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Alaska Department of Fish and Game
Commercial Fisheries Management
and Development Division
333 Raspberry Road
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June 1998

Subsistence and Personal Use

Salmon Harvest Estimates

Yukon Area, 1997

by

Bonnie M. Borba

Helen H. Hamner

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SALMON HARVEST ESTIMATES,
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and

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Regional Information Report¹ No. 3A98-23

Alaska Department of Fish and Game
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ABSTRACT

The Yukon Area includes all waters of Alaska within the Yukon River drainage and all coastal waters of Alaska from Point Romanof southward to the Naskonat Peninsula. Successful management of Yukon Area fishery resources is dependent upon accurate estimates of subsistence and personal use harvests.

In the majority of the Yukon Area no regulatory requirements exist for fishermen to report their subsistence salmon harvest. To estimate the subsistence salmon harvest from villages within this area the department has implemented a voluntary survey program. The 1997 survey program utilized subsistence harvest calendars, postseason household interviews, and postseason household telephone interviews and postal questionnaires. Stratified random sampling techniques were used to select Yukon Area households to be interviewed in 1997. Based on information collected from 915 households that were contacted by surveyors, an estimated total of 47,759 chinook *Oncorhynchus tshawytscha*, 154,243 chum *O. keta*, and 10,927 coho salmon *O. kisutch* were harvested by subsistence fishermen in the survey portion of the Yukon Area in 1997. The chum salmon run is made up of an early (summer) and later (fall) run. The chum salmon subsistence harvest was collected by runs and totaled 101,184 summer chum and 53,059 fall chum salmon.

In some portions of the Yukon Area, fishermen are required to obtain an annual subsistence or personal use household permit prior to fishing. In these areas, fishermen are required to document their harvest on the permit and return the permit with the harvest information to the department at the end of the fishing season. A total of 544 subsistence and personal use permits were issued in 1997. A total of 509 subsistence and personal use permits (94% of the total permits issued) were returned to the department as of April 6, 1998. A total of 292 permit holders (57% of the total permits returned) indicated they fished in 1997. The reported permit harvest was 7,514 chinook, 5,068 summer chum, 38,941 fall chum, and 12,183 coho salmon. This reported harvest does not include Stevens Village household permit harvest information. The Yukon River permit information reported by Stevens Village residents was used to supplement the postseason survey of that village.

The number of fish provided to households for subsistence use from various Yukon Area test fish projects in 1997 are also documented. A total of 2,157 chinook, 6,959 summer chum, 3,425 fall chum, and 1,185 coho salmon were provided to households for subsistence use from test fishery projects throughout the drainage

Combining survey, permit, and test fishery information, an estimated 57,430 chinook, 113,211 summer chum, 95,425 fall chum, and 24,295 coho salmon were harvested by an estimated 1,382 Yukon Area subsistence and personal use fishing households in 1997.

INTRODUCTION

The Yukon Area includes all waters of Alaska within the Yukon River drainage and all coastal waters of Alaska from Point Romanof southward to the Naskonat Peninsula. For management purposes, the Yukon Area is divided into seven districts: a coastal district and six districts within the Yukon River drainage (Figure 1). The Lower Yukon Area consists of the coastal waters of the Yukon Area and that portion of the Yukon River drainage from its mouth to Old Paradise Village (Yukon River mile 301). The Lower Yukon Area is divided into four districts: the Coastal District and Districts 1, 2 and 3. The Upper Yukon Area consists of that portion of the Yukon River drainage upstream of Old Paradise Village to the Canadian border (Yukon River mile 1,224) and is divided into three districts: Districts 4, 5 and 6.

Five species of Pacific salmon are found in the Yukon River drainage: chinook *Oncorhynchus tshawytscha*, chum *O. keta*, coho *O. kitsutch*, pink *O. gorbuscha*, and sockeye *O. nerka* salmon. Chinook, chum, and coho salmon compose the majority of subsistence and personal use harvests. The chum salmon return is made up of an early (summer chum) and later (fall chum) salmon run. Effective management of Yukon River salmon runs requires knowledge of the number of salmon harvested in the subsistence and personal use fisheries. Yukon Area subsistence salmon fishery and harvest information has been collected by the Alaska Department of Fish & Game (department) since 1961 (ADF&G 1997). Documentation of the subsistence harvest prior to 1961 is limited. However, early exploration reports attest to the importance of subsistence salmon harvests to the people living in the Yukon River drainage (Zagoskin [1847] 1967; Allen 1887). Historical accounts documented that large salmon harvests were used to support dogs which were used for transportation, packing, and as draft animals (Richardson [1900] 1964; Gilbert and O'Malley 1921). Around 1930, the airplane began replacing the sled dog as the primary mail and supply carrier, which contributed to a gradual reduction in the need for subsistence salmon. Additionally, the introduction of snow machines during the early to mid-1960s accelerated the decline of sled dog use. Subsistence salmon harvests declined accordingly.

During the early 1970s, additional employment opportunities, including commercial fishing activities, became available to rural residents (ADF&G 1985). From 1974 through 1977 the sale of subsistence caught salmon roe was legal. The slight increase in subsistence harvests observed in those years likely resulted from the legalization of the sale of subsistence caught salmon roe. Beginning in the early 1980s, there was a renewed interest in the recreational use and racing of sled dogs. As the number of dogs increased throughout the drainage, the corresponding need for subsistence salmon to feed dogs also increased. Recent survey information indicates that the practice of keeping sled dogs is much more common in the Upper Yukon Area than in the Lower Yukon Area. The number of dogs within a household is considered to be a major factor affecting the amount of subsistence salmon that a household needs.

In addition, as the human population within the Yukon River drainage increased, the need for subsistence salmon used for human consumption also increased. From 1980 to 1996, the human population in the Yukon River drainage has increased by 44 percent (Williams, 1993; 1997). The communities documented by the subsistence surveys include those rural residents that reside along the coast and the major river systems. The residents in these rural communities are primarily of

Yupik Eskimo and Athabaskan Indian descent. Excluding the greater Fairbanks area (approximately 82,000 people) the most recent census indicates that in 1996, the rural resident population of Yukon Area is approximately 21,000 people (Williams 1997).

Subsistence and Personal Use Salmon Fishery Description

Yukon Area subsistence fishermen primarily use drift gillnets, set gillnets, and fish wheels to harvest salmon. Set gillnets are the primary gear type utilized throughout the Yukon Area. It is only legal to use drift gillnets to harvest salmon for subsistence in that portion of the Yukon River drainage below rivermile 514. Although fish wheels are a legal gear type for subsistence fishing throughout the drainage, they are only used in the upper Yukon Area.

Subsistence salmon fishing activities in the Yukon Area primarily occur from late May through early October. Salmon fishing in May and October is highly dependent on the ice conditions on the river. Fishing activities are based either from a fish camp or a home village. Extended family groups, which represent two or more households, often work together to fish for subsistence salmon. These groups, as well as members of individual households, cooperate to harvest, cut, preserve, and store salmon for subsistence use. Some households from communities not located along the mainstem Yukon River, such as Shageluk and Birch Creek, often operate fish camps along the mainstem Yukon River.

A significant portion of the salmon harvested are frozen, dried, or smoked for later human consumption. The majority of the large (greater than 21 inches in length) chinook salmon harvested are used for human consumption. Although a large portion of the small chinook salmon are also used for human consumption, a significant proportion of the small chinook salmon, often referred to as "jacks," are used for dog food. Summer chum, fall chum, and coho salmon are also used for human consumption; however, a relatively large percentage of these salmon are harvested to feed dogs. During the summer salmon migration, dogs are often fed scraps that become available during the processing of salmon, and relatively few whole fresh salmon are fed to dogs. The majority of summer chum salmon are dried for winter supplies of dog food. Additionally, fall chum and coho salmon are commonly "cribbed" for dog food. Cribbing is the freezing of fish by natural air temperature for use later in the winter. There is usually little wastage of fish taken for subsistence purposes, although damp weather may cause some drying fish to spoil.

By regulation, personal use fishermen may only use set gillnets or fish wheels to harvest salmon. Currently, personal use salmon fishing is only allowed within a portion of the Tanana River drainage located near Fairbanks. Personal use salmon fishing activity typically occurs from late June through early October. Personal use fish can only be harvested by Alaska residents as food for human consumption or for use as bait by that individual or his immediate family. Personal use caught fish cannot be fed to dogs or other animals (S. M. White, 1991, Memorandum).

Many subsistence or personal use fishermen also participate in the commercial salmon fishery. During the Yukon Area commercial salmon fishing season, additional restrictions on subsistence and personal use salmon fishing are required to assist in the enforcement of commercial fishing

regulations. However, during the salmon fishing season, substantially more time is allowed for subsistence and personal use salmon fishing than for commercial fishing. Throughout most of the history of the Yukon Area commercial salmon fishery, commercial and subsistence fishing periods coincided. However, in 1993 the Alaska Board of Fisheries adopted regulations which separated subsistence and commercial salmon fishing times in Districts 1, 2, 3, and in the lower portion of District 4 (Subdistrict 4-A). In these areas, subsistence salmon fishing is allowed seven days per week except for 24 hours before the opening of the commercial salmon fishing season. By regulation, subsistence salmon fishing may not occur 18 hours immediately before, during, and 12 hours after each commercial salmon fishing period.

In the upper portion of District 4 (Subdistricts 4-B and 4-C) and in Districts 5 and 6, subsistence salmon fishing periods coincide with commercial salmon fishing periods. Additional subsistence-only salmon fishing periods are also allowed. In District 4 and Subdistricts 5-B and 5-C, subsistence salmon fishing is allowed seven days per week until 24 hours prior to and 24 hours following the commercial salmon fishing season. In Subdistrict 5-A, subsistence fishing is allowed seven days a week until 24 hours prior to the commercial salmon fishing season. Since 1994, the subsistence fishing schedule in Subdistrict 5-A allows subsistence fishing five days a week beginning 24 hours after closure of the commercial salmon fishing season. In Subdistrict 5-D, subsistence salmon fishing is allowed seven days a week throughout the fishing season. Since 1988, subsistence and personal use salmon fishing in Subdistricts 6-A, 6-B and 6-C, the lower Tanana River drainage, is allowed for two 42-hour periods per week throughout the fishing season unless altered by emergency order. In the upper Tanana River drainage, subsistence salmon fishing is allowed seven days a week throughout the fishing season.

History of Survey and Permit Methodologies

Subsistence harvest surveys have been conducted annually by the department since 1961. Survey methodologies prior to 1988 were varied, although in all cases surveyors attempted to census all known *fishing families* in a village. A fishing family was defined as one or more households that fished together. The Division of Subsistence standardized the survey methodology in 1988. In each community, all households were identified and stratified into those that *usually fish* and those that *usually do not fish* (Walker et al. 1989). Subsistence salmon harvest surveys use personal or telephone interviews, harvest calendars, and mailed questionnaires to collect household information. Subsistence harvest information gathered through these surveys was expanded for non-contacted fishing households to provide an annual community estimate.

In 1990 and again in 1991, the method for stratifying households was refined by the Commercial Fisheries Management and Development Division to improve the accuracy and precision of the subsistence harvest estimate (Holder and Hamner 1991; Bromaghin and Hamner 1993). Since 1990, households have been classified into one of five harvest categories. These categories consist of those that are light, medium, and heavy harvesters, those that do not harvest salmon and those with unknown harvest levels. The 1990 through 1995 use group classifications were based on the household's annual harvest estimates available since 1988. In 1997, as in 1996, use group classifications were based on the average harvest of two recent years in a three-year period. The

1997 use group classifications were based on the average harvest for the two most recent years within the time period from 1994 to 1996. If household harvest information was not available for two recent years, the household use group classification was left unchanged. A stratified random sample (Cochran 1977) is drawn from the strata formed by combinations of village and harvest levels. The current method assumes that households tend to harvest the same level in the year being surveyed as they have in prior years. The current sampling design more intensively samples the households with a recent history of large harvests.

Data analysis from 1990 to 1995 included using the district's variance to estimate a stratum's variance if only one household was contacted in the stratum. In addition, the district's mean and variance was used to estimate a stratum mean if no households were contacted in the stratum. Since 1996, if only one household was contacted in a stratum, the stratum variance was not estimated. In addition, if no households are contacted for a stratum, the mean and the variance are not estimated.

Permits for subsistence and personal use salmon fishing are required in select areas of the Upper Yukon Area. The areas that require salmon fishing permits and the type of permit required (subsistence or personal use) have varied through time (Appendices B.5 through B.9). The first annual subsistence permits were issued in 1973. Personal use permits have only been required in select areas since 1987. Permitted areas currently include: the Yukon River drainage between Hess Creek and the Dall River (Yukon River bridge area); between the upstream mouth of Twenty-Two Mile Slough and the Canadian border, and the entire Tanana River drainage. In permitted areas, the fishing households are required to obtain a permit prior to fishing activity and to return the permit at the end of the season with a record of the harvest. The department utilizes the returned permits to document the harvest in these areas.

History of the Personal Use Fishery

Personal use fishing is considered a lower priority use of the resource than subsistence fishing. Due to changes in the state subsistence law in 1986 that limited subsistence hunting and fishing to rural Alaskan residents, the Board of Fisheries created personal use salmon fisheries in the Yukon Area for non-rural state residents. The regulation directed that fishermen residing within non-rural areas be considered personal use fishermen regardless of where they fished. Correspondingly, fishermen residing in rural areas were considered subsistence fishermen regardless of where they fished. The residents of the greater Fairbanks area were considered non-rural fishermen. In 1987, a personal use fishery was implemented in the Yukon Area which initially only affected the fall chum salmon fishery. In 1988, a personal use fishery was in effect for all salmon species in the Yukon Area. Under the statutes and regulations that were in effect from 1988 until July 1, 1990, Alaska residents domiciled in non-rural areas were prohibited from participating in subsistence fisheries. During that time, non-rural residents harvested salmon under personal use fishing regulations wherever they fished.

Effective July 1, 1990, the Alaska Supreme Court struck down the rural residency requirement for subsistence participation (*McDowell vs. State*), ruling that the Alaska Constitution prevented allocations of fish and game to people based on the location of their residence. The result was that

every Alaska resident became eligible for subsistence fishing. In effect, this decision made the personal use category obsolete in the Yukon Area. Anyone eligible for a personal use permit could also obtain a less restrictive subsistence fishing permit. During the 1991 and the 1992 seasons, all fishermen fished under subsistence fishing regulations and no Yukon Area personal use salmon fishing permits were issued.

During a special session in 1992, the legislature revised the subsistence law to allow the Joint Boards of Fisheries and Game to divide the state into subsistence and non-subsistence areas. Inside the non-subsistence areas, personal use fishing was authorized and the subsistence regulations for these areas were repealed. The Fairbanks Nonsubsistence Area, the only non-subsistence area created by the Joint Boards of Fisheries and Game in the Yukon Area, consists of the Fairbanks North Star Borough and surrounding areas. The Fairbanks Nonsubsistence Area includes the Tanana River drainage above the confluence of the Wood River upstream to the mouth of the Volkmar River on the north bank of the Tanana River and to the mouth of the Johnson River on the south bank of the Tanana River (Figure 2). During the 1993 fishing season, personal use fishery regulations were implemented in this area. In October 1993, the state superior court ruled in the *Kenaitze* case that the non-subsistence area provision of the 1992 subsistence law was unconstitutional because it discriminated between different areas of the state. Although the state was initially granted a stay on the effects of that decision pending appeal to the Supreme Court, the stay was vacated on April 11, 1994. With the stay lifted, the state was required to provide subsistence fishing in non-subsistence areas during the 1994 season. All Alaskan residents were again qualified as subsistence users during the 1994 fishing season and, although available, no personal use permits were issued.

On May 9, 1995, the Alaska Supreme Court reversed the superior court's ruling, upholding the constitutionality of the non-subsistence areas. Once again the Joint Boards of Fisheries and Game adopted regulations that affected the Fairbanks Nonsubsistence Area. No subsistence fishing is allowed within non-subsistence areas, however, personal use fishing regulations are applicable in non-subsistence areas. The non-subsistence area regulation primarily affected salmon fishermen within Subdistrict 6-C, which falls entirely within the boundaries of the Fairbanks Nonsubsistence Area. By regulation, Subdistrict 6-C personal use salmon fishery has a fishery harvest limit of 750 chinook, 5,000 summer chum, and 5,200 fall chum and coho salmon combined.

History of Commercial-Related Harvests

Distinguishing between subsistence and commercial harvests has become more difficult with development of salmon fisheries in which commercial fishermen extract the roe from female carcasses and only sell the roe. The Upper Yukon Area commercial roe fishery began in 1978. In the Lower Yukon Area, the first sale of salmon roe by commercial fishermen occurred in 1996. A stripped carcass refers to the female salmon flesh that remains after the roe has been removed and sold commercially. Stripped carcasses are a byproduct of the commercial roe fishery and are available to meet subsistence needs. Salmon that are taken commercially but provide both subsistence and commercial use are assigned to a special category referred to as commercial-related salmon harvest. Subsistence harvest is defined as those salmon harvested under subsistence fishing

regulations. Commercial-related salmon harvests can be combined with the subsistence harvest estimate to provide the total potential subsistence utilization. The commercial-related harvests can also be combined with the salmon sold in the round to provide an estimate of the commercial harvest.

Except for Subdistrict 4-A, in most of the Yukon Area the commercial-related harvest is a small proportion of the subsistence utilization. In Subdistrict 4-A, since 1981, the number of female summer chum salmon carcasses available from the commercial roe fishery, along with the incidental harvest of male chum salmon, has been greater than the subsistence utilization levels documented in prior years. The department estimates the number of male and female summer chum salmon harvested during a commercial fishing period from the pounds of roe sold. The method expands the roe to estimate numbers of fish by using the observed pounds of summer chum salmon roe per female and the sex ratio information collected during each commercial period.

From 1980 to 1990, survey questions were not structured to identify the commercial-related harvests. During these years it is believed that many of the commercial-related salmon harvests were reported as subsistence harvests. The Division of Subsistence conducted the first subsistence surveys directed at addressing commercial-related harvest issues in Subdistrict 4-A villages of Kaltag and Nulato in 1984. These surveys attempted to exclude the commercial-related summer chum salmon used for subsistence purposes from the subsistence harvest. For this reason, the 1984 subsistence summer chum salmon harvest estimates for Kaltag and Nulato were below harvest estimates for previous years. Attempts were also made from 1986 to 1989 to identify the commercial-related summer chum salmon harvest from the Subdistrict 4-A subsistence harvest estimates. Although, during these years of transition, it is probable that some portion of the commercial-related harvest was still being reported as subsistence harvest. It was not until 1990 that survey questions and fishermen's reports resulted in satisfactory separation of the subsistence utilization into subsistence and commercial-related harvests (Figure 4).

Prior to 1990, in all districts, the commercial harvest included the number of fish sold in the round and the number of females taken to produce the roe sold. By regulation, since 1990, commercial-related harvests in Subdistrict 4-A are considered to be the estimated number of female salmon taken to produce the roe sold and the incidental harvest of male salmon. Although not in regulation, the department estimates the commercial harvest of summer chum salmon in Subdistricts 4-B and 4-C and in the lower Yukon Area in the same manner.

From 1990 to 1993, subsistence and commercial periods were conducted simultaneously, and therefore some salmon harvests during these periods could have occurred under subsistence regulations. However, since 1990, by regulation, the estimated number of male summer chum salmon taken during a Subdistrict 4-A commercial fishing period is also included in the commercial-related harvest. Since 1993, the subsistence and commercial periods have been separated in Subdistrict 4-A, and all fish harvested and not sold in the round during the commercial periods are considered commercial-related.

Beginning in 1990, Subdistrict 4-A commercial fishermen have been required by regulation to report on fish tickets the number of fish harvested to produce the roe sold, including both males and females. An additional series of questions to address the usage of commercial-related harvests was

added to the survey questionnaire of Subdistrict 4-A commercial fishermen during the 1992, 1993, and 1995 surveys. The extra survey questions in Subdistrict 4-A were initiated to investigate discrepancies between the number of fish the department estimated was harvested in the summer chum salmon roe fishery and the number of fish harvested as reported on commercial fish tickets. These surveys also documented the practice of Subdistrict 4-A fishermen releasing live male chum salmon directly back into the river during commercial roe fisheries.

In 1994, the Board of Fisheries adopted regulations that allowed a commercial summer chum salmon fishery on the Anvik River (5 ACC 05.368, Anvik River Chum Salmon Fishery Management Plan). The Anvik River is within Subdistrict 4-A and has been managed as a terminal harvest commercial fishery since 1994. The Anvik River commercial summer chum salmon fishery only involves the sale of roe, and therefore results in additional stripped female summer chum salmon carcasses that are made available to subsistence users.

METHODS

Personal interviews and returned permits are the primary sources of information used to estimate the number of subsistence and personal use salmon harvested in the Yukon Area. Test fisheries are used throughout the Yukon River drainage to index salmon runs. Test fisheries harvest salmon that are made available to subsistence users. Salmon provided by these test fisheries are documented by each individual project. Information from surveys, permits, and test fisheries are combined to estimate Yukon Area subsistence and personal use harvests. However, it should be noted that many Stevens Village residents fish in both permit and non-permit areas. Subsistence salmon harvest estimates from Stevens Village are based on the survey information, which incorporates information obtained from permits. Stevens Village permit information must be removed from the permit total when combining permit harvest information with survey results to avoid double counting the salmon harvested.

Subsistence Survey

The 1997 survey program was designed to provide an accurate estimate of the salmon harvested by subsistence fishing households residing in surveyed villages. Primary components of the survey program were subsistence harvest calendars mailed out prior to fishing activities, postseason personal interviews, and telephone or postal surveys.

The household list database was updated prior to the 1997 survey using the survey information collected in 1996. The database is updated according to information gathered on households that move from one survey community to another, those households that combine with another established household in a survey community, and household members who have recently established a household of their own. Some households are removed each year as information is obtained that they no longer reside in the surveyed communities or that they have combined with an existing household. New households are added to the survey's household database as they are

identified. Prior to the 1997 survey, the department adjusted approximately 300 households that were removed from their current location and approximately 90 new households that were added to the database. Harvest information is collected from all calendars returned, including households that were not selected to be surveyed in 1996, to ensure households are placed in the correct strata for the 1997 survey.

Prior to fishing activities, the department mailed subsistence harvest calendars to 1,238 Lower and 2,398 Upper Yukon Area fishing households. The Lower Yukon Area calendars contained the months of May through September (Appendix C.1). The Upper Yukon Area calendars contained the months of June through October. Additional calendars were made available to households upon request from department offices in Emmonak and Fairbanks. The calendars provide space for fishermen to record their daily salmon harvest by species. Enclosed with the 1997 calendar was a letter of appreciation for fisherman's participation in the previous year's subsistence survey. The letter also included the previous year's subsistence and personal use salmon harvest estimates by village (Appendix C.2). Harvest information from calendars returned prior to or during the subsistence survey was used to assist in the survey of the household. In an effort to improve calendar returns, posters were sent to each village post office to remind fishermen to have their harvest calendars available for the surveyors. Radio announcements were also broadcast in the area prior to the surveyor's arrival in the village.

Since 1992, the department has conducted subsistence surveys in the Yukon Area villages of Hooper Bay and Scammon Bay. A salmon tagging and recapture study conducted in 1986 (Kerkvliet 1986) indicated that residents of the coastal villages, Hooper Bay and Scammon Bay, harvest chinook and chum salmon bound primarily for the Yukon River drainage. However, Norton Sound, Kotzebue Sound, and local stocks were also present in the Hooper Bay area.

A database of Yukon Area households located in surveyed communities formed the sampling frame for the stratified random sampling program. Each household in the database was assigned to a subsistence harvest category. These harvest categories consisted of unknown, do not fish, light, medium, or heavy. Households that had no previous harvest information available for placing them into a harvest classification were categorized as unknown. Households that had historical harvest information were placed in a harvest category based upon their average, annual salmon harvest from the two most recent years in the database since 1992, excluding 1993. Because of low returns of salmon and subsequent subsistence restrictions and closures during the fall season in 1993, the overall subsistence salmon harvest in that year was the lowest recorded since 1977. Therefore, 1993 household harvests were considered atypical and were not used to update the household harvest categories. If information for two recent years was not available, the household's harvest classification was not changed. In the Lower Yukon Area, an average harvest of 1 to 200 salmon was considered light, a harvest of 201 to 500 salmon was considered medium, and a harvest greater than 500 salmon was considered heavy. In the Upper Yukon Area, an average harvest of 1 to 100 salmon was considered light, a harvest of 101 to 700 salmon was considered medium, and a harvest greater than 700 salmon was considered heavy.

A stratified random sample (Cochran 1977) of households was drawn from the stratified population, with strata being defined by the combinations of community of residence and harvest category. In general, stratum sample sizes were established based upon the level of harvest: all of the households

in the medium and heavy categories; 30 percent of the households in the light category; 10 percent of the households in the do not fish harvest category; and 20 percent of the households in the unknown harvest category were identified to be sampled during the survey. Several exceptions were adopted in 1991, as requested by area management biologists. Based on concerns for the large numbers of test fish given away in the villages of Emmonak and Pilot Station, the large subsistence harvests taken in the village of Tanana, and a concern for an unusual chinook salmon harvest estimate in Holy Cross in one year, sample sizes were increased for select harvest categories in these villages. In Emmonak, Pilot Station, and Tanana, 30 percent of the households in the do not fish harvest strata and 50 percent of the households in the light harvest strata were identified to be sampled. In Holy Cross, 50 percent of the households in the light harvest stratum were identified to be sampled. These sampling efforts should increase the precision of the harvest estimates from these villages. Further, if any stratum sample size obtained using these guidelines contained less than five households, the sample size was increased to five; if the stratum contained less than five households, the sample size was made equal to the stratum size. Since 1996, all households in survey communities with 40 or fewer households were to be sampled.

Prior to conducting surveys, the surveyors received an orientation, which included a review of the operational plan, survey form instructions, profiles of villages to be surveyed, regulations and issues related to the current fishing season, along with an overview of the Yukon Area fisheries. Additionally, attempts are made to have an experienced surveyor conduct joint surveys with an inexperienced surveyor during the first several surveys. In 1997, the project benefited by having experienced surveyors. Appendix C.3 is an example of the 1997 interview form the surveyors used. Interviews were designed to determine if the household participated in the 1997 subsistence salmon fishery, the number of salmon harvested by species, the number of salmon processed for their own household's use by species, how many other households assisted in the salmon harvest, which other households shared the harvest, the number of salmon used that were a byproduct of a commercial fishery (commercial-related), the primary gear type used, the location where the subsistence salmon harvest occurred, and whether their subsistence needs were met.

Surveyed households were asked if they received any salmon from other fishermen or from a test fish project. The survey questions concentrated on chinook, summer chum, fall chum, and coho salmon, but households were also asked about the number of pink salmon as well as the annual subsistence harvest of other miscellaneous non-salmon species. Reported harvests of whitefish, pike, and sheefish are expanded to obtain estimates of total harvests. The reported harvests of other non-salmon species are not expanded to estimate total harvest. The survey also included questions regarding the number of people and dogs in the household and the number of chum and coho salmon fed to dogs. Households which indicated that they had not met their subsistence salmon needs were queried regarding the cause.

Telephone interviews were attempted for all households that were to be surveyed but were not personally contacted by surveyors during the village visits. Survey questionnaires with a postage-paid return envelope were mailed to households that were not contacted by personal or telephone interviews. The collection of personal and telephone interviews as well as returned postal survey responses was assumed to constitute a stratified random sample. Estimation was performed using classical stratified random sampling methods (Cochran 1977).

Subsistence and Personal Use Permits

Subsistence or personal use fishing households are currently required to obtain permits in select areas of the Yukon River drainage prior to conducting fishing activities. Subsistence fishing permits are required in areas primarily located within District 5, in Subdistricts 6-A and 6-B of Tanana River drainage, and in the upper Tanana River drainage. In 1997, personal use salmon permits were required in Subdistrict 6-C, which falls within the Fairbanks Nonsubsistence Area (Figure 2). Permit applications for the 1997 season (Appendix C.4 to C.6) were mailed to all 1996 permittees who returned their permit. Subsistence permit applications sent to rural communities included a letter (Appendix C.7) which explained how to apply by mail. The letter also provided information concerning the schedule that a department representative would be in each village preseason if the applicant chose to be issued a fishing permit in person. Permits were issued during these preseason permit issuing trips in the villages of Nenana, Manley, Minto, Central, Circle, Delta, Tok, Dot Lake, Tanacross, Northway, and Eagle. In 1997, personal use permit holders also received permit applications by mail. Applications have been mailed preseason to prior year subsistence permit holders since 1990, and to prior year personal use permit holders beginning in 1996. Permits were also issued in person or by mail throughout the season from department offices in Fairbanks, Tok, and Delta. Other types of household fishing permits issued in the Tanana River drainage include subsistence and personal use whitefish and sucker permits, as well as subsistence pike fishing permits for the Tolovana River drainage.

Most household fishing permits had an expiration date of October 15, 1997. Because of the remoteness of the fishing area, or because of later fishing activities, several permits had later expiration dates. All Tolovana River drainage pike fishing permits, Kantishna River drainage salmon fishing permits, personal use whitefish and sucker permits in the Fairbanks Nonsubsistence Area, and Upper Tanana River drainage fishing permits expired on December 31, 1997. Additionally, one personal use whitefish and sucker permit expired on July 1, 1997.

Permit holders were required to keep a record of their daily fish harvest on the permit and return the permit to the department within 10 days of the permit's expiration. Households with outstanding expired permits were contacted first by mail in the form of reminder letters and then by telephone. The reminder letters were used in an attempt to improve the accuracy of the permit harvest information and to improve compliance. Fishermen who had not reported their required 1997 harvest information were sent a reminder letter on November 3, 1997 (Appendix C.8). On November 20, 1997, a second reminder letter was sent to all permittees who still had not reported their required harvest information. Fishermen who held permits which required weekly inseason reporting and had complied with the verbal reporting requirement at least once during the fishing season but failed to return their permit were sent first and second reminder letters. The letters expressed the department's appreciation for the verbal reporting inseason and asked them to confirm their season's total harvest (Appendix C. 9). Permit holders in the Tolovana River drainage pike fishery, the personal use whitefish and sucker fishery, and the upper Tanana River drainage fishery were sent their first reminder letter on January 12, 1998, and a second reminder letter was mailed on January 27, 1998. Harvests were tabulated postseason for all permit holders who returned their permit, returned a completed reminder letter, or verbally reported their harvest information.

Test Fisheries

Test fishery projects are annually operated by various agencies to index salmon runs in several locations within the Yukon River drainage. Salmon harvested in Yukon Area test fisheries are frequently provided to the public. It is assumed that salmon provided from test fisheries replace those that would have been obtained through more traditional subsistence fishing activities. Salmon harvests that are provided to subsistence users from test fisheries are included in village subsistence harvest estimates.

RESULTS

A total of 57,430 chinook, 113,211 summer chum, 95,425 fall chum, and 24,295 coho salmon were estimated to have been harvested in the Yukon Area by 1,382 subsistence and personal use fishing households in 1997. These estimates include salmon provided by the test fish program. The 1997 permit harvest information is based on permits returned as of April 6, 1998. Table 1 summarizes the 1997 Yukon Area salmon harvests, by community of residence, that are gathered from subsistence surveys, from subsistence and personal use permits, from test fisheries, and provides other related information. Appendices B.1 through B.4 document the historical, annual subsistence salmon harvest from 1986 to 1997 by species and by village of residence.

Subsistence Survey

The 1997 survey database contained 2,398 households in 34 Yukon Area village communities included in the survey area (Table 2). The stratified random sampling design identified 1,039 households to be surveyed in 1997. Surveyors from the department's Commercial Fisheries Management and Development Division traveled to villages between September 8 and November 5, 1997. Surveyors attempted to interview a member of each household identified in the sample, preferably the primary harvester. A total of 915 households, or 88 percent of the households identified to be sampled, were contacted in 1997. The contact number does not include three households that declined to participate in the personal interview. A total of 195 calendars, or 8 percent of approximately 2,398 calendars distributed, were either picked up by surveyors during the interviews or mailed back to the department. Survey questionnaires that were mailed out were often returned incomplete, resulting in partial surveys.

In 1997, a total of 8,964 people were estimated to have resided in the 34 surveyed villages (Table 3). In the survey area an estimated 1,093 households participated in the subsistence salmon fishery (Table 4). This indicates 46 percent of the estimated total number of households participated in the fishery. Approximately 51, 39, and 9 percent of the households that reported fishing in the surveyed villages indicated their primary gear types were set gillnet, drift gillnet, or fish wheel, respectively (Table 5).

The estimated number of subsistence salmon harvested by households sampled in the surveyed villages was 47,759 chinook, 101,184 summer chum, 53,059 fall chum, and 10,927 coho salmon (Table 6; Appendices A.1 through A.4). Tables 7 through 10 identify subsistence salmon harvest estimates by surveyed village and fishing location. Commercial fishing districts, subdistricts, and major tributaries of the Yukon River represent areas fished.

The 1997 survey included questions concerning the harvest of pink salmon and ten non-salmon species (Table 11). Of these, pink salmon, whitefish, pike, and sheefish are expanded to estimate total Yukon Area harvests for the surveyed villages, while the reported harvests for the other species are unexpanded. The harvest of pink salmon was estimated to be 483 fish, most of which were harvested by communities within the Coastal District. During the past decade, large runs of pink salmon have occurred during even-numbered years (ADF&G 1997). Therefore, it is noted that the 1997 pink salmon return to the Yukon Area was a low abundance year in the two-year cycle. Whitefish are the most utilized miscellaneous non-salmon species harvested throughout the drainage. Whitefish harvests are distinguished between large whitefish (4 pounds or greater) and small whitefish (less than 4 pounds). The 1997 Yukon Area subsistence harvest includes expanded estimates of 39,732 large whitefish, 37,902 small whitefish, 29,540 pike, and 19,538 sheefish.

Table 12 contains the estimated subsistence use of salmon by species organized by community of residence and harvest strata (Appendices A.5 through A.8). The 1997 Yukon Area estimated numbers of salmon used for subsistence purposes totaled 49,321 chinook, 139,427 summer chum, 54,194 fall chum, and 10,327 coho salmon, and includes salmon used by fishing and non-fishing households. The estimated use includes salmon harvested during subsistence activities (subsistence harvest), fish received from other individuals (includes receiving test fish harvests), and those retained from commercial harvests (commercial-related harvests). Survey results indicated that an estimated total of 391 chinook, 74,525 summer chum, 389 fall chum, and 284 coho salmon were retained from commercial harvests and used for subsistence purposes by Yukon Area households (Table 13). Of the estimated number of salmon harvested and available for subsistence purposes, 99, 58, 99, and 97 percent of the chinook, summer chum, fall chum, and coho salmon, respectively, were obtained from the subsistence fishery. The remainder were primarily commercial-related harvests.

Estimates from the survey indicated that 1,525 households (64 percent of total) owned 5,099 dogs (Table 14). An estimated 79,930 summer chum, 38,567 fall chum, and 6,990 coho salmon were retained for dog food from both subsistence and commercial salmon harvests in the surveyed communities (Table 15).

A total of 213 households, approximately 23 percent of the households surveyed, reported that they did not meet their subsistence salmon needs in 1997. The responses of those who had not met their needs included the categories: lost opportunity to fish due to high water or inclement weather; no helper to harvest or process more fish; poor run of fish; not enough fish caught; and still fishing at the time of the survey. These responses represent 30 percent of the total households surveyed that had not met their needs. The remaining 70 percent of the total households surveyed responded that they had not met their needs due to other reasons such as another occupation, no fishing gear, too busy doing other things, medical reasons, out of town during the fishing season, and other various

explanations. Table 16 categorizes the reasons households gave why their subsistence needs were not met.

Subsistence and Personal Use Permits

A total of 544 household permits (427 subsistence and 117 personal use) were issued during the 1997 fishing season (Table 17). A total of 50 households obtained two permits in order to fish in two different permit areas. Most of these two-permit fishing households were in the village of Minto. Separate permits are required for the taking of salmon on the Yukon or Tanana Rivers and for the subsistence harvest of pike in the Tolovana River drainage. Prior to the salmon fishing season, the department representatives traveled to 11 interior villages and issued 223 subsistence permits. The remainder of the permits were issued either by mail or to individuals who applied for a permit in person at department offices in Fairbanks, Tok, or Delta.

Approximately 71 percent of the permits had an expiration date of October 15, 1997, and approximately 29 percent of the permits had an expiration date of December 31, 1997. Permit holders were required to return their permits within 10 days of permit expiration. Reminder letters were sent to households with expired permits on November 3, 1997, November 20, 1997, January 12, 1998, and January 27, 1998. Corresponding with the reminder letter dates, the percentage of permit holders that had returned their harvest information increased from 37 percent, to 57 percent, to 83 percent, and resulted in an overall return of expired permits of 94 percent (509 permits returned) as of April 6, 1998.

A total harvest of 7,484 chinook, 4,900 summer chum, 38,657 fall chum, and 11,833 coho salmon were reported by subsistence permit holders in 1997. Personal use permit holders reported harvesting a total of 313 chinook, 391 summer chum, 284 fall chum, and 350 coho salmon in 1997. Table 17 contains a summary of the number of fish harvested by permit type and by area. Table 18 contains similar information, but organizes it by the permittee's community of residence and by the drainage of the harvest. The 292 households that fished in permit areas were estimated to have operated the following primary gear types: 74 percent set gillnets, 19 percent fish wheels, and 7 percent reported other gear types.

Historic subsistence permit harvest information for salmon is summarized in Appendices B.5 and B.6. During the 1997 fishing season, personal use salmon fishing permits were required in Subdistrict 6-C. Personal use fishing permits for whitefish and suckers were required within the entire Fairbanks Nonsubsistence Area. Historical harvest information for the personal use salmon fishery is summarized in Appendices B.7 and B.8. Permit harvest information for the subsistence and personal use salmon carcass fishery near the confluence of the Delta and Tanana Rivers from 1973 to 1994 is summarized in Appendix B.9. In November 1994, the Board of Fisheries adopted regulations that closed the lower portion of the Delta River for the collection of salmon carcasses.

A total of 427 subsistence permits were issued, of which 258 households reported having 2,505 dogs. Of households with dogs, 155 households indicated they fed whole fish to their dogs. In 1997, subsistence permit fishermen reported harvesting 32,397 salmon for the primary purpose of feeding

dogs (Table 19). Salmon fed to dogs were not identified by species. Personal use permittees were not asked dog-related information because the fish harvested under personal use regulations cannot be fed to dogs.

Test Fisheries

A total of 2,158 chinook, 6,959 summer chum, 7,612 fall chum, and 1,982 coho salmon were provided to the public by test fish projects in 1997 (Table 20). Residents in the communities of Emmonak, Kotlik, Mountain Village, Pilot Station, and Tanana were the primary recipients of these fish.

DISCUSSION

Subsistence Surveys

Since 1988, survey methods and corresponding harvest estimates are relatively comparable. It is more difficult to compare harvest estimates from recent surveys to those prior to 1988 because of modifications to the survey program. Commercial-related harvests retained for subsistence purposes were included in the estimates of subsistence harvests prior to 1988. Surveys conducted prior to 1979 were conducted preceding completion of the fishing season and only partially documented the harvest for later running fall chum and coho salmon. Additionally, the sampling design and questionnaire have changed periodically throughout the history of the program (Brannian and Gnath 1988; Holder and Hamner 1990; Holder and Hamner 1991; Bromaghin and Hamner 1993).

During personal interviews, surveyors attempted to interview an adult member of the household, preferably the primary harvester. The quality of the harvest estimate is dependent upon the collection of complete and accurate information. Both the surveyor and the surveyed individual contribute to the quality of the estimate. Surveyors have a responsibility to contact all the households to be surveyed and to ensure that questions are asked consistently and understandably while fostering a cooperative atmosphere. The household member being interviewed has the responsibility to answer the questions to the best of their ability. Due to individuals providing partial information during the survey, the number of households contacted for a given question varies. In reporting survey results the greatest number of contacted households is provided for each topic.

Species identification of the harvest is also a concern. For example, fishermen in portions of the Upper Yukon Area use the term "chinook" to refer to coho salmon and "king" to refer to chinook salmon. In 1992, surveyors attempted to show pictures of the different salmon species to assist fishermen in identifying the salmon harvested. Unfortunately, it was difficult for many fishermen to associate the salmon they harvested with the pictures. The most effective technique used is for surveyors to be familiar with the local, common names of the fish species. In recent years, surveyors have been provided with the common species names for each village surveyed.

The variability of water levels from year to year and within the season can greatly affect the available opportunity and efficiency of fishermen. During high water events, debris moving downstream results in decreased fishing opportunities or efficiency of gear as well as increasing the occurrence of lost or destroyed gear. However, it has been observed that high levels of harvest can occur during high water events in sites that remain relatively drift free, possibly due to the velocity of water forcing the fish to the banks. During low water events, loss of a fishing site becomes an important factor in decreasing a fisherman's opportunity to participate. The department's water level database includes water levels from 1987 to 1996 and is represented by maximums, averages, and minimums compared to the current year. During the 1997 fishing season, water levels were well below average in the Yukon River, resulting in some new low daily records. The water level did not rise above average until mid or late July (Appendix A.12). Water levels on the Tanana River are largely an indication of summer temperatures and the corresponding glacial melt within the drainage, although it is also affected by rainstorm events in its tributaries. In 1997, the Tanana River set new low records in early June and remained below average until mid to late July, as did the Yukon River. The Salcha River flowing into the Tanana River is mostly affected by spring run off and rainstorm events. The Salcha River was also well below average and set new record lows throughout the season. Spring run off water levels have been well below average since 1993.

The 1997 subsistence harvest of chinook salmon was above average when compared to the recent five-year average, 1992 to 1996 (Figure 3). The summer chum salmon harvest was slightly below the recent five-year average, 1992 to 1996 (Figure 4). The summer chum salmon five-year average harvest, 1987 to 1991, is substantially greater, primarily due to the fact that the surveys prior to 1988 included commercial-related harvests. Summer chum salmon roe sold in Districts 3, 4, 5, and 6 resulted in female carcasses that were retained from the commercial harvest and were available for subsistence use.

