weekly fishing schedule in effect for subdistricts 1 and 2 after July 10 consists of two - 36 hour periods. The fishery, which has expanded greatly in recent years, has the capability to harvest very large numbers of fall chums during a single fishing period (50-75,000 fish). It is possible that the 200,000 quota could be taken by early August.

A reduction in fishing time from 36 to 24 hours per period should be implemented by July 20 even if the run is average or better in magnitude. This action would minimize overharvesting of certain run segments (especially the early portion) and also "spread out" the effort over a greater portion of the season. As a result, the 200,000 quota would still be harvested, but distributed over a greater period of time resulting in a better allocation of catch between subdistricts in the lower Yukon area. A reduced fishing schedule would also minimize the possibility of processors being "swamped" with huge deliveries that have occurred in the past during 36 hour fishing periods. Furthermore, extension of the season would provide for additional harvest of the coho salmon run which peaks later.

In the lower Yukon area an extended reduction in fishing time during the fall chum run to two 24 periods per week would also affect subsistence fishing. During the closed commercial periods, subsistence fishing is also prohibited. If prolonged reduced fishing periods occur during the fall chum run (as was the case in 1977), then through emergency order action an additional fishing period for subsistence only will be allowed beginning on or about August 10. After August 20, if the commercial fishing season has closed, subsistence fishing will be allowed seven days a week.

MANAGEMENT STRATEGY, UPPER YUKON (SUBDISTRICTS 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. In the upper Yukon area the commercial king salmon fishery is regulated by a 5,000 fish quota apportioned to the various subdistricts. Presently there is no quota on the numbers of summer chums that may be taken.

If either a weak run of kings or summer chums develops during 1978 in the upper Yukon then the Department would consider various restrictions. These restrictions would probably vary in each subdistrict because of the different types of fisheries and the importance of the species harvested.

Fishermen in subdistrict 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 these subdistricts.

If the king salmon quota (1,000 fish) is taken (before July 10) in subdistrict 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. (Subsistence fishermen who do not fish commercially would be exempt from using 6 inch or smaller mesh nets).

If the summer chum salmon run was below average in magnitude, then fishing time in subdistrict 4, where the bulk of the upper Yukon harvest is taken, would be reduced. A reduction in fishing time from the present 5 days a week schedule would lessen the harvest and allow the fishery to be "spread out" over the duration of the run.

In subdistrict 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 quota was taken in this subdistrict the fishery

would be closed until the fall season. If the king run was poor, then fishing time would be reduced.

In subdistrict 6 fishwheels are primarily used to harvest kings and summer chums for both commercial and subsistence purposes. Once the king quota was taken or if the run was poor, the commercial fishing season would be closed. A season closure would also aid in bolstering summer chum salmon escapements. 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 regulated by a 50,000 combined chum and coho salmon quota which is apportioned to three subdistricts. This quota is based on average or better runs and does not represent a "guaranteed" catch. As in the lower Yukon area, cohos are of minor importance and are taken incidentally to the more abundant fall chums.

If a weak run of fall chums is indicated (based on lower Yukon area catches), then a reduction of fishing time from the present 5 days a week would be implemented. A reduction in fishing time would also tend to allow a more equal distribution of effort over a greater portion of the run.

In subdistrict 6 a delay in the opening of the fall season will be implemented in order to provide for a more equitable harvest. In some years, the greater majority of the catch quotas were taken in the lower portions of subdistrict 6. A delay in the opening of the season, coupled with a possible reduction in fishing time, would allow the fall chum run to distribute itself throughout the subdistrict. This in turn would

provide a more equitable harvest among various fishermen groups. Also, more importantly, balanced escapements of all spawning stocks would be realized since the harvest would be "spread out" over a longer period of time. This policy has been endorsed by the Board of Fisheries.

In all the quota fisheries in the upper Yukon area, the Department plans to closely monitor the catches. Catches should not exceed the subdistrict quotas by more than 10 percent. Fall chums tend to fluctuate sharply in abundance and often it is difficult to project when the quota may be taken. Fishermen and processors will be given at least 24 hours notice prior to the expected season closure dates.

SALE OF SALMON ROE

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. It appears unlikely that the Legislature will pass a bill to allow continuation of subsistence roe sales in view of the Board's action. Therefore, sale of subsistence roe will be illegal in 1978. Fishermen are requested to report any instances of subsistence roe sales or other 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 1978 Yukon Area Salmon Management

Plan should be directed to:

Michael F. Geiger
Yukon Area Management Biologist
Alaska Department of Fish and Game
Division of Commercial Fisheries
333 Raspberry Road
Anchorage, Alaska 99502
Phone 344-0541

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

Pt. HOPE

BROOKS RANGE

KOYUKUK SOUND

Porcupine R.

Chandalar R.

Ft. YUKON

YUKON R.

CIRCLE

SEWARD PENINSULA

KOYUKUK R.

STEVENS VILLAGE

334-50
(Y-5)

ILLINOIS Cr.

TANANA R.

