

ANNUAL MANAGEMENT REPORT YUKON AREA, 1997

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Sponsorship

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PREFACE

This report is one of a series of annual management reports detailing the management activities of the Division of Commercial Fisheries in the Yukon Area. Data presented in this report supersedes information found in previous management reports. The 1960-1974 management reports for the Yukon Area appear in the Arctic-Yukon-Kuskokwim Area report series. The 1975-1986 management reports appear in the Yukon Area Annual Report series. The annual management report became a part of the Regional Information Report Series in 1987. Data from selected research and monitoring projects are summarized in this report. The report is organized into the following major sections:

1. Salmon Fishery. This section presents a description of the area, fishery resources, fisheries and management practices.
2. Area Salmon Report. This section presents a comprehensive report of the current year salmon fisheries and makes comparisons with previous years.
3. Cape Romanzof District Herring Fishery. This section presents a description of the area, fishery resources, fisheries and management practices, and summary of the current year herring fishery.
4. Other Marine and Freshwater Finfish Fisheries. This section presents a description of the fishery resources and finfish fisheries other than salmon and herring.

In order to facilitate use of this report, tabular data has been separated into current year tables for the salmon fishery and appendices where historical salmon data and herring and freshwater finfish data are presented.

Catch-per-unit-effort (CPUE) is obtained by dividing the total fishermen hours into the catch for the corresponding period of time. Commercial fishing effort has been computed, assuming that if a permit holder delivers in a given fishing period, the fisherman fished the entire period for as many hours as were open to commercial fishing. Total fishermen is the total number of fishermen making deliveries, regardless of how many deliveries were made or periods fished during a particular "season". There are fishermen who deliver only once or twice during the entire season.

YUKON AREA INTRODUCTION

The Division of Commercial Fisheries (CF) of the Alaska Department of Fish and Game (ADF&G) is responsible for the management of commercial, personal use, and subsistence fisheries in the Yukon Area. This annual management report details the activities of the CF Division in the Yukon Area during 1997.

The Yukon Area includes all waters of the Yukon River drainage in Alaska and all coastal waters from Point Romanof near Kotlik southward to Naskonat Peninsula (Figure 1). Important subsistence and commercial fisheries include salmon and herring. Other marine and freshwater finfish are harvested primarily for subsistence use. A list of indigenous fishes found in the Yukon Area is provided in Appendix A.1.

SALMON FISHERY

Description of Area and District Boundaries

The Yukon River is the largest river in Alaska, draining approximately 35 percent of the state, and is the fifth largest drainage in North America. The river originates in British Columbia, Canada, within 30 miles of the Gulf of Alaska and flows over 2,300 miles to its mouth on the Bering Sea, draining an area of approximately 330,000 square miles. With the possible exception of a few fish taken near the mouth or adjacent coastal villages, only salmon of Yukon River origin are harvested in the Yukon Area.

Excluding the greater Fairbanks area (approximately 82,000 residents), there are approximately 21,000 rural residents in the Alaskan portion of the drainage (Williams 1997), the majority of whom reside in 43 small villages scattered along the coast and major river systems. Nearly all of these people are dependent to varying degrees on fish and game resources for their livelihood.

Commercial salmon fishing occurs along the entire 1,200 mile length of the mainstem Yukon River in Alaska and the lower 225 miles of the Tanana River. The Yukon Area is divided into seven districts and ten subdistricts for management and regulatory purposes (Figure 2). The present district boundaries were originally established in 1961 and redefined in 1962, 1974, 1978, and 1994. The Coastal District was established in 1994 and is only open to subsistence fishing. The Lower Yukon Area (Districts 1, 2, and 3) includes coastal waters of the delta and that portion of the Yukon River drainage from the mouth to Old Paradise Village, river mile 301. The Upper Yukon Area (Districts 4, 5, and 6) is that portion of the drainage upstream of Old Paradise Village to the U.S./Canada border. The districts and subdistricts are further divided into 28 statistical areas for management and reporting purposes (Figures 3-8). Figures 9-13 show selected closed waters areas. Yukon River mileages are listed in Appendix A.2.