The fall chum salmon subsistence harvest was below average in 1997 when compared to the recent five-year average, 1992 to 1996 (Figure 5). The 1992 to 1996 average contains the low harvest in 1992 which resulted from an early freeze up. The average also contains 1993 and 1994 harvests in which regulations restricting the fall season fishery resulted in reduced fishing opportunities. Unlike summer chum salmon, fall chum salmon are typically sold in the round in the commercial fishery. However, due to changes in the salmon markets, subsistence harvests of fall chum salmon in 1995 and 1996 appear lower than historical. The decrease in these years is primarily due to the increase in commercial-related harvests in which fall chum salmon carcasses became available from the commercial roe fishery and satisfied some of the subsistence needs. The 1997 below average fall chum salmon harvest is in part due to the poor return of fall chum salmon to the Tanana River drainage. The coho salmon harvest in 1993 and 1994 was subject to the same fishing restrictions as the fall chum salmon in those years, but coho salmon did not show a similar drop in subsistence harvest in 1994 as it did in 1993. In 1994 the operation of fish wheels with live boxes allowed selection for coho salmon and therefore maintained harvests for subsistence. Subsistence restrictions were also relaxed prior to the end of the fishing season, during the time period when coho salmon are in greater abundance. The 1997 coho salmon harvest was below the recent five-year average, 1992 to 1996 (Figure 6).

Due to market conditions, the commercial sale of fall chum salmon flesh was reduced in 1995 and 1996. Unusually poor flesh markets for fall chum salmon were reflected in the above average level of commercial sales of fall chum salmon roe in Districts 4 and 5. It appears that the larger than average number of commercial-related fall chum salmon carcasses available for subsistence users replaced a large portion of the subsistence harvest in these areas. Correspondingly, a below average harvest of subsistence fall chum salmon was estimated in Districts 4 and 5 during 1995 and 1996, particularly in the village of Tanana.

An example of how the availability of commercial-related harvests can effect the subsistence harvest is illustrated by the harvest within the village of Tanana. The village of Tanana had a 1992 to 1996 five-year average subsistence harvest of approximately 23,000 fall chum salmon. These years represent lower than historic fall chum salmon subsistence harvests due to subsistence restrictions in 1993 and 1994 which reduced potential harvests. Also, in view of poor flesh markets during 1995 and 1996, the increase in availability of commercial-related fall chum salmon carcasses appeared to have displaced some of the subsistence harvest. The village of Tanana's 1987 to 1991 five-year average subsistence harvest was approximately 35,000 fall chum salmon. This can be compared to the village of Tanana's subsistence harvest in 1996 of approximately 21,000 fall chum salmon. Approximately 15,000 female fall chum salmon carcasses were available in the village of Tanana for subsistence use after the roe was extracted and sold. These commercial-related female carcasses are believed to have met some of the subsistence needs in 1996. When the subsistence harvest for the village of Tanana is added to the commercial-related harvest, the subsistence use of approximately 36,000 fall chum salmon was near the recent average observed for the village.

The Subdistrict 4-A commercial roe fishery poses a special challenge to the survey program. With the large number of salmon harvested and the release of male chum salmon, it has been difficult to estimate the commercial-related harvests and the number of summer chum salmon carcasses used for subsistence in Subdistrict 4-A. Although the commercial-related male and female carcasses are used for subsistence, these fish are considered a part of the commercial harvest since they are harvested under commercial regulations. A supplemental Subdistrict 4-A survey was conducted in 1992, 1993, and 1995 to improve the understanding of commercial-related harvests and the usage of the commercial-related harvests in fulfilling subsistence needs (Borba and Hamner 1996).

Since 1992, the subsistence survey has examined the issue of what portion of the salmon harvest was used for the household and whether the household was given any additional salmon. When a household was given salmon, the surveyor asked them to identify the household that gave the salmon to them. The individuals understandably find naming the sources difficult, but the responses to these questions provided the department with some estimate of the amount shared between households. As with many hunter-gatherer cultures, sharing is a very common practice, but is difficult to quantify. The information gathered from this line of questioning assists the department in ensuring that each fishing household is in the proper harvest stratum since it is based on the amount of salmon caught and not the amount used.

Appendix B.10 provides categorized responses of why subsistence salmon needs were not met in surveyed households from 1992 to 1997. Overall, the majority of responses included: the individuals worked in another occupation; individuals did not have the equipment necessary to participate such as boats or fishing gear; or due to environmental conditions such as high water

which hamper fishing opportunity. The years 1993 and 1994 bring department fishing regulations and restrictions into the top ranks of reasons (fourth), as these years were specifically hard on households affected by the departments actions taken in years that the fall season salmon returns appeared to be weak thus limiting fishing opportunity. The individual responses are subjectively categorized, but collectively they appear to characterized a particular year.

During the subsistence survey interviews, fishermen are requested to estimate the number of salmon they obtain from the commercial roe fishery (commercial-related) to meet their subsistence needs. An alternate method to estimate this by-product of the commercial fishery is through information submitted on fish tickets which includes the number of pounds of salmon roe sold and in Subdistrict 4-A the number of fish killed to produce the roe sold. Usually the number of commercial-related salmon obtained from the survey questionnaire is substantially lower than the estimate of the commercial-related harvests based on the pounds of roe sold commercially. A portion of this discrepancy in estimates could result from the practice of releasing live male chum salmon during the pursuit of roe producing females. Other factors include difficulty of recall when large numbers of fish are involved as in the Subdistrict 4-A summer chum salmon fishery.

Pink salmon harvest information has been collected in surveyed communities in the Yukon Area since 1993. The two-year cycle is evident by the high and low subsistence harvests noted in alternate years (Appendix B.11). Although the subsistence survey program is designed to estimate the number of salmon harvested, it also is the primary source for information on subsistence and personal use harvests of miscellaneous non-salmon species in the Yukon River drainage. Harvests of selected miscellaneous non-salmon species have been collected from surveyed areas consistently since 1993 and include whitefish, pike, sheefish, burbot, lamprey, tomcod, grayling, suckers, arctic char, and blackfish (Appendix B.12). Selected miscellaneous non-salmon harvest information has also been consistently collected from permit areas since 1988, but the information is only presented in this report since 1993 to correspond with the historical survey data presented. In 1995, the survey began attempting to distinguish between large whitefish and small whitefish harvests.

Prior to 1992, only surveyed subsistence fishing households were asked dog-related information. Beginning in 1992, all surveyed and permit households, whether they fished or not, were asked how many dogs they owned and the number of whole salmon fed to the dogs. The difference in asking all households for dog information accounts for the significant increase in the estimated number of dogs reported since 1992 (Appendix B.13). The decrease in the number of dogs reported on permits in District 6 beginning in 1995 is due to dog-related questions not being asked of personal use households fishing in the Fairbanks Nonsubsistence Area since personal use salmon cannot legally be fed to dogs.

Subsistence and Personal Use Permits

Department personnel conduct annual spring permit issuing trips, primarily in rural areas, for the distribution of subsistence and personal use fishing permits. Permits are also available through the mail or at the department offices in Fairbanks, Delta, and Tok. However, more effort could be used to improve the weekly harvest reporting requirement from personal use fishermen in Subdistrict 6-C

and subsistence fishermen in that portion of Subdistrict 6-B three miles upstream of Totchaket Slough. By regulation, personal use permits are required for those fishing for salmon within Subdistrict 6-C and suckers and whitefish in the Fairbanks Nonsubsistence Area. Subsistence permits are also required for the taking of fish in the Tanana River drainage upstream of the Fairbanks Nonsubsistence Area.

Some fishermen have expressed confusion on where to report subsistence fish taken during commercial periods which also coincide with subsistence periods. The regulatory reporting requirements during commercial/subsistence salmon fishing periods includes reporting the number of fish taken but not sold on the fish tickets. A problem exists for both commercial fishermen and the department when attempting to clarify as to whether these unsold fish were reported on the fish ticket, during the survey, on the calendar, or on a permit so that they are not double-counted in the final village harvest estimates. In an effort to make the regulation more understandable, an informational letter was distributed in 1996 to all commercial/subsistence fishermen and salmon buyers in Subdistricts 4-B, 4-C, District 5 and District 6 of the Upper Yukon Area. The commercial and subsistence fishing periods coincide in these areas and any salmon or their parts taken and not sold during a commercial opening is considered subsistence. This letter explained where and how to report fish harvested but not sold during commercial/subsistence periods. Fishermen were reminded that stripped female salmon are considered commercial harvest and should not be reported as fish harvested under subsistence fishing regulations (subsistence harvest). Generally, fishermen found the letter helpful in clarifying how to report their harvest and how the department was using the information. However, fishermen also expressed they would like the regulation removed that required reporting fish taken but not sold on fish tickets. During the Board of Fisheries meeting held in December of 1997, a regulation change was adopted that removed the requirement of reporting on fish tickets salmon taken but not sold, with the exception of Subdistrict 6-C. In Subdistrict 6-C the personal use fishery has a permit harvest limit. To avoid exceeding the personal use permit harvest limit commercial fishermen are required to report the fish taken but not sold on the fish tickets.

Test Fisheries

During the 1997 season, test fisheries were operated throughout the drainage by various agencies or organizations. These test fish are routinely given away, and the numbers are documented as being received by the primary recipient villages (Table 20). The Tanana River tag deployment fish wheel was operated with a live box and all fish were released alive in 1997. The Yukon River right bank test fish wheel located near the village of Tanana and the Tanana River right and left bank recovery test fish wheels located near the community of Nenana did not give fish away for subsistence use. These fish wheels also operated with a live box, and fish caught were either released alive or retained by the operator for his own subsistence use and reported on the operator's household subsistence permit.

RECOMMENDATIONS

Although some individuals may accurately recall the numbers of salmon they harvested during the fishing season, others are only able to provide a rough estimate of their subsistence harvest. Minimizing this problem necessitates that fishermen accurately document their salmon harvests in season. The department currently provides subsistence fishermen with harvest calendars, which are mailed pre-season to all Yukon Area households residing in surveyed communities. Harvest calendars are distributed to encourage fishermen to record their daily harvest. It is recommended that some type of incentive program for returning completed harvest calendars needs to be explored since the return of calendars continues to remain low. It is recognized that neither survey or permit methods are accounting for all subsistence harvests taken in the Yukon Area. In these cases, individuals reside outside the surveyed communities and fish in a surveyed area. In recent years, attempts have been made to distribute subsistence survey calendars to these individual households when identified, but so far the number of calendars returned has also been poor.

Community household lists have formed the basis of the sampling frame since 1988 (Walker et al. 1989). Each year, surveyors have attempted to update the list by having knowledgeable individuals in each community review it. This process alone is not sufficient to maintain a complete and accurate community household list due to the dynamic nature of most communities. The harvest estimates obtained from the sampling program are based on the most complete and accurate household list available. Households identified from a recent Alaska Permanent Fund list may improve the sampling frame for the survey. It is recommended that the Alaska Permanent Fund list be obtained annually. Efforts need to be expended continually to minimize the size of the unknown use category by directing surveyors to contact any new households to have their use categorized for the following year's survey. Efforts thus far have resulted in a decline of the unknown use group in the surveyed villages by as much as 88 percent. Reducing the size of the unknown use category is an annual effort since this fluctuates with the identification of new households in any given community. In recent years, surveyors have been provided with lists of unknown harvest households to contact during the surveys and are encouraged to classify each new household for inclusion in the database.

Several village organizations were willing to share community household lists prepared for village census purposes. Other community lists such as telephone and utility registers were also reviewed. One of the largest problems with the sampling frame is that, even though it is updated annually, nearly a full year passes from the update to when the next sampling occurs. Methods for updating and maintaining an accurate sampling frame must continually be explored.

To reduce problems with ambiguous or confusing questions, the interview form is continually reviewed. Its consistent application will only be achieved by additional training time for surveyors and by gaining an understanding of how the person being interviewed might interpret the questions. To minimize these problems, continual feedback must be relayed to developers of the interview questions based on what surveyors encounter during the interviews.

In 1997, approximately 88 percent of the surveyed households to be sampled were contacted, and approximately 94 percent of the permits were returned. A concern in the past was that not enough

surveyed households were contacted. To maintain high contact rates, several techniques have been implemented in recent years, including spending more time in the villages and increasing the effort to make contacts through the telephone and postal systems. Experience has shown that spending more time in the villages is the best practical method of increasing the number of contacts. Telephone contacts are constrained due to the limited availability of telephones in the villages and the reluctance of people to return messages even when they are asked to call collect. The interview forms sent to households that could not be personally interviewed or contacted by telephone have a low response rate and are often returned incomplete.

If the Yukon Area commercial salmon roe markets expand while the salmon flesh markets continue to decline, the survey and permit program may need to find new ways to address the issue of how to better interpret commercial-related harvests more comprehensively as it relates to fulfilling subsistence needs.

Currently, Chevak is the only community in the Coastal District of the Yukon Area not included in the subsistence survey program. In the future, this community should be included in the subsistence salmon survey program to provide an estimate of the annual salmon harvests for the entire Coastal District.

Some consideration should be taken in the structuring of the miscellaneous non-salmon species harvest information collected. In 1993, survey questions asked about fish harvested in the current year, which could be interpreted as either from the beginning of the year, January, or the salmon fishing season up until the point of the survey in the fall. Since 1994 the survey has asked for miscellaneous non-salmon species harvests encompassing an entire year, from survey to survey, in an attempt to collect information that includes winter harvests. Permit information would primarily include harvest taken from the time of issuance until an expiration date. Salmon permits usually expire by the end of October, although a few permit harvest reports are not due until December of the year issued.

Households are placed into harvest categories based upon the size of their historic harvests of salmon species. However, in recent years, interest in documenting harvests of non-salmon species has been increasing. Information collected during the subsistence salmon surveys concerning harvests of non-salmon species has been included in the annual reports since 1993. In some years the reported whitefish, pike, sheefish, burbot, and blackfish, have been expanded to estimate the annual Yukon Area harvest. The household use categories established for salmon are used for the expansion of non-salmon species. The correspondence between the level of salmon harvest and the level of non-salmon harvest has not yet been studied, and the current stratification system may yield estimates of non-salmon harvests having relatively large variances. Stratification systems and sampling designs that might result in improved estimates for individual species should be identified and developed.

The survey is based on subsistence salmon fishing households and categorizes those households into use groups (unknown, does not harvest salmon, light, medium, heavy salmon harvesters). is based on the assumption that the non-salmon species being reported by salmon fishing households represents similar non-salmon fishing patterns and harvests. The non-salmon species have different life cycles and migration patterns thus the availability in each community is different than that o

salmon. These species are often harvested with different gear types, at different times of the season, and are not taken necessarily by the same fishing households that fish for salmon. The assumptions used in the expansion of the salmon harvest should be explored further to determine if these same assumptions can be applied to the non-salmon species components of subsistence harvests. Until these assumptions can be reviewed more thoroughly, the expanded estimate for non-salmon species should be used with caution.

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Table 1. Subsistence and personal use salmon harvest estimates which include test fish harvests given away for subsistence use, and related information, Yukon Area, 1997. a

Village	Survey Date or Permit Village	Fishing Households b	Dogs	Estimated Harvest				Primary Gear Used			
				Chinook	Summer Chum	Fall Chum	Coho	Set Nets	Drift Nets	Fish Wheels	
Hooper Bay	9/15-9/16	c	96	316	613	12,310	0	0	96	0	0
Scammon Bay	9/15		40	178	526	3,401	0	0	40	0	0
Coastal District Total			136	494	1,139	15,711	0	0	136	0	0
Sheldon Pt.	9/12		24	46	970	2,603	337	51	24	0	0
Alakanuk	9/10-9/11		75	182	2,058	7,443	900	882	55	20	0
Emmonak	9/8-9, 9/11, 9/13	d	77	171	3,080	12,399	1,039	356	22	54	0
Kotlik	9/10	e	47	284	1,442	4,803	856	534	30	17	0
District 1 Subtotal			223	683	7,550	27,248	3,132	1,823	131	91	0
Mt. Village	9/19	f	89	428	2,081	11,310	2,698	1,089	9	80	0
Pitkas Pt.	9/18		18	76	793	747	178	427	1	17	0
St. Marys	9/16-9/17, 9/20		92	101	2,592	8,874	310	329	3	89	0
Pilot Station	9/22	g	52	203	2,373	4,532	1,106	323	10	42	0
Marshall	9/22		35	267	1,511	1,508	388	256	15	20	0
District 2 Subtotal			286	1,075	9,350	26,971	4,680	2,424	38	248	0
Russian Mission	9/23		15	222	1,459	585	0	10	5	11	0
Holy Cross	9/22		38	137	3,472	487	420	20	10	27	0
Shageeluk	9/25		21	133	1,380	9,244	367	736	21	0	0
District 3 Subtotal			75	492	6,311	10,316	787	786	36	38	0
Lower Yukon River Total			584	2,250	23,211	64,535	8,599	5,013	205	377	0
Arvik	9/23		17	107	951	6,306	514	24	11	5	1
Grayling	9/24		46	111	2,391	2,446	1,531	1,055	20	26	0
Kaltag	10/15		34	65	1,036	73	1,142	60	0	27	7
Nulato	10/14		40	96	1,576	115	697	444	8	32	0
Koyukuk	10/13		16	79	851	739	1,954	345	7	4	5
Galena	10/13-10/14		45	272	2,350	4,575	3,370	1,002	11	13	21
Ruby	10/16		19	117	2,260	3,286	2,195	474	12	0	7
District 4 Yukon R. Subtotal			217	847	11,415	17,540	11,403	3,404	69	107	41
Huslia	10/15		5	108	57	840	10	50	5	0	0
Hughes	10/15		7	74	34	1,579	51	250	7	0	0
Allakaket	10/1-10/2		20	127	423	3,916	270	50	20	0	0
Alatna	10/2		3	8	38	145	0	0	3	0	0
Bettles	10/2		3	45	39	210	0	0	3	0	0
Koyukuk R. Subtotal			38	362	591	6,690	331	350	38	0	0
District 4 Subtotal			255	1,209	12,006	24,230	11,734	3,754	107	107	41
Tanana	10/20-10/21		38	455	3,596	2,526	25,058	3,045	15	0	21
Rampart	10/10		10	46	2,203	738	646	34	9	0	1
Fairbanks NSB	permits	h	25	159	955	424	491	26	23	0	2
Stevens Village	10/7, permits	j	14	77	2,070	191	1,585	1	11	0	3
Birch Creek	10/21		3	45	373	1	0	3	3	0	0
Beaver	10/9		14	33	1,859	2	243	0	14	0	0
Ft. Yukon	10/7-10/8, 11/5		31	329	3,145	133	5,119	248	14	0	17
Circle	permits		10	97	1,091	257	3,707	210	4	0	6
Central	permits		4	9	146	25	0	0	4	0	0
Eagle	permits		35	270	1,534	17	14,488	2	27	0	8
Other	permits	k	11	34	763	130	421	0	8	0	3
District 5 Yukon R. Subtotal			193	1,554	17,735	4,444	52,758	3,569	132	0	61

-Continued-

Table 1. (page 2 of 2). a

Village	Survey Date or Permit Village	Fishing Households b	Dogs	Estimated Harvest				Primary Gear Used			
				Chinook	Summer Chum	Fall Chum	Coho	Set Nets	Drift Nets	Fish Wheels	
Venetie	10/9	6	97	314	76	1,564	7	5	0	1	
Chalkyitsik	10/8	4	64	0	0	936	7	4	0	0	
<i>Chandalar/Black Rivers Subtotal</i>		10	161	314	76	2,500	14	9	0	1	
<i>District 5 Subtotal</i>		203	1,715	18,049	4,520	55,258	3,583	141	0	62	
Manley	permits	14	399	242	576	5,887	3,236	7	0	6	
Minto	permits	m	36	337	1,208	1,056	2,361	364	30	0	6
Nenana	permits		30	583	1,082	1,899	3,799	5,147	12	0	18
Healy	permits		5	108	4	22	3,272	1,618	5	0	0
Fairbanks NSB	permits	n	92	285	489	662	4,315	1,580	68	0	5
Delta Junction	permits		3	2	0	0	0	0	3	0	0
Other	permits	o	24	184	0	0	200	0	22	0	0
<i>District 6 Tanana R. Subtotal</i>		204	1,898	3,025	4,215	19,834	11,945	147	0	35	
Upper Yukon River Total		662	4,822	33,080	32,965	86,826	19,282	396	107	138	
Survey Village Subtotals		1,093	5,099	47,759	101,184	53,059	10,927	523	484	84	
Permit Area Subtotals		289	2,467	7,514	5,068	38,941	12,183	213	0	54	
Subsistence Permit Subtotals		227	2,467	7,201	4,677	38,657	11,833	154	0	51	
Personal Use Permit Subtotals		62	-	313	391	284	350	59	0	3	
Test Fish Subtotals		p	-	2,157	8,959	3,425	1,185	-	-	-	
Alaska, Yukon River Total		q	1,246	7,072	56,291	97,500	95,425	24,295	600	484	138
Alaska, Yukon Area Total			1,382	7,566	57,430	113,211	95,425	24,295	736	484	138

a Data collected by Alaska Department of Fish and Game. (ADF&G) Commercial Fisheries Management and Development Division. Survey data is expanded for number of fishing households, number of dogs, and harvest. Permit data is unexpanded, the number of dogs is based on information obtained from permits issued, while the number of fishing households and their harvest is based on returned permits. Gear data represents the primary gear types used by fishing households. Of the 544 permits issued 50 obtained permits for more than one location.

b Estimated number of households that fished in surveyed communities or number of permit households who reported fishing in permit required areas, may include primary gear not listed.

c A 1986 Hooper Bay salmon tagging study conducted by the Bering Sea Fishermen's Association (BSFA) suggested that harvests in the Nuok Spit area of Hooper Bay intercepted Yukon River and Norton Sound chum salmon stocks.

d Includes 1,345 chinook, 4,184 summer chum, 893 fall chum, and 334 coho salmon from ADF&G test fish catches.

e Includes 480 chinook, 355 summer chum, 573 fall chum, and 259 coho salmon from ADF&G test fish catches.

f Includes 2 chinook, 962 fall chum and 309 coho salmon from BSFA test fish catches.

g Includes 330 chinook, 2,420 summer chum, 997 fall chum, and 263 coho salmon from ADF&G test fish catches.

h Fairbanks North Star Borough (Fairbanks NSB) households that obtained a permit and indicated that they fished in the Yukon River permit required area.

i Permit harvest information from Stevens Village residents was used to compliment the information obtained by the survey.

k Other includes residents of Manley, Nenana, and the Upper Tanana River drainage villages of Dot Lake, Northway, Tanacross, and Tok who obtained a household permit and fished in a Yukon River permit required area.

m Number of fishing households includes 18 Tolovana River Pike permits that were fished.

n Fairbanks North Star Borough (Fairbanks NSB) households that obtained a permit and indicated that they fished in the Tanana River permit required area. The number of fishing households includes 21 Tolovana River Pike permits and one Kantishna River permit that were fished.

o Other includes residents of the Upper Tanana River drainage villages, Dot Lake, Gakona, Healy Lake, Northway, Tanacross, and Tok who fished in the Tanana River.

p Test fish given away for subsistence use.

q Yukon River Total does not include Coastal District.

Table 2. Estimated total number of households, the sample size, the number contacted, and the percentage of the sampled households that were contacted in surveyed villages, by harvest stratum, with village and district totals, Yukon Area, 1997. a

Community	Unknown				Does Not Harvest Salmon				Light Harvester				Medium Harvester				Heavy Harvester				Community Totals			
	N	n	C	%C	N	n	C	%C	N	n	C	%C	N	n	C	%C	N	n	C	%C	N	n	C	%C
Hooper Bay	13	5	3	60.0	72	7	7	100.0	87	26	24	92.3	18	18	18	100.0	0	0	0	-	190	56	52	92.8
Scammon Bay	0	0	0	-	22	5	4	80.0	52	16	11	68.7	2	2	2	100.0	0	0	0	-	76	23	17	73.9
Coastal District	13	5	3	60.0	94	12	11	91.6	139	42	35	83.3	20	20	20	100.0	0	0	0	-	268	79	69	87.3
Sledovia's Pond	0	0	0	-	8	8	5	62.5	25	25	20	80.0	4	4	2	50.0	0	0	0	-	37	37	27	72.9
Alakanuk	1	1	1	100.0	42	5	5	100.0	77	23	22	95.6	5	5	5	100.0	0	0	0	-	125	34	33	97.0
Ermonak	1	1	1	100.0	78	23	23	100.0	67	34	31	91.1	10	10	10	100.0	2	2	2	100.0	158	70	67	95.7
Kolik	0	0	0	-	31	5	4	80.0	49	15	12	80.0	11	11	11	100.0	3	3	3	100.0	94	34	30	88.2
District 1	2	2	2	100.0	159	41	37	90.2	218	97	85	97.6	30	30	29	93.3	5	5	5	100.0	414	175	157	89.7
Mountain Village	0	0	0	-	41	5	5	100.0	86	26	25	96.1	8	8	7	87.5	1	1	1	100.0	136	40	38	95.0
Pikas Point	0	0	0	-	6	6	4	66.6	19	19	17	89.4	6	6	6	100.0	0	0	0	-	31	31	27	87.0
St. Mary's	0	0	0	-	45	5	4	80.0	58	17	15	88.2	14	14	14	100.0	2	2	2	100.0	119	38	35	92.1
Pilot Station	1	1	1	100.0	45	14	11	78.5	46	23	20	86.9	1	1	1	100.0	1	1	1	100.0	94	40	34	85.0
Marshall	1	1	0	0.0	15	5	5	100.0	41	12	11	91.6	5	5	4	80.0	0	0	0	-	62	23	20	86.9
District 2	2	2	1	50.0	152	35	29	82.8	250	97	88	90.7	34	34	32	94.1	4	4	4	100.0	442	172	154	89.5
Russian Mission	1	1	1	100.0	17	5	4	80.0	29	9	9	100.0	4	4	4	100.0	2	2	1	50.0	53	21	19	90.4
Holy Cross	0	0	0	-	19	5	4	80.0	38	19	18	94.7	6	6	6	100.0	0	0	0	-	63	30	28	93.3
Shageluk	0	0	0	-	17	17	16	94.1	9	9	9	100.0	2	2	1	50.0	6	6	6	100.0	34	34	32	94.1
District 3	1	1	1	100.0	53	27	24	88.8	76	37	36	97.2	12	12	11	91.6	8	8	7	87.5	150	85	79	92.9
Arvik	0	0	0	-	16	16	15	93.7	20	20	20	100.0	2	2	2	100.0	0	0	0	-	38	38	37	97.3
Grayling	0	0	0	-	24	5	5	100.0	25	8	8	100.0	7	7	5	71.4	1	1	1	100.0	57	21	19	90.4
Kaltag	0	0	0	-	13	5	5	100.0	30	9	7	77.7	7	7	7	100.0	2	2	2	100.0	52	23	21	91.3
Nulato	0	0	0	-	42	5	5	100.0	35	11	10	90.9	9	9	9	100.0	0	0	0	-	86	25	24	96.0
Koyukuk	2	2	1	50.0	24	5	3	60.0	15	5	5	100.0	4	4	4	100.0	1	1	1	100.0	46	17	14	82.3
Galena	2	2	2	100.0	62	6	5	83.3	44	13	13	100.0	9	9	8	88.6	5	5	5	100.0	122	35	31	88.5
Ruby	1	1	1	100.0	37	5	4	80.0	18	5	4	80.0	2	2	2	100.0	4	4	4	100.0	62	17	15	88.2
Huslia	0	0	0	-	48	5	5	100.0	13	5	4	80.0	7	7	7	100.0	2	2	1	50.0	70	19	17	89.4
Hughes	0	0	0	-	17	17	13	76.4	1	1	1	100.0	5	5	5	100.0	1	1	1	100.0	24	24	20	83.3
Altakaket	3	3	2	66.6	21	5	4	80.0	15	5	4	80.0	5	5	5	100.0	3	3	3	100.0	47	21	18	85.7
Alatna	1	1	0	0.0	7	7	6	85.7	2	2	1	50.0	0	0	0	-	0	0	0	-	10	10	7	70.0
Bettes	0	0	0	-	22	22	17	77.2	1	1	1	100.0	2	2	2	100.0	0	0	0	-	25	25	20	80.0
District 4	9	9	8	88.6	333	103	87	84.4	219	85	78	91.7	59	59	54	91.5	19	19	18	94.7	639	275	243	88.3
Tanana	2	2	0	0.0	64	19	9	47.3	16	8	8	100.0	11	11	10	90.9	12	12	12	100.0	105	52	39	75.0
Rampart	0	0	0	-	9	9	8	88.8	2	2	2	100.0	13	13	13	100.0	1	1	0	0.0	25	25	23	92.0
Stevens Village	0	0	0	-	10	10	9	90.0	11	11	9	81.8	6	6	6	100.0	2	2	2	100.0	29	29	26	89.6
Birch Creek	0	0	0	-	10	10	8	80.0	4	4	3	75.0	0	0	0	-	0	0	0	-	14	14	11	78.5
Beaver	0	0	0	-	18	18	14	77.7	9	9	7	77.7	5	5	3	60.0	0	0	0	-	32	32	24	75.0
Fort Yukon	7	5	5	100.0	121	12	11	91.6	48	14	12	85.7	17	17	14	82.3	6	6	6	100.0	199	54	48	88.8
Venche	0	0	0	-	38	5	4	80.0	8	5	5	100.0	5	5	4	80.0	3	3	3	100.0	54	18	16	88.8
Chalkyitsuk	0	0	0	-	22	22	19	86.3	4	4	4	100.0	3	3	3	100.0	0	0	0	-	29	29	26	89.6
District 5	9	7	5	71.4	292	105	82	78.0	102	57	50	87.7	60	60	53	88.3	24	24	23	95.8	487	253	213	84.1
Survey Totals	36	26	18	69.2	1,083	323	270	83.5	1,004	415	372	89.6	215	215	198	92.0	60	60	57	95.0	2,398	1,039	915	88.0

a Total number of households (N), the sample size (n), the number of households contacted (C), and the percent of the sampled households that were contacted (%C). Dashes indicate indefinable values.

Table 3. Estimated number of people in households in surveyed villages, by harvest stratum, with village and district totals, Yukon Area, 1997. a

Community	Unknown				Does Not Harvest Salmon				Light Harvester				Medium Harvester				Heavy Harvester				Combined			
	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	Total		Est. CI(95%)	
																					N	n	Total	(+/-)
Hooper Bay	13	3	3.7	0.8	72	7	3.6	1.0	87	24	4.9	0.4	18	18	5.2	0.0	0	0	-	-	190	52	830	160
Scammon Bay	0	0	-	-	22	4	4.0	1.5	52	11	5.2	0.6	2	2	5.0	0.0	0	0	-	-	76	17	372	91
Coastal District	13	3	3.7	0.8	94	11	3.7	0.9	139	35	5.1	0.3	20	20	5.2	0.0	0	0	-	-	266	69	1,202	184
Sheldon's Point	0	0	-	-	8	5	3.4	0.3	25	20	4.5	0.2	4	2	3.5	0.4	0	0	-	-	37	27	154	13
Alakanuk	1	1	11.0	0.0	42	4	4.3	0.6	77	22	4.8	0.6	5	5	4.2	0.0	0	0	-	-	125	32	585	105
Emmonak	1	1	7.0	0.0	78	23	3.6	0.5	67	31	4.9	0.2	10	10	3.5	0.0	2	2	6.0	0.0	158	67	664	79
Kotlik	0	0	-	-	31	4	2.5	1.1	49	12	5.5	0.3	11	11	5.5	0.0	3	3	3.7	0.0	94	30	418	75
District 1	2	2	9.0	0.0	159	36	3.6	0.4	218	85	5.0	0.2	30	28	4.3	0.1	5	5	4.6	0.0	414	156	1,827	152
Mountain Village	0	0	-	-	41	5	2.2	0.6	86	25	6.0	0.4	8	7	6.1	0.3	1	1	6.0	0.0	136	38	661	86
Pikias Point	0	0	-	-	6	4	1.3	0.1	19	17	4.3	0.1	6	6	5.8	0.0	0	0	-	-	31	27	125	6
St. Mary's	0	0	-	-	45	4	2.5	0.9	58	15	5.0	0.5	14	14	5.1	0.0	2	2	4.0	0.0	119	35	485	101
Pilot Station	1	1	5.0	0.0	45	11	4.7	0.7	46	20	5.6	0.4	1	1	6.0	0.0	1	1	10.0	0.0	94	34	494	76
Marshall	1	0	-	-	15	5	2.6	1.0	41	11	3.6	0.5	5	4	5.3	0.2	0	0	-	-	62	20	214	54
District 2	2	1	2.5	0.0	152	29	3.0	0.4	250	88	5.2	0.2	34	32	5.5	0.1	4	4	6.0	0.0	442	154	1,979	162
Russian Mission	1	1	2.0	0.0	17	4	4.5	1.2	29	9	5.0	0.4	4	4	5.5	0.0	2	1	2.0	-	53	19	250	47
Holy Cross	0	0	-	-	19	4	2.5	0.4	38	18	4.1	0.2	6	6	4.7	0.0	0	0	-	-	63	28	232	27
Shageluk	0	0	-	-	17	16	3.4	0.1	9	9	3.4	0.0	2	1	2.0	-	6	6	3.8	0.0	34	32	115	5
District 3	1	1	2.0	0.0	53	24	3.4	0.4	76	36	4.4	0.2	12	11	4.5	0.0	8	7	3.4	0.0	150	79	597	55
Anvik	0	0	-	-	16	15	2.3	0.1	20	20	3.3	0.0	2	1	5.0	-	0	0	-	-	38	36	113	3
Grayling	0	0	-	-	24	5	3.8	1.2	25	8	4.7	0.4	7	5	4.6	0.4	1	1	2.0	0.0	57	19	244	62
Kallag	0	0	-	-	13	5	2.4	0.4	30	7	4.8	0.4	7	7	4.3	0.0	2	2	4.5	0.0	52	21	216	30
Nulato	0	0	-	-	42	5	2.6	0.8	35	9	3.8	0.7	9	9	4.7	0.0	0	0	-	-	86	23	287	79
Koyukuk	2	1	4.0	-	24	3	2.7	1.1	15	5	3.6	0.7	4	4	4.0	0.0	1	1	2.0	0.0	46	14	144	57
Galena	2	2	2.5	0.0	62	5	2.4	0.7	44	12	3.5	0.3	9	6	3.8	0.5	5	5	3.0	0.0	122	30	357	93
Ruby	1	1	1.0	0.0	37	4	3.5	0.6	18	4	2.2	0.2	2	2	3.5	0.0	4	4	3.3	0.0	62	15	191	45
Hustlia	0	0	-	-	48	4	3.0	1.0	13	4	3.0	0.5	7	7	5.7	0.0	2	1	3.0	-	70	16	229	98
Hughes	0	0	-	-	17	13	2.6	0.2	1	1	2.0	0.0	5	4	4.0	0.4	1	1	5.0	0.0	24	19	71	7
Allakaket	3	2	1.0	0.0	21	4	3.3	0.9	15	4	3.5	1.4	5	5	3.4	0.0	3	3	5.3	0.0	47	18	157	57
Alatna	1	0	-	-	7	6	2.0	0.2	2	1	5.0	-	0	0	-	-	0	0	-	-	10	7	24	3
Bottles	0	0	-	-	22	16	1.9	0.1	1	1	1.0	0.0	2	2	3.0	0.0	0	0	-	-	25	19	48	6
District 4	9	6	1.9	0.0	333	85	2.8	0.3	219	76	3.7	0.2	59	52	4.3	0.1	19	18	3.6	0.0	639	237	2,081	195
Tanana	2	0	-	-	64	9	1.9	0.4	16	8	3.5	0.4	11	10	3.0	0.2	12	12	3.8	0.0	105	39	255	51
Rampart	0	0	-	-	9	7	1.4	0.1	2	2	1.0	0.0	13	13	3.9	0.0	1	0	-	-	25	22	86	2
Stevens Village	0	0	-	-	10	8	1.9	0.2	11	9	2.7	0.3	8	6	4.2	0.0	2	1	1.0	-	29	25	76	8
Birch Creek	0	0	-	-	10	8	2.1	0.2	4	3	5.0	1.0	0	0	-	-	0	0	-	-	14	11	41	9
Beaver	0	0	-	-	18	14	2.2	0.2	9	6	2.8	0.2	5	3	1.7	0.2	0	0	-	-	32	23	74	9
Fort Yukon	7	5	2.6	0.4	121	11	2.4	0.4	48	12	2.8	0.4	17	14	4.3	0.2	6	4	4.3	0.4	199	46	539	102
Venetie	0	0	-	-	38	4	2.5	0.5	8	5	4.4	0.5	5	4	4.0	0.5	3	3	3.0	0.0	54	16	159	37
Chalkyitsik	0	0	-	-	22	19	2.1	0.1	4	4	3.7	0.0	3	3	4.3	0.0	0	0	-	-	29	26	74	5
District 5	9	5	2.6	0.3	292	81	2.2	0.2	102	49	3.1	0.2	60	53	3.7	0.1	24	20	3.4	0.0	487	208	1,284	121
Survey Totals	36	18	3.0	0.3	1,083	266	2.9	0.2	1,004	369	4.5	0.1	215	199	4.4	0.0	60	54	3.7	0.0	2,398	903	8,064	373

a The total number of households (N), the number of households contacted (n), standard error (SE), and includes 95 percent confidence interval, CI (95%). Dashes indicate indefinable values.

Table 4. Estimated number of subsistence fishing households in surveyed villages, by harvest stratum, with village and district totals, Yukon Area, 1997 ^a

Community	Unknown				Does Not Harvest Salmon				Light Harvester				Medium Harvester				Heavy Harvester				Combined			
	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	Total		Est	CI(95%)
																					N	n		
Hooper Bay	13	3	0.0	0.0	72	7	0.1	0.1	87	24	0.8	0.0	18	18	0.7	0.0	0	0	-	-	190	52	96	22
Scammon Bay	0	0	-	-	22	4	0.0	0.0	52	11	0.7	0.1	2	2	1.0	0.0	0	0	-	-	76	17	40	13
Coastal District	13	3	0.0	0.0	94	11	0.1	0.1	139	35	0.8	0.0	20	20	0.8	0.0	0	0	-	-	266	69	136	26
Steldon's Point	0	0	-	-	8	5	0.2	0.1	25	20	0.7	0.0	4	2	1.0	0.0	0	0	-	-	37	27	24	3
Alakanuk	1	1	1.0	0.0	42	5	0.4	0.2	77	22	0.6	0.0	5	5	1.0	0.0	0	0	-	-	125	33	75	23
Emmonak	1	1	0.0	0.0	78	23	0.2	0.1	67	31	0.7	0.0	10	10	0.8	0.0	2	2	1.0	0.0	158	67	77	14
Kotik	0	0	-	-	31	4	0.3	0.2	49	12	0.5	0.1	11	11	0.7	0.0	3	3	1.0	0.0	94	30	47	19
District 1	2	2	0.5	0.0	159	37	0.3	0.1	218	65	0.7	0.0	30	28	0.8	0.0	5	5	1.0	0.0	414	157	223	33
Mountain Village	0	0	-	-	41	5	0.2	0.2	86	25	0.8	0.0	8	7	1.0	0.0	1	1	1.0	0.0	136	38	89	16
Pitkas Point	0	0	-	-	6	4	0.0	0.0	19	17	0.8	0.0	6	6	1.0	0.0	0	0	-	-	31	27	18	1
St. Mary's	0	0	-	-	45	4	0.8	0.2	58	15	0.7	0.1	14	14	1.0	0.0	2	2	1.0	0.0	119	35	92	24
Pilot Station	1	1	0.0	0.0	45	11	0.5	0.1	46	20	0.6	0.0	1	1	1.0	0.0	1	1	1.0	0.0	94	34	52	14
Marshall	1	0	-	-	15	5	0.0	0.0	41	11	0.7	0.1	5	4	1.0	0.0	0	0	-	-	62	20	35	10
District 2	2	1	0.0	0.0	152	29	0.4	0.1	250	88	0.7	0.0	34	32	1.0	0.0	4	4	1.0	0.0	442	154	286	35
Hudson Mission	1	1	0.0	0.0	17	4	0.0	0.0	29	9	0.4	0.1	4	4	0.8	0.0	2	1	0.0	-	53	19	16	8
Holy Cross	0	0	-	-	19	4	0.3	0.2	38	18	0.7	0.0	6	6	1.0	0.0	0	0	-	-	63	28	38	10
Shageyak	0	0	-	-	17	16	0.4	0.0	9	9	0.6	0.0	2	1	1.0	-	6	6	1.0	0.0	34	32	21	1
District 3	1	1	0.0	0.0	53	24	0.2	0.1	76	36	0.6	0.0	12	11	0.9	0.0	8	7	0.8	0.0	150	79	75	13
Arvik	0	0	-	-	16	15	0.1	0.0	20	20	0.6	0.0	2	2	1.0	0.0	0	0	-	-	38	37	17	1
Grayling	0	0	-	-	24	5	0.8	0.2	25	8	0.7	0.1	7	5	1.0	0.0	1	1	1.0	0.0	57	19	46	11
Kallag	0	0	-	-	13	5	0.4	0.2	30	7	0.7	0.1	7	7	0.9	0.0	2	2	0.5	0.0	52	21	34	11
Nulato	0	0	-	-	42	5	0.2	0.2	35	10	0.7	0.1	9	9	0.8	0.0	0	0	-	-	86	24	40	18
Koyukuk	2	1	1.0	-	24	3	0.0	0.0	15	5	0.6	0.2	4	4	1.0	0.0	1	1	1.0	0.0	46	14	16	6
Galena	2	2	0.0	0.0	62	5	0.2	0.2	44	13	0.4	0.1	9	6	0.8	0.1	5	5	1.0	0.0	122	31	45	26
Ruby	1	1	1.0	0.0	37	4	0.0	0.0	18	4	0.7	0.2	2	2	0.0	0.0	4	4	1.0	0.0	62	15	19	8
Huslia	0	0	-	-	48	5	0.0	0.0	13	4	0.2	0.2	7	7	0.3	0.0	2	1	0.0	-	70	17	5	5
Hughes	0	0	-	-	17	13	0.1	0.0	1	1	1.0	0.0	5	5	0.8	0.0	1	1	1.0	0.0	24	20	7	1
Allakaket	3	2	0.0	0.0	21	4	0.3	0.2	15	4	0.5	0.2	5	5	0.8	0.0	3	3	1.0	0.0	47	18	20	12
Atalna	1	0	-	-	7	6	0.2	0.1	2	1	1.0	-	0	0	-	-	0	0	-	-	10	7	3	1
Bettles	0	0	-	-	22	17	0.1	0.0	1	1	1.0	0.0	2	2	0.5	0.0	0	0	-	-	25	20	3	1
District 4	9	6	0.3	0.0	333	87	0.2	0.1	219	78	0.6	0.0	59	54	0.8	0.0	19	18	0.8	0.0	639	243	255	38
Tanana	2	0	-	-	64	9	0.1	0.1	16	8	0.6	0.1	11	10	0.6	0.1	12	12	1.0	0.0	105	39	36	14
Rampart	0	0	-	-	9	8	0.3	0.1	2	2	0.5	0.0	13	13	0.5	0.0	1	0	-	-	25	23	10	1
Stevens Village	0	0	-	-	10	9	0.1	0.0	11	9	0.6	0.0	6	6	0.7	0.0	2	2	1.0	0.0	29	26	14	2
Birch Creek	0	0	-	-	10	8	0.0	0.0	4	3	0.8	0.1	0	0	-	-	0	0	-	-	14	11	3	1
Beaver	0	0	-	-	18	14	0.1	0.1	9	7	0.7	0.0	5	3	1.0	0.0	0	0	-	-	32	24	14	2
Fort Yukon	7	5	0.4	0.1	121	11	0.0	0.0	48	12	0.2	0.1	17	14	0.7	0.1	6	6	0.7	0.0	199	48	31	11
Venohé	0	0	-	-	38	4	0.0	0.0	8	5	0.2	0.1	5	4	0.5	0.1	3	3	0.7	0.0	54	16	6	2
Chalkyitsik	0	0	-	-	22	19	0.0	0.0	4	4	0.2	0.0	3	3	1.0	0.0	0	0	-	-	29	26	4	0
District 5	9	5	0.3	0.1	292	82	0.0	0.0	102	50	0.4	0.0	60	53	0.7	0.0	24	23	0.8	0.0	487	213	118	18
Survey Totals	36	18	0.2	0.0	1,083	270	0.2	0.0	1,004	372	0.7	0.0	215	198	0.8	0.0	60	57	0.9	0.0	2,388	915	1,093	70

^a The total number of households (N), the number of households contacted (n), standard error (SE), and includes 95 percent confidence interval, CI (95%). Dashes indicate indefinable values.