FAIRBANKS

YUKON R.
334-40 (Y-4)

GALENA RUBY

334-60
(Y-6) NENANA

NORTON SOUND

YUKON MANAGEMENT AREA

YUKON AREA

(Y-1)
334-10

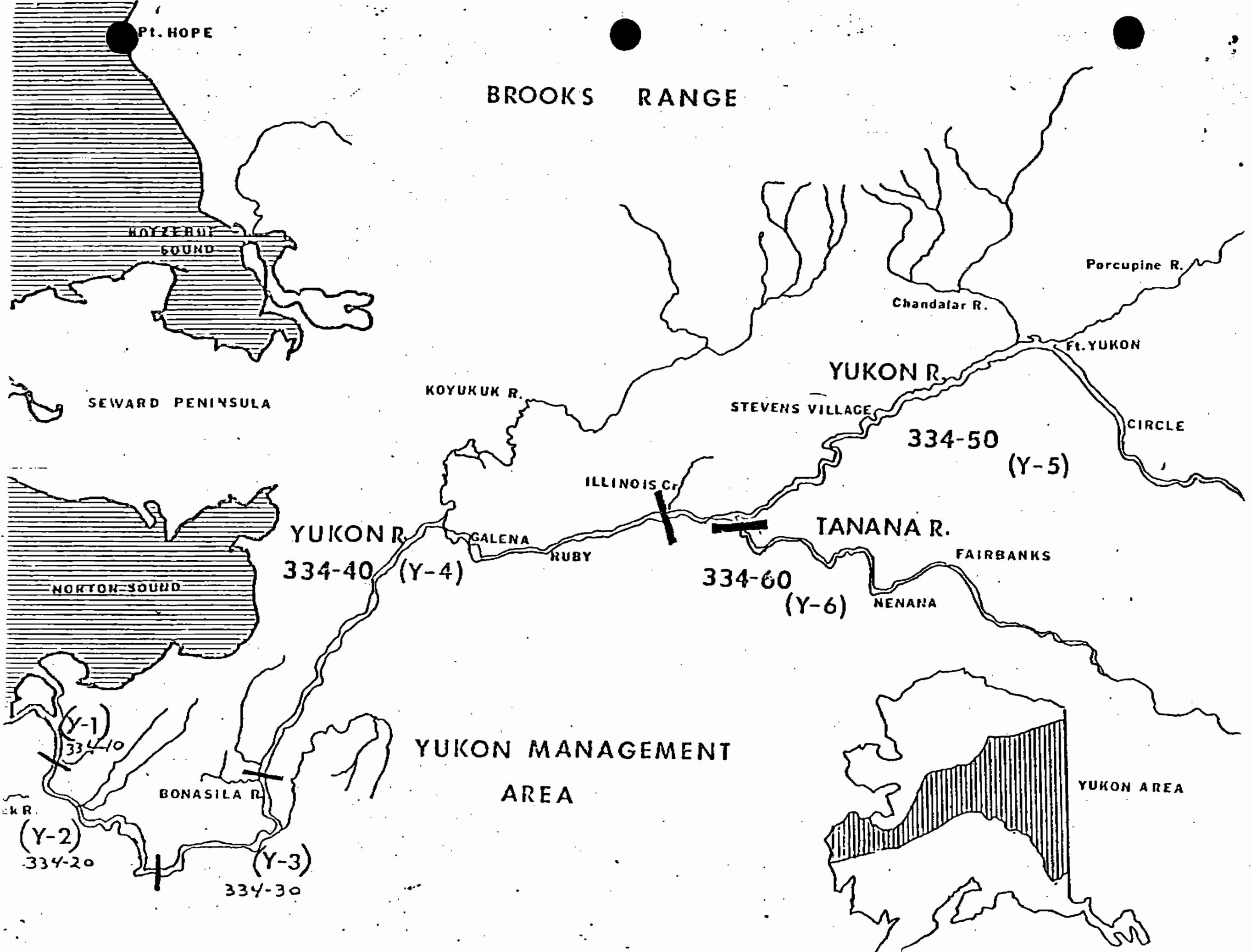
BONASILA R.

(Y-2)
334-20

(Y-3)

334-30

Ch R.



COMMERCIAL SALMON CATCH AND EFFORT DATA
YUKON AREA, 1977

Subdistrict	Fishing Vessels	Kings	Summer Chums	Fall Chums	Total Chums	Cohos	Total
1	392	69,456	263,396	122,576	385,972	30,588	486,016
2	188	16,781	107,057	51,994	159,051	5,312	181,144
3	<u>46</u>	<u>3,943</u>	<u>3,459</u>	<u>15,851</u>	<u>19,310</u>	<u>521</u>	<u>23,774</u>
Subtotal Lower Yukon	626	90,180	373,912	190,421	564,333	36,421	690,934
4	96	959	169,569	13,996	183,565	-	184,524
5	53	4,267	1,153	25,695	26,848	-	31,115
6	<u>39</u>	<u>1,008</u>	<u>4,325</u>	<u>19,910</u>	<u>24,235</u>	<u>1,600</u>	<u>20,918</u>
Subtotal Upper Yukon	188	6,234	175,047	58,601	234,648	1,600	242,482
Total	814	96,414	548,959	249,922	798,981	38,021	933,416

Commercial Salmon Catches, Yukon Area, 1961-1977

	<u>Kings</u>	<u>Summer Chums</u>	<u>Fall Chums</u>	<u>Total Chums</u>	<u>Coho</u>
1961	120,260		42,577	42,577	2,855
1962	94,374		53,160	53,160	22,926
1963	116,994				5,572
1964	93,587		8,347	8,347	2,446
1965	118,098		23,317	23,317	350
1966	93,315		71,045	71,045	19,254
1967	129,706	11,179	38,274	49,453	11,047
1968	106,526	14,470	52,925	67,395	13,303
1969	90,223	42,121	149,739	191,860	14,981
1970	80,269	105,612	241,112	346,724	12,245
1971	110,507	43,300	246,384	289,684	12,203
1972	92,840	80,479	207,365	287,844	22,233
1973	75,353	253,136	264,899	518,035	36,641
1974	97,919	606,085	273,158	879,243	16,240
1975	63,740	719,703	265,156	984,859	2,346
1976	88,671	598,227	163,282	761,509	5,197
1977	96,414	548,959	249,922	798,981	38,021