In addition, commercial, Aboriginal, sport, and domestic salmon fisheries occur in Canada, with fishery management activities conducted by the Canadian Department of Fisheries and Oceans (DFO).

Fishery Resources

Five species of Pacific salmon are found in the Yukon River drainage: chinook salmon (*Oncorhynchus tshawytscha*), chum salmon (*O. keta*), coho salmon (*O. kisutch*), pink salmon (*O. gorbuscha*), and sockeye salmon (*O. nerka*).

Chinook salmon are the largest species found in the Yukon River ranging from 2-90 pounds and averaging 20-25 pounds. Spawning populations of chinook salmon have been documented throughout the Yukon River drainage from the Archuelinguk River located approximately 80 miles from the mouth to as far upstream as the headwaters of the drainage in Yukon Territory and British Columbia, Canada, nearly 2,000 miles from the mouth (Figures 14-18). Chinook salmon begin entering the mouth of the Yukon River soon after ice breakup during late May and early June and continue through mid-July.

The chum salmon return is made up of an early (summer chum) run and a later (fall chum) run. Summer chum salmon are chiefly characterized by: earlier run timing (early June to mid-July at the mouth), rapid maturation in freshwater, smaller size (average 6-7 pounds), and larger population size. Summer chum salmon spawn primarily in run-off streams in the lower 500 miles of the drainage and in the Tanana River drainage (Figures 14-16). Fall chum salmon are mainly distinguished by: later run timing (mid-July to early September at the mouth), robust body shape and bright silvery appearance, larger size (average 7-8 pounds) and smaller population size. Fall chum salmon primarily spawn in the upper portion of the drainage in streams which are spring fed, usually remaining ice-free during the winter. Major fall chum salmon spawning areas include the Tanana, Chandalar, and Porcupine River systems, as well as various streams in Yukon Territory, Canada, including the mainstem Yukon River (Figures 16-18).

Coho salmon enter the Yukon River from late July through September and average about seven pounds in weight. Coho salmon spawn discontinuously throughout the Alaskan portion of the drainage primarily in tributaries in the lower 500 miles of the drainage and in the Tanana River drainage. Major spawning populations of coho salmon have been documented in tributaries of the Tanana River drainage, and the Andreafsky and Anvik Rivers (Figures 14 and 16).

Pink salmon enter the lower river from late June to late July and average approximately 3 pounds in weight. Pink salmon primarily spawn in the lower portion of the drainage, downstream of the village of Grayling, river mile 336 (Figure 14). However, pink salmon have been caught in the mainstem Yukon River upstream as far as Ruby (river mile 601) (ADF&G 1983). During the past decade, large runs of pink salmon have occurred during even-numbered years.

Sockeye salmon are uncommon in the Yukon River drainage with only a few individuals caught each year. Sockeye salmon have been reported in the mainstem Yukon River upstream to Rampart (river mile 763). There have been observations of sockeye salmon in the Innoko (ADF&G 1986), Kantishna (L. Barton, ADF&G, Fairbanks, personal communication 1988), Anvik (M. Erickson, ADF&G, Anchorage, personal communication 1989) and Andreafsky (Tobin and Harper 1995) River drainages.

Water Quality

Water quality and spawning habitats in the Yukon Area have been largely preserved in an undisturbed condition. Pollution, logging, dam construction, oil development, and mining activities, except in a few locations, have been to date minimal.

Management

The overall goal of the Yukon Area research and management programs is to manage the salmon runs for sustained yield under the policies set forth by the Alaska Board of Fisheries. Management of the Yukon River salmon fishery is complex due to the inability to determine stock specific abundance and timing, overlapping multispecies salmon runs, the high efficiency of the commercial fleet, allocation issues, and the immense size of

the Yukon River drainage. Based on current knowledge, it is impossible to manage individual stocks independently. Escapement levels required to produce maximum sustained yields cannot be determined at this time due to the lack of an adequate database. Subsistence fishing has been designated by the Alaska State Legislature and the Alaska Board of Fisheries as the highest priority among beneficial uses of the resource. Management of the Yukon River salmon fisheries must take a conservative approach to maintain the subsistence priority, and to provide for spawning area escapements to sustain production of the resource.