Table 5. Primary fishing gear used to harvest salmon by surveyed subsistence fishing households, Yukon Area, 1997.

Community	Total Number of Households	Number of Households Surveyed	Number of Households that Subsistence Fished	Primary Gear Used						
				Set Gillnets	Drift Gillnets	Fishwheels	Hook and Line			
Hooper Bay	190	52 (27.4%)	34 (65.4%)	34 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Scammon Bay	76	17 (22.4%)	10 (58.8%)	10 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Coastal District	266	69 (25.9%)	44 (63.8%)	44 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Sheldon's Point	37	27 (73.0%)	18 (66.7%)	18 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Atakanuk	125	33 (26.4%)	23 (69.7%)	16 (72.7%)	6 (27.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Ermonak	158	67 (42.4%)	38 (56.7%)	11 (28.9%)	27 (71.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Kotik	94	30 (31.9%)	19 (63.3%)	12 (63.2%)	7 (36.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
District 1	414	157 (37.9%)	98 (62.4%)	57 (58.8%)	40 (41.2%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Mountain Village	136	38 (27.9%)	30 (78.9%)	3 (10.0%)	27 (90.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Pitkas Point	31	27 (87.1%)	17 (63.0%)	1 (5.9%)	16 (94.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
St. Mary's	119	35 (29.4%)	30 (85.7%)	1 (3.3%)	29 (96.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Pilot Station	94	34 (36.2%)	20 (58.8%)	4 (20.0%)	16 (80.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Marshall	62	20 (32.3%)	12 (60.0%)	5 (41.7%)	7 (58.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
District 2	442	154 (34.8%)	109 (70.8%)	14 (12.8%)	95 (87.2%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Russian Mission	53	19 (35.8%)	7 (36.8%)	2 (28.6%)	5 (71.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Holy Cross	63	28 (44.4%)	20 (71.4%)	5 (25.0%)	14 (70.0%)	0 (0.0%)	1 (5.0%)	0 (0.0%)	0 (0.0%)	
Shageluk	34	32 (94.1%)	20 (62.5%)	20 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
District 3	150	79 (52.7%)	47 (59.5%)	27 (57.4%)	19 (40.4%)	0 (0.0%)	1 (2.1%)	0 (0.0%)	0 (0.0%)	
Anvik	38	37 (97.4%)	17 (45.9%)	11 (64.7%)	5 (29.4%)	1 (5.9%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Grayling	57	19 (33.3%)	16 (84.2%)	7 (43.8%)	9 (56.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Kaltag	52	21 (40.4%)	14 (66.7%)	0 (0.0%)	11 (78.6%)	3 (21.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Nulato	86	24 (27.9%)	15 (62.5%)	3 (20.0%)	12 (80.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Koyukuk	46	14 (30.4%)	9 (64.3%)	4 (44.4%)	2 (22.2%)	3 (33.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Galena	122	31 (25.4%)	17 (54.8%)	4 (23.5%)	5 (29.4%)	8 (47.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Ruby	62	15 (24.2%)	8 (53.3%)	5 (62.5%)	0 (0.0%)	3 (37.5%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Huslia	70	17 (24.3%)	3 (17.6%)	3 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Hughes	24	20 (83.3%)	7 (35.0%)	7 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Allakaket	47	18 (38.3%)	10 (55.6%)	10 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Alatna	10	7 (70.0%)	2 (28.6%)	2 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Bettles	25	20 (80.0%)	3 (15.0%)	3 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
District 4	639	243 (38.0%)	121 (49.8%)	59 (48.8%)	44 (36.4%)	18 (14.9%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Tanana	105	39 (37.1%)	24 (61.5%)	10 (41.7%)	0 (0.0%)	14 (58.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Rampart	25	23 (92.0%)	10 (43.5%)	9 (90.0%)	0 (0.0%)	1 (10.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Stevens Village	29	26 (89.7%)	13 (50.0%)	10 (76.9%)	0 (0.0%)	3 (23.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Birch Creek	14	11 (78.6%)	2 (18.2%)	2 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Beaver	32	24 (75.0%)	10 (41.7%)	10 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Fort Yukon	199	48 (24.1%)	19 (39.6%)	8 (44.4%)	0 (0.0%)	10 (55.6%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Venetie	54	16 (29.6%)	5 (31.3%)	4 (80.0%)	0 (0.0%)	1 (20.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Chalkyitsik	29	26 (89.7%)	4 (15.4%)	4 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
District 5	487	213 (43.7%)	87 (40.8%)	58 (66.7%)	0 (0.0%)	29 (33.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Survey Totals	2,398	915 (38.2%)	506 (55.3%)	259 (51.3%)	198 (39.2%)	47 (9.3%)	1 (0.2%)	0 (0.0%)	0 (0.0%)	

Table 6. Subsistence salmon harvest estimates and corresponding confidence intervals (CI) for surveyed villages, Yukon Area, 1997

Community	Catch Strata Combined		Chinook Salmon		Summer Chum Salmon		Fall Chum Salmon		Coho Salmon	
	Total Households	Households Contacted ^a	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)
Hooper Bay	190	52	613	316	12,310	3,285	0	0	0	0
Scammon Bay	76	17	526	313	3,401	1,764	0	0	0	0
Coastal District	266	69	1,139	445	15,711	3,729	0	0	0	0
Sheldon's Point	37	27	970	223	2,603	611	337	201	51	36
Alakanuk	125	33	2,058	894	7,443	2,940	900	618	882	653
Emmonak	158	67	1,735	479	8,215	1,840	146	107	22	22
Kotik	94	30	962	440	4,448	2,396	283	0	275	42
District 1	414	157	5,725	1,128	22,709	4,260	1,666	658	1,230	656
Mountain Village	136	37	2,079	757	11,310	3,031	1,736	1,132	780	500
Pitkas Point	31	27	793	65	747	75	178	34	427	25
St. Mary's	119	35	2,582	809	8,874	3,877	310	164	329	298
Pilot Station	94	34	2,043	737	2,112	712	109	135	40	31
Marshall	62	20	1,511	686	1,508	883	388	558	256	175
District 2	442	153	9,018	1,499	24,551	5,057	2,721	1,281	1,832	659
Russian Mission	53	19	1,459	605	585	359	0	0	10	16
Holy Cross	63	28	3,472	1,024	487	158	420	45	20	0
Shageluk	34	32	1,300	89	9,244	395	367	0	736	126
District 3	150	79	6,311	1,193	10,316	555	787	45	766	127
Anvik	38	37	951	3	6,306	0	514	16	24	0
Grayling	57	19	2,391	951	2,446	2,467	1,531	830	1,055	642
Kaitag	52	21	1,036	334	73	7	1,142	630	60	0
Nulato	86	24	1,576	745	115	42	697	573	444	260
Koyukuk	46	14	851	256	739	120	1,954	1,164	345	10
Galena	122	31	2,350	1,226	4,575	3,897	3,370	832	1,002	563
Ruby	62	15	2,260	2,236	3,286	3,514	2,195	1,563	474	31
Huslia	70	17	57	0	840	5	10	0	50	0
Hughes	24	20	34	0	1,579	37	51	0	250	0
Allakaket	47	18	423	260	3,916	1,261	270	315	50	63
Alatna	10	7	38	0	145	35	0	0	0	0
Bettles	25	20	39	0	210	4	0	0	0	0
District 4	639	243	12,606	2,866	24,230	5,943	11,734	2,450	3,754	895
Tanana	105	39	3,596	529	2,526	346	25,058	826	3,045	372
Rampart	25	23	2,203	643	738	37	646	0	34	0
Stevens Village	29	26	2,070	275	191	45	1,585	84	1	1
Birch Creek	14	11	373	228	1	1	0	0	3	3
Beaver	32	24	1,859	637	2	2	243	217	0	0
Fort Yukon	199	48	3,145	1,018	133	37	6,119	1,867	248	200
Venetie	54	16	314	274	76	0	1,564	496	7	5
Chalkyitsik	29	26	0	0	0	0	936	0	7	0
District 5	487	213	13,560	1,622	3,667	353	36,151	2,132	2,345	423
Survey Totals	2,398	914	47,759	3,998	101,184	9,660	53,059	3,553	10,927	1,364

^a The number of households contacted per species may vary. The number of households indicated is the greatest number of households contacted for a given species

Table 7. Surveyed villages estimated chinook salmon subsistence harvest by fishing location, Yukon Area, 1997

COMMUNITY	Coastal District	Districts			Subdistricts							River Drainages				Total by Community	
		1	2	3 a	4A b	4B	4C	5A	5B	5C	5D c	Innoko	Koyukuk	Chandalar	Porcupine d		Black
Hooper Bay	613	0															613
Scammon Bay	337	189															526
Coastal District	950	189															1,139
Sheldon's Point	13	957															970
Alakanuk	0	2,058															2,058
Emmonak	0	1,735															1,735
Kotik	20	942															962
District 1	33	5,692															5,725
Mountain Village		1,027	1,052														2,079
Pitkas Point		85	708														793
St. Mary's		539	2,053														2,592
Pilot Station		113	1,930														2,043
Marshall		0	1,511														1,511
District 2		1,764	7,254														9,018
Russian Mission	0		1,459	0								0					1,459
Holy Cross	0		3,472	0								0					3,472
Shageluk	240		0	100								1,040					1,380
District 3	240		4,931	100								1,040					6,311
Anvik				951	0	0							0				951
Grayling				2,391	0	0							0				2,391
Kaltag				1,036	0	0							0				1,036
Nulato				1,576	0	0							0				1,576
Koyukuk				460	371	0							0				831
Galena				451	932	967							0				2,350
Ruby				0	151	2,109							0				2,260
Huslia				0	0	0							57				57
Hughes				0	0	0							34				34
Allakaket				0	0	0							423				423
Alatna				0	0	0							38				38
Bettles				0	0	0							39				39
District 4				6,885	1,454	3,076							591				12,006
Tanana							426	3,170	0	0				0	0		3,596
Rampart							0	0	2,203	0				0	0		2,203
Stevens Village							0	0	562	1,508				0	0		2,070
Birch Creek							0	0	0	373				0	0		373
Beaver							0	0	0	1,859				0	0		1,859
Fort Yukon							0	0	0	3,034				0	111		3,145
Venette							0	0	0	313				1	0		314
Chaikytik							0	0	0	0				0	0		0
District 5							426	3,170	2,765	7,087			1	111			13,560
Survey Totals	1,223	7,645	7,254	4,931	6,985	1,454	3,076	426	3,170	2,765	7,087	1,040	591	1	111	0	47,559

a Except for the Innoko River drainage.

b Except for the Koyukuk River drainage.

c Except for the Porcupine and Chandalar River drainages.

d Except for the Black River drainage.

Table 8. Surveyed villages estimated summer chum salmon subsistence harvest by fishing location, Yukon Area, 1997.

COMMUNITY	Coastal District	Districts				Subdistricts					River Drainages				Total by Community		
		1	2	3 a	4A b	4B	4C	5A	5B	5C	5D c	Innoko	Koyukuk	Chandalar		Porcupine d	Black
Hooper Bay	12,310	0															12,310
Scammon Bay	1,581	1,820															3,401
Coastal District	13,891	1,820															15,711
Sheldon's Point	125	2,478															2,603
Alakanuk	0	7,443															7,443
Emmonak	0	8,215															8,215
Kotik	231	4,217															4,448
District 1	356	22,353															22,709
Mountain Village		3,465	7,845														11,310
Pitkas Point		125	622														747
St. Mary's		1,223	7,651														8,874
Pilot Station		299	1,813														2,112
Marshall		0	1,508														1,508
District 2		5,112	19,439														24,551
Russian Mission	0			585								0					585
Holy Cross	0			487								0					487
Shageluk	2,063			0								7,181					9,244
District 3	2,063			1,072								7,181					10,316
Anvik				6,306	0	0						0	0				6,306
Grayling				2,446	0	0						0	0				2,446
Kaitag				73	0	0						0	0				73
Nulato				115	0	0						0	0				115
Koyukuk				355	289	0						75	20				739
Galena				0	4,043	532						0	0				4,575
Ruby				0	944	2,342						0	0				3,286
Husliu				0	0	0						0	840				840
Hughes				0	0	0						0	1,579				1,579
Allakaket				0	0	0						0	3,916				3,916
Alatna				0	0	0						0	145				145
Bellies				0	0	0						0	210				210
District 4				9,295	6,276	2,874						75	6,710				24,230
Tanana								234	2,292	0	0			0	0		2,526
Rampart								0	0	738	0			0	0		738
Stevens Village								0	0	79	112			0	0		191
Birch Creek								0	0	0	1			0	0		1
Beaver								0	0	0	2			0	0		2
Fort Yukon								0	0	0	67			0	66		133
Venetie								0	0	0	0			76	0		76
Chalkyitsik								0	0	0	0			0	0		0
District 5								234	2,292	817	182			76	66		3,667
Survey Totals	16,310	29,285	19,439	1,072	9,295	6,276	2,874	234	2,292	817	182	7,256	6,710	76	66	0	101,184

a Except for the Innoko River drainage.

b Except for the Koyukuk River drainage.

c Except for the Porcupine and Chandalar River drainages.

d Except for the Black River drainage.

Table 9. Surveyed villages estimated fall chum salmon subsistence harvest by fishing location, Yukon Area, 1997.

COMMUNITY	Coastal District	Districts			Subdistricts					River Drainages				Total by Community			
		1	2	3 a	4A b	4B	4C	5A	5B	5C	5D c	Innoko	Koyukuk		Chandalar	Porcupine d	Black
Hooper Bay																	0
Scammon Bay																	0
<i>Coastal District</i>																	0
Sheldon's Point		337															337
Alakanuk		900															900
Emmonak		146															146
Kotik		283															283
<i>District 1</i>		1,666															1,666
Mountain Village		415	1,321														1,736
Pitkas Point		20	158														178
St. Mary's		0	310														310
Pilot Station		0	109														109
Marshall		0	388														388
<i>District 2</i>		435	2,286														2,721
Russian Mission				0	0							0					0
Holy Cross				420	0							0					420
Shageeluk				0	157							210					367
<i>District 3</i>				420	157							210					787
Arvik					514	0	0					0	0				514
Grayling					1,531	0	0					0	0				1,531
Kaitag					1,142	0	0					0	0				1,142
Nulato					697	0	0					0	0				697
Koyukuk					669	535	0					750	0				1,954
Galena					124	2,446	800					0	0				3,370
Ruby					0	232	1,963					0	0				2,195
Hustlia					0	0	0					0	10				10
Hughes					0	0	0					0	51				51
Allakaket					0	0	0					0	270				270
Alatna					0	0	0					0	0				0
Bettles					0	0	0					0	0				0
<i>District 4</i>					4,677	3,213	2,763					750	331				11,734
Tanana								9,165	15,893	0	0			0	0	0	25,058
Rampart								0	0	646	0			0	0	0	646
Stevens Village								0	0	234	1,351			0	0	0	1,585
Birch Creek								0	0	0	0			0	0	0	0
Beaver								0	0	0	243			0	0	0	243
Fort Yukon								0	0	0	6,099			0	20	0	6,119
Venotie								0	0	0	0			1,514	0	50	1,564
Chaikyltsik								0	0	0	0			0	0	936	936
<i>District 5</i>								9,165	15,893	880	7,693			1,514	20	986	36,151
Survey Totals	0	2,101	2,286	420	4,834	3,213	2,763	9,165	15,893	880	7,693	960	331	1,514	20	986	53,059

a Except for the Innoko River drainage.

b Except for the Koyukuk River drainage.

c Except for the Porcupine and Chandalar River drainages.

d Except for the Black River drainage.

Table 10. Surveyed villages estimated coho salmon subsistence harvest by fishing location, Yukon Area, 1997.

COMMUNITY	Coastal District	Districts		Subdistricts								River Drainages				Total by Community	
		1	2	3 a	4A b	4B	4C	5A	5B	5C	5D c	Innoko	Koyukuk	Chandalar	Porcupine d		Black
Hooper Bay																	0
Scammon Bay																	0
Coastal District																	0
Sheldon's Point		51															51
Atkasuk		882															882
Emmonak		22															22
Kotik		275															275
District 1		1,230															1,230
Messian Village		209	491														700
Pitkas Point		270	157														427
St Mary's		0	329														329
Pilot Station		0	40														40
Marshall		0	256														256
District 2		559	1,273														1,832
Hussain Mission				10	0								0				10
Holy Cross				20	0								0				20
Shageluk				0	150								506				736
District 3				30	150								506				766
Arak					24	0	0						0	0			24
Grayling					1,055	0	0						0	0			1,055
Kaltag					60	0	0						0	0			60
Nulato					444	0	0						0	0			444
Koyukuk					338	1	0						0	0			345
Galena					0	912	90						0	0			1,002
Ruby					0	319	155						0	0			474
Huslia					0	0	0						0	50			50
Hughes					0	0	0						0	250			250
Allakaket					0	0	0						0	50			50
Alutna					0	0	0						0	0			0
Beetles					0	0	0						0	0			0
District 4					1,921	1,232	245						6	350			3,754
Tanana								2,206	839	0	0			0		0	3,045
Rampart								0	0	34	0			0		0	34
Slevens Village								0	0	1	0			0		0	1
Birch Creek								0	0	0	3			0		0	3
Beaver								0	0	0	0			0		0	0
Fort Yukon								0	0	0	248			0		0	248
Vendie								0	0	0	0			0		1	1
Chalkytsik								0	0	0	0			0		7	7
District 5								2,206	839	35	251			6		8	3,345
Survey Totals	0	1,789	1,273	30	2,071	1,232	245	2,206	839	35	251	592	350	6	0	8	10,927

a Except for the Innoko River drainage.

b Except for the Koyukuk River drainage.

c Except for the Porcupine and Chandalar River drainages.

d Except for the Black River drainage.

Table 11. Estimated or reported subsistence harvest of pink salmon and other select miscellaneous fish species by surveyed villages, Yukon Area, 1997

Community	Harvest Strata Combined Total Households Households Contacted a		Estimated Subsistence Harvest with Corresponding Confidence Intervals (CI) (Expanded to Estimate Survey Village Harvest)										Reported Numbers of Miscellaneous Fish Species, (Not Expanded)							
			Pink Salmon		Whitefish b				Pike		Sheefish		Burbot	Lamprey	Tomcod	Grayling	Sucker	Arctic Char	Blackfish	
			Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)								
Hooper Bay	190	52	265	286	576	248	7,707	3,306	928	763	7	6	38	0	3,031	0	0	0	0	34,295
Scammon Bay	76	17	0	0	246	411	1,626	1,437	1,353	1,005	16	123	45	0	1,180	0	0	0	0	42
Coastal District	266	69	265	286	822	481	9,333	3,605	2,281	1,262	83	124	83	0	4,211	0	0	0	0	34,337
Sheldon's Point	37	27	1	1	296	167	2,111	670	96	36	574	232	236	0	405	0	0	0	0	17,780
Alakanuk	125	33	33	34	1,064	747	4,087	2,284	10,817	16,174	3,717	2,718	192	0	237	0	1	0	0	29,440
Emmonak	158	67	35	0	1,246	536	5,319	2,055	2,290	1,151	2,709	1,199	423	0	915	0	0	0	0	102,008
Kotik	94	30	0	0	453	601	2,591	1,425	912	686	4,386	2,137	379	0	120	0	0	0	0	4,740
District 1	474	157	69	34	3,059	1,111	14,108	3,452	14,115	16,229	11,386	3,667	1,230	0	1,677	0	1	0	0	153,968
Mountain Village	136	37	10	0	3,056	2,432	2,200	1,769	3,788	1,508	1,098	484	1,883	642	200	107	0	0	0	34,780
Pekas Point	31	27	101	24	1,308	294	189	67	269	64	530	93	441	11	0	0	0	0	0	10,120
St. Mary's	119	35	4	7	2,472	1,236	715	185	1,485	559	670	382	1,027	568	0	20	0	0	0	12,244
Pink Station	94	34	0	0	1,700	755	62	73	750	404	659	284	332	50	0	0	0	0	0	15,050
Munhall	62	20	0	0	1,163	596	0	0	704	408	135	81	133	0	0	10	0	0	0	14,820
District 2	442	153	115	24	10,599	2,907	3,166	1,781	6,996	1,709	1,042	590	3,816	1,271	200	137	0	0	0	87,014
Russian Mission	53	19	0	0	127	42	97	157	1,277	547	187	134	62	975	0	0	0	0	0	10
Holy Cross	63	28	0	0	1,503	341	2,311	1,498	850	188	315	67	64	275	0	0	0	0	0	0
Shageluk	34	32	0	0	4,987	1,358	638	303	1,176	200	1,280	352	111	0	0	0	3	1	0	0
District 3	150	79	0	0	6,817	1,401	3,046	1,536	3,303	986	1,782	383	237	1,250	0	0	3	1	0	10
Anvik	38	37	0	0	318	1	16	6	42	2	46	3	3	12	0	25	6	3	0	0
Grayling	57	19	0	0	1,255	1,186	540	419	254	151	230	138	11	0	0	21	2	27	0	0
Killing	52	21	11	0	213	149	249	200	112	147	96	15	1	0	0	55	0	5	0	0
Nulato	86	24	0	0	1,085	1,144	560	807	83	47	21	20	13	0	0	483	0	85	0	0
Koyukuk	46	14	23	29	75	120	20	0	125	120	63	34	7	0	0	0	0	2	0	0
Galena	122	31	0	0	2,444	3,052	2,650	548	79	70	466	156	137	0	0	0	45	0	0	140
Ruby	62	15	0	0	547	372	0	0	20	0	15	3	6	0	0	0	12	0	0	0
Husku	70	17	0	0	807	747	149	0	682	509	51	0	11	0	0	90	13	0	0	0
Hughes	74	20	0	0	2,551	1,622	1,223	603	65	7	125	25	4	0	0	133	10	0	0	0
Atkasook	47	18	0	0	899	509	253	63	385	116	639	203	549	0	0	171	121	0	0	0
Alutna	10	7	0	0	59	39	18	13	2	2	166	19	0	0	0	0	0	0	0	0
Bethel	25	20	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
District 4	639	243	34	29	10,244	3,963	5,878	1,239	1,829	603	1,718	296	697	12	0	1,042	409	122	140	0
Tanana	105	39	0	0	6,378	88	2,000	0	111	32	1,238	33	180	0	0	177	46	0	0	0
Rampart	25	23	0	0	212	0	250	0	13	12	120	0	2	0	0	105	6	0	0	0
Stevens Village	29	26	0	0	182	51	0	0	55	2	0	0	0	0	0	0	0	0	0	0
Bron Creek	14	11	0	0	325	267	0	0	143	71	1	1	0	0	0	0	0	0	0	0
Beaver	32	24	0	0	120	145	0	0	18	21	0	0	0	0	0	0	0	0	0	0
Fort Yukon	199	48	0	0	804	421	121	100	345	200	58	48	55	0	0	84	202	2	0	0
Verste	54	16	0	0	16	19	0	0	19	19	0	0	0	0	0	55	0	0	0	0
Chalkyitsik	29	26	0	0	550	0	0	0	312	5	20	0	41	0	0	20	0	0	0	0
District 5	487	213	0	0	8,391	529	2,371	100	1,015	217	1,477	57	318	0	0	421	254	2	0	0
Survey Totals	2,398	914	483	290	39,732	5,279	37,902	6,656	29,540	16,410	19,538	3,765	6,381	2,533	6,088	1,600	667	131	275,469	0

a. The number of households contacted per species may vary. The number of households indicated is the greatest number of households contacted for a given species.

b. Large whitefish are considered those 4 pounds or larger and small whitefish are less than 4 pounds.

Table 12. Estimated number of salmon used for subsistence purposes and corresponding confidence intervals (CI) for surveyed villages, Yukon Area, 1997.

Community	Catch Strata Combined		Chinook Salmon		Summer Chum Salmon		Fall Chum Salmon		Coho Salmon	
	Total Households	Households Contacted ^a	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)
Hooper Bay	180	52	449	144	10,774	3,005	0	0	0	0
Scammon Bay	76	17	619	290	3,831	1,532	0	0	0	0
Coastal District	266	69	1,068	324	14,605	3,373	0	0	0	0
Sheldon's Point	37	27	760	301	2,488	703	350	200	78	41
Alakanuk	125	32	2,656	1,320	8,761	1,946	854	596	776	512
Emmonak	158	66	2,118	545	10,515	2,165	436	170	88	49
Kotlik	94	29	1,234	551	4,922	2,722	344	53	352	85
District 1	414	154	6,768	1,560	26,686	4,048	1,984	654	1,294	523
Mountain Village	136	37	1,631	652	9,543	2,616	1,636	973	558	333
Pitkas Point	31	27	656	63	675	73	181	33	426	25
St. Mary's	119	35	2,355	807	7,836	3,648	239	144	193	206
Pilot Station	94	34	2,183	679	2,741	726	141	137	40	31
Marshall	62	20	1,723	546	2,042	694	436	554	256	175
District 2	442	153	8,750	1,357	22,837	4,636	2,835	1,137	1,473	411
Russian Mission	53	19	1,761	727	693	326	27	33	10	16
Holy Cross	63	28	3,131	973	2,679	3,212	396	53	20	0
Shageluk	34	32	1,360	145	9,320	1,086	439	197	721	126
District 3	150	79	6,252	1,224	12,692	3,407	862	207	751	127
Anvik	38	37	850	43	7,339	180	221	16	3	0
Grayling	57	19	1,921	547	14,501	15,054	1,882	866	1,055	642
Kallig	52	21	966	334	5,401	734	1,234	615	42	0
Nulato	86	24	1,498	735	126	40	651	616	439	214
Koyukuk	46	14	889	204	12,596	18,033	1,804	930	342	5
Galena	122	30	1,684	583	9,684	2,642	2,991	868	1,035	618
Ruby	62	14	5,188	3,713	2,465	3,516	2,326	1,781	190	122
Husku	70	16	479	431	910	115	30	0	50	0
Hughes	24	19	64	23	1,714	319	50	0	253	2
Allakaket	47	18	465	267	3,715	1,522	270	315	50	63
Alatna	10	7	40	1	155	32	0	0	0	0
Bettles	25	20	44	2	210	4	0	0	0	0
District 4	639	239	14,088	3,921	58,816	23,962	11,459	2,529	3,459	927
Tanana	105	39	3,013	497	2,512	345	27,876	816	2,959	372
Rampart	25	21	2,113	1,319	784	85	341	51	106	17
Stevens Village	29	25	1,665	279	303	82	1,655	107	0	0
Birch Creek	14	11	307	210	1	1	0	0	3	3
Beaver	32	23	1,545	664	2	2	255	228	1	1
Fort Yukon	199	48	3,443	995	113	83	4,362	1,862	244	200
Venette	54	16	69	49	76	0	1,689	482	30	36
Chalkyitsik	29	25	40	6	0	0	876	0	7	0
District 5	487	207	12,395	1,882	3,791	374	37,054	2,105	3,350	425
Survey Totals	2,398	901	49,321	4,979	139,427	25,202	54,194	3,549	10,327	1,231

^a The number of households contacted per species may vary. The number of households indicated is the greatest number of households contacted for a given species.

Table 13. Estimated number of salmon retained from commercial harvests for subsistence use (commercial-related) and corresponding confidence intervals (CI) for surveyed villages, Yukon Area, 1997.

Community	Catch Strata Combined		Chinook Salmon		Summer Chum Salmon		Fall Chum Salmon		Coho Salmon	
	Total Households	Households Contacted ^a	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)
Hooper Bay	190	52	0	0	0	0	0	0	0	0
Scammon Bay	76	17	0	0	0	0	0	0	0	0
Coastal District	266	69	0	0	0	0	0	0	0	0
Shekton's Point	37	27	6	4	43	22	0	0	25	22
Alakanuk	125	33	0	0	350	249	0	0	0	0
Emmonak	158	67	11	13	107	67	106	100	19	16
Kotik	94	30	41	70	54	57	29	42	41	70
District 1	414	157	58	71	554	265	135	108	85	75
Mountain Village	136	37	85	90	331	310	18	30	2	2
Pitkas Point	31	27	0	0	12	4	11	7	0	0
St. Mary's	119	35	53	72	415	28	5	0	197	333
Pilot Station	94	34	0	0	58	61	0	0	0	0
Marshall	62	20	93	126	400	312	0	0	0	0
District 2	442	153	231	171	1,216	445	35	31	199	333
Russian Mission	53	19	0	0	0	0	0	0	0	0
Holy Cross	63	28	0	0	3,150	4,479	0	0	0	0
Shageluk	34	32	0	0	0	0	0	0	0	0
District 3	150	79	0	0	3,150	4,479	0	0	0	0
Anvik	38	37	0	0	7,062	864	0	0	0	0
Grayling	57	19	0	0	24,446	37,058	0	0	0	0
Kallag	52	21	0	0	16,471	19,858	0	0	0	0
Nulato	86	24	0	0	0	0	0	0	0	0
Koyukuk	46	14	0	0	15,330	19,172	0	0	0	0
Galena	122	31	35	17	6,296	849	0	0	0	0
Ruby	62	15	0	0	0	0	0	0	0	0
Huslia	70	17	0	0	0	0	0	0	0	0
Hughes	24	20	0	0	0	0	0	0	0	0
Atlatkaket	47	18	0	0	0	0	0	0	0	0
Alatna	10	7	0	0	0	0	0	0	0	0
Bettles	25	20	0	0	0	0	0	0	0	0
District 4	639	243	35	17	69,605	45,816	0	0	0	0
Tanana	105	39	33	20	0	0	219	6	0	0
Rampart	25	23	34	0	0	0	0	0	0	0
Stevens Village	29	26	0	0	0	0	0	0	0	0
Birch Creek	14	11	0	0	0	0	0	0	0	0
Beaver	32	24	0	0	0	0	0	0	0	0
Fort Yukon	199	48	0	0	0	0	0	0	0	0
Venetie	54	16	0	0	0	0	0	0	0	0
Chalkyitsik	29	26	0	0	0	0	0	0	0	0
District 5	487	213	67	20	0	0	219	0	0	0
Survey Totals	2,398	914	391	166	74,525	46,039	389	112	284	341

^a The number of households contacted per species may vary. The number of households indicated is the greatest number of households contacted for a given species.

Table 14 Estimated number of households with dogs, numbers of dogs, and corresponding confidence intervals (CI) for surveyed villages, Yukon Area, 1997.

Community	Harvest Strata Combined		Number of Households with Dogs		Number of Dogs	
	Total Households	Households Contacted	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)
Hooper Bay	190	52	122	31	316	115
Scammon Bay	76	17	52	17	178	135
Coastal District	266	69	174	35	494	178
Sheldon's Point	37	27	22	3	46	10
Aiakanuk	125	32	87	24	182	72
Emmonak	158	65	81	17	171	53
Kotlik	94	30	65	16	284	151
District 1	414	154	255	33	683	176
Mountain Village	136	38	112	20	428	198
Pitkas Point	31	27	20	2	76	5
St. Mary's	119	35	52	12	101	38
Pilot Station	94	34	68	13	203	96
Marshall	62	20	49	5	267	158
District 2	442	154	301	28	1,075	273
Russian Mission	53	19	40	10	222	90
Holy Cross	63	28	45	11	137	40
Shageiuk	34	32	26	1	133	8
District 3	150	79	111	15	492	99
Anvik	38	36	20	1	107	4
Grayling	57	19	36	12	111	44
Kaltag	52	21	31	11	65	25
Nulato	86	23	60	21	96	26
Koyukuk	46	14	29	15	79	18
Galena	122	30	92	29	272	119
Ruby	62	14	57	8	117	30
Huslia	70	16	42	27	108	28
Hughes	24	19	15	2	74	22
Allakaket	47	18	31	13	127	36
Alatna	10	7	4	1	8	1
Bettles	25	19	13	3	45	17
District 4	639	236	430	52	1,209	147
Tanana	105	39	36	14	455	22
Rampart	25	22	21	0	46	3
Stevens Village	29	25	19	1	77	8
Birch Creek	14	11	8	2	45	19
Beaver	32	23	22	3	33	5
Fort Yukon	199	46	106	36	329	101
Venetie	54	16	30	21	97	51
Chalkyitsik	29	25	12	2	64	5
District 5	487	207	254	44	1,146	117
Survey Totals	2,399	899	1,525	89	5,099	427

Table 15. Estimated subsistence and commercial harvests of salmon fed to dogs and corresponding confidence intervals (CI) for surveyed villages, Yukon Area, 1997.

Community	Harvest Strata Combined		Summer Chum Salmon Fed to Dogs					Fall Chum Salmon Fed to Dogs					Coho Salmon Fed to Dogs					
	Total Households	Households Contacted ^a	Subsistence		Commercial		Subsistence and Commercial Estimated Total	Subsistence		Commercial		Subsistence and Commercial Estimated Total	Subsistence		Commercial		Subsistence and Commercial Estimated Total	
			Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)		Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)		Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)		
Hooper Bay	190	52	837	1,211	0	0	837	0	0	0	0	0	0	0	0	0	0	0
Scammon Bay	76	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Coastal District	365	69	837	1,211	0	0	837	0	0	0	0	0	0	0	0	0	0	0
Lueddin's Point	37	27	25	22	0	0	25	0	0	0	0	0	0	0	0	0	0	0
Alakanuk	125	32	14	23	0	0	14	0	0	0	0	0	0	0	0	0	0	0
Emmonak	156	66	14	24	0	0	14	0	0	0	0	0	0	0	0	0	0	0
Kotik	94	30	50	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0
District 1	414	155	103	40	0	0	103	0	0	0	0	0	0	0	0	0	0	0
Mountain Village	136	38	326	271	0	0	326	52	62	0	0	52	60	55	0	0	0	60
Pikas Pond	31	27	161	38	0	0	161	22	7	0	0	22	6	4	0	0	0	6
St. Mary's	119	35	8	13	0	0	8	0	0	0	0	0	0	0	0	0	0	0
Pilot Station	94	34	221	292	0	0	221	92	136	0	0	92	0	0	0	0	0	0
Marshall	62	20	63	55	0	0	63	332	556	0	0	332	56	14	0	0	0	16
District 2	442	154	779	404	0	0	779	499	576	0	0	498	142	109	0	0	0	142
Iverson Mission	53	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Holy Cross	63	28	202	65	2,269	3,227	2,471	200	0	0	0	200	30	0	0	0	0	0
Shageluk	34	32	7,784	1,001	1,163	505	8,946	200	0	0	0	200	726	1,6	0	0	0	726
District 3	150	79	7,986	1,005	3,432	3,266	11,416	400	0	0	0	400	746	126	0	0	0	746
Anva	38	37	538	0	6,623	182	7,161	200	0	0	0	200	20	0	0	0	0	20
Grayling	57	19	3,327	3,007	11,071	15,204	14,398	219	167	0	0	219	1,005	640	0	0	0	1,005
Katag	52	21	0	0	16,431	18,868	16,431	50	0	0	0	50	0	0	0	0	0	0
Nulato	86	23	5	0	0	0	5	1	0	0	0	1	184	0	0	0	0	184
Koyukuk	46	14	365	36	1,075	18,078	12,420	1,044	84	0	0	1,044	344	10	0	0	0	344
Gulena	122	30	2,927	2,437	5,006	649	8,623	1,479	766	0	0	1,479	1,123	614	0	0	0	1,123
Ruby	62	14	265	210	0	0	265	1,208	814	0	0	1,208	165	118	0	0	0	165
Huslia	70	16	837	0	0	0	837	10	0	0	0	10	50	0	0	0	0	50
Hughes	24	19	1,020	19	0	0	1,020	0	0	0	0	0	250	0	0	0	0	250
Allakaket	47	18	2,281	1,259	0	0	2,281	270	315	0	0	270	0	0	0	0	0	0
Alatna	10	7	9	7	0	0	9	0	0	0	0	0	0	0	0	0	0	0
Bettie	25	20	250	0	0	0	250	0	0	0	0	0	0	0	0	0	0	0
District 4	439	238	11,774	4,077	52,078	80,213	63,850	4,401	1,468	0	0	4,401	3,141	995	0	0	0	3,141
Tanana	100	38	2,181	216	0	0	2,181	26,225	755	239	98	26,484	2,958	372	0	0	0	2,958
Rampart	25	22	475	0	0	0	475	100	0	0	0	100	1	0	0	0	0	1
Stevens Village	29	25	211	69	0	0	211	1,606	107	0	0	1,606	0	0	0	0	0	0
Birch Creek	14	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beaver	32	23	0	0	0	0	0	167	207	0	0	167	0	0	0	0	0	0
Fort Yukon	199	46	0	0	0	0	0	2,291	880	0	0	2,291	0	0	0	0	0	0
Veneta	54	16	76	0	0	0	76	1,689	482	0	0	1,689	0	0	0	0	0	0
Chalkyitsk	29	26	0	0	0	0	0	871	0	0	0	871	2	0	0	0	0	2
District 5	487	207	2,943	227	0	0	2,943	32,949	1,277	239	98	33,186	2,961	372	0	0	0	2,961
Survey Totals	2,388	902	24,422	4,394	55,508	30,409	79,930	38,328	2,029	239	98	38,567	6,990	984	0	0	0	6,990

^a The number of households contacted per species may vary. The number of households contacted indicated is the greatest number of households contacted for a given question.

Table 16. Summary of responses from surveyed households which indicated that their subsistence salmon needs were not met in 1997.

Response Summary Category	Number of Responses	Percent of Total
Due to environmental conditions, i.e., high water	15	7.0%
Working in another occupation	37	17.4%
No gear - boat, net, motor, gas	16	7.5%
No helper to harvest or process fish	11	5.2%
Busy doing other things	14	6.6%
Medical reasons or elderly	16	7.5%
Poor run of fish	13	6.1%
Out of town	6	2.8%
Not enough fish caught	20	9.4%
Miscellaneous reasons, includes "No reason given"	36	16.9%
Still fishing	5	2.3%
Department Fishing Regulations/Restrictions	2	0.9%
Didn't fish - normally don't use fish	18	8.5%
Not enough available to share/barter	4	1.9%
TOTALS a	213	100.0%

a A total of 915 households were surveyed in 1997, of which 213 households (23.3 percent) indicated their subsistence salmon needs were not met.

Table 17. Reported subsistence and personal use fish harvested under the authority of a permit, listed by permit area, Yukon Area, 1997^a

Permit Fishing Area	Permit		Percent Returned	Number of Permits Returned that Fished	Reported Harvest											
	Type	Issued			Returned	Chinook	Summer Chum	Fall Chum	Coho	Whitefish	Sheefish	Burbot	Pike	Suckers	Grayling	
Subsistence Use																
Yukon River near Haul Road Bridge	SY	44	42	95%	28	1,588	683	491	26	92	6	4	11	0	0	
Yukon River near Circle and Eagle	SE	98	93	95%	60	3,184	393	18,616	212	1,292	49	28	31	43	55	
Tanana River Subdistrict 6A	SA	28	27	96%	16	852	536	9,313	3,169	351	30	31	106	175	1	
Tanana River Subdistrict 6B	SB	103	95	92%	55	1,825	3,282	8,723	7,692	1,507	40	38	391	89	0	
Tanana River Upstream of Subdistrict 6C	SU	61	58	95%	26	0	0	200	0	1,358	0	46	77	68	94	
Kantishna River Subdistrict 6A	SK	5	5	100%	5	35	6	1,308	534	39	0	6	18	26	1	
Tolovana River Pike Subdistrict 6B	ST	88	75	85%	40	0	0	6	0	508	71	57	1,344	255	3	
<i>Subsistence Permit Subtotals</i>		<i>427</i>	<i>395</i>	<i>93%</i>	<i>230</i>	<i>7,484</i>	<i>4,900</i>	<i>38,657</i>	<i>11,833</i>	<i>5,147</i>	<i>196</i>	<i>210</i>	<i>1,976</i>	<i>656</i>	<i>154</i>	
Personal Use																
Tanana River Subdistrict 6C	PC	112	109	97%	61	313	391	284	350	13	2	5	2	1	0	
Tanana River Whitefish Upstream of Subdistrict 6B	PW	5	5	100%	1	0	0	0	0	3	0	0	0	201	0	
<i>Personal Use Permit Subtotals</i>		<i>117</i>	<i>114</i>	<i>97%</i>	<i>62</i>	<i>313</i>	<i>391</i>	<i>284</i>	<i>350</i>	<i>16</i>	<i>2</i>	<i>5</i>	<i>2</i>	<i>202</i>	<i>0</i>	
Permit Totals		544^b	509	94%	292^c	7,797	5,291	38,941	12,183	5,163	198	215	1,978	858	154	

a Includes 1997 permit information received as of April 6, 1998.

b Includes 50 households that were issued permits for two different areas, including 34 Minto households who were issued both pike and salmon permits.

c Includes eight households that fished in two different permit areas.

Table 18. Reported subsistence and personal use fish harvested under the authority of a permit, listed by community of residence, by drainage, Yukon Area, 1997. ^a

Community	Harvest by Drainage	Permits		Percent Returned	Number of Permits Returned that Fished	Reported Harvest										
		Issued	Returned			Chinook	Summer Chum	Fall Chum	Coho	Whitefish	Sheefish	Burbot	Pike	Sucker	Grayling	
Subsistence Use																
Central	Yukon River	6	6	100%	4	146	25	0	0	0	0	2	8	0	25	
Circle	Yukon River	21	17	81%	10	1,091	257	3,707	210	1,000	20	14	10	10	0	
Eagle	Yukon River	50	48	96%	35	1,534	17	14,488	2	68	27	12	13	32	30	
FNSB ^b	Yukon River	35	35	100%	25	955	424	491	28	21	6	4	10	0	0	
	Tolovana River	47	46	98%	21	0	0	0	0	3	6	48	67	0	3	
	Tanana River	18	18	100%	9	176	271	4,031	1,230	89	4	14	5	2	0	
	Kantishna River	1	1	100%	1	0	0	0	0	0	0	0	9	0	0	
	<i>FNSB Subtotal</i>	101	100	99%	56	1,131	695	4,522	1,258	113	16	66	91	2	3	
Healy	Tanana River	8	8	100%	5	4	22	3,272	1,618	449	8	8	9	6	1	
Manley	Tanana River	21	20	95%	14	242	576	5,887	3,236	300	30	25	84	174	1	
Minto	Tolovana River	39	28	72%	18	0	0	6	0	505	65	9	1,266	255	0	
	Tanana River	46	42	91%	18	1,208	1,056	2,355	364	482	25	22	408	79	0	
	<i>Minto Subtotal</i>	85	70	82%	36	1,208	1,056	2,361	364	987	90	31	1,674	334	0	
Nenana	Tanana River	40	36	90%	27	1,047	1,893	3,775	5,065	557	3	0	4	6	0	
	Kantishna River	3	3	100%	3	35	6	24	82	20	0	6	5	23	0	
	<i>Nenana Subtotal</i>	43	39	91%	30	1,082	1,899	3,799	5,147	577	3	6	9	29	0	
Stevens Village	Yukon River	7	7	100%	3	283	223	0	0	71	0	0	1	0	0	
Upper Tanana Villages (UTV) ^c	Yukon River	20	20	100%	9	305	94	421	0	224	2	0	0	1	0	
	Tolovana River	1	0	0%	0	0	0	0	0	0	0	0	0	0	0	
	Tanana River	58	55	95%	24	0	0	200	0	1,358	0	46	50	68	94	
	<i>UTV Subtotal</i>	79	75	95%	33	305	94	621	0	1,582	2	46	50	69	94	
Other ^d	Yukon River	3	2	67%	2	458	36	0	0	0	0	0	0	0	0	
	Tanana River	3	3	100%	2	0	0	0	0	0	0	0	27	0	0	
	<i>Other Subtotal</i>	6	5	83%	4	458	36	0	0	0	0	0	27	0	0	
<i>Subsistence Permit Subtotals</i>		427	395	93%	230	7,484	4,900	38,657	11,833	5,147	196	210	1,976	656	154	
Personal Use																
FNSB ^b	Tanana River	111	109	98%	61	313	391	284	350	13	2	5	2	1	0	
Other ^e	Tanana River	6	5	83%	1	0	0	0	0	3	0	0	0	201	0	
<i>Personal Use Permit Subtotals</i>		117	114	97%	62	313	391	284	350	16	2	5	2	202	0	
Permit Totals		544 ^f	509	94%	292 ^g	7,797	5,291	38,941	12,183	5,163	198	215	1,978	858	154	

^a Includes 1997 permit information received as of April 6, 1998.

^b Fairbanks North Star Borough (FNSB) includes residents from the communities of College, Eielson AFB, Ester, Fairbanks, Ft. Wainwright, North Pole and Satcha.

^c Upper Tanana Villages include residents from the communities of Delta Junction, Dot Lake, Healy Lake, Northway, Tanacross and Tok.

^d Other subsistence permits include residents from the communities of Denali, Gakona, Manley, Nenana and Wiseman.

^e Other personal use permits include residents from the communities of Anderson, Chickaloon, Delta Junction and Nenana.

^f Includes 50 households that were issued permits for two different areas, including 34 Minto households who were issued both pike and salmon permits.

^g Includes eight households that fished in two different permit areas.

Table 19. Household and dog information reported by subsistence and personal use permits issued and returned, listed by community of residence, Yukon Area, 1997. a

Community	Permit Information b				Reported Household Information (Based on Permits Issued)					Whole Salmon Fed to Dogs (Based on Permits Returned)	
	Permits		Percent Returned	Numbers of Permits Returned that Fished	Number of People	Number of Fishermen	Number of Households with Dogs	Number of Dogs	Households Indicating Feeding Whole Salmon to Dogs	Number of Households Who Put Whole Salmon up for Dogs	Number of Whole Salmon Fed to Dogs
	Issued	Returned									
Subsistence Use											
Central	6	6	100%	4	13	9	5	9	2	0	0
Circle	21	17	81%	10	67	31	16	97	8	6	3,814
Eagle	50	48	96%	35	133	89	38	270	26	16	10,545
FNSB c	101	100	99%	56	283	187	43	444	20	5	5,225
Healy	8	8	100%	5	35	30	8	108	6	3	2,969
Manley	22	21	95%	15	55	41	20	400	19	4	3,411
Minto	85	70	82%	36	165	80	35	337	25	8	2,200
Nenana	44	40	91%	31	134	82	33	584	31	12	3,548
Stevens Village	7	7	100%	3	29	12	7	38	1	0	0
Upper Tanana Villages d	79	75	95%	33	227	130	50	192	15	1	685
Other e	4	3	75%	2	9	4	3	26	2	0	0
Subsistence Permit Subtotal	427	395	93%	230	1,150	695	258	2,505	155	55	32,397
Personal Use											
Delta Junction	2	2	100%	1	3	3	-	-	-	-	-
FNSB c	111	109	98%	61	328	184	-	-	-	-	-
Nenana	2	2	100%	0	4	2	-	-	-	-	-
Other f	2	1	50%	0	3	3	-	-	-	-	-
Personal Use Permit Subtotal	117	114	97%	62	338	192	-	-	-	-	-
TOTAL	544	509	94%	292 g	1,488	887	258	2,505	155	55	32,397

a Includes 1997 permit information received as of April 6, 1998.

b Includes 50 households that were issued permits for two different areas, including 34 Minto households who were issued both pike and salmon permits.

c Fairbanks North Star Borough (FNSB) includes residents from the communities of College, Eielson Air Force Base, Ester, Fairbanks, Ft. Wainwright, North Pole and Saicha.

d Upper Tanana Villages include residents from the communities of Delta Junction, Dot Lake, Healy Lake, Northway, Tanacross, and Tok.

e Other subsistence permits include residents from the communities of Denali, Gakona, Manley, Nenana and Wiseman.

f Other personal use permits include residents from the communities of Anderson, Chickaloon, Delta Junction and Nenana.

g Includes eight households that fished in two different permit areas.

Table 20. Salmon provided for subsistence purposes by test fish programs, Yukon Area, 1997.

Projects by Location	Primary Distribution	Chinook	Summer Chum	Fall Chum	Coho
Big Eddy Set Gill Net Sites	Emmonak	1,345	4,184	893	334
Middle Mouth Set Gill Net Sites	Kotlik	480	355	573	259
Mountain Village Drift Gill Net Sites	Mountain Village	2	0	962	309
Pilot Station Drift Gill Net Sites	Pilot Station	330	2,420	997	283
Tanana River Tag Deployment Fish Wheel	None	0	0	0	0
Nenana Right Bank Test Fish Wheel	None	0	0	0	0
Nenana Left Bank Test Fish Wheel	None	0	0	0	0
Subtotal a		2,157	6,959	3,425	1,185
Tanana Right Bank Test Fish Wheel	None	0	0	0	0
Tanana Left Bank Test Fish Wheel	Tanana	1	0	4,187	797
Subtotal b		1	0	4,187	797
Total		2,158	6,959	7,612	1,982

a Test fish given away that were not accounted for in subsistence harvest.

b Test fish given away in Tanana that were accounted for during the surveys.

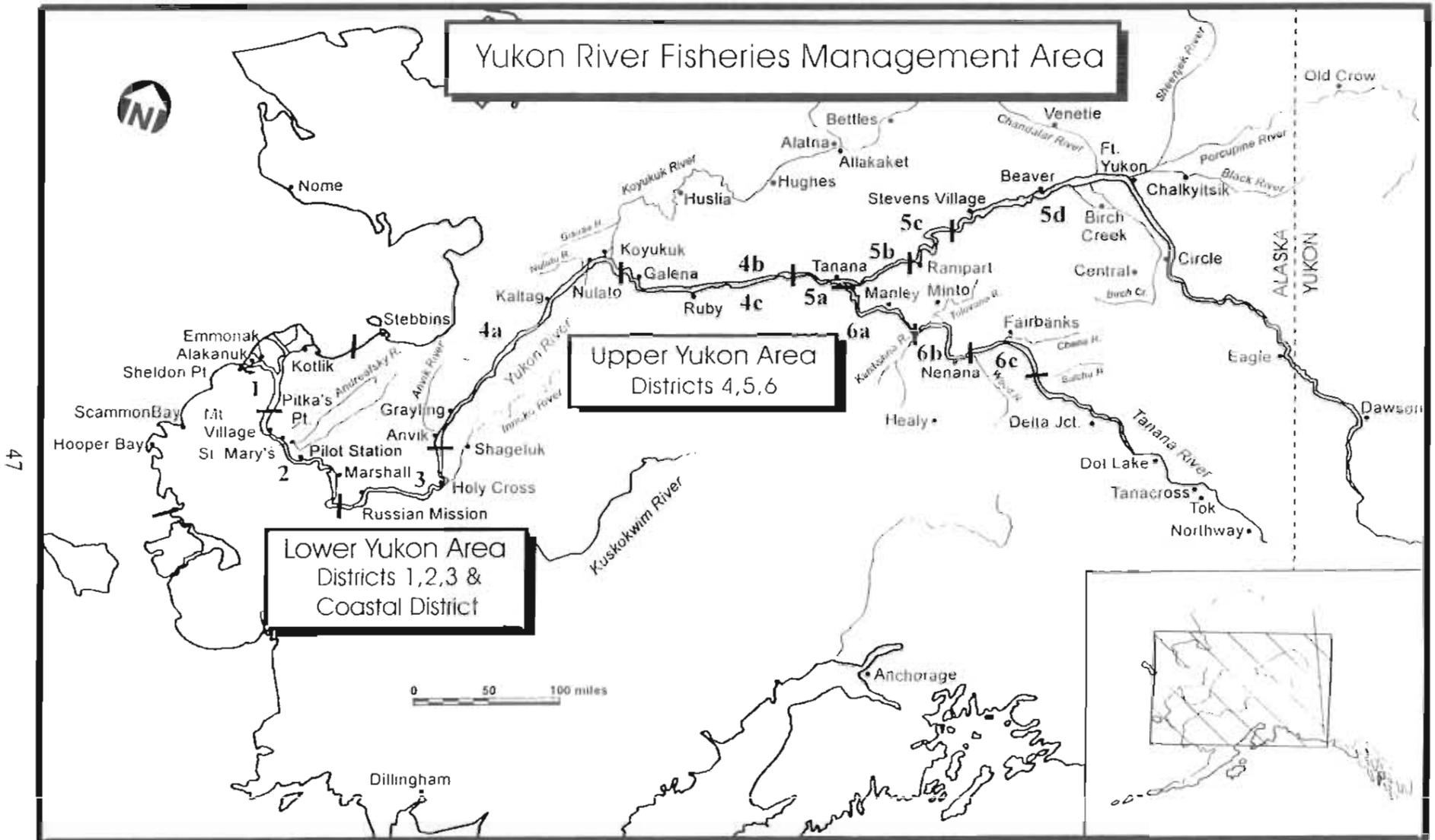
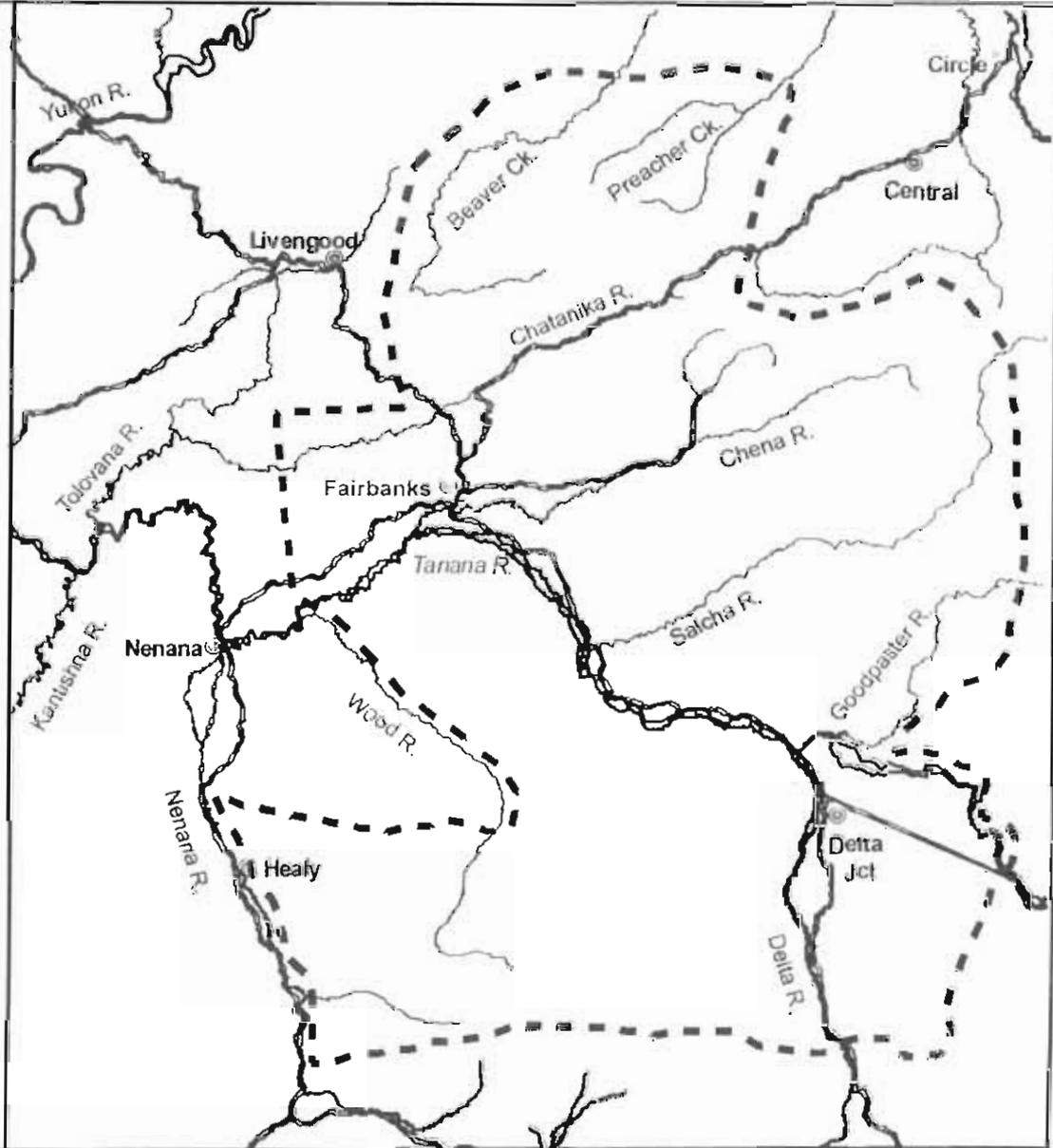
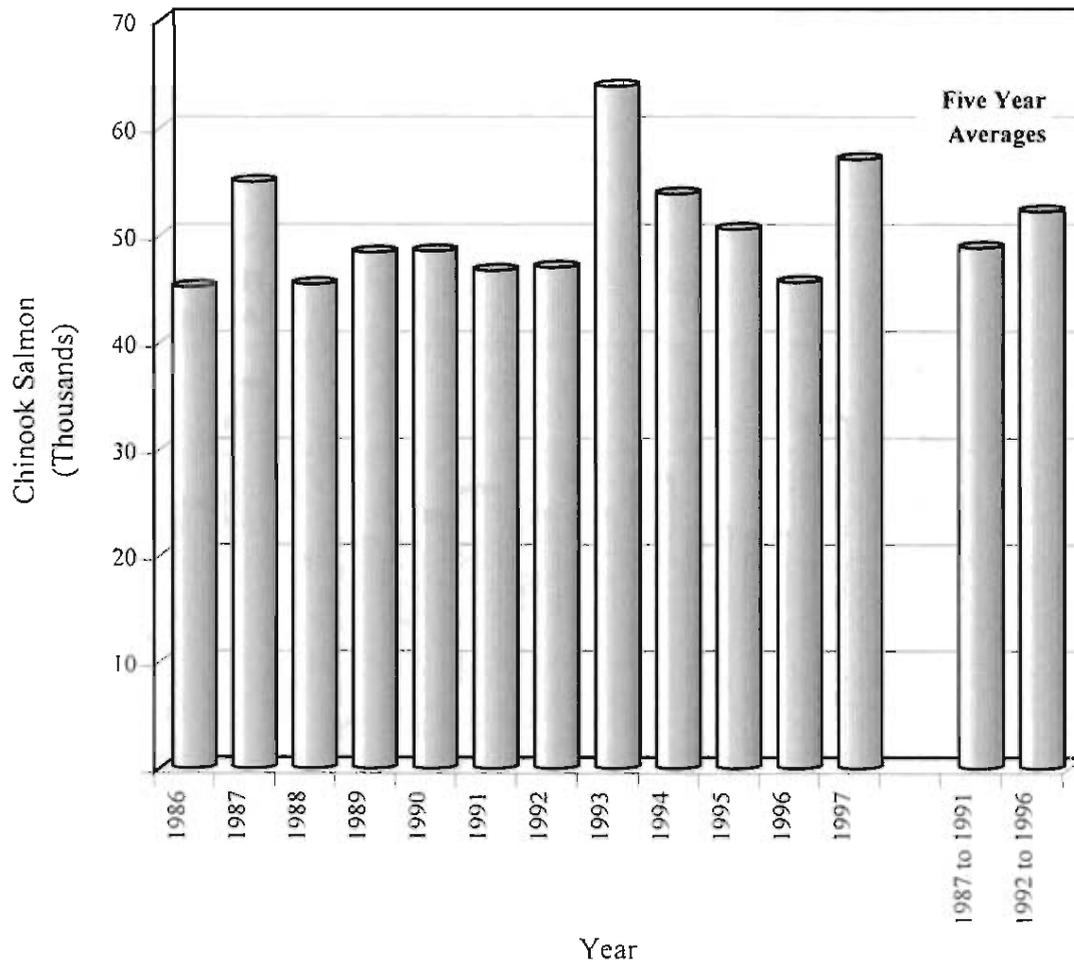


Figure 1. The Yukon Area showing communities and fishing districts, 1997.

5 AAC 99.015 JOINT BOARD
 NONSUBSISTENCE AREAS. (4) The
 Fairbanks Nonsubsistence Area is
 comprised of the following: within
 Unit 20(A) as defined by 5 AAC
 92.450(20)(A) east of the Wood
 River drainage and south of the
 Rex Trail but including the upper
 Wood River drainage south of its
 confluence with Chicken Creek,
 within Unit 20(B) as defined by
 5 AAC 92.450(20)(B) the North
 Star Borough and that portion of
 the Washington Creek drainage
 east of the Elliot Highway, within
 Unit 20(D) as defined by 5 AAC
 92.450(20)(D) west of the
 Tanana River between its
 confluence's with the Johnson
 and Delta Rivers, west of the
 west bank of the Johnson River,
 and north and west of the
 Volkmar drainage, including the
 Goodpaster River drainage, and
 within Unit 25(C) as defined by
 5 AAC 92.450(25)(C) the
 Preacher and Beaver Creek
 drainages.



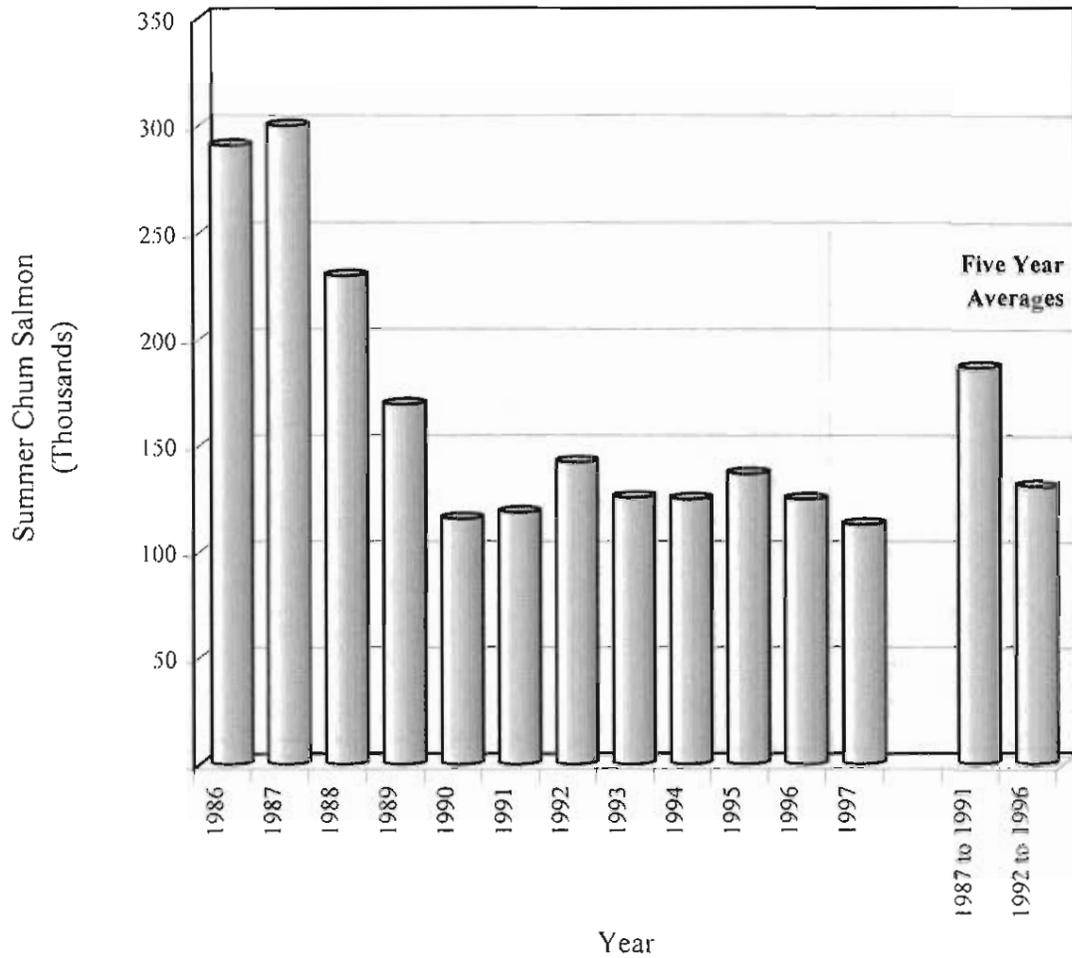
Estimated Chinook Salmon Subsistence Harvest Yukon Area



Beginning in 1988, subsistence salmon harvest estimates have been generated from a stratified random sample of village households.

Figure 3. The estimated number of chinook salmon harvested in the subsistence salmon fisheries, Yukon Area, 1986 to 1997.

Estimated Summer Chum Salmon Subsistence Harvest Yukon Area

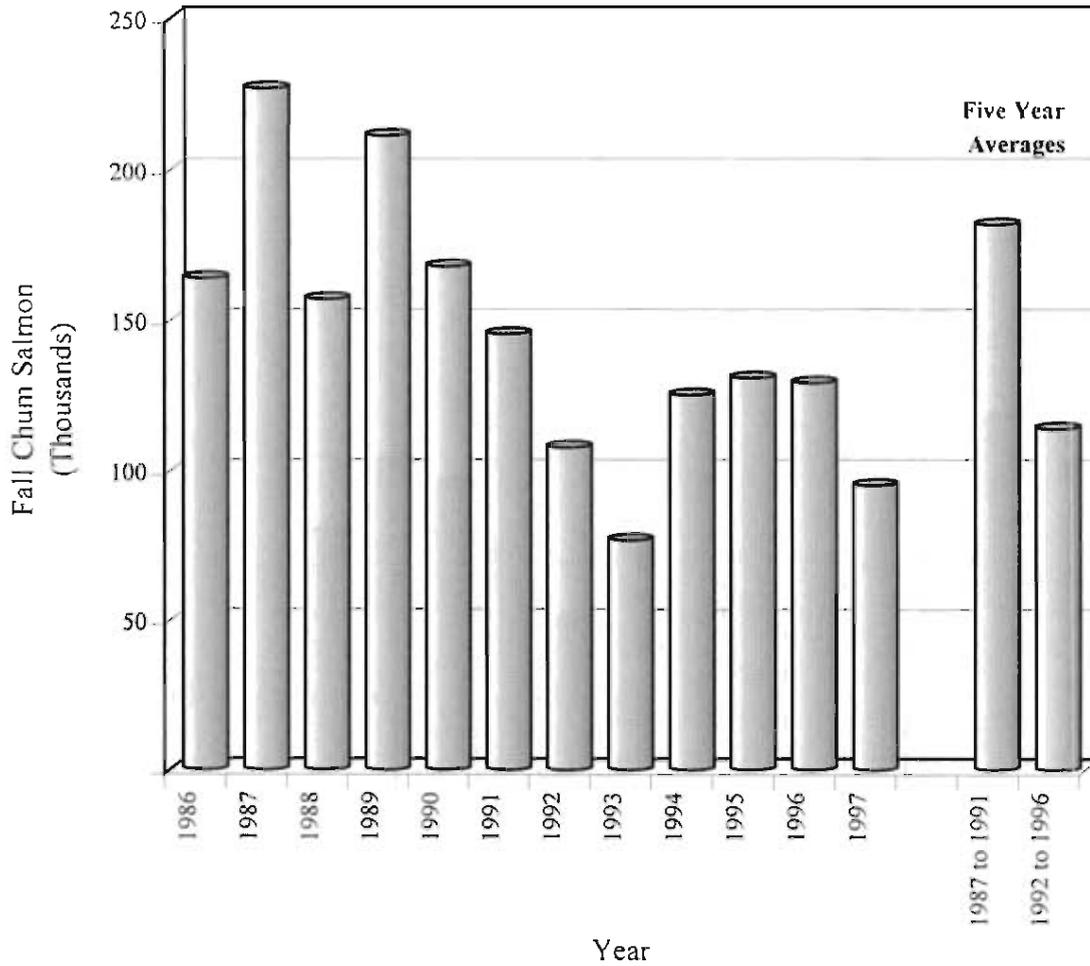


Summer chum salmon harvest estimates prior to 1988 included commercial caught summer chum salmon carcasses retained for subsistence use.

Beginning in 1988, subsistence salmon harvest estimates have been generated from a stratified random sample of village households.

Figure 4. The estimated number of summer chum salmon harvested in the subsistence salmon fisheries, Yukon Area, 1986 to 1997.

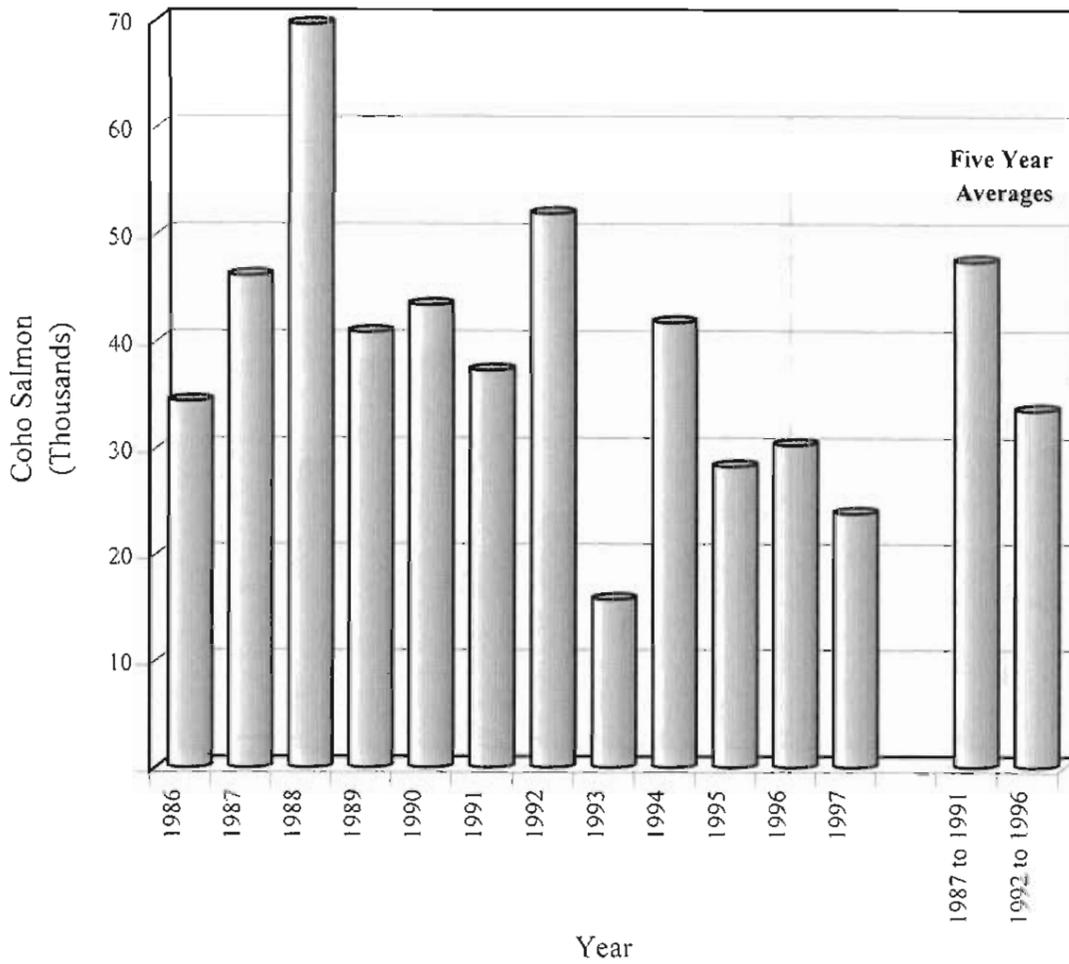
Estimated Fall Chum Salmon Subsistence Harvest Yukon Area



Beginning in 1988, subsistence salmon harvest estimates have been generated from a stratified random sample of village households.

Figure 5. The estimated number of fall chum salmon harvested in the subsistence salmon fisheries, Yukon Area, 1986 to 1997.

Estimated Coho Salmon Subsistence Harvest Yukon Area



Beginning in 1988, subsistence salmon harvest estimates have been generated from a stratified random sample of village households.

Figure 6. The estimated number of coho salmon harvested in the subsistence salmon fisheries, Yukon Area, 1986 to 1997.

APPENDIX A

DETAILED YUKON RIVER SALMON HARVEST
ESTIMATES AND RELATED INFORMATION

Appendix A.1 Estimated chinook salmon subsistence harvest by residents of surveyed villages, by harvest stratum, with village and district totals, Yukon Area, 1997. a

Community	Unknown				Does Not Harvest Salmon				Light Harvester				Medium Harvester				Heavy Harvester				Combined			
	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Total	Est
Hooper Bay	13	3	0.0	0.0	72	7	0.0	0.0	87	24	6.0	1.8	18	18	5.1	0.0	0	0	-	-	190	52	613	316
Scammon Bay	0	0	-	-	22	4	0.0	0.0	52	11	9.0	3.0	2	2	29.0	0.0	0	0	-	-	76	17	526	313
Coastal District	13	3	0.0	0.0	94	11	0.0	0.0	139	35	7.1	1.6	20	20	7.5	0.0	0	0	-	-	266	69	1,139	445
Sheldon's Point	0	0	-	-	8	5	17.8	10.9	25	20	21.0	2.3	4	2	75.5	11.0	0	0	-	-	37	27	970	223
Alakanuk	1	1	70.0	0.0	42	5	4.4	3.9	77	22	22.5	5.5	5	5	14.2	0.0	0	0	-	-	125	33	2,058	894
Emmonak	1	1	0.0	0.0	78	23	2.1	1.0	67	31	17.1	3.3	10	9	36.3	5.8	2	2	29.0	0.0	158	66	1,735	479
Kolik	0	0	-	-	31	4	2.5	2.3	49	12	8.6	4.3	11	11	20.6	0.0	3	3	77.7	0.0	94	30	962	440
District 1	2	2	35.0	0.0	159	37	3.6	1.3	218	85	17.6	2.4	30	27	32.1	2.4	5	5	58.2	0.0	414	156	5,725	1,128
Mountain Village	0	0	-	-	41	5	0.0	0.0	86	24	19.2	4.4	8	7	46.3	4.5	1	1	50.0	0.0	136	37	2,076	757
Pitkas Point	0	0	-	-	6	4	0.0	0.0	19	17	17.8	1.7	6	6	78.3	0.0	0	0	-	-	31	27	793	65
St. Mary's	0	0	-	-	45	4	15.5	7.0	58	15	17.2	4.8	14	14	56.6	0.0	2	2	52.5	0.0	119	35	2,592	809
Pilot Station	1	1	0.0	0.0	45	11	11.9	6.2	46	20	30.2	5.5	1	1	75.0	0.0	1	1	40.0	0.0	94	34	2,043	737
Marshall	1	0	-	-	15	5	0.0	0.0	41	11	30.0	8.3	5	4	56.3	13.9	0	0	-	-	62	20	1,511	686
District 2	2	1	0.0	0.0	152	29	8.1	2.8	250	87	22.5	2.5	34	32	58.1	2.3	4	4	48.8	0.0	442	153	9,018	1,499
Russian Mission	1	1	0.0	0.0	17	4	0.0	0.0	29	9	32.3	10.6	4	4	130.3	0.0	2	1	0.0	-	53	19	1,459	605
Holy Cross	0	0	-	-	19	4	22.5	20.0	38	18	67.2	9.4	6	6	81.3	0.0	0	0	-	-	63	28	3,472	1,024
Shagekuk	0	0	-	-	17	16	23.4	2.7	9	9	16.7	0.0	2	1	0.0	-	6	6	138.5	0.0	34	32	1,380	89
District 3	1	1	0.0	0.0	53	24	15.6	7.2	76	38	48.0	6.2	12	11	84.1	0.0	8	7	103.9	0.0	150	79	6,311	1,193
Arvik	0	0	-	-	16	15	0.4	0.1	20	20	30.9	0.0	2	2	163.5	0.0	0	0	-	-	38	37	951	3
Grayling	0	0	-	-	24	5	24.8	7.0	25	8	56.2	18.1	7	5	51.4	6.7	1	1	30.0	0.0	57	19	2,391	951
Kallag	0	0	-	-	13	5	2.6	2.0	30	7	16.4	5.6	7	7	69.1	0.0	2	2	12.5	0.0	52	21	1,036	334
Nulato	0	0	-	-	42	5	6.6	6.2	35	10	28.4	7.9	9	9	33.5	0.0	0	0	-	-	86	24	1,576	745
Koyukuk	2	1	1.0	-	24	3	0.0	0.0	15	5	17.0	8.7	4	4	107.8	0.0	1	1	163.0	0.0	46	14	851	256
Galena	2	2	0.0	0.0	62	5	5.2	5.0	44	13	24.7	12.0	9	6	71.3	13.2	5	5	59.2	0.0	122	31	2,350	1,226
Ruby	1	1	300.0	0.0	37	4	0.0	0.0	18	4	85.2	63.3	2	2	0.0	0.0	4	4	106.3	0.0	62	15	2,260	2,236
Huslia	0	0	-	-	48	5	0.0	0.0	13	4	0.0	0.0	7	7	8.1	0.0	2	1	0.0	-	70	17	57	0
Hughes	0	0	-	-	17	13	0.0	0.0	1	1	0.0	0.0	5	5	2.8	0.0	1	1	20.0	0.0	24	20	34	0
Allakaket	3	2	0.0	0.0	21	4	6.8	6.1	15	4	5.0	4.2	5	5	18.2	0.0	3	3	38.3	0.0	47	18	423	280
Alatna	1	0	-	-	7	8	0.0	0.0	2	1	19.0	-	0	0	-	-	0	0	-	-	10	7	38	0
Bettles	0	0	-	-	22	17	0.0	0.0	1	1	4.0	0.0	2	2	17.5	0.0	0	0	-	-	25	20	39	0
District 4	9	6	33.6	0.0	333	87	4.1	1.4	219	78	29.7	6.3	59	54	46.5	2.2	19	18	56.5	0.0	639	243	12,006	2,866
Tanana	2	0	-	-	64	9	2.2	2.1	16	8	38.5	14.4	11	10	30.3	3.9	12	12	208.7	0.0	105	39	3,506	529
Rampart	0	0	-	-	9	8	116.3	36.4	2	2	75.0	0.0	13	13	77.5	0.0	1	0	-	-	25	23	2,203	643
Stevens Village	0	0	-	-	10	9	1.1	0.4	11	9	87.3	12.7	6	6	122.8	0.0	2	2	180.5	0.0	29	26	2,070	275
Birch Creek	0	0	-	-	10	8	0.0	0.0	4	3	93.3	29.0	0	0	-	-	0	0	-	-	14	11	373	228
Beaver	0	0	-	-	18	14	5.1	1.8	9	7	61.4	12.7	5	3	242.7	82.0	0	0	-	-	32	24	1,859	837
Fort Yukon	7	5	0.0	0.0	121	11	0.0	0.0	48	12	14.3	8.2	17	14	128.9	19.8	6	6	44.3	0.0	199	48	3,145	1,018
Venetie	0	0	-	-	38	4	0.0	0.0	8	5	0.0	0.0	5	4	62.5	28.0	3	3	0.3	0.0	54	16	314	274
Chalkyitsik	0	0	-	-	22	19	0.0	0.0	4	4	0.0	0.0	3	3	0.0	0.0	0	0	-	-	29	26	0	0
District 5	9	5	0.0	0.0	292	82	4.4	1.2	102	50	32.8	4.9	60	53	96.6	9.2	24	23	130.5	0.0	487	213	13,560	1,622
Survey Totals	36	18	10.3	0.0	1,083	270	4.9	0.8	1,004	371	23.8	1.7	215	197	58.8	2.7	60	57	92.1	0.0	2,398	913	47,759	3,998

a The total number of households (N), the number of households contacted (n), standard error (SE), and includes 95 percent confidence interval, CI (95%). Dashes indicate indefinable values.

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Appendix A.2 Estimated summer chum salmon subsistence harvest by residents of surveyed villages, by harvest stratum, with village and district totals, Yukon Area, 1997 ^a

Community	Unknown				Does Not Harvest Salmon				Light Harvester				Medium Harvester				Heavy Harvester				Combined			
	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	Total		Est. CI(95%)	
																					N	n	Total	(+/-)
Hooper Bay	13	3	0.0	0.0	72	7	10.7	10.2	87	24	107.7	17.3	18	18	120.1	0.0	0	0	-	-	190	52	12,310	3,285
Scammon Bay	0	0	-	-	22	4	0.0	0.0	52	11	61.3	17.3	2	2	105.0	0.0	0	0	-	-	76	17	3,401	1,764
Coastal District	13	3	0.0	0.0	94	11	8.2	7.8	139	35	90.4	12.6	20	20	118.6	0.0	0	0	-	-	266	69	15,711	3,729
Sheldon's Point	0	0	-	-	8	5	30.0	18.4	25	20	58.9	6.6	4	2	222.5	54.8	0	0	-	-	37	27	2,603	611
Alakanuk	1	1	31.0	0.0	42	5	30.2	23.9	77	22	69.7	14.4	5	5	155.0	0.0	0	0	-	-	125	33	7,443	2,940
Ermenak	1	1	0.0	0.0	78	23	17.2	6.8	67	31	67.9	11.6	10	10	185.4	0.0	2	2	234.0	0.0	158	67	8,215	1,840
Kotik	0	0	-	-	31	4	30.0	26.0	49	12	38.3	17.5	11	11	106.2	0.0	3	3	157.3	0.0	94	30	4,448	2,396
District 1	2	2	15.5	0.0	159	37	23.8	9.0	218	85	60.9	7.4	30	28	156.2	7.3	5	5	188.0	0.0	414	157	22,709	4,260
Mountain Village	0	0	-	-	41	5	20.0	16.7	86	24	100.1	15.6	8	7	164.9	2.4	1	1	400.0	0.0	136	37	11,310	3,011
Pikas Point	0	0	-	-	6	4	0.0	0.0	19	17	17.7	2.0	6	6	68.5	0.0	0	0	-	-	31	27	747	75
St. Mary's	0	0	-	-	45	4	47.8	36.9	58	15	57.8	18.4	14	14	204.2	0.0	2	2	255.0	0.0	119	35	8,874	3,877
Pilot Station	1	1	0.0	0.0	45	11	11.2	6.3	46	20	25.2	4.9	1	1	300.0	0.0	1	1	150.0	0.0	94	34	2,112	712
Marshall	1	0	-	-	15	5	0.0	0.0	41	11	26.7	10.8	5	4	82.5	12.7	0	0	-	-	62	20	1,508	883
District 2	2	1	0.0	0.0	152	29	22.8	12.2	250	87	58.2	7.1	34	32	160.6	2.0	4	4	265.0	0.0	442	153	24,551	5,051
Russian Mission	1	1	0.0	0.0	17	4	0.0	0.0	29	9	13.4	6.2	4	4	48.8	0.0	2	1	0.0	-	53	16	505	358
Holy Cross	0	0	-	-	19	4	0.0	0.0	38	18	6.6	2.1	6	6	39.3	0.0	0	0	-	-	63	28	467	158
Shageluk	0	0	-	-	17	16	91.6	11.8	9	9	148.6	0.0	2	1	50.0	0.0	6	6	1041.3	0.0	34	32	6,244	395
District 3	1	1	0.0	0.0	53	24	29.4	3.8	76	36	26.0	2.6	12	11	44.3	0.0	8	7	781.0	0.0	150	79	10,316	555
Anvik	0	0	-	-	16	15	0.0	0.0	20	20	288.8	0.0	2	2	265.0	0.0	0	0	-	-	38	37	6,306	0
Grayling	0	0	-	-	24	5	2.0	1.8	25	8	78.1	50.7	7	5	13.6	2.7	1	1	350.0	0.0	57	19	2,446	2,467
Kallag	0	0	-	-	13	5	0.0	0.0	30	7	0.1	0.1	7	7	9.9	0.0	2	2	0.0	0.0	52	21	73	7
Nulato	0	0	-	-	42	5	0.0	0.0	35	10	3.0	0.6	9	9	1.1	0.0	0	0	-	-	86	24	115	42
Koyukuk	2	1	0.0	-	24	3	0.0	0.0	15	5	5.0	4.0	4	4	77.3	0.0	1	1	355.0	0.0	46	14	739	120
Galena	2	2	0.0	0.0	62	5	0.0	0.0	44	13	56.9	45.0	9	6	46.2	18.5	5	5	330.8	0.0	122	31	4,575	3,897
Ruby	1	1	80.0	0.0	37	4	0.0	0.0	18	4	119.5	99.6	2	2	0.0	0.0	4	4	263.8	0.0	62	15	3,286	3,514
Horsli	0	0	-	-	48	5	0.0	0.0	13	4	0.2	0.2	7	7	119.6	0.0	2	1	0.0	-	70	17	840	5
Hughes	0	0	-	-	17	13	2.3	1.1	1	1	50.0	0.0	5	5	98.0	0.0	1	1	1000.0	0.0	24	20	1,579	17
Allakaket	3	2	0.0	0.0	21	4	10.0	9.0	15	4	75.0	40.9	5	5	239.8	0.0	3	3	460.7	0.0	47	18	3,916	1,261
Alabu	1	0	-	-	7	6	6.7	2.5	2	1	49.0	-	0	0	-	-	0	0	-	-	10	7	145	35
Bulfinch	0	0	-	-	22	17	0.2	0.1	1	1	6.0	0.0	2	2	100.0	0.0	0	0	-	-	25	20	210	4
District 4	9	6	8.9	0.0	333	87	1.0	0.6	219	78	63.2	13.8	59	54	70.4	2.8	19	18	105.1	0.0	639	243	24,230	5,943
Tanana	2	0	-	-	64	9	2.2	2.1	16	8	9.7	6.8	11	10	13.6	3.7	12	12	173.2	0.0	105	39	2,520	340
Rampart	0	0	-	-	9	8	6.3	2.1	2	2	0.5	0.0	13	13	52.4	0.0	1	0	-	-	25	23	738	37
Stevens Village	0	0	-	-	10	9	0.0	0.0	11	9	8.3	2.0	6	6	16.7	0.0	2	2	0.0	0.0	29	26	191	45
Birch Creek	0	0	-	-	10	8	0.0	0.0	4	3	0.3	0.1	0	0	-	-	0	0	-	-	14	11	1	1
Beaver	0	0	-	-	18	14	0.0	0.0	9	7	0.0	0.0	5	3	0.3	0.2	0	0	-	-	32	24	2	2
Fort Yukon	7	5	2.0	1.1	121	11	0.0	0.0	48	12	0.3	0.2	17	14	2.1	0.6	6	6	11.3	0.0	199	48	1.3	17
Venise	0	0	-	-	38	4	0.0	0.0	8	5	0.0	0.0	5	4	0.0	0.0	3	3	25.3	0.0	54	16	76	0
Chalkyitsik	0	0	-	-	22	19	0.0	0.0	4	4	0.0	0.0	3	3	0.0	0.0	0	0	-	-	29	26	0	0
District 5	9	5	1.6	0.8	292	82	0.7	0.5	102	50	2.6	1.1	60	53	16.1	0.7	24	23	92.6	0.0	487	213	3,667	353
Survey Totals	36	18	3.5	0.2	1,083	270	9.3	2.3	1,004	371	56.3	4.2	215	198	84.5	1.3	60	57	271.1	0.0	2,398	914	101,184	9,660

^a The total number of households (N), the number of households contacted (n), standard error (SE), and includes 95 percent confidence interval, CI (95%). Dashes indicate indefinable values

Appendix A.3. Estimated fall chum salmon subsistence harvest by residents of surveyed villages, by harvest stratum, with village and district totals, Yukon Area, 1997 a

Community	Combined																				Total	Est	CI(95%)	(+/-)
	Unknown				Does Not Harvest Salmon				Light Harvester				Medium Harvester				Heavy Harvester							
	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE				
Hooper Bay	13	3	0.0	0.0	72	7	0.0	0.0	87	24	0.0	0.0	18	18	0.0	0.0	0	0	-	-	190	52	0	0
Scammon Bay	0	0	-	-	22	4	0.0	0.0	52	11	0.0	0.0	2	2	0.0	0.0	0	0	-	-	76	17	0	0
Coastal District	13	3	0.0	0.0	94	11	0.0	0.0	139	35	0.0	0.0	20	20	0.0	0.0	0	0	-	-	266	69	0	0
Sheldon's Point	0	0	-	-	8	5	0.0	0.0	25	20	13.0	4.0	4	2	3.0	2.1	0	0	-	-	37	27	337	201
Alakanuk	1	1	50.0	0.0	42	5	0.4	0.4	77	22	9.8	4.0	5	5	15.4	0.0	0	0	-	-	125	33	900	618
Emmonak	1	1	0.0	0.0	78	23	0.6	0.5	67	31	1.4	0.5	10	9	0.4	0.1	2	2	0.0	0.0	158	66	146	107
Kotik	0	0	-	-	31	4	0.0	0.0	49	12	0.0	0.0	11	11	0.0	0.0	3	3	94.3	0.0	94	30	263	0
District 1	2	2	25.0	0.0	159	37	0.4	0.3	218	85	5.4	1.5	30	27	3.1	0.3	5	5	56.6	0.0	414	156	1,966	658
Mountain Village	0	0	-	-	41	5	6.0	5.6	86	24	15.4	6.1	8	7	14.3	5.1	1	1	50.0	0.0	136	37	1,756	1,132
Pilkas Point	0	0	-	-	6	4	0.0	0.0	19	17	5.3	0.9	6	6	12.7	0.0	0	0	-	-	31	27	178	34
St. Mary's	0	0	-	-	45	4	0.0	0.0	58	15	3.0	1.4	14	14	9.7	0.0	2	2	0.0	0.0	119	35	310	164
Pilot Station	1	1	0.0	0.0	45	11	0.0	0.0	46	20	2.1	1.5	1	1	10.0	0.0	1	1	0.0	0.0	94	34	109	135
Marshall	1	0	-	-	15	5	0.0	0.0	41	11	8.0	6.9	5	4	11.3	5.0	0	0	-	-	62	20	388	558
District 2	2	1	0.0	0.0	152	29	1.6	1.5	253	87	8.1	2.4	34	32	11.5	1.4	4	4	12.5	0.0	442	153	2,721	1,281
Rustan Mission	1	1	0.0	0.0	17	4	0.0	0.0	20	9	0.0	0.0	4	4	0.0	0.0	2	1	0.0	-	53	19	0	0
Holy Cross	0	0	-	-	19	4	0.0	0.0	38	18	0.8	0.6	6	6	64.3	0.0	0	0	-	-	63	28	420	45
Shageluk	0	0	-	-	17	16	0.0	0.0	9	9	13.3	0.0	2	1	0.0	-	6	6	41.2	0.0	34	32	367	0
District 3	1	1	0.0	0.0	53	24	0.0	0.0	76	36	2.0	0.3	12	11	32.2	0.0	8	7	30.9	0.0	150	79	787	45
Anvik	0	0	-	-	16	15	2.0	0.5	20	20	5.3	0.0	2	2	187.5	0.0	0	0	-	-	38	37	514	16
Grayling	0	0	-	-	24	5	1.2	1.1	25	8	41.6	16.7	7	5	47.0	6.8	1	1	133.0	0.0	57	19	1,531	830
Kaltog	0	0	-	-	13	5	27.2	21.3	30	7	15.5	5.4	7	7	38.7	0.0	2	2	25.0	0.0	52	21	1,142	630
Nulato	0	0	-	-	42	5	7.4	7.0	35	10	0.9	0.4	9	9	39.4	0.0	0	0	-	-	86	24	697	573
Koyukuk	2	1	0.0	-	24	3	0.0	0.0	15	5	60.0	39.5	4	4	150.0	0.0	1	1	454.0	0.0	46	14	1,954	1,164
Galena	2	2	0.0	0.0	62	5	2.0	1.9	44	13	10.3	6.6	9	6	73.0	31.5	5	5	426.4	0.0	122	31	3,370	832
Ruby	1	1	100.0	0.0	37	4	0.0	0.0	18	4	50.2	44.3	2	2	0.0	0.0	4	4	297.5	0.0	62	15	2,195	1,563
Huslia	0	0	-	-	48	5	0.0	0.0	13	4	0.0	0.0	7	7	1.4	0.0	2	1	0.0	-	70	17	10	0
Hughes	0	0	-	-	17	13	0.0	0.0	1	1	50.0	0.0	5	5	0.2	0.0	1	1	0.0	0.0	24	20	51	0
Allakaket	3	2	0.0	0.0	21	4	0.0	0.0	15	4	12.5	10.7	5	5	0.0	0.0	3	3	27.3	0.0	47	18	270	315
Alatna	1	0	-	-	7	6	0.0	0.0	2	1	0.0	-	0	0	-	-	0	0	-	-	10	7	0	0
Bettles	0	0	-	-	22	17	0.0	0.0	1	1	0.0	0.0	2	2	0.0	0.0	0	0	-	-	25	20	0	0
District 4	9	6	11.1	0.0	333	87	2.6	1.3	219	78	18.9	5.2	59	54	44.0	4.9	19	18	212.7	0.0	639	243	11,714	2,450
Tanana	2	0	-	-	64	9	0.0	0.0	16	8	20.5	14.5	11	10	206.4	32.0	12	12	1871.7	0.0	105	39	25,050	926
Rampart	0	0	-	-	9	8	0.0	0.0	2	2	0.0	0.0	13	13	49.7	0.0	1	0	-	-	25	23	646	0
Stevens Village	0	0	-	-	10	9	0.0	0.0	11	9	12.2	3.8	6	6	232.8	0.0	2	2	26.5	0.0	29	26	1,585	84
Birch Creek	0	0	-	-	10	8	0.0	0.0	4	3	0.0	0.0	0	0	-	-	0	0	-	-	14	11	0	0
Beaver	0	0	-	-	18	14	0.0	0.0	9	7	8.2	3.9	5	3	33.7	21.0	0	0	-	-	32	24	243	217
Fort Yukon	7	5	70.0	37.4	121	11	0.0	0.0	48	12	18.3	15.6	17	14	181.8	31.0	6	6	276.5	0.0	199	48	6,119	1,867
Venetie	0	0	-	-	38	4	0.0	0.0	8	5	40.0	24.4	5	4	85.0	32.3	3	3	273.0	0.0	54	16	1,564	498
Chalkyitsik	0	0	-	-	22	19	0.0	0.0	4	4	1.5	0.0	3	3	310.0	0.0	0	0	-	-	29	26	936	0
District 5	9	5	54.4	29.1	292	82	0.0	0.0	102	50	17.1	8.0	60	53	148.8	11.0	24	23	1041.3	0.0	487	213	36,151	2,132
Survey Totals	36	18	17.8	7.3	1,083	270	1.1	0.4	1,004	371	9.2	1.5	215	197	57.7	3.4	60	57	493.5	0.0	2,396	913	53,050	3,553

a The total number of households (N), the number of households contacted (n), standard error (SE), and includes 95 percent confidence interval, CI (95%). Dashes indicate indefinable values.

Appendix A.4. Estimated coho salmon subsistence harvest by residents of surveyed villages, by harvest stratum, with village and district totals, Yukon Area, 1997. a

Community	Combined																							
	Unknown				Does Not Harvest Salmon				Light Harvester				Medium Harvester				Heavy Harvester				Total		Est	CI(95%)
	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n		
Hooper Bay	13	3	0.0	0.0	72	7	0.0	0.0	87	24	0.0	0.0	18	18	0.0	0.0	0	0	-	-	190	52	0	0
Sicammon Bay	0	0	-	-	22	4	0.0	0.0	52	11	0.0	0.0	2	2	0.0	0.0	0	0	-	-	76	17	0	0
Coastal District	13	3	0.0	0.0	94	11	0.0	0.0	139	35	0.0	0.0	20	20	0.0	0.0	0	0	-	-	266	69	0	0
Sheldon's Point	0	0	-	-	8	5	0.0	0.0	25	20	2.0	0.7	4	2	0.0	0.0	0	0	-	-	37	27	51	36
Alakanuk	1	1	25.0	0.0	42	5	1.6	1.5	77	22	9.8	4.2	5	5	6.0	0.0	0	0	-	-	125	33	682	653
Emmonak	1	1	0.0	0.0	78	23	0.0	0.0	67	31	0.3	0.1	10	10	0.0	0.0	2	2	0.0	0.0	158	67	22	22
Kotlik	0	0	-	-	31	4	0.0	0.0	49	12	0.5	0.4	11	11	0.0	0.0	3	3	83.3	0.0	94	30	275	42
District 1	2	2	12.5	0.0	159	37	0.4	0.4	218	85	3.9	1.5	30	28	1.0	0.0	5	5	50.0	0.0	414	157	1,230	656
Mountain Village	0	0	-	-	41	5	0.0	0.0	86	24	8.3	3.3	8	7	7.1	2.5	1	1	3.0	0.0	136	37	780	560
Pitkas Point	0	0	-	-	6	4	0.0	0.0	19	17	3.1	0.6	6	6	61.2	0.0	0	0	-	-	31	27	427	25
St. Mary's	0	0	-	-	45	4	0.0	0.0	58	15	5.6	2.6	14	14	0.0	0.0	2	2	0.0	0.0	119	35	329	298
Pilot Station	1	1	0.0	0.0	45	11	0.0	0.0	46	20	0.6	0.3	1	1	10.0	0.0	1	1	0.0	0.0	94	34	40	31
Marshall	1	0	-	-	15	5	0.0	0.0	41	11	1.3	1.1	5	4	40.0	15.1	0	0	-	-	62	20	256	175
District 2	2	1	0.0	0.0	152	29	0.0	0.0	250	87	4.8	1.3	34	32	18.7	2.3	4	4	0.8	0.0	442	153	1,832	859
Russian Mission	1	1	0.0	0.0	17	4	0.0	0.0	29	9	0.3	0.2	4	4	0.0	0.0	2	1	0.0	-	53	10	10	10
Holy Cross	0	0	-	-	19	4	0.0	0.0	38	18	0.0	0.0	6	6	3.3	0.0	0	0	-	-	63	28	20	0
Shageluk	0	0	-	-	17	16	15.6	3.8	9	9	7.7	0.0	2	1	0.0	-	6	6	96.7	0.0	34	32	736	126
District 3	1	1	0.0	0.0	53	24	5.0	1.2	76	36	1.0	0.1	12	11	1.7	0.0	8	7	50.0	0.0	150	79	766	127
Arvik	0	0	-	-	16	15	0.0	0.0	20	20	0.2	0.0	2	2	10.0	0.0	0	0	-	-	38	37	24	0
Grayling	0	0	-	-	24	5	1.0	0.9	25	8	23.8	13.0	7	5	3.8	1.3	1	1	408.0	0.0	57	19	1,055	642
Kaltag	0	0	-	-	13	5	0.0	0.0	30	7	0.0	0.0	7	7	8.6	0.0	2	2	0.0	0.0	52	21	60	0
Nulato	0	0	-	-	42	5	0.0	0.0	35	10	7.2	3.7	9	9	21.3	0.0	0	0	-	-	86	24	444	260
Koyukuk	2	1	0.0	-	24	3	0.0	0.0	15	5	0.4	0.3	4	4	0.3	0.0	1	1	338.0	0.0	46	14	345	10
Galena	2	2	0.0	0.0	62	5	0.0	0.0	44	13	8.8	6.4	9	6	17.7	5.1	5	5	90.8	0.0	122	31	1,002	563
Ruby	1	1	7.0	0.0	37	4	0.0	0.0	18	4	1.0	0.8	2	2	0.0	0.0	4	4	112.3	0.0	62	15	474	31
Hustla	0	0	-	-	48	5	0.0	0.0	13	4	0.0	0.0	7	7	7.1	0.0	2	1	0.0	-	70	17	50	0
Hughes	0	0	-	-	17	13	0.0	0.0	1	1	0.0	0.0	5	5	0.0	0.0	1	1	250.0	0.0	24	20	250	0
Allakaket	3	2	0.0	0.0	21	4	0.0	0.0	15	4	2.5	2.1	5	5	2.4	0.0	3	3	0.0	0.0	47	18	50	63
Alatna	1	0	-	-	7	6	0.0	0.0	2	1	0.0	-	0	0	-	-	0	0	-	-	10	7	0	0
Bettles	0	0	-	-	22	17	0.0	0.0	1	1	0.0	0.0	2	2	0.0	0.0	0	0	-	-	25	20	0	0
District 4	9	6	0.8	0.0	333	87	0.1	0.1	219	78	6.0	2.0	59	54	8.8	0.8	19	18	99.9	0.0	639	243	3,754	895
Tanana	2	0	-	-	64	9	0.0	0.0	16	8	0.5	0.3	11	10	96.0	17.3	12	12	165.1	0.0	105	39	3,045	372
Rampart	0	0	-	-	9	8	0.0	0.0	2	2	0.0	0.0	13	13	2.6	0.0	1	0	-	-	25	23	34	0
Stevens Village	0	0	-	-	10	9	0.0	0.0	11	9	0.1	0.0	6	6	0.0	0.0	2	2	0.0	0.0	29	26	1	1
Birch Creek	0	0	-	-	10	8	0.0	0.0	4	3	0.6	0.3	0	0	-	-	0	0	-	-	14	11	3	3
Beaver	0	0	-	-	18	14	0.0	0.0	9	7	0.0	0.0	5	3	0.0	0.0	0	0	-	-	32	24	0	0
Fort Yukon	7	5	0.0	0.0	121	11	0.0	0.0	48	12	0.0	0.0	17	14	14.6	6.0	6	6	0.0	0.0	199	48	248	200
Venebe	0	0	-	-	38	4	0.0	0.0	8	5	0.0	0.0	5	4	1.5	0.5	3	3	0.0	0.0	54	16	7	5
Chalkyitsik	0	0	-	-	22	19	0.0	0.0	4	4	0.5	0.0	3	3	1.7	0.0	0	0	-	-	29	26	7	0
District 5	9	5	0.0	0.0	292	82	0.0	0.0	102	50	0.7	0.0	60	53	22.5	3.6	24	23	82.5	0.0	487	213	3,345	423
Survey Totals	36	18	0.9	0.0	1,083	270	0.3	0.1	1,004	371	3.4	0.6	215	198	11.9	1.1	60	57	75.6	0.0	2,398	914	10,927	1,364

a The total number of households (N), the number of households contacted (n), standard error (SE), and includes 95 percent confidence interval, CI (95%). Dashes indicate indefinable values.

Appendix A.5. Estimated chinook salmon subsistence use by residents of surveyed villages, by harvest stratum, with village and district totals, Yukon Area, 1997 a

Community	Combined																							
	Unknown				Does Not Harvest Salmon				Light Harvester				Medium Harvester				Heavy Harvester				Total			
	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Est	CI(95%)
Hooper Bay	13	3	0.0	0.0	72	7	0.3	0.3	87	24	3.9	0.8	18	18	4.9	0.0	0	0	-	-	190	52	449	144
Scammon Bay	0	0	-	-	22	4	7.0	2.6	52	11	7.6	2.6	2	2	29.0	0.0	0	0	-	-	76	17	619	290
Coastal District	13	3	0.0	0.0	94	11	1.9	0.6	139	35	5.4	1.1	20	20	7.3	0.0	0	0	-	-	266	69	1,068	324
Sheldon's Point	0	0	-	-	8	4	23.0	15.6	25	20	17.7	1.9	4	2	33.0	19.1	0	0	-	-	37	26	700	301
Alakanuk	1	1	70.0	0.0	42	4	20.8	12.7	77	21	21.5	5.3	5	5	11.4	0.0	0	0	-	-	125	31	2,656	1,320
Emmonak	1	1	0.0	0.0	78	22	6.9	2.1	67	31	18.9	3.3	10	9	27.1	3.8	2	2	21.5	0.0	158	65	2,118	545
Kotik	0	0	-	-	31	3	10.0	5.5	49	12	9.9	4.5	11	11	17.8	0.0	3	3	80.7	0.0	94	29	1,234	551
District 1	2	2	35.0	0.0	159	33	12.0	3.8	218	84	17.7	2.3	30	27	21.9	2.9	5	5	57.0	0.0	414	151	6,768	1,560
Mountain Village	0	0	-	-	41	4	1.8	1.1	86	24	15.4	3.8	8	7	47.9	4.9	1	1	47.0	0.0	136	36	1,831	652
Pitkas Point	0	0	-	-	6	4	1.8	0.8	19	17	18.0	1.6	8	6	50.7	0.0	0	0	-	-	31	27	658	63
St. Mary's	0	0	-	-	45	4	15.5	7.0	58	15	16.6	4.6	14	14	42.0	0.0	2	2	51.5	0.0	119	35	2,355	607
Pilot Station	1	1	30.0	0.0	45	11	12.7	6.1	46	19	31.7	4.6	1	1	78.0	0.0	1	1	40.0	0.0	94	33	2,183	679
Marshall	1	0	-	-	15	5	13.4	7.2	41	11	30.2	6.0	5	4	56.3	13.9	0	0	-	-	62	20	1,723	546
District 2	2	1	15.0	0.0	152	28	10.2	2.9	250	86	21.4	2.1	34	32	48.1	2.4	4	4	47.5	0.0	442	151	8,750	1,357
Russian Mission	1	1	1.0	0.0	17	4	18.0	14.1	29	8	32.5	9.5	4	4	127.0	0.0	2	0	-	-	53	17	1,701	727
Holy Cross	0	0	-	-	19	4	25.0	19.3	38	17	59.5	8.8	6	6	65.7	0.0	0	0	-	-	63	27	3,131	973
Shageluk	0	0	-	-	17	16	21.8	2.6	9	9	17.0	0.0	2	1	0.0	-	6	5	139.4	9.9	34	31	1,360	145
District 3	1	1	1.0	0.0	53	24	21.7	8.4	76	34	44.2	5.7	12	11	75.4	0.0	8	5	104.6	7.0	150	75	6,252	1,224
Anvik	0	0	-	-	16	15	3.3	0.2	20	19	27.3	1.0	2	2	125.0	0.0	0	0	-	-	38	36	850	43
Grayling	0	0	-	-	24	5	17.2	7.3	25	8	46.3	8.4	7	5	45.6	6.3	1	1	30.0	0.0	57	19	1,921	547
Kollig	0	0	-	-	13	5	2.6	2.0	30	7	16.4	5.6	7	7	58.6	0.0	2	2	14.5	0.0	52	21	966	334
Nulato	0	0	-	-	42	5	6.6	6.2	35	10	28.0	7.7	9	9	26.8	0.0	0	0	-	-	86	24	1,498	735
Koyukuk	2	1	3.0	-	24	3	0.3	0.3	15	5	21.4	6.9	4	4	97.8	0.0	1	1	163.0	0.0	46	14	889	204
Galena	2	2	0.0	0.0	62	5	2.6	1.8	44	12	17.0	5.8	9	8	60.2	10.8	5	5	46.8	0.0	122	30	1,684	583
Ruby	1	1	225.0	0.0	37	4	3.0	1.4	18	4	87.5	62.6	2	2	0.5	0.0	4	3	819.0	380.4	62	14	5,188	3,713
Huslia	0	0	-	-	48	4	7.5	4.6	13	4	0.5	0.2	7	7	7.4	0.0	2	1	30.0	-	70	16	479	431
Hughes	0	0	-	-	17	12	1.5	0.6	1	1	2.0	0.0	5	4	4.3	0.9	1	1	15.0	0.0	24	18	64	23
Allakaket	3	2	0.0	0.0	21	4	9.3	5.7	15	4	5.0	4.2	5	5	17.2	0.0	3	3	36.7	0.0	47	18	465	267
Alatna	1	0	-	-	7	6	0.3	0.1	2	1	19.0	-	0	0	-	-	0	0	-	-	10	7	40	1
Bettles	0	0	-	-	22	17	0.2	0.1	1	1	4.0	0.0	2	2	17.5	0.0	0	0	-	-	25	20	44	2
District 4	9	6	25.7	0.0	333	85	4.9	1.3	219	76	27.2	5.5	59	53	39.8	1.8	19	17	206.1	80.0	639	237	14,088	3,921
Tanana	2	0	-	-	64	9	3.4	2.0	16	8	36.0	13.4	11	10	35.9	3.2	12	12	151.8	0.0	105	39	3,013	407
Rampart	0	0	-	-	9	6	132.7	74.8	2	2	40.0	0.0	13	13	64.5	0.0	1	0	-	-	25	21	2,113	1,319
Stevens Village	0	0	-	-	10	9	8.6	1.4	11	9	85.1	12.8	6	6	126.2	0.0	2	1	43.0	-	29	25	1,865	279
Birch Creek	0	0	-	-	10	8	0.0	0.0	4	3	76.6	26.8	0	0	-	-	0	0	-	-	14	11	307	210
Beaver	0	0	-	-	18	14	5.9	1.1	9	6	66.8	17.5	5	3	167.7	59.8	0	0	-	-	32	23	1,545	664
Fort Yukon	7	5	0.8	0.4	121	11	2.3	1.1	48	12	28.6	8.8	17	14	95.4	13.2	6	4	27.5	13.3	199	46	3,443	995
Venebe	0	0	-	-	36	4	0.5	0.5	8	5	1.4	0.3	5	4	7.5	3.4	3	3	0.3	0.0	54	16	69	49
Chalkyitsik	0	0	-	-	22	19	1.0	0.1	4	4	2.0	0.0	3	3	3.3	0.0	0	0	-	-	29	26	40	6
District 5	9	5	0.6	0.3	292	80	6.6	2.4	102	49	38.2	5.2	60	53	75.0	6.3	24	20	86.4	3.0	487	207	12,395	1,882
Survey Totals	36	18	9.4	0.1	1,083	261	7.7	1.1	1,004	364	23.1	1.5	215	196	47.4	1.9	60	51	121.7	25.4	2,398	890	49,321	4,979

a The total number of households (N), the number of households contacted (n), standard error (SE), and includes 95 percent confidence interval, CI (95%). Dashes indicate indefinable values.

Appendix A.6. Estimated summer chum salmon subsistence use by residents of surveyed villages, by harvest stratum, with village and district totals, Yukon Area, 1997. a

Community	Unknown				Does Not Harvest Salmon				Light Harvester				Medium Harvester				Heavy Harvester				Combined			
	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	Total		Est. CI(95%)	
																					N	n	Total	(+/-)
Hooper Bay	13	3	28.7	11.2	72	7	34.1	14.7	87	24	74.8	12.6	18	18	79.6	0.0	0	0	-	-	190	52	10,774	3,005
Scammon Bay	0	0	-	-	22	4	35.0	14.1	52	11	54.8	13.8	2	2	105.0	0.0	0	0	-	-	76	17	3,831	1,532
Coastal District	13	3	28.7	11.2	94	11	34.3	11.7	139	35	67.3	9.4	20	20	82.2	0.0	0	0	-	-	266	69	14,605	3,373
Sheldon's Point	0	0	-	-	8	4	37.8	20.5	25	20	53.5	5.9	4	2	212.0	62.2	0	0	-	-	37	26	2,488	703
Atakanuk	1	1	35.0	0.0	42	4	65.0	1.8	77	21	68.4	12.8	5	5	144.6	0.0	0	0	-	-	125	31	8,761	1,946
Emmonak	1	1	0.0	0.0	78	22	38.4	10.6	67	31	79.4	10.9	10	10	185.9	0.0	2	2	169.5	0.0	158	66	10,515	2,165
Kotik	0	0	-	-	31	3	46.7	35.3	49	12	43.1	17.4	11	11	79.4	0.0	3	3	162.3	0.0	94	29	4,922	2,722
District 1	2	2	17.5	0.0	159	33	47.0	8.7	218	84	64.4	6.9	30	28	143.4	8.3	5	5	165.2	0.0	414	152	26,686	4,048
Mountain Village	0	0	-	-	41	4	26.8	23.2	86	24	77.5	10.8	8	7	188.9	2.8	1	1	270.0	0.0	136	36	9,543	2,616
Pikas Point	0	0	-	-	6	4	0.0	0.0	19	17	22.2	1.9	6	6	41.8	0.0	0	0	-	-	31	27	675	73
St. Mary's	0	0	-	-	45	4	47.8	36.9	58	15	47.4	14.4	14	14	178.5	0.0	2	2	217.5	0.0	119	35	7,836	3,649
Pilot Station	1	1	40.0	0.0	45	11	15.5	6.5	46	20	33.3	4.9	1	1	311.0	0.0	1	1	156.0	0.0	94	34	2,741	726
Marshall	1	0	-	-	15	5	4.2	1.8	41	11	34.5	10.7	5	4	112.5	23.1	0	0	-	-	62	20	2,042	894
District 2	2	1	20.0	0.0	152	28	26.4	12.8	250	87	51.2	5.4	34	32	151.0	3.5	4	4	215.3	0.0	442	152	22,837	4,636
Hudson Mission	1	1	0.0	0.0	17	4	0.5	0.4	29	9	16.8	5.7	4	4	48.8	0.0	2	0	-	-	53	18	693	326
Holy Cross	0	0	-	-	19	4	0.0	0.0	38	18	65.0	43.1	8	6	34.8	0.0	0	0	-	-	63	28	2,679	3,212
Shapeluk	0	0	-	-	17	15	165.7	32.6	9	9	142.7	0.0	2	1	60.0	-	6	6	849.8	0.0	34	31	9,320	1,085
District 3	1	1	0.0	0.0	53	23	53.3	10.5	76	36	55.9	21.6	12	11	43.7	0.0	8	6	637.4	0.0	150	77	12,692	3,407
Anvik	0	0	-	-	16	15	38.8	5.8	20	20	107.5	0.0	2	2	2284.0	0.0	0	0	-	-	38	37	7,339	180
Grayling	0	0	-	-	24	5	42.0	35.2	25	8	457.5	303.5	7	5	243.6	118.5	1	1	350.0	0.0	57	19	14,501	15,054
Kaltag	0	0	-	-	13	5	0.0	0.0	30	7	14.4	12.4	7	7	709.7	0.0	2	2	0.0	0.0	52	21	5,401	734
Nulato	0	0	-	-	42	5	0.0	0.0	35	10	3.4	0.5	9	9	0.8	0.0	0	0	-	-	86	24	126	40
Koyukuk	2	1	0.0	-	24	3	0.0	0.0	15	5	781.0	613.3	4	4	131.5	0.0	1	1	355.0	0.0	46	14	12,596	18,033
Galena	2	2	0.0	0.0	62	5	0.0	0.0	44	12	49.1	29.1	9	6	107.8	45.7	5	5	1310.0	0.0	122	30	9,684	2,642
Ruby	1	1	40.0	0.0	37	4	0.0	0.0	18	4	120.0	99.4	2	2	25.0	0.0	4	3	53.7	26.8	62	14	2,465	3,516
Huslia	0	0	-	-	48	4	1.3	1.2	13	4	1.0	0.8	7	7	119.6	0.0	2	1	0.0	-	70	16	910	115
Hughes	0	0	-	-	17	13	2.3	1.1	1	1	50.0	0.0	5	4	115.0	32.3	1	1	1050.0	0.0	24	19	1,714	319
Allakaket	3	2	1.0	0.6	21	4	2.5	2.3	15	4	52.5	42.1	5	5	189.8	0.0	3	2	841.0	149.5	47	17	3,715	1,522
Atalna	1	0	-	-	7	6	11.0	2.3	2	1	39.0	-	0	0	-	-	0	0	-	-	10	7	155	32
Bettles	0	0	-	-	22	17	0.2	0.1	1	1	6.0	0.0	2	2	100.0	0.0	0	0	-	-	25	20	210	4
District 4	9	6	4.8	0.2	333	86	5.6	2.6	219	77	142.1	55.4	59	53	260.3	15.9	19	16	549.6	24.0	639	238	58,816	23,962
Tanana	2	0	-	-	64	9	2.4	2.0	16	8	9.7	6.8	11	10	16.3	3.7	12	12	168.3	0.0	105	39	2,512	345
Rampart	0	0	-	-	9	6	8.3	4.8	2	2	0.0	0.0	13	13	54.5	0.0	1	0	-	-	25	21	784	85
Stevens Village	0	0	-	-	10	9	11.1	3.5	11	9	8.3	2.0	6	6	16.7	0.0	2	1	0.0	-	29	25	303	82
Birch Creek	0	0	-	-	10	8	0.0	0.0	4	3	0.3	0.1	0	0	-	-	0	0	-	-	14	11	1	1
Beaver	0	0	-	-	18	14	0.0	0.0	9	6	0.0	0.0	5	3	0.3	0.2	0	0	-	-	32	23	2	2
Fort Yukon	7	5	2.0	1.1	121	11	0.0	0.0	48	12	0.3	0.2	17	14	0.9	0.4	6	4	11.3	6.5	199	46	113	83
Venete	0	0	-	-	38	4	0.0	0.0	8	5	0.0	0.0	5	4	0.0	0.0	3	3	25.3	0.0	54	16	76	0
Chalkyitsik	0	0	-	-	22	19	0.0	0.0	4	4	0.0	0.0	3	3	0.0	0.0	0	0	-	-	29	26	0	0
District 5	9	5	1.6	0.8	292	80	1.2	0.5	102	49	2.6	1.1	60	53	16.8	0.7	24	20	90.1	2.0	487	207	3,791	374
Survey Totals	36	18	14.0	4.0	1,083	261	18.2	2.6	1,004	368	71.5	12.4	215	197	130.1	4.6	60	51	323.2	7.7	2,398	895	139,427	25,202

a The total number of households (N), the number of households contacted (n), standard error (SE), and includes 95 percent confidence interval, CI (95%) (+/-). Dashes indicate indefinable values.

Appendix A.7. Estimated fall chum salmon subsistence use by residents of surveyed villages, by harvest stratum, with village and district totals, Yukon Area, 1997. a

Community	Unknown				Does Not Harvest Salmon				Light Harvester				Medium Harvester				Heavy Harvester				Combined					
	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Total	Est	CI(95%)	(+/-)
Hooper Bay	13	3	0.0	0.0	72	7	0.0	0.0	87	24	0.0	0.0	18	18	0.0	0.0	0	0	-	-	190	52	0	0		
Scammon Bay	0	0	-	-	22	4	0.0	0.0	52	11	0.0	0.0	2	2	0.0	0.0	0	0	-	-	76	17	0	0		
Coastal District	13	3	0.0	0.0	94	11	0.0	0.0	139	35	0.0	0.0	20	20	0.0	0.0	0	0	-	-	266	69	0	0		
Sheldon's Point	0	0	-	-	8	4	0.0	0.0	25	20	13.5	4.0	4	2	3.0	2.1	0	0	-	-	37	26	350	200		
Alakanuk	1	1	50.0	0.0	42	4	2.0	1.9	77	22	6.4	3.8	5	5	13.8	0.0	0	0	-	-	125	32	854	596		
Emmonak	1	1	0.0	0.0	78	22	1.5	0.6	67	31	4.5	1.0	10	9	1.7	0.4	2	2	0.5	0.0	158	65	436	170		
Kotik	0	0	-	-	31	3	0.0	0.0	49	12	1.2	0.5	11	11	0.0	0.0	3	3	94.3	0.0	94	29	344	53		
District 1	2	2	25.0	0.0	159	33	1.2	0.6	218	85	6.2	1.4	30	27	3.3	0.3	5	5	56.8	0.0	414	152	1,984	654		
Mountain Village	0	0	-	-	41	5	8.4	5.5	66	24	14.9	5.1	8	7	20.1	5.9	1	1	50.0	0.0	136	37	1,838	973		
Pitkas Point	0	0	-	-	6	4	0.3	0.1	19	17	5.7	0.8	6	6	11.8	0.0	0	0	-	-	31	27	181	33		
St. Mary's	0	0	-	-	45	4	0.0	0.0	58	15	2.4	1.2	14	14	6.9	0.0	2	2	0.0	0.0	119	35	239	144		
Pilot Station	1	1	0.0	0.0	45	11	0.0	0.0	46	20	2.8	1.5	1	1	10.0	0.0	1	1	0.0	0.0	94	34	141	137		
Marshall	1	0	-	-	15	5	0.0	0.0	41	11	9.2	6.8	5	4	11.3	5.0	0	0	-	-	62	20	436	554		
District 2	2	1	0.0	0.0	152	29	2.3	1.5	250	87	8.2	2.1	34	32	11.6	1.6	4	4	12.5	0.0	442	153	2,835	1,137		
Russian Mission	1	1	0.0	0.0	17	4	1.0	0.9	29	9	0.3	0.2	4	4	0.0	0.0	2	1	0.0	-	53	19	27	33		
Holy Cross	0	0	-	-	19	4	0.0	0.0	38	18	1.8	0.7	8	6	54.3	0.0	0	0	-	-	63	28	396	53		
Shageluk	0	0	-	-	17	16	2.8	0.6	9	9	10.5	0.0	2	1	0.0	-	6	5	49.4	16.6	34	31	439	197		
District 3	1	1	0.0	0.0	53	24	1.2	0.3	76	36	2.3	0.3	12	11	27.2	0.0	8	6	37.1	12.0	150	78	862	207		
Anvik	0	0	-	-	16	15	1.3	0.2	20	19	4.4	0.3	2	2	55.0	0.0	0	0	-	-	38	36	221	16		
Grayling	0	0	-	-	24	5	16.2	13.1	25	8	43.5	12.2	7	5	39.0	7.4	1	1	133.0	0.0	57	19	1,882	866		
Kaltag	0	0	-	-	13	5	30.2	20.9	30	7	18.4	5.2	7	7	34.1	0.0	2	2	25.0	0.0	52	21	1,234	615		
Nulato	0	0	-	-	42	5	7.4	7.0	35	10	4.9	3.3	9	9	18.8	0.0	0	0	-	-	86	24	651	616		
Koyukuk	2	1	0.0	-	24	3	0.0	0.0	15	5	50.0	31.6	4	4	150.0	0.0	1	1	454.0	0.0	46	14	1,604	930		
Galena	2	2	0.0	0.0	62	5	2.0	1.9	44	12	23.0	9.3	9	6	39.7	13.2	5	5	299.6	0.0	122	30	2,991	808		
Ruby	1	1	75.0	0.0	37	4	3.8	3.5	18	4	50.2	44.3	2	2	0.0	0.0	4	3	302.0	103.8	62	14	2,326	1,781		
Huslia	0	0	-	-	48	4	0.0	0.0	13	4	0.0	0.0	7	7	4.3	0.0	2	1	0.0	-	70	16	30	0		
Hughes	0	0	-	-	17	13	0.0	0.0	1	1	50.0	0.0	5	4	0.0	0.0	1	1	0.0	0.0	24	19	50	0		
Atkasaget	3	2	0.0	0.0	21	4	0.0	0.0	15	4	12.5	10.7	5	5	0.0	0.0	3	3	27.3	0.0	47	18	270	115		
Alatna	1	0	-	-	7	6	0.0	0.0	2	1	0.0	-	0	0	-	-	0	0	-	-	10	7	0	0		
Bettles	0	0	-	-	22	17	0.0	0.0	1	1	0.0	0.0	2	2	0.0	0.0	0	0	-	-	25	20	0	0		
District 4	9	6	8.3	0.0	333	86	4.1	1.6	219	76	21.9	4.9	59	53	30.1	2.2	19	17	180.3	22.0	639	238	11,459	2,529		
Tanana	2	0	-	-	64	9	1.1	0.7	16	8	25.5	14.4	11	10	231.4	31.2	12	12	2070.9	0.0	105	39	27,876	811		
Rampart	0	0	-	-	9	6	5.0	2.9	2	2	50.0	0.0	13	13	15.1	0.0	1	0	-	-	25	21	341	1		
Stevens Village	0	0	-	-	10	9	11.1	3.5	11	9	13.3	3.8	6	6	232.8	9.0	2	1	0.0	-	29	25	1,655	107		
Birch Creek	0	0	-	-	10	8	0.0	0.0	4	3	0.0	0.0	0	0	-	-	0	0	-	-	14	11	0	0		
Beaver	0	0	-	-	18	14	0.0	0.0	9	6	9.6	5.5	5	3	33.7	21.0	0	0	-	-	32	23	255	228		
Fort Yukon	7	5	70.0	37.4	121	11	0.4	0.4	48	12	18.3	15.8	17	14	171.1	29.5	6	3	6.7	4.7	199	45	4,362	1,862		
Venetie	0	0	-	-	38	4	0.0	0.0	8	5	40.0	24.4	5	4	110.0	29.8	3	3	273.0	0.0	54	16	1,089	482		
Chaikytzik	0	0	-	-	22	19	0.0	0.0	4	4	1.5	0.0	3	3	290.0	0.0	0	0	-	-	29	26	876	0		
District 5	9	5	54.4	29.7	292	80	0.9	0.3	102	49	19.1	8.0	60	53	143.9	10.6	24	19	1071.3	1.0	487	206	37,054	2,105		
Survey Totals	36	18	17.1	7.3	1,083	263	2.1	0.6	1,004	368	10.3	1.4	215	196	52.2	3.0	60	51	496.1	7.1	2,398	896	54,194	3,549		

a The total number of households (N), the number of households contacted (n), standard error (SE), and includes 95 percent confidence interval, CI (95%) (+/-). Dashes indicate indefinable values.

Appendix A B. Estimated coho salmon subsistence use by residents of surveyed villages, by harvest stratum, with village and district totals, Yukon Area, 1997. a

Community	Unknown				Does Not Harvest Salmon				Light Harvester				Medium Harvester				Heavy Harvester				Combined				
	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Mean	SE	N	n	Total	Est	CI(95%)
Hooper Bay	13	3	0.0	0.0	72	7	0.0	0.0	87	24	0.0	0.0	18	18	0.0	0.0	0	0	-	-	190	52	0	0	
Scammon Bay	0	0	-	-	22	4	0.0	0.0	52	11	0.0	0.0	2	2	0.0	0.0	0	0	-	-	76	17	0	0	
Coastal District	13	3	0.0	0.0	94	11	0.0	0.0	139	35	0.0	0.0	20	20	0.0	0.0	0	0	-	-	266	69	0	0	
Sheldon's Point	0	0	-	-	8	5	0.0	0.0	25	20	3.1	0.8	4	2	0.0	0.0	0	0	-	-	37	27	78	41	
Alakanuk	1	1	25.0	0.0	42	4	1.5	1.4	77	22	8.5	3.3	5	5	5.2	0.0	0	0	-	-	125	32	776	512	
Ermonak	1	1	0.0	0.0	78	22	0.1	0.1	67	31	1.1	0.3	10	10	0.0	0.0	2	2	0.5	0.0	158	66	88	49	
Kotlik	0	0	-	-	31	3	0.0	0.0	49	12	2.0	0.8	11	11	0.0	0.0	3	3	83.3	0.0	94	29	352	85	
District 1	2	2	12.5	0.0	159	34	0.4	0.4	218	85	4.2	1.1	30	28	0.9	0.0	5	5	50.2	0.0	414	154	1,294	523	
Mountain Village	0	0	-	-	41	5	0.0	0.0	86	24	5.3	1.9	8	7	11.6	3.5	1	1	3.0	0.0	136	37	558	333	
Pikias Point	0	0	-	-	6	4	0.0	0.0	19	17	3.1	0.6	6	6	61.2	0.0	0	0	-	-	31	27	426	25	
St. Mary's	0	0	-	-	45	4	0.0	0.0	58	15	3.3	1.8	14	14	0.0	0.0	2	2	0.0	0.0	119	35	193	206	
Pilot Station	1	1	0.0	0.0	45	11	0.0	0.0	46	20	0.6	0.3	1	1	10.0	0.0	1	1	0.0	0.0	94	34	40	31	
Marshall	1	0	-	-	15	5	0.0	0.0	41	11	1.3	1.1	5	4	40.0	15.1	0	0	-	-	62	20	256	175	
District 2	2	1	0.0	0.0	152	29	0.0	0.0	250	87	3.2	0.8	34	32	19.7	2.4	4	4	0.8	0.0	442	153	1,473	431	
Kussian Mission	1	1	0.0	0.0	17	4	0.0	0.0	29	9	0.3	0.2	4	4	0.0	0.0	2	1	0.0	-	53	19	10	16	
Holy Cross	0	0	-	-	19	4	0.0	0.0	38	18	0.0	0.0	6	6	3.3	0.0	0	0	-	-	63	28	20	0	
Shageluk	0	0	-	-	17	16	15.6	3.8	9	9	6.1	0.0	2	1	0.0	-	6	6	66.7	0.0	34	32	721	126	
District 3	1	1	0.0	0.0	53	24	5.0	1.2	76	36	0.9	0.1	12	11	1.7	0.0	8	7	50.0	0.0	150	79	751	127	
Atvik	0	0	-	-	16	15	0.0	0.0	20	20	0.1	0.0	2	2	0.0	0.0	0	0	-	-	38	37	3	0	
Grayling	0	0	-	-	24	5	1.0	0.9	25	8	23.8	13.0	7	5	3.8	1.3	1	1	408.0	0.0	57	19	1,055	642	
Kaltag	0	0	-	-	13	5	0.0	0.0	30	7	0.0	0.0	7	7	6.0	0.0	2	2	0.0	0.0	52	21	42	0	
Nulato	0	0	-	-	42	5	0.0	0.0	35	10	7.2	3.1	9	9	20.8	0.0	0	0	-	-	86	24	439	214	
Koyukuk	2	1	0.0	0.0	24	3	0.0	0.0	15	5	0.2	0.1	4	4	0.3	0.0	1	1	338.0	0.0	48	14	342	5	
Galena	2	2	0.0	0.0	62	5	0.0	0.0	44	12	9.5	7.0	9	6	17.7	5.1	5	5	90.8	0.0	122	30	1,035	618	
Ruby	1	1	7.0	0.0	37	4	0.0	0.0	18	4	1.0	0.8	2	2	0.0	0.0	4	3	41.3	15.0	62	14	190	122	
Huslia	0	0	-	-	48	4	0.0	0.0	13	4	0.0	0.0	7	7	7.1	0.0	2	1	0.0	-	70	16	50	0	
Hughes	0	0	-	-	17	13	0.2	0.1	1	1	0.0	0.0	5	4	0.0	0.0	1	1	250.0	0.0	24	19	253	2	
Allakaket	3	2	0.0	0.0	21	4	0.0	0.0	15	4	2.5	2.1	5	5	2.4	0.0	3	3	0.0	0.0	47	18	50	63	
Atlatna	1	0	-	-	7	6	0.0	0.0	2	1	0.0	-	0	0	-	-	0	0	-	-	10	7	0	0	
Bettles	0	0	-	-	22	17	0.0	0.0	1	1	0.0	0.0	2	2	0.0	0.0	0	0	-	-	25	20	0	0	
District 4	9	6	0.8	0.0	333	86	0.1	0.1	219	77	6.1	2.1	59	53	6.1	0.8	19	17	85.0	3.0	639	239	3,459	927	
Tanana	2	0	-	-	64	9	0.0	0.0	16	8	0.5	0.3	11	10	96.0	17.3	12	12	157.9	0.0	105	39	2,959	372	
Rampart	0	0	-	-	9	6	1.7	1.0	2	2	0.0	0.0	13	13	7.0	0.0	1	0	-	-	25	21	106	17	
Stevens Village	0	0	-	-	10	9	0.0	0.0	11	9	0.0	0.0	6	6	0.0	0.0	2	1	0.0	-	29	25	0	0	
Birch Creek	0	0	-	-	10	8	0.0	0.0	4	3	0.6	0.3	0	0	-	-	0	0	-	-	14	11	3	3	
Beaver	0	0	-	-	18	14	0.1	0.0	9	6	0.0	0.0	5	3	0.0	0.0	0	0	-	-	32	23	1	1	
Fort Yukon	7	5	0.0	0.0	121	11	0.0	0.0	48	12	0.0	0.0	17	14	14.4	6.0	6	4	0.0	0.0	189	46	244	200	
Venetie	0	0	-	-	38	4	0.5	0.5	8	5	0.0	0.0	5	4	1.5	0.5	3	3	1.0	0.0	54	16	30	36	
Chalkyitsik	0	0	-	-	22	19	0.0	0.0	4	4	0.5	0.0	3	3	1.7	0.0	0	0	-	-	29	26	7	0	
District 5	9	5	0.0	0.0	292	80	0.1	0.1	102	49	0.1	0.0	60	53	23.4	3.6	24	20	79.1	0.0	487	207	3,350	425	
Survey Totals	36	18	0.9	0.0	1,083	264	0.4	0.1	1,004	369	3.1	0.5	215	197	12.1	1.1	60	53	69.5	1.0	2,398	901	10,327	1,231	

a The total number of households (N), the number of households contacted (n), standard error (SE), and includes 95 percent confidence interval, CI (95%) (+/-). Dashes indicate indefinable values.

Appendix A.9 Estimated number of salmon given away by commercial fishermen to subsistence households and corresponding confidence intervals (C.I.) for surveyed villages, Yukon Area, 1997

Community	Catch Strata Combined		Chinook Salmon		Summer Chum Salmon		Fall Chum Salmon		Coho Salmon	
	Total Households	Households Contacted ^a	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)
Hooper Bay	190	52	0	0	0	0	0	0	0	0
Scammon Bay	76	17	0	0	0	0	0	0	0	0
Coastal District	266	69	0	0	0	0	0	0	0	0
Nikolai's Point	37	27	0	0	0	0	0	0	0	0
Alakanuk	125	32	0	0	0	0	0	0	0	0
Emmonak	158	66	0	0	0	0	0	0	0	0
Kottik	94	29	0	0	0	0	0	0	0	0
District 1	414	154	0	0	0	0	0	0	0	0
Mountain Village	136	38	0	0	0	0	0	0	0	0
Pitkas Point	31	27	3	2	34	17	0	0	0	0
St. Mary's	119	35	0	0	77	131	0	0	0	0
Point Station	94	34	0	0	0	4	0	0	0	0
Marshall	62	20	0	0	0	0	0	0	0	0
District 2	442	154	3	2	111	142	0	0	0	0
Russian Mission	53	19	0	0	0	0	0	0	0	0
Holy Cross	63	28	0	0	0	0	0	0	0	0
Shageluk	34	32	0	0	100	0	0	0	0	0
District 3	150	79	0	0	100	0	0	0	0	0
Anek	38	37	0	0	3 680	167	0	0	0	0
Grayling	57	19	0	0	226	263	0	0	0	0
Kaltag	52	21	0	0	0	0	20	0	0	0
Nulato	86	24	0	0	0	0	0	0	0	0
Koyukuk	46	14	12	15	300	400	0	0	0	0
Galena	122	30	0	0	0	0	0	0	0	0
Ruby	62	14	1	0	0	0	0	0	0	0
Huslia	70	16	0	0	0	0	0	0	0	0
Hughes	24	19	13	12	0	0	0	0	0	0
Aitakaket	47	18	0	0	0	0	0	0	0	0
Alatna	10	7	0	0	0	0	0	0	0	0
Bettles	25	20	3	2	0	0	0	0	0	0
District 4	639	239	29	19	4 206	577	20	0	0	0
Lanana	105	39	21	27	0	0	50	90	0	0
Rampart	25	22	0	0	0	0	0	0	0	0
Stevens Village	29	25	0	0	0	0	0	0	0	0
Birch Creek	14	11	0	0	0	0	0	0	0	0
Beaver	32	23	0	0	0	0	0	0	0	0
Fort Yukon	199	46	0	0	0	0	0	0	0	0
Venche	54	16	0	0	0	0	0	0	3	0
Chalkyitsik	29	26	2	2	0	0	0	0	0	0
District 5	487	208	23	27	0	0	50	90	3	0
Survey Totals	2 398	903	55	34	4 417	592	70	90	3	0

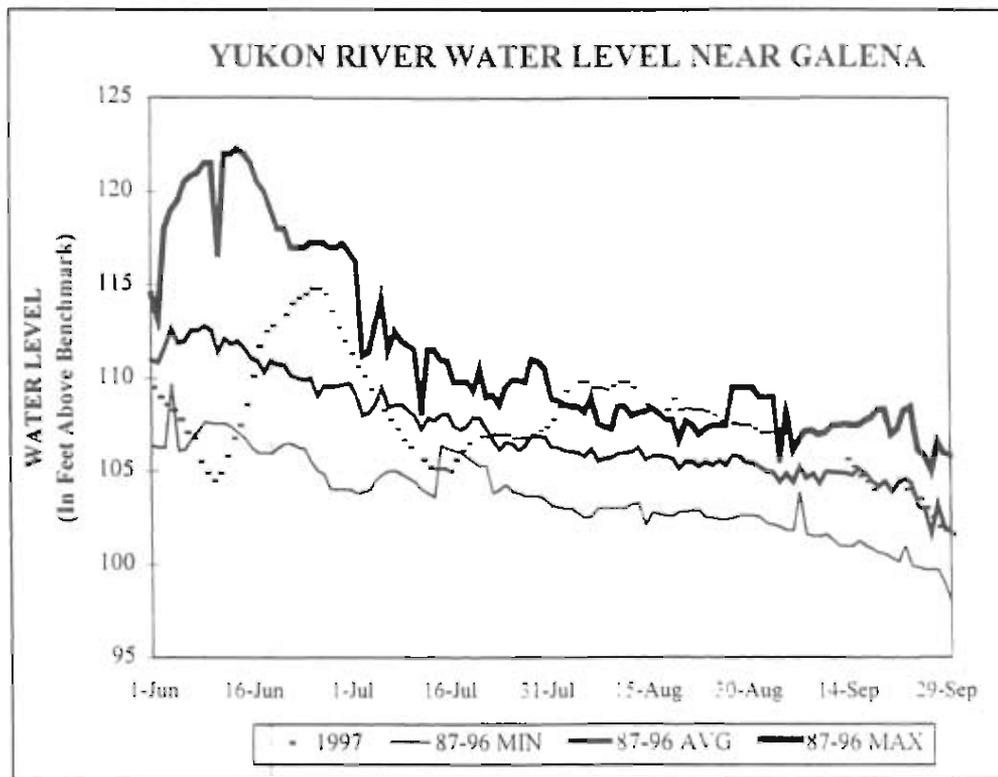
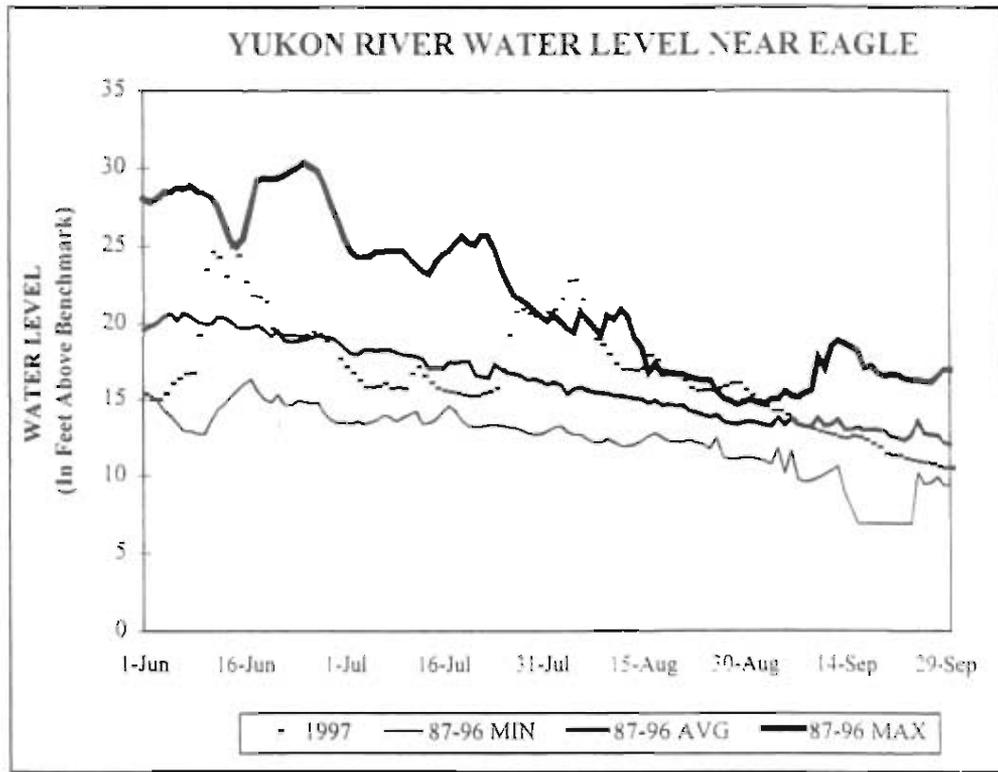
^a The number of households contacted per species may vary. The number of households indicated is the greatest number of households contacted for a given species.

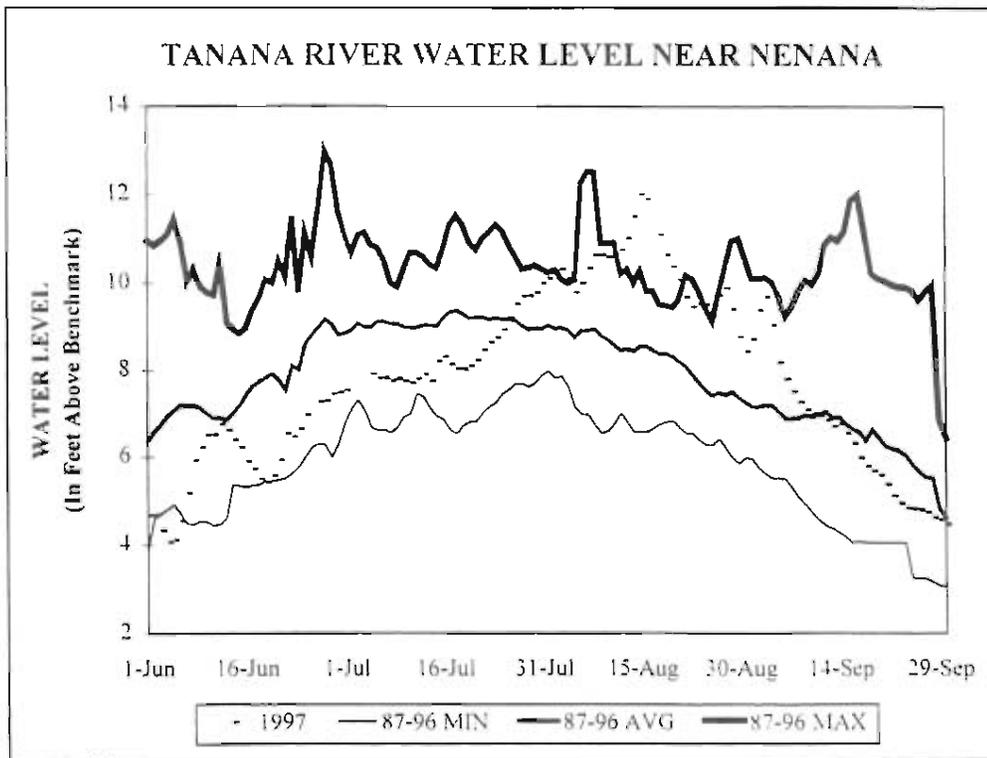
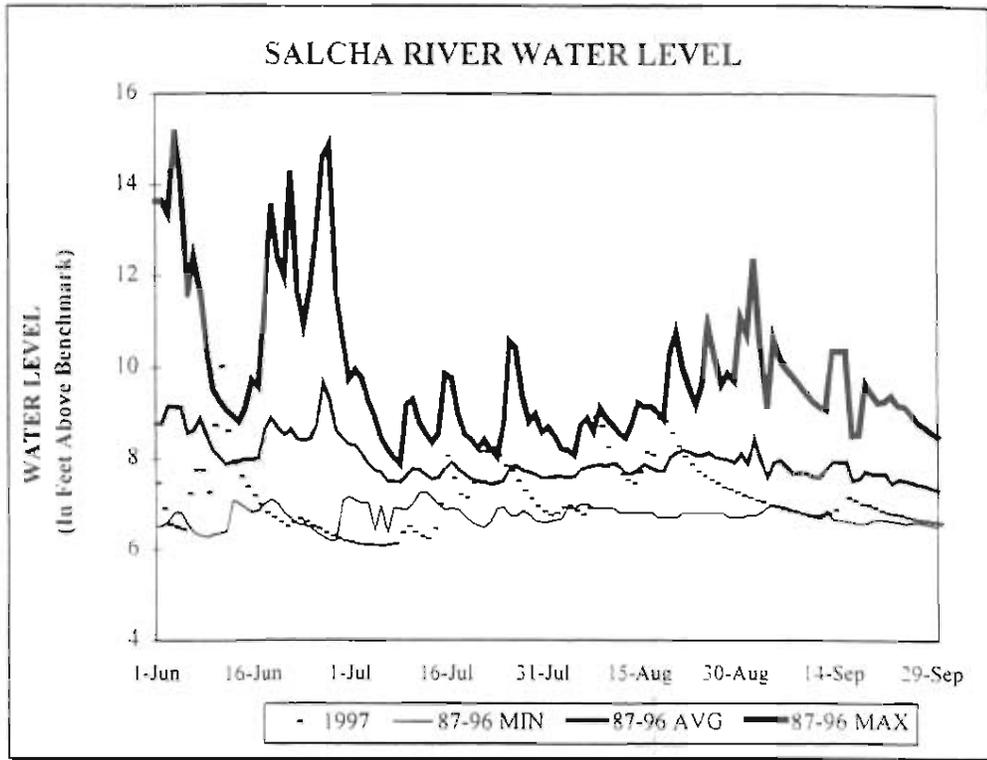
Appendix A 10. Estimated number of salmon given away by subsistence fishermen to another subsistence household and corresponding confidence intervals (CI) for surveyed villages, Yukon Area, 1997

Community	Catch Strata Combined		Chinook Salmon		Summer Chum Salmon		Fall Chum Salmon		Coho Salmon	
	Total Households	Households Contacted ^a	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)	Estimated Total	CI(95%) (+/-)
Hooper Bay	190	52	88	62	3,882	2,546	0	0	0	0
Scammon Bay	76	17	206	122	1,266	844	0	0	0	0
Coastal District	266	69	294	137	5,148	2,682	0	0	0	0
Iskiden's Point	37	27	17	7	68	28	13	11	1	1
Alakanuk	125	32	102	1,121	2,382	1,317	84	157	84	120
Emmonak	158	66	143	121	999	756	7	12	0	0
Kotik	94	29	231	197	472	594	0	0	0	0
District 1	414	154	1,218	1,145	3,921	1,630	104	157	85	120
Mountain Village	136	38	32	39	236	251	142	181	23	16
Pikus Point	31	27	38	14	57	23	4	2	4	3
St. Mary's	119	35	5	7	135	157	35	59	0	0
Pilot Station	94	34	10	67	327	329	0	0	0	0
Marshall	62	20	190	228	108	82	48	63	0	0
District 2	442	154	455	242	865	454	229	262	27	16
Russian Mission	53	19	212	500	170	263	27	33	0	0
Holy Cross	63	28	115	68	0	0	63	54	0	0
Shageluk	34	32	63	12	1,374	760	58	20	0	0
District 3	150	79	370	505	1,544	804	148	66	0	0
Anvik	38	37	174	19	113	32	81	15	0	0
Grayling	57	19	113	182	560	1,674	673	710	0	0
Kaltag	52	21	29	0	0	0	133	121	0	0
Nulato	86	24	155	176	7	12	147	232	140	19
Koyukuk	46	14	81	73	17	0	0	0	0	0
Galena	122	30	129	110	580	920	517	614	0	0
Ruby	62	14	161	126	104	93	139	257	0	0
Huslia	70	16	432	431	70	114	20	0	0	0
Hughes	24	19	17	7	50	0	0	0	3	2
Alakakut	47	18	53	53	143	112	0	0	0	0
Alatna	10	7	2	1	20	11	0	0	0	0
Bettles	25	20	3	2	0	0	0	0	0	0
District 4	639	239	1,229	541	2,674	1,529	1,110	1,007	63	69
Tanana	105	39	156	80	44	26	4,476	190	0	0
Rampart	25	21	169	16	253	0	146	51	73	17
Stevens Village	29	25	156	28	111	69	123	70	0	0
Birch Creek	14	11	0	0	0	0	0	0	0	0
Beaver	32	23	55	16	0	0	0	0	1	1
Fort Yukon	199	46	1,039	737	0	0	44	62	0	0
Venotie	54	16	30	36	0	0	125	110	19	35
Chalkyitsuk	29	26	38	6	0	0	0	0	0	0
District 5	487	207	1,943	743	408	74	4,914	256	93	39
Survey Totals	2,398	902	5,809	1,577	13,960	3,794	7,105	1,073	266	161

^a The number of households contacted per species may vary. The number of households indicated is the greatest number of households contacted for a given species.

Appendix A.11. Water levels for the Yukon River drainage at select locations.





APPENDIX B

YUKON RIVER DRAINAGE HISTORICAL SUBSISTENCE
AND PERSONAL USE SALMON HARVESTS

Appendix B 1 Estimated chinook salmon subsistence harvest in numbers of fish by village, Yukon Area, 1986-1997. a

Village	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1987-1997 Average	1992-1996 Average
Hooper Bay		2,783	1,099 b	14 b			503	230	157	1,500	1,127	613	1,941 c	703
Scammon Bay		838	489 b	2 b			948	1,199	668	585	1,238	526	664 c	928
<i>Coastal District Subtotal</i>		3,621	1,588	16			1,451	1,429	825	2,085	2,365	1,139	2,605	1,631
Sheldon Pt	592	1,173	302	165	756	445	388	561	606	459	450	970	568	493
Alakanuk	1,027	1,180	738	820	871	1,044	623	2,562	1,045	1,191	662	2,058	931	1,217
Emmonak	1,754	2,518	1,786	1,598	1,873	1,311	2,336	4,372	2,384	1,711	702	3,080	1,817	2,301
Kotik	1,902	2,407	1,112	1,982	3,119	3,125	1,794	2,913	2,505	2,599	1,832	1,442	2,349	2,329
<i>District 1 Subtotal</i>	5,275	7,278	3,938	4,565	6,619	5,925	5,141	10,408	6,540	5,960	3,646	7,550	5,665	6,339
Mt Village	1,367	2,252	740	2,001	1,792	1,171	1,249	3,217	1,511	1,542	1,315	2,081	1,591	1,767
Pitkas Pt/St Marys	1,717	2,457	1,378	2,184	2,476	2,488	2,604	3,043	3,191	2,590	2,528	3,385	2,197	2,791
Pilot Station	1,452	2,593	674	1,498	3,786	2,681	1,818	2,661	1,977	1,614	1,811	2,373	2,246	1,976
Marshall	1,947	2,564	1,031	1,464	1,492	1,277	1,403	2,592	2,277	3,291	2,126	1,511	1,566	2,338
<i>District 2 Subtotal</i>	6,483	9,866	3,823	7,147	9,546	7,617	7,074	11,513	8,956	9,037	7,780	9,350	7,681	8,911
Russian Mission	1,747	2,036	1,850	2,367	1,694	1,349	1,282	3,273	1,793	2,450	2,709	1,459	1,859	2,301
Holy Cross	2,505	2,625	2,593	2,379	2,337	1,649	3,491	3,191	4,040	2,808	3,953	3,472	2,317	3,497
Shageluk	53	47	104	32	62	189	218	128	291	161	121	1,380	87	184
<i>District 3 Subtotal</i>	4,305	4,708	4,547	4,778	4,093	3,187	4,991	6,592	6,124	5,419	6,783	6,311	4,263	5,982
Lower Yukon Area Total	16,063	25,473	13,896	16,506	20,258	16,729	18,657	29,942	22,445	22,501	20,574	24,350	20,132	22,824
Anvik	959	428	211	418	481	619	389	663	424	450	768	951	431	539
Grayling	1,837	1,322	1,571	1,082	144	874	1,074	1,045	1,843	1,340	1,036	2,391	999	1,268
Katag	1,080	1,117	1,168	1,306	2,244	1,866	1,084	1,260	1,653	1,890	994	1,036	1,540	1,376
Nulato	1,835	1,573	1,988	2,079	2,788	2,500	1,596	1,660	1,735	1,533	1,461	1,576	2,185	1,597
Koyukuk	569	609	711	1,003	876	885	510	853	589	148	402	851	817	500
Galena	1,046	1,270	1,982	1,374	3,134	2,574	1,870	1,732	1,834	1,336	2,770	2,350	2,067	1,908
Ruby/Kokines	1,263	927	1,402	1,016	811	971	498	3,263	1,539	1,435	557	2,260	1,025	1,458
<i>Bonasila R. to Illinois Cr. Subtotal (Excluding the Koyukuk River)</i>	8,589	7,246	9,031	8,278	10,478	10,289	7,021	10,476	9,617	8,130	7,988	11,415	9,064	8,046
Ikroavik	82	182	189	177	198	198	751	232	239	502	67	57	101	411
Hughes	296	177	29	181	90	146	29	88	107 d	77	54	34	125	59
Atkasook/Alatna e	563	309	366	438	356	451	437	139	364 d	331	84	461	384	226
Bettles				0	0	16	53	1	0	4	0	39	5 f	12
<i>Koyukuk River Subtotal</i>	941	668	484	796	644	811	1,270	460	710	1,344	205	591	683	741
<i>District 4 Subtotal</i>	9,530	7,914	9,515	9,074	11,122	11,100	8,291	10,936	10,327	9,474	8,193	12,006	9,747	9,387

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Village	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1987-1991 Average	1992-1996 Average
Tanana	1,672	4,021	3,537	3,008	2,294	2,483	2,477	3,362	2,999	2,398	2,741	3,596	3,067	2,795
Rampart	1,700	2,815	3,145	3,177	1,481	988	2,802	1,956	1,354	1,461	1,751	2,203	2,321	1,865
Fairbanks (permits) g h	1,762	613	0	200	420	982	1,394	1,514	1,920	1,447	1,166	955	443	1,488
Stevens Village	2,839	2,076	2,845	3,101	1,295	2,035	1,887	1,754	2,814	2,674	681	2,070	2,270	1,962
Berch Creek			0 b	0		196	44	0	119	93	0	373	49	51
Beavut	708	466	940	1,604	721	713	1,564	1,557	850	1,021	896	1,859	607	1,176
Ft. Yukon	3,083	3,950	2,245	4,898	4,051	5,585	4,122	6,361	4,727	3,132	4,957	3,145	4,146	4,660
Circle/Central (permits) h	2,233	1,614	2,034	1,785	1,951	1,871	1,752	955	1,617	1,316	1,912	1,237	1,851	1,510
Eagle (permits) h	1,915	1,988	2,333	2,385	1,742	1,193	1,040	753	1,234	1,886	1,092	1,534	1,928	1,201
Other (permits) h i					615	374	571	437	602	1,004	377	763	495	598
Illoos Cr. to U.S. Can. Border Subtotal (Excluding Chandalar/Black Rivers)	15,912	17,543	17,079	20,248	14,560	16,420	17,653	18,649	18,206	16,432	15,563	17,735	17,477	17,307
Vonotse	32	13	121	88	29	9	35	2,716	524	434	134	314	57	744
Chalkytsuk	0	0	0	0	0	0	3	0	0	0	30	0	0	1
Chandalar/Black Rivers Subtotal	32	13	121	88	29	9	38	2,716	524	434	164	314	57	744
District 5 Subtotal	15,944	17,556	17,200	20,336	14,589	16,429	17,691	21,365	18,760	16,866	15,727	18,049	17,225	17,767
Manley j	621	40	572	992	1,169	401	551	238	480	335	134	242	635	290
Minto j	350	374	466	366	100	134	142	468	316	535	523	1,208	288	397
Neriana j	2,093	3,151	3,846	1,188	1,265	1,599	1,267	693	759	607	423	1,082	2,210	625
Fairbanks (permits) h k	637	531	0	0	84	378	402	273	775	285	97	176	159	305
Other j l			0	0	0	3	76	0	40	17	0	4	1	22
Tanana River District 6 Subtotal	3,701	4,096	4,884	2,546	2,618	2,515	2,438	1,672	2,370	1,779	1,177	2,712	3,332	1,639
Upper Yukon Area Total	29,175	29,566	31,599	31,956	28,329	30,044	28,420	33,973	31,457	28,119	25,097	32,767	30,304	28,793
Alaska Yukon Area Total	45,238	55,039	45,495	48,462	48,587	46,773	47,077	63,915	53,902	50,620	45,671	57,117	50,436	51,617

a. Historic estimated subsistence harvests are available in each year's respective Yukon Area Annual Management Report (1961 to 1996). Beginning in 1988 subsistence salmon harvest estimates have been generated from a stratified random sample of village households. Numbers include test fish catches given away. Blanks indicate harvest information was not collected.

b. The village was not surveyed, harvest estimates were calculated from calendar and post card replies.

c. 1987 and 1988 average harvest.

d. Due to floods in 1994, Hughes, Allakaket, and Alatna were not surveyed. The 1994 chinook salmon harvest is estimated using 5 year average 1989-1993.

e. Alatna combined with Allakaket.

f. 1989-1991 average harvest.

g. Harvests by Fairbanks subsistence permit holders that fished in District 5 of the Yukon River.

h. Salmon catches expanded for permits not returned and household interviews (1981-1989). Beginning in 1990, reported harvest is from returned permits only.

i. Other permit holders that fished in District 5 but did not reside in the villages listed.

j. Permits required beginning in 1986 for Subdistricts 6-A and 6-B. In 1988 and 1989, permit and household interview data were expanded. Beginning in 1990, reported harvest is from returned permits only.

k. Harvests by Fairbanks subsistence permit holders that fished in the Tanana River. Permits required beginning in 1964 for the Tanana River upstream of the Wood River.

l. Other permit holders that fished in District 6 but did not reside in the villages listed.

Appendix B 2 Estimated summer chum salmon subsistence harvest in numbers of fish, by village, Yukon Area, 1986-1997 a

Village	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1987-1991 Average	1992-1996 Average
Hooper Bay		23,468	23,059 b	2,293 b			12,900	16,106	10,556	13,374	15,670	12,310	23,264 c	11,234
Scammon Bay		6,200	8,171 b	48 b			3,795	4,692	4,347	3,986	6,365	3,401	7,186 c	4,205
<i>Coastal District Subtotal</i>		29,668	31,230	2,341			16,695	20,798	14,903	17,360	22,235	15,711	30,449	17,465
Sheldon Pt	4,755	2,460	2,589	4,314	1,488	2,226	1,415	2,362	1,941	2,979	2,634	2,603	2,609	2,174
Alakanuk	11,260	9,913	6,992	12,108	7,265	8,058	9,951	8,935	5,947	10,538	6,171	7,443	8,867	8,843
Emmonak	12,618	11,177	10,528	22,985	15,215	8,401	12,296	15,568	13,060	11,696	6,097	12,399	13,661	13,155
Kutik	10,201	7,210	8,825	11,437	13,061	9,105	9,577	7,121	11,197	9,777	12,387	4,803	10,326	9,418
<i>District 1 Subtotal</i>	38,834	30,760	28,934	52,644	36,969	27,790	33,239	33,986	32,145	34,900	27,289	27,248	35,465	33,750
Mt Village	11,468	12,456	9,248	15,809	9,950	4,743	7,864	10,505	3,938	10,554	9,265	11,310	10,453	8,210
PMas Pt (w/ Marys)	14,988	12,402	10,501	13,124	9,515	9,284	8,555	7,406	11,231	7,615	8,355	9,621	10,965	8,702
Flot Station	7,870	4,279	4,247	6,783	6,698	4,634	6,236	5,641	5,450	4,427	6,355	4,532	5,327	5,439
Marshall	7,172	3,997	4,796	3,527	2,290	2,042	2,076	1,745	2,288	4,594	4,431	1,508	3,410	2,676
<i>District 2 Subtotal</i>	41,496	33,134	28,787	39,703	28,453	20,703	24,731	25,297	32,067	27,190	28,426	26,971	30,156	25,011
Russian Mission	3,136	2,283	2,794	2,229	2,146	837	3,331	1,838	601	3,653	3,554	585	2,058	2,406
Holy Cross	2,392	1,878	3,038	1,753	857	1,028	1,001	1,517	1,479	948	1,700	487	1,710	1,236
Shageluk	6,710	8,015	8,779	8,842	6,518	3,680	5,267	4,183	6,212	7,542	6,114	9,244	7,167	5,801
<i>District 3 Subtotal</i>	12,238	12,176	14,609	12,824	9,521	5,545	9,599	7,538	8,492	12,143	11,368	10,316	10,930	9,443
Lower Yukon Area Total	92,588	105,738	103,560	107,712	74,973	54,038	84,264	87,619	78,447	91,683	89,318	80,246	107,005	85,530
Anvik	41,581	28,887	12,607	410	2,032	876	1,142	1,735	907	9	185	6,306	8,962	948
Grayling	35,284	21,264	22,634	14,570	1,430	8,094	3,605	1,137	1,418	3,385	587	2,448	13,508	2,386
Kallag	24,667	28,550	3,592	632	6,956	2,287	1,204	1,118	3,683	139	31	73	8,403	1,536
Nulato	10,349	16,299	10,201	200	502	159	889	15	975	228	1,003	115	5,472	527
Koyukuk	6,250	9,718	284	381	283	2,326	1,130	230	2,039	315	41	739	2,598	929
Galena	6,618	11,776	7,413	6,216	1,760	3,493	3,232	2,477	1,198	1,954	3,902	4,575	6,132	2,215
Kutry/Kokines	7,883	8,786	4,010	1,844	351	1,352	2,420	1,450	4,186	4,445	2,016	3,286	3,269	3,228
<i>Bonanza R. to Ilinois Cr. Subtotal (Excluding the Koyukuk River)</i>	132,632	125,280	60,741	24,253	13,314	18,587	13,622	8,169	14,906	10,475	7,765	17,540	48,435	11,768
Huslia	10,516	11,042	14,895	10,005	7,368	7,857	13,670	8,343	6,014	4,885	2,372	840	10,233	8,208
Hughes	7,280	4,369	2,445	3,687	509	1,257	1,625	827	1,581 d	2,448	1,411	1,579	2,453	1,296
Atkasket/Alatna e	8,934	8,700	8,524	2,915	5,319	7,413	6,858	2,703	5,042 d	6,536	4,877	4,061	6,574	4,228
Bettles				75	24	155	37	34	45	740	0	210	85 f	214
<i>Koyukuk River Subtotal</i>	26,730	24,111	25,864	16,642	13,220	16,682	22,190	11,907	12,682	14,605	8,660	6,890	19,349	13,944
<i>District 4 Subtotal</i>	159,362	149,391	86,605	40,935	26,534	35,268	35,812	20,076	27,488	25,084	16,425	24,230	67,781	25,734

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Village	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1987-1991 Average	1992-1996 Average
Tanana	11,646	10,876	13,972	7,750	5,905	2,779	4,553	4,245	7,022	3,660	5,190	2,526	8,258	4,670
Rampart	1,450	2,434	3,383	28	58	20	4,494	1,489	559	1,168	1,188	738	1,185	1,928
Fairbanks (permits) g-h	1,382	1,493	0	0	25	1,068	706	465	360	722	2,958	424	517	563
Stevens Village	3,116	1,446	865	2,375	1,671	1,385	460	653	459	158	530	191	1,548	433
Beaver	0	657	214	124	108	2,355	12	134	655	36	572	2	692	209
Ft. Yukon	3,264	1,187	7,717	1,760	145	11,974	1,700	3,830	2,043	998	26	134	4,557	2,143
Circle/Central (permits) h	459	2,078	871	361	1,267	51	356	85	106	72	324	282	926	155
Eagle (permits) h	516	417	1,273	547	361	607	23	32	38	57	105	17	641	38
Other (permits) h j					187	32	291	24	21	232	616	130	110	142
Wood Cr. to U.S. Can. Border Subtotal (Excluding Chandalar/Black Rivers)	21,833	20,588	28,295	12,951	9,727	20,271	12,595	10,957	11,263	7,163	11,509	4,444	18,412	10,490
Veneta	0	0	701	30	0	3,393	0	129	587	552	0	76	825	312
Chalkyitsik	0	0	327	0	90	500	17	0	0	0	0	0	183	4
Chandalar/Black Rivers Subtotal	0	0	1,028	30	90	3,893	17	129	587	552	0	76	1,008	316
District 5 Subtotal	21,833	20,588	29,323	12,981	9,817	24,164	12,612	11,086	11,850	7,655	11,509	4,520	19,440	10,736
Mantley k	604	267	3,731	2,457	2,250	1,716	850	1,310	1,405	1,657	1,219	576	2,084	1,306
Minto k	1,587	1,383	947	1,425	500	748	625	367	509	1,320	1,421	1,058	1,001	705
Nenana k	10,827	21,214	5,654	3,996	1,383	1,499	6,372	5,019	1,352	5,043	4,411	1,899	6,747	4,447
Fairbanks n1	4,024	1,461	0	0	152	1,096	1,342	97	3,693	3,528	392	271	542	2,165
Other k m			0	0	0	10	315	0	67	113	43	22	3	124
Tanana River District 6 Subtotal	17,042	24,329	10,332	7,882	4,285	5,069	9,504	6,793	7,026	11,661	7,486	3,824	10,376	8,740
Upper Yukon Area Total	198,237	194,304	126,260	61,784	40,636	64,502	57,928	37,955	46,344	44,400	35,420	32,574	97,597	45,276
Alaska Yukon Area Total	290,825	300,042	229,820	169,496	115,809	118,540	142,192	125,574	124,791	138,083	124,738	112,820	204,603	130,805

- a. Historic, estimated subsistence harvests are available in each year's respective Yukon Area Annual Management Report (1961 to 1996). Beginning in 1988, subsistence salmon harvest estimates have been generated from a stratified random sample of village households. Numbers include test fish catches given away. District 4 summer chum salmon subsistence harvest estimates prior to 1988 and District 5 and 6 prior to 1983 included commercially caught summer chum salmon carcasses retained for subsistence use. Beginning in 1988 and 1989, efforts were made to exclude commercial carcasses from subsistence harvest estimates. Blanks indicate harvest information was not collected.
- b. The village was not surveyed; harvest estimates were calculated from calendar and post-card replies.
- c. 1987 and 1988 average harvest.
- d. Due to floods in 1994, Hughes, Allakaket, and Aitna were not surveyed. 1994 summer chum salmon harvest is estimated using 5 year average 1989-1993.
- e. Aitna combined with Allakaket.
- f. 1989-1991 average harvest.
- g. Catches by Fairbanks subsistence use permit holders that fished in District 5 of the Yukon River.
- h. Salmon catches expanded for permits not returned and household interviews (1981-1989). Beginning in 1990, reported harvest is from returned permits only.
- i. Includes Birch Creek.
- j. Other permit holders that fished in District 5 but did not reside in the villages listed.
- k. Permits required beginning in 1988 for Subdistricts 6-A and 6-B. In 1988 and 1989, permit and household interview data were expanded. Beginning in 1990, reported harvest is from returned permits only.
- l. Catches by Fairbanks subsistence use permit holders that fished in the Tanana River. Permits required beginning in 1964 for the Tanana River upstream of the Wood River.
- m. Other permit holders that fished in District 6 but did not reside in the villages listed.

Appendix B 3. Estimated fall chum salmon subsistence harvest in numbers of fish by village, Yukon Area, 1986-1997. a

Village	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1987-1991 Average	1992-1996 Average
Hooper Bay		105	1,711 b	146 b			127	113	284	207	392	0	908 c	225
Scammon Bay		117	551 b	10 b			79	7	63	147	0	0	334 c	59
Coastal District Subtotal		222	2,262	156			206	120	347	354	392	0	1,242	284
Sheldon Pt	259	882	289	586	102	84	490	158	25	256	21	337	389	190
Atakanuk	2,030	3,748	1,194	430	267	193	401	182	73	631	100	900	1,166	277
Emmonak	2,746	8,160	1,792	840	2,353	2,027	1,628	1,507	3,441	1,614	1,501	1,039	3,034	1,938
Kotik	3,965	5,677	2,200	3,058	2,613	1,631	2,697	5,923	1,348	2,197	2,625	856	3,036	2,938
District 1 Subtotal	9,000	18,467	5,475	4,914	5,335	3,935	5,216	7,770	4,887	4,698	4,147	3,132	7,625	5,344
Mt. Village	2,947	4,897	1,880	4,641	1,566	1,473	1,052	1,113	797	1,347	1,366	2,698	2,891	1,135
Pikas Pt/St. Marys	5,401	3,966	2,533	1,970	956	2,202	77	708	1,356	641	1,261	488	2,325	809
Pilot Station	1,663	583	1,372	1,872	1,941	1,062	3,526	1,017	1,527	575	448	1,106	1,366	1,419
Marshall	3,472	4,008	2,815	1,532	1,724	891	2,727	256	471	754	2,212	388	2,194	1,284
District 2 Subtotal	13,483	13,454	8,600	10,015	6,187	5,626	7,382	3,094	4,151	3,317	5,287	4,680	8,777	4,640
Husston Mission	637	1,255	1,151	308	878	425	648	172	11	865	587	0	803	457
Holy Cross	1,148	1,598	586	711	1,178	190	845	1,066	145	681	1,814	420	855	1,014
Shageluk	370	434	0	4	0	0	865	211	186	126	305	367	88	339
District 3 Subtotal	2,155	3,287	1,747	1,023	2,056	615	2,358	1,449	862	1,672	2,706	787	1,746	1,805
Lower Yukon Total	24,638	35,430	18,084	16,108	13,578	10,178	15,162	12,433	10,247	10,041	12,532	8,599	19,300	12,083
Anvik	913	394	136	168	583	452	894	420	155	269	457	514	347	439
Grayling	4,204	4,750	1,700	830	1,405	3,816	2,993	2,083	811	1,155	1,759	1,531	2,472	1,760
Kallag	2,024	7,474	2,293	1,654	2,327	2,834	2,522	704	630	644	1,049	1,142	3,315	1,110
Nulato	1,762	2,200	1,673	2,438	3,546	1,637	1,910	571	1,109	1,137	2,299	697	2,298	1,405
Koyukuk	2,195	2,492	567	2,460	860	2,761	2,817	2,052	1,048	814	2,458	1,954	1,832	1,638
Galena	4,819	10,509	4,308	6,438	3,202	5,525	2,393	3,255	3,983	3,202	6,620	3,370	5,996	3,887
Ruby/Koekines	7,101	11,000	5,171	6,599	3,352	2,856	4,499	1,085	4,553	4,695	561	2,195	5,796	3,279
Bonasia R. to Illinois Cr. Subtotal (Excluding the Koyukuk River)	23,018	38,819	15,928	20,583	15,275	19,681	18,028	10,170	13,270	11,916	15,203	11,403	22,057	13,717
Huska	808	585	1,697	1,728	846	411	1,286	258	55	1,035	298	10	1,053	586
Hughes	1,422	586	311	260	70	270	325	169	0 d	263	274	51	289	172
Atakapet/Alaina u Butler	878	1,477	443	1,969	3,050	513	1,579	235	0 d	260	861	270	1,460	506
				0	0	0	14	0	0	583	50	0	0 f	129
Koyukuk River Subtotal	3,108	2,648	2,451	3,957	3,966	1,194	3,204	662	50	2,141	1,583	331	2,843	1,203
District 4 Subtotal	26,126	41,467	18,379	24,540	19,241	20,875	21,232	10,832	13,325	14,057	16,786	11,734	24,900	15,111

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Village	1985	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1987-1991 Average	1992-1996 Average
Tanana	32,049	41,825	55,998	40,845	41,145	40,868	19,365	23,103	34,681	14,409	21,420	25,058	35,310	22,596
Rampart	3,950	5,092	3,600	2,472	10,818	5,801	5,701	3,272	1,007	1,403	898	646	4,322	2,456
Fairbanks (permits) g h	11,708	5,264	0	7	62	2,022	2,491	930	2,870	2,184	2,727	491	2,844	2,240
Slevens Village	4,150	7,538	1,451	6,633	3,857	2,481	150	862	45	3,194	991	1,585	3,938	1,048
Beaver	3,321	5,750	96	7,242	757	7	361	692	2,069	1,231	9	243	2,861	872
Fl Yukon	8,543	15,200	2,786	27,790	11,627	7,467	2,284	2,380	6,827	9,196	8,144	6,119	10,988	5,766
Circle/Central (permits) h	3,650	7,691	4,296	4,478	6,804	6,413	6,379	349	4,581	5,102	5,440	3,707	4,503	4,370
Eagle (permits) h	16,027	19,678	14,800	11,557	8,027	7,985	5,630	2,070	8,263	13,115	14,916	14,488	11,682	8,799
Other (permits) h j					529	100	0	1,750	0	630	505	421	265	617
Winnis Cr. to U.S. Can. Border Subtotal (Excluding Chandalar/Black Rivers)	83,398	106,038	83,107	101,024	83,646	73,144	42,361	35,408	60,343	50,664	55,048	52,758	76,712	48,765
Venute	3,193	2,774	34	7,977	5,377	758	3,066	7,881	4,302	6,085	7,195	1,564	3,871	5,706
Chalkytsuk	1,533	2,686	1,066	3,000	1,490	100	274	475	1,751	845	1,230	836	1,955	915
Chandalar/Black Rivers Subtotal	4,726	5,460	1,102	10,977	6,867	858	3,340	8,356	6,053	6,930	8,425	2,500	5,826	6,621
District 5 Subtotal	88,124	113,498	84,209	112,001	90,513	74,002	45,701	43,764	66,396	57,594	63,473	55,258	82,538	55,386
Manley j	5,905	4,267	6,899	21,087	25,860	13,243	7,010	3,215	13,722	20,272	10,662	5,887	10,670	9,147
Minto j	545	5,419	2,615	2,005	3,652	5,276	3,017	301	1,419	4,762	4,381	2,361	2,847	2,780
Nenana j	15,902	26,909	26,889	25,340	12,464	17,932	13,253	5,929	11,201	15,500	14,207	3,799	17,917	10,015
Fairbanks (permits) h k	2,803	0	0	0	309	1,871	1,384	56	5,006	6,384	5,736	4,031	519	3,096
Other k m				10,222	2,283	2,347	1,039	352	2,249	2,230	1,481	3,472	4,168	1,470
Tanana River District 6 Subtotal	25,155	36,595	36,403	58,654	44,568	40,469	25,713	9,853	33,597	49,168	36,467	19,550	36,121	26,508
Upper Yukon Total	139,405	191,560	138,991	195,195	154,322	135,346	92,646	64,449	113,318	120,819	116,726	86,542	143,580	97,005
Alaska Total	164,043	226,990	157,075	211,303	167,900	145,524	107,808	76,882	123,565	130,860	129,258	95,141	162,949	100,000

a. Historic estimated subsistence harvests are available in each year's respective Yukon Area Annual Management Report (1961 to 1996). Beginning in 1988 subsistence salmon harvest estimates have been generated from a stratified random sample of village households. Numbers include test fish catches given away. Includes commercial related harvest to produce roe sold, 1982-1988. Blanks indicate harvest information was not collected.

b. The village was not surveyed, harvest estimates were calculated from calendar and post card replies.

c. 1987 and 1988 average harvest.

d. Due to floods in 1994, Hughes, Allakaket, and Alatina were not surveyed and the estimated harvest of fall chum salmon was zero.

e. Alatina combined with Allakaket.

f. 1989-1991 average harvest.

g. Harvests by Fairbanks subsistence use permit holders that fished in District 5 near the Yukon River bridge crossing.

h. Salmon catches expanded for permits not returned and household interviews (1981-1989). Beginning 1990, reported harvest is from returned permits only.

i. Includes Birch Creek.

j. Other permit holders that fished in District 5 but did not reside in the villages listed.

k. Permits required beginning in 1988 for Subdistricts 6-A and 6-B. In 1988 and 1989, permit and household interview data were expanded. Beginning in 1990, reported harvest is from returned permits only.

l. Harvests by Fairbanks subsistence use permit holders that fished in the Tanana River. Permits required beginning in 1964 for the Tanana River upstream of the Wood River.

m. Other permit holders that fished in District 6 but did not reside in the villages listed.

Appendix B 4 Estimated coho salmon subsistence harvest in numbers of fish by village, Yukon Area, 1986-1997 a

Village	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1987-1991 Average	1992-1996 Average
Hooper Bay		69	1,523 b	211 b			28	0	1	48	92	0	796 c	34
Scammon Bay		64	326 b	2 b			31	40	80	104	0	0	195 c	51
<i>Coastal District Subtotal</i>		133	1,849	213			59	40	81	152	92	0	991	85
Sheldon Pt	237	308	169	467	78	35	441	78	52	419	138	51	215	226
Atkasuk	1,518	1,116	634	334	156	391	966	138	94	658	103	882	526	392
Emmonak	732	3,497	1,578	1,259	1,283	801	666	196	959	485	594	356	1,684	580
Kotik	238	1,475	2,008	2,997	1,784	581	3,353	1,931	2,167	689	1,610	534	1,769	1,950
<i>District 1 Subtotal</i>	2,725	6,396	4,389	5,977	3,301	1,808	5,426	2,343	3,272	2,251	2,445	1,823	4,194	3,147
MI Village	828	2,481	1,314	2,385	1,754	868	1,971	447	968	921	276	1,089	1,700	917
Pekas Pt/St. Marys	4,832	1,740	3,147	971	515	1,617	2,771	451	978	708	983	756	1,598	1,178
Pilot Station	1,514	300	876	379	1,968	553	300	477	811	241	1,258	323	815	617
Marshall	1,968	2,373	1,767	1,304	2,107	259	1,545	320	1,124	272	958	256	1,562	844
<i>District 2 Subtotal</i>	9,140	6,894	7,104	5,659	6,344	3,297	6,587	1,695	3,881	2,142	3,475	2,474	5,736	3,176
Russian Mission	679	423	604	20	688	396	1,148	152	55	891	255	10	426	500
Holy Cross	102	259	935	517	338	944	105	88	171	0	0	20	599	73
Shagekuk	173	72	128	0	0	0	296	39	137	0	189	736	40	132
<i>District 3 Subtotal</i>	954	754	1,667	537	1,026	1,340	1,549	279	363	891	444	766	1,065	705
Lower Yukon Total	12,819	14,177	15,009	10,866	10,671	6,445	13,621	4,357	7,597	5,436	6,456	5,013	12,205	8,538
Arvik	296	405	97	40	236	347	202	115	95	10	44	24	225	93
Grayling	860	599	692	969	10	1,363	859	164	36	97	236	1,055	727	278
Kallag	229	0	0	792	501	1,260	2,105	334	245	426	298	60	511	682
Nukto	69	85	234	276	845	75	435	37	27	25	149	444	303	135
Koyukuk	154	894	10	118	162	307	1,877	78	885	33	476	345	297	552
Gukna	465	1,343	1,029	415	572	422	1,398	124	803	275	780	1,002	757	676
Ruby/Kokness	339	0	2,169	1,069	974	410	1,299	308	1,957	607	376	474	524	969
<i>Bonasia R. to Ilkors Cr. Subtotal (Excluding the Koyukuk River)</i>	2,412	3,332	4,231	3,671	3,300	4,184	8,175	1,152	3,488	1,473	2,359	3,404	3,744	3,325
Huola	31	124	201	150	235	150	233	9	47	307	18	50	172	123
Hughes	0	0	104	91	43	9	21	3	0 d	153	51	250	49	38
Atakaket/Alatna s	15	23	178	118	36	108	0	3	0 d	0	39	50	93	7
Bettles			0	0	0	0	0	0	0	1	0	0	0 i	0
<i>Koyukuk River Subtotal</i>	46	147	483	359	314	267	254	15	47	461	108	350	314	168
<i>District 4 Subtotal</i>	2,458	3,479	4,714	4,030	3,614	4,451	8,429	1,167	3,515	1,934	2,467	3,754	4,058	3,493

Continued

Village	1985	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1987-1991 Average	1992-1996 Average
Tanana	4,691	6,680	16,922	5,518	8,580	4,448	11,406	5,576	2,587	2,154	6,110	3,045	8,430	5,567
Rampart	110	81	842	87	591	58	75	38	99	0	5	34	332	43
Farbanks (permits) g h	709	6	0	0	5	8	34	0	25	18	42	26	4	24
Stevens Village	67	0	604	208	478	0	20	0	0	1	2	1	258	5
Beaver	124	0	164	774	172	1	398	135	10	20	7	0	222	114
Ft Yukon	118	41	370	405	727	380	341	5	963	4	157	251	385	294
Cackla/Central (permits) h	37	0	41	1	205	5	54	10	30	0	0	210	51	19
Eagle (permits) h	6	0	11	0	0	0	3	85	0	1	1	2	2	18
Other (permits) h i			0	11.5	450	12	0	0	0	7	0	0	157	1
<i>Ilinois Cr. to U.S. Can. Border Subtotal (Excluding Chandalar/Black Rivers)</i>	<i>5,862</i>	<i>6,808</i>	<i>18,954</i>	<i>7,159</i>	<i>11,210</i>	<i>4,912</i>	<i>12,331</i>	<i>5,849</i>	<i>3,714</i>	<i>2,205</i>	<i>6,324</i>	<i>3,569</i>	<i>9,840</i>	<i>6,085</i>
Veneto	0	17	0	2	348	12	45	135	4	0	264	7	76	90
Chalkytsik	8	2	801	26	4	7	0	0	428	0	0	7	168	91
<i>Chandalar/Black River Subtotal</i>	<i>8</i>	<i>19</i>	<i>801</i>	<i>28</i>	<i>352</i>	<i>19</i>	<i>45</i>	<i>135</i>	<i>432</i>	<i>0</i>	<i>264</i>	<i>14</i>	<i>244</i>	<i>181</i>
<i>District 5 Subtotal</i>	<i>5,870</i>	<i>6,827</i>	<i>19,755</i>	<i>7,187</i>	<i>11,562</i>	<i>4,931</i>	<i>12,376</i>	<i>5,984</i>	<i>4,144</i>	<i>2,205</i>	<i>6,588</i>	<i>3,583</i>	<i>10,084</i>	<i>6,266</i>
Manley j	538	1,467	2,103	5,310	7,574	6,381	4,725	1,535	10,410	7,395	2,482	3,236	4,563	5,305
Minto j	1,058	671	2,729	1,179	818	526	614	300	2,616	338	1,223	364	1,185	1,018
Nenana j	10,090	19,592	25,369	7,593	7,381	10,171	8,895	1,314	9,387	7,142	7,883	5,147	14,021	5,770
Farbanks (permits) h i	1,635	0	0	0	66	2,501	2,281	0	2,103	3,076	2,314	1,230	513	1,629
Other k m				4,719	1,774	2,002	1,039	1,155	1,973	851	1,011	1,618	2,845	1,206
<i>Tanana River District 6 Subtotal</i>	<i>13,321</i>	<i>21,730</i>	<i>30,201</i>	<i>18,841</i>	<i>17,613</i>	<i>21,561</i>	<i>17,554</i>	<i>4,304</i>	<i>26,489</i>	<i>18,602</i>	<i>14,893</i>	<i>11,595</i>	<i>23,127</i>	<i>14,929</i>
Upper Yukon Total	21,649	32,036	54,670	30,058	32,789	30,943	38,359	11,455	34,178	22,941	23,948	18,932	37,269	24,687
Alaska Total	34,468	46,213	69,679	40,924	43,460	37,388	51,960	15,612	41,775	28,377	30,404	23,945	49,534	33,225

a Historic estimated subsistence harvests are available in each years respective Yukon Area Annual Management Report (1961 to 1996). Beginning in 1988 subsistence salmon harvest estimates have been generated from a stratified random sample of village households. Numbers include test fish catches given away. Blanks indicate harvest information was not collected.

b The village was not surveyed, harvest estimates were calculated from calendar and post card replies.

c 1987 and 1988 average harvest.

d Due to floods in 1994, Hughes, Atlakaket, and Alatina were not surveyed and the estimated harvest of coho salmon was zero.

e Alatina combined with Atlakaket.

f 1989-1991 average harvest.

g Harvests by Farbanks subsistence use permit holders that fished in District 5 near the Yukon River bridge crossing.

h Salmon catches expanded for permits not returned and household interviews (1981-1989). Beginning 1990, reported harvest is from returned permits only.

i Includes Birch Creek.

j Other permit holders that fished in District 5 but did not reside in the villages listed.

k Permits required beginning in 1988 for Subdistricts 6-A and 6-B. In 1988 and 1989, permit and household interview data were expanded. Beginning in 1990, reported harvest is from returned permits only.

l Harvests by Farbanks subsistence use permit holders that fished in the Tanana River. Permits required beginning in 1964 for the Tanana River upstream of the Wood River.

m Other permit holders that fished in District 6 but did not reside in the villages listed.

Yukon River "Bridge" Area Subsistence Salmon Fishery b							
Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			Coho
				Chinook	Summer Chum d	Fall Chum d	
1974	29	-	-	591	-	1,857	1,271
1975	19	-	-	727	-	778	70
1976	28	-	18	531	-	974	-
1977	38	-	-	467	-	2,567	-
1978	57	-	-	1,333	-	9,735	-
1979	55	-	41	2,194	-	12,374	-
1980	70	-	57	1,350	-	5,488	36
1981	57	-	24	1,095	-	12,034	-
1982	64	-	44	1,935	-	11,328	20
1983	68	-	46	2,672	-	15,059	-
1984	67	-	54	4,676	-	27,869	399
1985	55	-	42	2,618	-	21,832	33
1986	76	-	58	3,827	-	18,690	759
1987	16	-	14	1,818	2,091	7,631	6
1988	24	21	18	1,747	2,097	3,183	606
1989	26	20	13	2,483	574	1,157	309
1990	26	25	16	2,033	3,493	1,109	455
1991	52	46	34	2,529	1,295	3,953	20
1992	45	42	33	2,241	975	2,491	34
1993	49	47	36	3,767	492	2,915	16
1994	50	49	36	3,073	384	2,911	25
1995	59	59	39	3,253	954	2,244	59
1996	47	45	31	1,157	3,475	2,727	42
1997	44	42	28	1,588	683	491	26
Five Year Average							
1992-1996	50	48	35	2,698	1,256	2,658	35
Ten Year Average							
1987-1996	39	-	27	2,410	1,583	3,032	157

Upper Yukon River Area Subsistence Salmon Fishery e							
Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			Coho
				Chinook	Summer Chum d	Fall Chum d	
1979	75	-	6	4,063	-	30,475	114
1980	48	-	38	3,649	-	18,477	6
1981	71	-	51	4,510	-	38,333	-
1982	60	-	61	3,833	-	15,432	-
1983	53	-	52	2,831	-	23,708	-
1984	58	-	54	2,543	-	21,675	17
1985	59	-	36	2,419	-	19,059	2
1986	40	-	52	4,148	-	20,701	43
1987	51	51	58 c	3,602	2,495	27,369	0
1988	58	57	50	2,783	2,134	9,076	101
1989	59	56	42	1,186	68	7,515	1
1990	81	75	54	3,746	1,629	14,992	206
1991	70	69	48	3,219	658	14,898	5
1992	85	79	54	2,984	409	12,009	57
1993	79	79	49	1,910	118	2,419	95
1994	79	76	51	3,093	145	12,844	30
1995	87	87	53	3,628	129	19,047	1
1996	86	84	51	3,458	528	20,861	1
1997	98	93	60	3,184	393	18,616	212
Five Year Average							
1992-1996	83	81	52	3,015	266	13,436	37
Ten Year Average							
1987-1996	74	71	51	2,961	831	14,103	50

a Prior to 1988 the reported salmon harvest was expanded for permits not returned. Beginning in 1988 the reported harvest was not expanded. Dashes in the table indicate the information is not available.

b That portion of the Yukon River drainage from Hess Creek to Dall River

c Some fishermen reporting harvests did not have permits.

d Summer chum and fall chum salmon undifferentiated from 1974 to 1986.

e That portion of the Yukon River drainage from 22 Mile Slough, above the village of Fort Yukon, to the United States/Canada border

Appendix B.6. Subsistence salmon harvests taken under authority of a permit. Tanana River drainage, 1973-1997. a

Subdistrict 6-A Subsistence Salmon Fishery							
Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			
				Chinook	Summer Chum	Fall Chum	Coho
1988 b	28	24	18	845	1,389	9,165	3,455
1989 b, c	29	28	24 d	651	1,918	25,266	5,292
1990 c	42	36	26	1,369	2,250	27,957	8,408
1991	45	41	31	420	1,716	17,472	8,486
1992	38	35	26	508	450	5,999	5,028
1993 c	42	41	22	331	784	2,617	1,317
1994 e	37	37	30	576	3,793	18,076	12,449
1995	41	38	29	456	4,898	23,522	11,344
1996	31	29	23	209	1,338	18,931	5,959
1997	33	32	21	887	542	10,621	3,703
Five Year Average							
1992-1996	38	36	26	416	2,253	13,829	7,219

Subdistrict 6-B Subsistence Salmon Fishery							
Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			
				Chinook	Summer Chum	Fall Chum	Coho
1988	75	66	52	3,721	3,167	18,902	18,906
1989 f	60	51	37 d	455	363	18,506	8,453
1990 f	70	58	38	1,234	1,966	16,332	9,155
1991 f	87	78	51	1,796	2,373	21,629	11,971
1992 f	98	89	57	1,587	7,820	18,782	11,409
1993	99	89	38	1,341	5,976	7,166	2,987
1994	102	94	49	1,337	2,035	13,726	12,480
1995	98	98	59	1,322	6,712	25,364	7,458
1996	105	96	59	968	6,138	17,439	8,934
1997	103	95	55	1,825	3,282	8,723	7,892
Five Year Average							
1992-1996	100	93	52	1,311	5,736	16,495	8,654

-Continued-

Subdistrict 6-C Subsistence Salmon Fishery

Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			
				Chinook	Summer Chum	Fall Chum g	Coho g
1973	22	-	4	26	771	886	-
1974	70	-	-	38	1,373	1,580	-
1975	36	-	-	32	751	864	-
1976	110	-	-	31	1,314	1,512	-
1977	89	-	33	81	118	607	-
1978	160	-	126	126	2,729	1,188	-
1979	246	-	199	264	2,384	4,459	-
1980	315	-	254	282	3,729	4,059	-
1981	346	-	228	440	3,239	5,770	-
1982	330	-	209	451	2,708	4,521	-
1983	259	-	147	475	2,276	3,830	-
1984	308	-	212	321	3,177	5,134	-
1985	291	-	155	326	2,646	3,937	-
1986	323	-	211	637	4,031	4,437	-
1987 h	217	-	123	531	2,739	0	0
1988	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0
1990 i	19	18	6	15	69	279	50
1991	149	142	98	299	980	1,080	1,089
1992	149	146	90	343	1,234	896	1,116
1993 j	0	0	0	0	0	0	0
1994 k	145	142	107	457	1,198	1,600	1,545
1995 l							
Five Year Average							
1990-1994	92	90	60	223	696	771	760

Upper Tanana River Drainage Subsistence Salmon Fishery

Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			
				Chinook	Summer Chum	Fall Chum	Coho
1988	0	0	0	0	0	0	0
1989	2	2	2	5	0	39	0
1990	1	1	0	0	0	0	0
1991	8	7	6	0	0	288	14
1992	11	11	4	0	0	36	1
1993	10	10	8	0	0	5	0
1994	7	7	3	0	0	202	15
1995	50	46	12	0	0	88	0
1996	42	39	15	0	10	97	0
1997	61	58	26	0	0	200	0
Five Year Average							
1992 to 1996	24	23	8	0	2	86	3

-Continued-

- a Prior to 1988 the reported salmon harvests were expanded for permits not returned. Beginning in 1988 the reported harvests were not expanded. Dashes in the table indicate the information is not available.
- b Many Subdistrict 6-A fishermen did not obtain a permit in 1988 or in 1989.
- c Includes salmon given away as part of the Department's test fish project in Manley.
- d Includes harvests reported by fishermen that did not have permits.
- e Beginning in 1994, a separate Kantishna River drainage permit was required. The Subdistrict 6-A harvest totals include the harvest from the Kantishna River drainage.
- f Includes salmon given away as part of the Department's test fish project in Nenana.
- g Prior to 1988 fall chum and coho salmon were not reported as separate species.
- h Personal use fishery established for nonrural residents beginning in July 1987.
- i Some fishermen had both personal use and subsistence permits. The McDowell Decision became effective July 1990 (midway through the season), and stated that all Alaskan residents were eligible subsistence participants.
- j Personal use fishery was established for those fishing for salmon within the Fairbanks Nonsubsistence Area, which includes Subdistrict 6-C.
- k No personal use permits were issued in 1994 for this area.
- l In 1995 subsistence regulations were repealed within the Fairbanks Nonsubsistence Area, which included Subdistrict 6-C.

Appendix B.7 Personal use salmon harvests taken under authority of a permit in the Lower Yukon Area, and in District 5 of the Upper Yukon Area, 1987-1991. a

Lower Yukon River Personal Use Salmon Fishery							
Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			
				Chinook	Summer Chum	Fall Chum	Coho
1987	0	0	0			0	
1988	17	14	10	67	416	5	0
1989	26	23	12	286	381	18	59
1990	19	16	15	450	256	60	8
1991 b	0	0	0	0	0	0	0

"Yukon River Bridge" Area Personal Use Salmon Fishery c							
Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			
				Chinook	Summer Chum	Fall Chum	Coho
1987	42	-	33	1,674	4,262	15,750	58
1988	45	42	35	1,435	567	1,762	103
1989	45	42	32	1,877	295	3,294	82
1990 d	41	36	26	1,529	641	3,723	18
1991 b	0	0	0	0	0	0	0

Upper Yukon River Personal Use Salmon Fishery e							
Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			
				Chinook	Summer Chum	Fall Chum	Coho
1987	2	2	2 f	32	0	0	0
1988	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0
1990	4	4	3	164	0	0	0
1991 b	0	0	0	0	0	0	0

- a Personal use fishery during 1987 applied to nonrural residents harvesting only fall chum salmon. Beginning in 1988, nonrural personal use fishing applied to all salmon species and reported harvest is from returned permits only. Effective July 1, 1990 all Alaskan residents became eligible for subsistence fishing permits. Dashes in the table indicate the information is not available.
- b After 1991 the regulations did not provide for a personal use fishery in these areas.
- c That portion of the Yukon River drainage from Hess Creek to Dall River.
- d Includes personal use harvest of two chinook salmon taken by one permittee from a non-permit area below Rampart.
- e That portion of the Yukon River drainage from 22 Mile Slough, above the village of Fort Yukon, to the U.S./Canada border.
- f In 1987 some fishermen reporting harvests did not have permits.

Appendix B.8. Personal use salmon harvests taken under authority of a permit, Tanana River drainage, 1987-1997. a

Subdistrict 6-A Personal Use Salmon Fishery							
Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			
				Chinook	Summer Chum	Fall Chum	Coho
1987	0	0	0			0	
1988	1	1	0	0	0	0	0
1989	1	1	1	0	4	0	0
1990	1	1	0	0	0	0	0
1991	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0

Subdistrict 6-B Personal Use Salmon Fishery							
Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			
				Chinook	Summer Chum	Fall Chum	Coho
1987	0	0	0			0	
1988	1	1	1	306	60	40	22
1989	1	1	1	56	220	0	0
1991	4	4	3	9	12	40	35
1990	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0

Subdistrict 6-C Personal Use Salmon Fishery							
Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest			
				Chinook	Summer Chum	Fall Chum	Coho
1987	132 b	-	60 c			3,316	2,465
1988	208	162	120	317	1,182	2,074	1,125
1989	175	160	112	397	991	1,770	731
1990	152	144	102	442	918	1,353	1,120
1991 d	0	0	0	0	0	0	0
1992 d	0	0	0	0	0	0	0
1993	133	131	79	426	674	163	0
1994 d	0	0	0	0	0	0	0
1995	139	138	91	399	780	863	417
1996	129	125	73	215	905	356	198
1997	112	109	61	313	391	264	350
Five Year Average							
1989-1990, 1993,							
1995-1996							
	146	140	91	376	854	901	493

-Continued-

Upper Tanana River Personal Use Salmon Fishery								
Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest				
				Chinook	Summer Chum	Fall Chum	Coho	
1987	0	0	0	0	0	0	0	
1988	0	0	0	0	0	0	0	
1989	0	0	0	0	0	0	0	
1990	0	0	0	0	0	0	0	
1991 e	0	0	0	0	0	0	0	

- a Personal use fishery during 1987 applied to nonrural residents harvesting only fall chum salmon. Beginning in 1988, nonrural personal use fishing applied to all salmon species and reported harvest is from returned permits only. Effective July 1, 1990 all Alaskan residents became eligible for subsistence fishing permits. In 1993 the Board established the Fairbanks Nonsubsistence Area (FNA), this designated fishermen residing in the area as personal use harvesters. In 1994 a Superior Court decision invalidated the FNA and subsistence regulations applied. In 1995 the Board amended the FNA to apply personal use regulations to all fishermen fishing in the area. Dashes in the table indicate the information is not available.
- b Includes 60 former subsistence fishermen who were reissued personal use permits to fish for fall chum salmon.
- c Some fishing families used both subsistence and personal use permits.
- d From July 1, 1990 through 1992, and in 1994, the regulations did not provide for a personal use fishery in this area.
- e After July 1, 1991 the regulations did not provide for a personal use fishery in this area.

Appendix B.9 Subsistence and personal use chum salmon carcasses taken under authority of a permit, Tanana River drainage, 1973-1995.

Upper Tanana River (Big Delta Area)
Subsistence and Personal Use Chum Salmon Carcass Fishery

Year	Number of Permits Issued a	Number of Permits Returned	Number Reporting Harvest	Fall Chum Salmon Carcasses
1973	16	-	8	1,561
1974	21	-	-	1,974
1975	26	-	-	2,573
1976	36	-	-	3,441
1977	46	-	29	5,816
1978	70	-	43	2,517
1979	32	-	25	4,582
1980	57	-	36	4,915
1981	43	-	27	5,030
1982	37	-	13	1,690
1983	45	-	29	5,357
1984	31	-	14	2,353
1985	30	-	14	2,111
1986	27	-	19	2,276
1987	20	17	13	1,931
1988	22	20	15	2,100
1989	12	12	10	1,785
1990	7	7	3	750
1991	8	4	3	741
1992	10	10	9	1,897
1993 b	0	0	0	0
1994	4	4	4	250
1995 c				
All Year Average 1973-1994	27	-	-	2,530

a Personal use permits in 1987 to 1990 and 1993. Subsistence permits issued in 1973 to 1986, 1991, 1992 and 1994. Dashes in the table indicate the information is not available.

b To reduce spawning habitat disturbances, no personal use carcass permits were issued in 1993.

c In 1995 all subsistence, personal use, sport and commercial fishing was closed by regulations adopted by the Board of Fisheries in that portion of the Delta River from the mouth to the Department marker two miles upstream.

Appendix B.10. Summary of responses of surveyed households which indicated that their subsistence salmon needs were not met, Yukon Area, 1992 to 1997.

Response Summary Category	1992		1993		1994		1995	
	Number of Responses	Percent of Total						
Due to environmental conditions, i.e., high water	54	19.9%	33	6.4%	42	12.2%	14	6.8%
Working in another occupation	35	12.9%	57	11.1%	52	15.1%	26	12.6%
No gear - boat, net, motor, gas	30	11.0%	64	12.5%	32	9.3%	32	15.5%
No helper to harvest or process fish	15	5.5%	11	2.1%	19	5.5%	14	6.8%
Busy doing other things	21	7.7%	25	4.9%	15	4.3%	28	13.5%
Medical reasons or elderly	23	8.5%	34	6.6%	20	5.8%	25	12.1%
Poor run of fish	19	7.0%	41	8.0%	4	1.2%	1	0.5%
Out of town	9	3.3%	6	1.2%	13	3.8%	12	5.8%
Will buy or be given more fish	10	3.7%	6	1.2%	1	0.3%	0	0.0%
Not enough fish caught	17	6.3%	22	4.3%	11	3.2%	8	3.9%
Miscellaneous reasons, includes "No reason given"	26	9.6%	40	7.8%	36	10.4%	24	11.6%
Still fishing	13	4.8%	6	1.2%	3	0.9%	6	2.9%
Department Fishing Regulations/Restrictions	0	0.0%	131	25.5%	70	20.3%	0	0.0%
Didn't fish - normally don't use fish	0	0.0%	29	5.6%	27	7.8%	17	8.2%
Not enough available to share/barter	0	0.0%	9	1.8%	0	0.0%	0	0.0%
TOTALS	272		514		345		207	
Total Number of Households Contacted	870		979		933		1,011	
Percentage Not Met	31.3%		52.5%		37.0%		20.5%	

-Continued-

Response Summary Category	1996		1997		1992 to 1996 Average	
	Number of Responses	Percent of Total	Number of Responses	Percent of Total	Number of Responses	Percent of Total
Due to environmental conditions, i.e., high water	11	4.8%	15	7.0%	31	10.0%
Working in another occupation	34	14.8%	37	17.4%	41	13.3%
No gear - boat, net, motor, gas	24	10.4%	16	7.5%	36	11.7%
No helper to harvest or process fish	5	2.2%	11	5.2%	13	4.4%
Busy doing other things	33	14.3%	14	6.6%	24	9.0%
Medical reasons or elderly	21	9.1%	16	7.5%	25	8.4%
Poor run of fish	12	5.2%	13	6.1%	15	4.4%
Out of town	12	5.2%	6	2.8%	10	3.9%
Will buy or be given more fish	4	1.7%	0	0.0%	4	1.4%
Not enough fish caught	24	10.4%	20	9.4%	16	5.6%
Miscellaneous reasons, includes "No reason given"	15	6.5%	36	16.9%	28	9.2%
Still fishing	1	0.4%	5	2.3%	6	2.0%
Department Fishing Regulations/Restrictions	6	2.6%	2	0.9%	41	9.7%
Didn't fish - normally don't use fish	24	10.4%	18	8.5%	19	6.4%
Not enough available to share/barter	4	1.7%	4	1.9%	3	0.7%
TOTALS	230		213		314	
Total Number of Households Contacted	951		915		949	
Percentage Not Met	24.2%		23.3%		33.1%	

Appendix B.11. Estimated pink salmon subsistence harvest by residents of surveyed villages, Yukon Area, 1994 to 1997. a

Community	1994 b		1995		1996		1997		Even Years	Odd Years	1994 to 1997
	Est. Total	I (95%) (+/-)	Est. Total	I (95%) (+/-)	Est. Total	I (95%) (+/-)	Est. Total	I (95%) (+/-)	Average Estimated Total	Average Estimated Total	Average Estimated Total
Hooper Bay	734	760	326	175	3,212	2,075	265	286	1,973	296	1,134
Scammon Bay	1,319	1,063	559	596	305	399	0	0	812	280	546
Coastal District	2,053	-	885	-	3,517	2,113	265	286	2,785	575	1,680
Sheldon's Point	1,388	218	1	0	262	129	1	1	825	1	413
Alakanuk	54	31	124	132	35	52	33	34	45	78	61
Emmonak	1,451	821	5	5	46	0	35	0	749	20	384
Kotlik	1,340	1,279	2	1	100	0	0	0	720	1	361
District 1	4,233	-	132	-	443	139	69	34	2,338	101	1,219
Mountain Village	806	280	35	15	611	573	10	0	709	23	366
Pitkas Point	163	142	4	0	280	96	101	24	222	53	137
St. Mary's	850	327	0	0	42	27	4	7	446	2	224
Pilot Station	32	31	0	0	0	0	0	0	16	0	8
Marshall	880	1,159	6	0	0	0	0	0	440	3	222
District 2	2,731	1,245	45	15	933	582	115	24	1,832	80	956
Russian Mission	200	0	0	0	0	0	0	0	100	0	50
Holy Cross	89	93	0	0	140	175	0	0	115	0	57
Shageluk	0	0	0	0	40	0	0	0	20	0	10
District 3	289	93	0	0	180	175	0	0	235	0	117
Anvik	475	520	0	0	0	0	0	0	238	0	119
Grayling	451	574	0	0	4	2	0	0	228	0	114
Kallag	0	0	0	0	0	0	11	0	0	6	3
Nulato	4	2	0	0	0	0	0	0	2	0	1
Koyukuk	4	0	0	0	0	0	23	29	2	12	7
Galena	61	6	0	0	52	0	0	0	57	0	28
Ruby	0	0	0	0	3	0	0	0	2	0	1
Huslia	0	0	0	0	0	0	0	0	0	0	0
Hughes	0	0	0	0	0	0	0	0	0	0	0
Allakaket	0	0	0	0	0	0	0	0	0	0	0
Alatna	0	0	0	0	0	0	0	0	0	0	0
Bettles	0	0	0	0	0	0	0	0	0	0	0
District 4	995	775	0	0	59	2	34	29	527	17	272
Tanana	0	0	0	0	0	0	0	0	0	0	0
Rampart	0	0	0	0	0	0	0	0	0	0	0
Stevens Village	0	0	0	0	0	0	0	0	0	0	0
Birch Creek	0	0	0	0	0	0	0	0	0	0	0
Beaver	0	0	0	0	0	0	0	0	0	0	0
Fort Yukon	0	0	0	0	0	0	0	0	0	0	0
Venetie	0	0	0	0	0	0	0	0	0	0	0
Chalkyitsik	0	0	0	0	0	0	0	0	0	0	0
District 5	0	0	0	0	0	0	0	0	0	0	0
Survey Totals	10,301	2,496	1,062		5,132	2,204	483	290	7,717	773	4,245

a Includes 95 percent confidence interval, CI (95%).

b Due to floods in 1994, Hughes, Allakaket, and Alatna were not surveyed and the estimated harvest of pink salmon was zero.

Appendix B. 12. Estimated or reported subsistence and personal use harvest of miscellaneous non-salmon fish species, Yukon Area, 1993 to 1997.

	1993	1994	1995	1996	1997	1993 to 1996 Average
Survey Estimates						
Whitefish	70,479	84,734	58,660	63,610	77,634	71,023
Pike	11,787	28,515	17,646	18,833	29,540	21,264
Sheefish	12,039	17,117	12,186	17,793	19,538	15,735
Survey Reported						
Burbot	316	9,181	4,602	13,654	6,381	6,827
Lamprey	2	2,565	5,122	4,630	2,533	2,970
Tomcod	2,069	1,875	4,724	4,554	6,088	3,862
Grayling	122	1,559	1,285	1,664	1,600	1,246
Suckers	67	304	210	191	667	288
Arctic Char	2	174	265	210	131	153
Blackfish	8,810	190,736	233,890	145,752	275,469	170,931
Permit Reported						
Whitefish	3,139	3,509	3,172	5,474	5,157	3,824
Pike	1,150	1,214	1,280	2,113	1,978	1,439
Sheefish	49	361	87	127	190	156
Burbot	66	196	187	105	215	139
Grayling	-	3	10	315	154	82
Suckers	-	68	456	1,156	858	420
Yukon Area Totals						
Whitefish	73,618	88,243	61,832	69,084	82,791	73,194
Pike	12,937	29,729	18,926	20,946	31,518	20,635
Sheefish	12,088	17,478	12,273	17,920	19,728	14,940
Burbot	382	9,377	4,789	13,759	6,596	7,077
Lamprey	2	2,565	5,122	4,630	2,533	3,080
Tomcod	2,069	1,875	4,724	4,554	6,088	3,306
Grayling	122	1,562	1,295	1,979	1,754	1,240
Suckers	67	372	666	1,347	1,525	613
Arctic Char	2	174	265	210	131	163
Blackfish	8,810	190,736	233,890	145,752	275,469	144,797

Appendix B.13. Households with dogs, number of dogs, and salmon fed to dogs, as estimated in surveyed villages or reported in permit areas, Yukon Area, 1990-1997.

Districts Surveyed or Permit	Number of Households with Dogs	Number of Dogs	Summer Chum Salmon Fed to Dogs	Fall Chum Salmon Fed to Dogs	Coho Salmon Fed to Dogs	Total Salmon Fed to Dogs ^a
1990						
Survey Coastal District	-	-	-	-	-	-
Survey District 1	-	457	2,859	372	0	3,231
Survey District 2	-	778	3,279	415	3,667	7,361
Survey District 3	-	191	3,232	120	166	3,518
Survey District 4	-	1,469	96,273	6,911	2,512	105,696
Survey District 5	-	1,288	5,697	72,426	9,120	87,243
Permits District 5 b	-	-	-	-	-	-
Permits District 6	-	-	-	-	-	-
Totals	0	4,183	111,340	80,244	15,465	207,049
1991						
Survey Coastal District	-	-	-	-	-	-
Survey District 1	-	352	30	0	16	46
Survey District 2	-	546	724	652	875	2,251
Survey District 3	-	104	360	150	0	510
Survey District 4	-	1,706	171,258	903	591	172,752
Survey District 5	-	1,522	28,521	54,658	2,755	85,934
Permits District 5 b	49	299	-	-	-	11,024
Permits District 6	220	2,081	-	-	-	19,977
Totals	269	6,610	200,893	56,363	4,237	292,494
1992						
Survey Coastal District	133	513	659	0	0	659
Survey District 1	262	617	512	1,000	153	1,665
Survey District 2	285	971	694	247	2,237	3,178
Survey District 3	90	395	657	74	37	768
Survey District 4	459	2,177	143,749	6,950	3,323	154,022
Survey District 5	323	1,577	12,897	38,529	14,529	65,955
Permits District 5 b	52	372	-	-	-	7,026
Permits District 6	255	2,586	-	-	-	18,115
Totals	1,859	9,208	159,168	46,800	20,279	251,388
1993						
Survey Coastal District	150	391	0	0	0	0
Survey District 1	280	690	654	70	22	746
Survey District 2	232	880	794	260	670	1,724
Survey District 3	90	342	1,421	234	152	1,807
Survey District 4	463	1,750	46,043 ^c	4,405	589	51,037
Survey District 5	348	1,840	5,490	38,888	5,147	49,525
Permits District 5 b	54	293	-	-	-	1,133
Permits District 6	143	2,595	-	-	-	1,547
Totals	1,760	8,781	54,402	43,857	6,580	107,519
1994						
Survey Coastal District	161	367	1,287	0	0	1,287
Survey District 1	288	819	267	144	384	795
Survey District 2	286	1,074	1,066	653	2,470	4,189
Survey District 3	97	309	1,118	0	25	1,143
Survey District 4 ^d	453	1,753	97,288 ^c	4,720	3,053	105,061
Survey District 5	355	1,426	10,903	51,674	4,422	66,999
Permits District 5 b	103	563	-	-	-	9,874
Permits District 6	212	2,269	-	-	-	34,111
Totals	1,955	8,580	111,929	57,191	10,354	223,459

- Continued -

Appendix B.13. (Page 2 of 2)

Districts Surveyed or Permit	Number of Households with Dogs	Number of Dogs	Summer Chum Salmon Fed to Dogs	Fall Chum Salmon Fed to Dogs	Coho Salmon Fed to Dogs	Total Salmon Fed to Dogs ^a
1995						
Survey Coastal District	158	596	2,919	214	0	3,133
Survey District 1	223	391	531	43	7	581
Survey District 2	213	677	1,587	436	979	3,002
Survey District 3	111	347	8,450	265	100	8,815
Survey District 4	423	1,830	183,385 ^c	9,092	1,151	193,628
Survey District 5	356	1,443	6,221	50,680 ^e	2,107	59,008
Permits District 5 b	54	495	-	-	-	17,950
Permits District 6 f	103	1,864	-	-	-	50,731
Totals	1,641	7,643	203,093	60,730	4,344	336,878
1996						
Survey Coastal District	159	406	0	0	0	0
Survey District 1	298	682	1,847	250	38	2,135
Survey District 2	251	1,044	1,460	1,724	1,423	4,607
Survey District 3	134	513	3,558	0	0	3,558
Survey District 4	468	1,607	130,575 ^c	5,771	1,324	137,670
Survey District 5	325	1,289	10,155	48,836 ^e	5,966	64,957
Permits District 5 b	53	293	-	-	-	13,870
Permits District 6 f	176	1,907	-	-	-	43,590
Totals	1,864	7,741	147,595	56,581	8,751	270,387
1997						
Survey Coastal District	174	494	837	0	0	837
Survey District 1	255	683	103	0	0	103
Survey District 2	301	1,075	779	498	142	1,419
Survey District 3	111	492	11,418 ^g	400	746	12,564
Survey District 4	430	1,209	63,850 ^c	4,481	3,141	71,472
Survey District 5	254	1,146	2,943	33,188 ^e	2,961	39,092
Permits District 5 b	95	569	-	-	-	19,584
Permits District 6 f	156	1,898	-	-	-	12,613
Totals	1,776	7,566	79,930	38,567	6,990	157,884
1992 to 1996 Average						
Survey Coastal District	152	455	973	43	0	1,016
Survey District 1	270	640	762	301	121	1,184
Survey District 2	253	929	1,120	664	1,556	3,340
Survey District 3	104	381	3,041	115	63	3,218
Survey District 4	453	1,823	120,208	6,188	1,888	128,284
Survey District 5	341	1,515	9,133	45,721	6,434	61,289
Permits District 5 b	63	403	-	-	-	9,977
Permits District 6 f	178	2,244	-	-	-	29,619
Totals	1,816	8,331	135,237	53,032	10,062	237,926

a Includes commercial and subsistence harvests from 1993 through 1997. Only commercial harvests greater than 1,000 are noted.

b Permit totals do not include the community of Stevens Village.

c Surveys in District 4 include commercially harvested summer chum salmon retained for subsistence use in the amounts of 26,218; 70,202; 164,300; 117,931; and 52,077, in 1993, 1994, 1995, 1996, and 1997 respectively.

d Does not include the villages of Hughes, Allakaket, Alatna, which were not surveyed due to a major flood event.

e Surveys in District 5 include commercially harvested fall chum salmon retained for subsistence use in the amounts of 20,837 and 11,386, in 1995 and 1996 respectively.

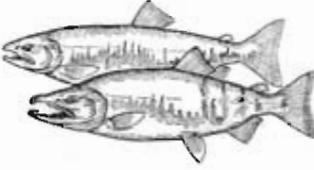
f Information was only collected from households that were issued subsistence permits.

g Survey in District 3 includes commercially harvested summer chum salmon retained for subsistence use in the amount of 3,432 in 1997.

APPENDIX C

YUKON RIVER DRAINAGE SUBSISTENCE SALMON
SURVEY AND PERMIT HARVEST FORMS

Appendix C.1. Example of the subsistence salmon harvest calendar mailed to Lower Yukon Area fishermen, 1997.



May 1997

Dear Subsistence Fishermen:

The 1997 Yukon River drainage subsistence salmon harvest reporting calendar is provided by the Department of Fish and Game, Commercial Fisheries Management and Development Division. Please record the number of salmon harvested each day for your household on this calendar. Include salmon that were caught by your household but given to other households. Additionally, include on this calendar all salmon that were caught for dog food. However, do not include salmon sold in the round when commercial fishing or female salmon that had roe stripped and the roe sold separately. Additionally, do not include fish caught by other households and given to you.

At the end of your subsistence salmon season close the calendar by applying tape to the appropriately marked areas, and place the self-addressed, postage-paid calendar in the mail (NO POSTAGE IS REQUIRED), or have the calendar available for pick up by our surveyor.

The information obtained through these calendars and the surveys is used to document the subsistence salmon needs and to try to make sure there will be enough salmon for the future. If you have any questions or comments, please call (907) 459-7274.

THANK YOU, and we hope you have a successful fishing season.

KEY	SPECIES	COMMON LOCAL NAMES
Early Season	Chum Salmon	King, Doyyapuk, Doyyalep, Zayapay, Koying, Chik-cho
	Summer Chum Salmon	Dog, Chum, Kachook, Kachookik, Yemachik, Pole Fish, Early Chum, Spelak, Tappanachik
	Pink Salmon	Humpy, Anagayook, Chokpak
Late Season	Fall Chum Salmon	Silver, Chikig, Chikik, Dog, Late Chum, Red Chum, Okhoo, Oghoo, Sook, Doleyak, Uperky, No'annu
	Coho Salmon	Chomok, Eboor, Red, Redfish, Gokhoo, Kachook, Kachookik, Geyepok, Combed-Head Fish, Red, Chupakik, Sook

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	
MAY 1997							
SUBSISTENCE SALMON CALENDAR							
LOWER YUKON				1	2	3	
				KING _____ DOG _____	KING _____ DOG _____	KING _____ DOG _____	
4	5	6	7	8	9	10	
KING _____ DOG _____	KING _____ DOG _____	KING _____ DOG _____	KING _____ DOG _____	KING _____ DOG _____	KING _____ DOG _____	KING _____ DOG _____	
11	12	13	14	15	16	17	
KING _____ DOG _____	KING _____ DOG _____	KING _____ DOG _____	KING _____ DOG _____	KING _____ DOG _____	KING _____ DOG _____	KING _____ DOG _____	
18	19	20	21	22	23	24	
KING _____ DOG _____	KING _____ DOG _____	KING _____ DOG _____	KING _____ DOG _____	KING _____ DOG _____	KING _____ DOG _____	KING _____ DOG _____	
25	26	27	28	29	30	31	
KING _____ DOG _____	KING _____ DOG _____	KING _____ DOG _____	KING _____ DOG _____	KING _____ DOG _____	KING _____ DOG _____	KING _____ DOG _____	

Appendix C.1. (Page 2 of 5)



Photo by Helen Farnon, CSMO District, Anchorage

A subsistence fish camp near Emmonak, Yukon River.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		JUNE 1997				
1	2	3	4	5	6	7
KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____
8	9	10	11	12	13	14
KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____
15	16	17	18	19	20	21
KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____
22	23	24	25	26	27	28
KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____
29	30	SUBSISTENCE SALMON CALENDAR				
KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____					

Appendix C.1. (Page 3 of 5)

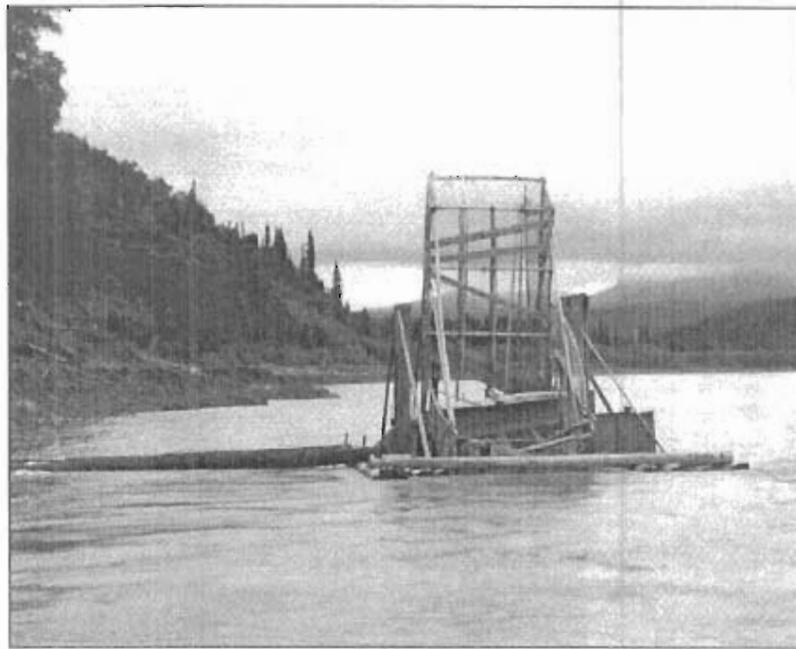


Salmon in a gillnet off the western coast of Alaska.

Photo by Helen Hansen, CFWD Division, Anchorage

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
JULY 1997						
SUBSISTENCE SALMON CALENDAR						
		1	2	3	4	5
		KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____			
6	7	8	9	10	11	12
KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____
13	14	15	16	17	18	19
KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____	KING _____ DOG _____ HUMPY _____ FALL CHUM _____	KING _____ DOG _____ HUMPY _____ FALL CHUM _____	KING _____ DOG _____ HUMPY _____ FALL CHUM _____	KING _____ DOG _____ HUMPY _____ FALL CHUM _____	KING _____ DOG _____ HUMPY _____ FALL CHUM _____
20	21	22	23	24	25	26
KING _____ DOG _____ HUMPY _____ FALL CHUM _____	KING _____ DOG _____ HUMPY _____ FALL CHUM _____	KING _____ DOG _____ HUMPY _____ FALL CHUM _____	KING _____ DOG _____ HUMPY _____ FALL CHUM _____	KING _____ DOG _____ HUMPY _____ FALL CHUM _____	KING _____ DOG _____ HUMPY _____ FALL CHUM _____	KING _____ DOG _____ HUMPY _____ FALL CHUM _____
27	28	29	30	31		
KING _____ DOG _____ HUMPY _____ FALL CHUM _____	KING _____ DOG _____ HUMPY _____ FALL CHUM _____	KING _____ DOG _____ HUMPY _____ FALL CHUM _____	KING _____ DOG _____ HUMPY _____ FALL CHUM _____	KING _____ DOG _____ HUMPY _____ FALL CHUM _____		

Appendix C.1. (Page 4 of 5)



A three-basket fish wheel on the Yukon River near Anvik.

Photo by Richard Cluett, GMD Division, Fairbanks

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
 AUGUST 1997					1 FALL CHUM _____ COHO _____	2 FALL CHUM _____ COHO _____
3 FALL CHUM _____ COHO _____	4 FALL CHUM _____ COHO _____	5 FALL CHUM _____ COHO _____	6 FALL CHUM _____ COHO _____	7 FALL CHUM _____ COHO _____	8 FALL CHUM _____ COHO _____	9 FALL CHUM _____ COHO _____
10 FALL CHUM _____ COHO _____	11 FALL CHUM _____ COHO _____	12 FALL CHUM _____ COHO _____	13 FALL CHUM _____ COHO _____	14 FALL CHUM _____ COHO _____	15 FALL CHUM _____ COHO _____	16 FALL CHUM _____ COHO _____
17 FALL CHUM _____ COHO _____	18 FALL CHUM _____ COHO _____	19 FALL CHUM _____ COHO _____	20 FALL CHUM _____ COHO _____	21 FALL CHUM _____ COHO _____	22 FALL CHUM _____ COHO _____	23 FALL CHUM _____ COHO _____
24 FALL CHUM _____ COHO _____	25 FALL CHUM _____ COHO _____	26 FALL CHUM _____ COHO _____	27 FALL CHUM _____ COHO _____	28 FALL CHUM _____ COHO _____	29 FALL CHUM _____ COHO _____	30 FALL CHUM _____ COHO _____
31 FALL CHUM _____ COHO _____			LOWER YUKON SUBSISTENCE SALMON CALENDAR			

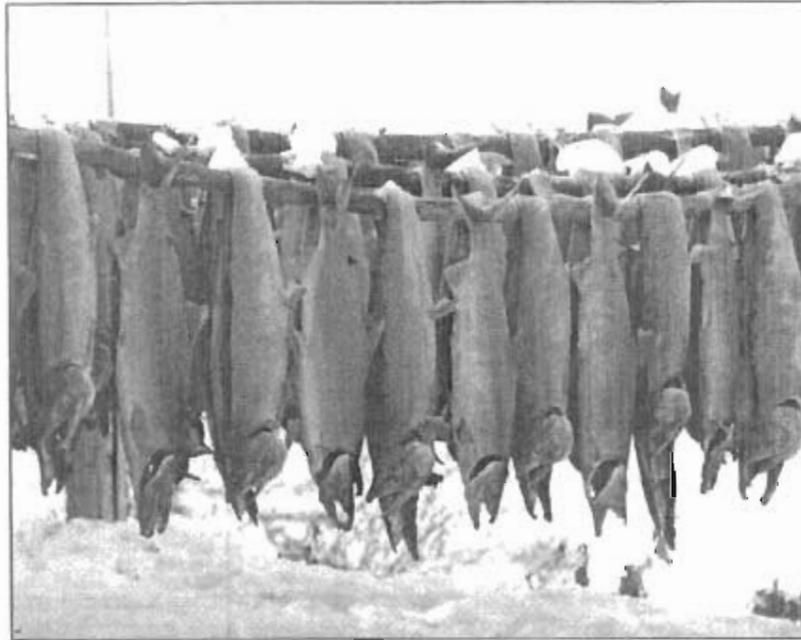


Photo by: Janet Heston, Alaska Channel, Fairbanks

Chum and coho salmon hanging on a rack at a Tanana River fish camp near Neretza

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	
SEPTEMBER 1997 SUBSISTENCE SALMON CALENDAR							
LOWER YUKON	1 FALL CHUM _____ COHO _____	2 FALL CHUM _____ COHO _____	3 FALL CHUM _____ COHO _____	4 FALL CHUM _____ COHO _____	5 FALL CHUM _____ COHO _____	6 FALL CHUM _____ COHO _____	
	7 FALL CHUM _____ COHO _____	8 FALL CHUM _____ COHO _____	9 FALL CHUM _____ COHO _____	10 FALL CHUM _____ COHO _____	11 FALL CHUM _____ COHO _____	12 FALL CHUM _____ COHO _____	13 FALL CHUM _____ COHO _____
	14 FALL CHUM _____ COHO _____	15 FALL CHUM _____ COHO _____	16 FALL CHUM _____ COHO _____	17 FALL CHUM _____ COHO _____	18 FALL CHUM _____ COHO _____	19 FALL CHUM _____ COHO _____	20 FALL CHUM _____ COHO _____
	21 FALL CHUM _____ COHO _____	20 FALL CHUM _____ COHO _____	30 FALL CHUM _____ COHO _____				
	28 FALL CHUM _____ COHO _____	29 FALL CHUM _____ COHO _____	30 FALL CHUM _____ COHO _____	THANK YOU !			

Appendix C.2. Example of the preseason letter mailed with the subsistence harvest calendars, Yukon Area, 1997.

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

DIVISION OF COMMERCIAL FISHERIES MANAGEMENT AND DEVELOPMENT

TONY KNOWLES, GOVERNOR

1300 COLLEGE ROAD
FAIRBANKS, ALASKA 99701-1599
PHONE: (907) 459-7274
FAX: (907) 452-1668

May 15, 1997

Dear Subsistence Salmon Fisherman:

The 1997 salmon fishing season is rapidly approaching. Each year the department estimates the Yukon Area subsistence and personal use salmon harvests using postseason surveys and fishing permits. These estimates are very important as they are used to ensure that there will be enough salmon allocated for families along the river. The harvest estimates are also used in regulation decisions by the Alaska Board of Fisheries and in the international treaty negotiations with Canada.

During our community visits and interviews with fishermen, many of you expressed an interest in the results of the survey. In 1996, a total of 951 households were interviewed out of the approximately 2,484 households located in the surveyed area of the Yukon River drainage. The department estimated that 1,144 households in surveyed communities participated in Yukon Area subsistence salmon fisheries. Additionally, Yukon Area subsistence and personal use salmon harvests were compiled from the 515 permits issued to households who expressed an interest in harvesting fish in one of the permitted areas. A total of 277 households participated in the permitted fishery in 1996.

The department estimated that 46,154 chinook, 127,099 summer chum, 130,680 fall chum, and 30,824 coho salmon were harvested in both subsistence surveyed and subsistence and personal use permitted areas of the Yukon River drainage during the 1996 fishing season (Table 1). To improve our understanding of the subsistence fishery, information was also collected on the size of the fishing households, the primary type of fishing gear used, the number of dogs, and the number of whole fish fed to dogs.

I would like to personally thank all of the people who participated in the 1996 survey. This successful project would not be possible if not for the cooperation given by fishermen throughout the drainage. In preparation for the 1997 season, I have enclosed the 1997 fishing calendar for your household. Please use this calendar to record your household's daily harvest of subsistence fish. If you fish in more than one location, please keep track of the fish you catch in each area. To return the calendar after you are done fishing for the season, please put it in the mail. The calendars are already postage paid. You may also return the calendar to the postseason surveyor when they are in your local community this fall. Thank you again for your cooperation!

Sincerely,

Bonnie Borba

Bonnie Borba
Fishery Biologist

Appendix C.2. (Page 2 of 2)

TABLE 1. PRELIMINARY SUBSISTENCE AND PERSONAL USE SALMON HARVEST ESTIMATES, YUKON AREA, 1996 a/

Village	Estimation Method	Total Households or Permits Issued	Households Contacted or Permits Returned	Estimated Fishing Households	Estimated Harvest			
					Chook	Summer Chum	Fall Chum	Coho
Hooper Bay	Survey	177	47	109	1,127	15,670	382	92
Scammon Bay	Survey	76	21	55	1,238	5,365	0	3
Coastal District Subtotal		256	68	164	2,365	21,035	382	95
Sheldon Pt.	Survey	37	30	24	450	2,634	21	138
Alakanuk	Survey	137	28	52	662	6,171	100	103
Emmonak ^{d/}	Survey	161	72	62	702	6,097	1,501	594
Kotik ^{d/}	Survey	98	34	50	1,832	12,387	2,926	1,610
District 1 Subtotal		433	164	188	3,646	27,289	4,147	2,445
Mt. Village ^{e/}	Survey	140	40	74	1,315	9,265	1,366	276
Pikas Pt.	Survey	34	31	22	162	1,619	603	691
St. Marys	Survey	24	42	63	1,766	6,736	556	292
Pilot Station ^{f/}	Survey	94	36	52	1,829	6,402	448	1,256
Marshall	Survey	65	23	46	2,126	4,431	2,212	956
District 2 Subtotal		457	172	257	7,798	28,473	5,287	3,475
Russian Mission	Survey	57	15	40	2,725	4,736	625	276
Holy Cross	Survey	64	17	39	3,953	1,700	1,814	0
Shageluk	Survey	42	17	16	121	6,114	305	189
District 3 Subtotal		163	49	95	6,799	12,550	2,744	465
Arvik	Survey	38	34	20	768	165	457	44
Gonying	Survey	64	19	35	1,036	567	1,758	236
Katag	Survey	51	24	40	994	31	1,048	298
Nulato	Survey	87	29	51	1,461	1,003	2,298	149
Koyukuk	Survey	43	11	10	402	41	2,458	476
Galena	Survey	137	35	71	2,770	3,902	6,620	780
Ruby	Survey	80	17	8	557	2,016	581	376
District 4 Subtotal		483	169	235	7,998	7,765	16,293	2,359
Huslia	Survey	70	19	10	67	2,372	298	16
Hughes	Survey	27	25	5	54	1,411	274	51
Alatolok	Survey	51	22	18	62	4,668	981	39
Alaina	Survey	13	6	2	2	208	0	0
Bettles	Survey	27	22	2	0	0	50	0
Koyukuk River Subtotal		168	96	37	205	8,660	1,663	108
Tanana	Survey	110	50	55	2,741	5,190	21,420	5,110
Rampart	Survey	36	25	13	1,845	1,391	1,886	206
Stevens Village	Survey	29	21	7	661	530	991	2
Birch Creek	Survey	15	10	1	127	24	23	0
Beaver	Survey	35	28	13	899	572	14	7
Pt. Yukon ^{g/}	Survey	203	53	69	4,967	26	6,144	157
Fairbanks NSB	Permit	46	43	20	1,566	2,956	2,727	42
Circle	Permit	11	11	8	1,781	271	5,308	0
Central	Permit	7	7	5	131	53	132	0
Eagle	Permit	96	85	32	1,092	105	14,916	1
Other ^{h/}	Permit	10	10	5	277	616	506	0
District 5 Subtotal		590	314	228	5,797	11,736	56,076	6,525
Verona	Survey	55	18	6	154	0	7,195	264
Chalchitlak	Survey	29	26	4	30	0	1,230	0
Chandalar/Blaine Rivers Subtotal		84	45	10	184	0	8,425	264
Manley	Permit	23	21	15	134	1,219	10,662	2,462
Marfo	Permit	77	63	33	523	1,421	4,361	1,223
Nemana	Permit	48	46	32	423	4,411	14,210	7,883
Healy	Permit	9	9	4	0	33	1,364	1,011
Fairbanks NSB	Permit	162	173	94	312	1,295	6,084	2,509
Delta Junction	Permit	4	4	5	0	2	91	3
Other ^{i/}	Permit	42	39	13	0	10	11	0
District 6 Tanana River Subtotal		385	357	197	1,392	8,391	35,623	15,091
Survey Village Subtotal		2,494	951	1,144	40,216	114,705	70,289	15,660
Permit Area Subtotal ^{j/}		515	483	277	3,939	12,384	60,411	15,134
Yukon River Area Total		3,999	1,434	1,421	44,154	127,089	130,699	30,824

a/ Source: "Subsistence and Personal Use Salmon Harvests, Yukon Area, 1996" (in prep.) by Bonnie Borbe and Helen Hamner, Alaska Department of Fish and Game (ADF&G). Harvests are listed by settlement's community of residence.

b/ Includes permit information received as of April 10, 1997.

c/ Includes 329 chook, 879 summer chum, 693 fall chum, and 326 coho salmon from ADF&G test fish catches.

d/ Includes 1,026 chook, 6,173 summer chum, 728 fall chum, and 429 coho salmon from ADF&G test fish catches.

e/ Includes 319 fall chum and 228 coho salmon from Bettix Sea Fishermen's Association (BSFA) test fish catches.

f/ Includes 276 summer chum, 150 fall chum, and 25 coho salmon from ADF&G test fish catches.

g/ Includes 1,081 fall chum salmon from Councils of Athabaskan Tribal Governments (CATG) test fish catches.

h/ Other includes residents of other communities who fished in District 5 of the Yukon River.

i/ Other includes residents of other communities who fished in District 6 of the Tanana River.

j/ Permit totals include 32 permits issued for personal use areas and include Tokovani River Pike permits. Permit totals do not include 3 subsistence salmon permits issued to Stevens Village residents. Permit harvest information from Stevens Village residents was included in the survey data.

Appendix C.3. Example of the subsistence salmon postseason interview form, Yukon Area, 1997.

Community _____ HHID _____
 Date of Survey _____ Person interviewed _____
 Interviewer _____ Relation to HH _____

1997 Post-Season Subsistence Salmon Harvest Survey Yukon Area
 CONFIDENTIAL INFORMATION

- We would like to make sure we have the correct name and address for your household.
 Head of Household _____
 Mailing Address _____ Telephone: _____
 Permanent Note _____
 Significant Other _____
 Permanent Note _____
 Adult household member was contacted and declined to be interviewed. () Reason given: _____
- Did anyone in your household catch salmon for subsistence use this year? Yes ___ No ___ (If no go to area II.)
 Fish use includes salmon eaten fresh, frozen, dried, smoked, and those used for dog food. Include all salmon kept for subsistence use. Include female carcasses from which roe was removed and sold commercially.

I. HOUSEHOLD FISHED

- May I have your fish catch calendar?
 Picked up by interviewer ___ Didn't get one ___ Didn't Use ___ Not available ___ Already sent in ___
 If you used a calendar are all the fish harvested on it? Yes | | No | | (if no, estimate remainder on calendar)
 How many total salmon did you or your fishing group catch this year? ("group" may include other households)
 CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____
 How many households help catch these fish? ___ (Names) _____
- How many total salmon did your household catch this year? (Include only fish caught by this household, not the group)
 CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____
- Where did you catch your subsistence salmon? (Circle all that apply and show harvest by area if more than one)
 Ocean | 2 | 3 | 4A | 4B | 4C | 5A | 5B | 5C | 5D Innoko, Koyukuk, Chandalar, Porcupine, Black
 Area _____ CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____
 Area _____ CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____
- What is your households' primary type of subsistence salmon fishing gear? (In order of importance 1= primary)
 Set net ___ Drift net ___ Fishwheel ___ Hook & Line ___ Other _____
- How many salmon did you keep for your household's use?
 CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____
- Did your household share the salmon catch with any other households? (Names, HHIDs, Species and Numbers)

- How many of your households' salmon catch was taken commercially? (Include any salmon taken but not sold. In the Lower Yukon Area and District 4 - include female summer chum salmon carcasses from which roe was removed and sold commercially and all male summer chum salmon taken but not sold.)
 CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____
- How many of the fish you caught were lost to spoilage, wild animals (i.e. bears, birds)? (Include these numbers in the catch, by species.) _____

II. ALL HOUSEHOLDS

11. Did your household catch any other fish besides salmon this year? (From Sept./Oct. of last year to now.)

LG WHITEFISH _____ SM WHITEFISH _____ SHEEFISH _____ BURBOT _____ PIKE _____ BLACKFISH _____
 GRAYLING _____ SUCKERS _____ TROUT (Arctic Char) _____ EELS (Lamorev) _____ TOMCOD (Saffron) _____

12. Was your household given any salmon? Yes _____ No _____

Subsistence Fishermen (Name) _____

CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____

Subsistence Fishermen (Name) _____

CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____

Commercial Fishermen (Name) (list only fish retained for subsistence use while commercial fishing) _____

CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____

From Test Fish Projects (Where) _____

CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____

13. How many people live in your household? _____ People

14. How many dogs does your household have? _____ (If none go to question 15)

Do you feed whole salmon to your dogs? Yes _____ No _____ Only Feed Scraps _____ (If no go to question 15)

How many whole salmon will you feed to your dogs this year? (These can be subsistence and commercial. Numbers should represent whole fish, not scraps.) _____

Were any of the salmon put up for the dogs from the commercial fishery? Yes _____ No _____ Some _____

Estimate harvest by fishery:

(subsistence harvest) SUMMER CHUM _____ FALL CHUM _____ COHO _____

(commercial harvest) SUMMER CHUM _____ FALL CHUM _____ COHO _____

15. Did your household get enough subsistence salmon this year? Yes _____ No _____ Could not estimate _____

If the answer is no, ask:
 Why didn't you meet your salmon needs this year? _____

THANK YOU FOR YOUR HELP. THIS HARVEST INFORMATION WILL BE USED TO MAKE SURE THERE WILL BE ENOUGH SALMON FOR FAMILIES ALONG THE RIVER.

Interviewer, please note any comments about this interview or anything of value for assisting data analysis.

THIS HOUSEHOLD'S TOTAL SUBSISTENCE SALMON CATCH (This area is to be filled in by the surveyor after the interview)
 (Subtract numbers obtained in question 9 from numbers obtained from question 4.)

CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____

THIS HOUSEHOLD'S TOTAL SUBSISTENCE SALMON USE (This area is to be filled in by the surveyor after the interview)
 (Add numbers obtained from question 7 to numbers obtained from question 12.)

CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____

Complete Survey _____ Partial Survey _____ No Survey _____

Appendix C.4. Example of the Upper Yukon River and Kantishna River subsistence fishing permit application, 1997.

**Household Application and Permit
for Subsistence Fishing**

Dept. of Fish and Game, Commercial Fisheries Management and Development Division
1300 College Road, Fairbanks, AK 99701 Telephone (907) 459-7274



Name _____ Telephone _____
(PLEASE PRINT) (Home, Work, or Message)

Mailing Address _____
City State Zipcode

Total Household Members _____ Household Fishermen _____
(Include yourself) (Other household members besides yourself authorized to fish this permit)

Number of Dogs in Household _____ Do you feed whole salmon to dogs? (Circle one) yes no

Area to be Fished: (Circle one) Kantishna River, Yukon River Bridge, Circle/Eagle

Primary Gear to be Used: (Circle One) Fish Wheel -or- Set Gillnet

Conditions of Permit: All regulations pertaining to subsistence fishing in the area to be fished are to be observed. Anyone fishing this household's permit must be named above and carry this permit on their person during any fishing activity. For a 24-hour recording of personal use, subsistence, or commercial salmon fishing schedules, call (907) 459-7387. It is unlawful to buy or sell subsistence-taken fish, their parts, or their eggs.

An accurate record of fish taken under authority of this permit must be recorded in the appropriate spaces on the reverse side of this permit immediately upon landing. Return this permit with your completed catch information to the address above within 10 days after permit expiration date. FAILURE TO RETURN YOUR PERMIT OR REPORT YOUR CATCH INFORMATION MAY RESULT IN YOUR NOT BEING ISSUED A PERMIT NEXT YEAR.

X _____ Birthdate or Date _____ Drivers License No. _____

Signature of Permittee - I hereby claim I am a resident of Alaska and that the above information I have provided is a true statement as witnessed by my signature.

TO BE COMPLETED BY ISSUING OFFICER

The above named household member(s) is authorized to take fish according to the following stipulations:
Permit is valid for the location marked below and expires October 15 of the year issued, unless otherwise noted.

- Kantishna River:SK Under authority of this permit 60 chinook salmon and 500 chum salmon may be taken from the Kantishna River drainage from the date of issue through August 15. From August 16 through December 31, 450 chum salmon may be taken. Fishermen are required to keep daily and cumulative harvest information as the fishing site that is accessible to department personnel. After August 16, the Kantishna River drainage fishery harvest limit is 2,000 chum salmon. Once the fishery limit is taken, the directed chum salmon subsistence fishery will close by emergency order. Permit expiration date is December 31 of the year issued.
- Yukon Bridge:SY Under authority of this permit fish may be taken from the Yukon River drainage from the mouth of Hess Creek to the mouth of the Dall River.
- Circle, Eagle SE Under authority of this permit fish may be taken from the Yukon River drainage from the mouth of Twenty-two Mile Slough upstream to the U.S. Canada border.

Signature of Issuing Officer

Date issued

Permit Number

Appendix C.5. Example of the Tanana River subsistence fishing permit application, 1997.

**Household Application and Permit
for Subsistence Fishing**
Dept. of Fish and Game, Commercial Fisheries Management and Development Division
1300 College Road, Fairbanks, AK 99701 Telephone (907) 459-7274



Name _____ Telephone _____
(PLEASE PRINT) (Home, Work, or Message)

Mailing Address _____
City State Zipcode

Total Household Members _____ Household Fishermen _____
(Include yourself) (Other household members besides yourself authorized to fish this permit)

Number of Dogs in Household _____ Do you feed whole salmon to dogs? (Circle one) yes no

Area to be Fished: (Circle one) Tanana 6A, Tanana 6B, Upper Tanana (above the Fairbanks nonsubsistence area)

Primary Gear to be Used: (Circle One) Fish Wheel -or- Set Gillnet

Conditions of Permit: All regulations pertaining to subsistence fishing in the area to be fished are to be observed. Anyone fishing this household's permit must be named above and carry this permit on their person during any fishing activity. For a 24-hour recording of personal use, subsistence, or commercial salmon fishing schedules, call (907) 459-7387. It is unlawful to buy or sell subsistence-taken fish, their parts, or their eggs.

An accurate record of fish taken under authority of this permit must be recorded on the reverse side of this permit immediately upon landing. PERMITTEES FISHING IN THE UPPER PORTION OF SUBDISTRICT 6-B (three miles upstream of Totchaket Slough) ARE REQUIRED TO REPORT THEIR WEEKLY CATCHES BY CALLING THE DEPARTMENT OF FISH AND GAME AT (907) 459-7388 BY 4:30 P.M. EVERY THURSDAY. Return this permit with your completed catch information to the address above within 10 days after the permit expiration date. FAILURE TO RETURN YOUR PERMIT OR REPORT YOUR CATCH INFORMATION MAY RESULT IN YOUR NOT BEING ISSUED A PERMIT NEXT YEAR.

X _____ Date _____ Birthdate or Drivers License No. _____
Signature of Permittee - I hereby claim I am a resident of Alaska and that the information I have provided on this permit is true as witnessed by my signature.

TO BE COMPLETED BY ISSUING OFFICER	
The above named household member(s) is authorized to take fish according to the following stipulations: Permit is valid for the location marked and expires October 15 of the year issued, unless otherwise noted.	
<input type="checkbox"/> Tanana 6A/SA	Under authority of this permit 60 chinook salmon and 500 chum salmon may be taken from the date of issue through August 15. In addition, from August 16 through October 15, 2,000 chum and coho salmon combined may be taken (Note: A separate permit is required for the Kantishna River drainage).
<input type="checkbox"/> Tanana 6B/SB	
<input type="checkbox"/> Upper Tanana/SU	Under authority of this permit fish may be taken in the upper Tanana River drainage upstream of the Fairbanks Nonsubsistence Area. Permit expires December 31 of the year issued.
Signature of Issuing Officer _____	Date issued _____
	Permit Number _____

Revised 1/96

Appendix C.6. Example of the Yukon Area personal use fishing permit application, 1997.

**Household Application and Permit
for Personal Use Salmon Fishing**
Dept. of Fish and Game, Commercial Fisheries Management and Development Division
1300 College Road, Fairbanks, AK 99701 Telephone (907) 459-7274



Name _____ Telephone _____
(PLEASE PRINT) (Home, Work, or Message)

Mailing Address _____
City State Zipcode

Total Household Members _____ Household Fishermen _____
(Include yourself) (Other household members besides yourself authorized to fish this permit)

Area to be Fished: Subdistrict 6-C - Including the Tanana River upstream of the confluence with Wood River to the mouth of the Salcha River.

Primary Gear to be Used: (Circle One) Fish Wheel -or- Set Gillnet

Conditions of Permit: All regulations pertaining to personal use fishing in the area to be fished are to be observed. Anyone fishing this household's permit must be named above and carry this permit on their person during any fishing activity. For a 24-hour recording of personal use, subsistence, or commercial salmon fishing schedules, call (907) 459-7387. It is unlawful to buy, sell, trade, or barter fish or their parts, taken under personal use.

An accurate record of fish taken under authority of this permit must be recorded on the reverse side of this permit immediately upon landing. PERSONAL USE SALMON PERMITTEES ARE REQUIRED TO REPORT THEIR WEEKLY CATCHES BY CALLING THE DEPARTMENT OF FISH AND GAME AT (907) 459-7388 BY 4:30 P.M. EVERY THURSDAY. Return this permit with your completed catch information within 10 days after the permit expiration date. FAILURE TO RETURN YOUR PERMIT OR REPORT YOUR CATCH INFORMATION MAY RESULT IN YOUR NOT BEING ISSUED A PERMIT NEXT YEAR.

A resident Alaska sport fishing license is required by 5 AAC 77.010.
Permits invalid unless permittee has in their possession a valid resident Alaska sport fishing license.

X _____ Date _____ Sport Fish License No. _____
Signature of Permittee - I hereby claim I am a resident of Alaska and that the above information I have provided on this permit is true as witnessed by my signature.

TO BE COMPLETED BY ISSUING OFFICER		
The above named household member(s) is authorized to take salmon according to the following stipulations: Permit is valid for Subdistrict 6-C and expires October 15 of the year issued, unless otherwise noted.		
Tanana 6C PC Under authority of this permit 10 chinook salmon and 75 chum salmon may be taken from the date of issue through August 15. In addition, from August 16 through October 15, 75 chum and coho salmon combined may be taken.		
Signature of Issuing Officer _____	Date Issued _____	PC _____ Permit Number _____

Revised 1-96

Appendix C.7. Example of the letter sent to selected subsistence fishermen from the listed villages that complied with 1996 reporting requirements, announcing the dates and times for 1997 permit issuance. Yukon Area.

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

DIVISION OF COMMERCIAL FISHERIES
MANAGEMENT AND DEVELOPMENT

TONY KNOWLES, GOVERNOR

1300 COLLEGE ROAD
FAIRBANKS, AK 99701-1599
PHONE: (907) 459-7274
FAX: (907) 452-1668

May 6, 1997

Dear Subsistence Fishermen:

Regulations require subsistence fishermen to obtain a permit prior to fishing in three areas within the upper Yukon River drainage. Subsistence fishing permits are required upstream of Twenty-two Mile Slough to the Canada Border (includes the villages of Circle and Eagle), near the "Yukon River Bridge" (between Hess Creek and the Dall River), and within the Tanana River drainage. Our records indicate that you were issued a 1996 subsistence permit for one of the above areas. If you are planning to fish in the Yukon River area in 1997, we are providing you with the opportunity to obtain a subsistence fishing permit at the following places and times:

Village	Place	Day/Date	Time
MINTO	Lake View Lodge	Wednesday, May 21, 1997	12:00 noon to 3:00 p.m.
MANLEY	Manley Roadhouse	Thursday, May 22, 1997	10:00 a.m. to 1:00 p.m.
NENANA	Boat Landing	Tuesday, May 20, 1997	10:00 a.m. to 2:00 p.m.
CENTRAL	Post Office	Wednesday, May 21, 1997	12:00 noon to 3:00 p.m.
CIRCLE	Boat Landing	Thursday, May 22, 1997	11:00 a.m. to 2:00 p.m.
EAGLE	Post Office	Tuesday, May 27, 1997	10:30 a.m. to 2:00 p.m.
DOT LAKE	City Office	Wednesday, May 28, 1997	12:00 noon to 1:30 p.m.
TANACROSS	Community Center	Wednesday, May 28, 1997	3:00 p.m. to 6:00 p.m.
NORTHWAY	Community Hall	Thursday, May 29, 1997	12:00 noon to 3:00 p.m.

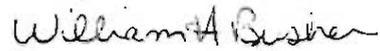
If you would like to be issued a subsistence fishing permit, please complete the top portion of the enclosed "Household Application and Permit" form. Present this form to the department representative at the place and times indicated above. The issuing officer will complete the bottom portion of the application and return the 1997 subsistence fishing permit to you.

If you would like to obtain a permit by mail, please complete the top portion of the enclosed "Household Application and Permit" form and return the application to the address indicated at the top of the application. Address the letter attention to the Subsistence Permit Issuing Officer. The bottom section of the application will be completed by the issuing officer and mailed back. The application is not a permit until you have completed and signed the top portion, and the issuing officer has completed and signed the bottom.

Appendix C.7. (Page 2 of 2)

Subsistence permits are also available at the Alaska Department of Fish and Game offices in Delta Junction, Tok, and Fairbanks during regular business hours. If you have any questions or comments, please contact me.

Sincerely,



William Busher
Fishery Biologist
Commercial Fisheries Management
and Development Division
(907) 459-7274

Enclosures: Permit Application, Regulation Summary

Appendix C.8. Example of the first subsistence fishing permit reminder letter, 1997.

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

DIVISION OF COMMERCIAL FISHERIES MANAGEMENT AND DEVELOPMENT

TONY KNOWLES, GOVERNOR

1300 COLLEGE ROAD
FAIRBANKS, AK 99701-1599
PHONE: (907) 459-7274
FAX: (907) 452-1668

November 3, 1997

John Doe
General Delivery
Fish Camp, AK 99###

Dear John:

The Department of Fish & Game (department) issued subsistence fishing permit SB-####-97 to you for the 1997 fishing season. Your harvest information is needed to accurately document the 1997 season harvest. Your permit expired on October 15, 1997. If you have not returned your permit, please take the time to ensure that your 1997 harvest information is entered on the back side of the permit. Sign and date the back of the permit at the place provided and return the expired permit to me. If you have already returned your permit, please disregard this reminder notice. If you are unable to locate the expired permit, fill out the questions on the bottom portion of this letter and return this letter to the department. Even if you did not fish, or caught no fish, you must return your permit or this letter. *For you to be eligible for a 1998 permit, we must have the harvest information from 1997.*

I fished in the **Tanana River drainage** in 1997. (Circle one) Yes No

If you fished for subsistence salmon in the Tanana River in 1997, but misplaced your permit, please fill in the number of salmon and freshwater finfish you caught below:

Chinook/King _____ Summer Chum _____ Fall Chum _____ Coho _____

Whitefish _____ Pike _____ Grayling _____

Suckers _____ Burbot _____ Other (specify species) _____

Number of whole salmon fed to dogs or put up for dog food _____

Signature

Date

If you have any questions, feel free to contact me. I hope you have a successful 1998 fishing season.

Sincerely,

Bonnie Borba
Fishery Biologist

Appendix C.9. Example of the second personal use permit reminder letter sent to households which had complied with the inseason reporting requirement by telephone but had not reported postseason, 1997.

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

DIVISION OF COMMERCIAL FISHERIES MANAGEMENT AND DEVELOPMENT

TONY KNOWLES, GOVERNOR

1300 COLLEGE ROAD
FAIRBANKS, AK 99701-1599
PHONE: (907) 459-7274
FAX: (907) 452-1668

November 20, 1997

Jane Doe
Cutlers Place
Riverbank, AK 99###

Dear Jane:

The Department of Fish and Game (department) issued personal use fishing permit PC-####-97 to you for the 1997 fishing season. Your permit expired on October 15, 1997. Your harvest information is needed to accurately document the 1997 season harvest. Our records show that we received weekly telephone harvest reports from you during the fishing season. Your telephone reports indicate that you harvested the following number of fish:

Chinook/King 10 Summer Chum 20 Fall Chum 40 Coho 5

The department appreciates your adherence to the telephone reporting requirement and uses these reports for inseason management of salmon openings. Although you may feel that you have completed your reporting requirement, we have not received your expired permit. A condition of the permit you were issued requires that you keep an accurate record of your harvest and return your expired permit. The expired permit is needed to confirm the total number of fish that you harvested this season.

If you have already returned your permit, please disregard this reminder notice. If you are unable to locate the expired permit, please fill in the total number of fish you harvested this past season and return this letter in the postage-paid envelope provided.

Chinook/King _____ Summer Chum _____ Fall Chum _____ Coho _____

Whitefish _____ Pike _____ Grayling _____

Suckers _____ Burbot _____ Other (specify species) _____

Signature

Date

This is your second and FINAL notice that the department has not received your expired permit or confirmation of your 1997 season harvest. TO QUALIFY FOR A PERMIT NEXT YEAR, YOU MUST REPORT YOUR HARVEST FOR THIS PAST SEASON.

Sincerely,

Bonnie Borba
Fishery Biologist

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