Fisheries within the Yukon River drainage may harvest salmon stocks that are up to several weeks and hundreds of miles from their spawning grounds. Since the Yukon River commercial fishery is a mixed stock fishery, some tributary populations may be under- or over harvested in relation to their actual abundance. It is impossible to manage the stocks separately based on current knowledge.

Primary management tools used to manage the commercial salmon harvest are guideline harvest ranges established by the Alaska Board of Fisheries (Table 1), and emergency order authority, which is used to implement fishing season openings and closures, fishing periods, and mesh size restrictions. Guideline harvest ranges have been established for chinook, summer chum, and fall chum salmon commercial fisheries throughout the Alaskan portion of the drainage. In general, the department attempts to manage the commercial fisheries such that the harvest in each district or subdistrict is proportionally similar within their respective guideline harvest ranges.

New regulations and changes to existing regulations for the Yukon Area adopted by the Alaska Board of Fisheries in March 1997 are shown in Attachment 1.

During the fishing season, management is based on pre-season projections and in-season run assessment. The salmon runs are monitored on a daily basis. In-season run assessment includes abundance indices from test fisheries, passage estimates from the Pilot Station sonar project, and spawning escapement and harvest data. Recent improvements at the main river sonar project at Pilot Station have improved in-season estimates of salmon passage for fisheries management. If it becomes apparent that the run is substantially smaller or larger than needed for escapement and subsistence requirements, then the commercial harvest can be adjusted through the use of emergency orders. Emergency order announcements are broadcast during the fishing season over various radio stations throughout the drainage.

The department operates several projects to obtain the biological information necessary for management of the salmon runs. Additional programs are operated by federal agencies, native organizations, and fishermen's groups. In 1997, the following projects were implemented:

1. Test Fishing. Department test fishing projects located at South, Middle and North Mouths utilized set gillnets from late May through late August to capture chinook, chum, and coho salmon to provide run timing, age composition, and an index of relative abundance for annual comparisons between years. A contract fisherman operated a test fish wheel near Nenana on the Tanana River during July, August, and September to monitor chinook, summer chum and fall chum salmon passage. To index the fall chum salmon run, Bering Sea Fishermen's Association (BSFA) funded test fish wheels on the north and south banks of mainstem Yukon River near Tanana village. Additionally, BSFA funded a drift test fishery near Mt. Village to index the fall chum salmon run.
2. Tributary Sonar Projects. Hydroacoustic equipment was operated in the Anvik River (summer chum) and Sheenjek River (fall chum) to estimate salmon escapements. The United States Fish and Wildlife Service (USFWS) operated hydroacoustic equipment in the Chandalar River to estimate fall chum salmon escapement.

3. Main River Sonar Project. Hydroacoustic equipment was operated in the mainstem Yukon River near Pilot Station to obtain inseason salmon passage estimates by species.
4. Stock Separation and Age Composition. Scale and vertebra samples were collected from salmon harvest and escapement to determine age composition of the 1997 runs. Scale samples of chinook were also utilized for the purpose of allocating the harvest to region of spawning using scale pattern analysis techniques.
5. Data Processing of Commercial Fishery Statistics. Lower Yukon Area commercial harvest and effort data were obtained from fish tickets at the Emmonak field office. Similarly, Upper Yukon Area commercial harvest and effort data were collected at the Fairbanks office.
6. Aerial and Ground Surveys of Salmon Spawning Streams. Aerial surveys were flown to monitor spawning escapements in major index streams throughout the drainage. Additionally, fall chum salmon foot surveys were conducted at selected areas in the Tanana River drainage. Tanana Chiefs Conference (TCC) and BSFA conducted aerial, boat, and ground surveys in the Nenana River drainage primarily to estimate coho salmon escapement.
7. Tagging Projects. A salmon tagging project was conducted by DFO to estimate harvest rates and total escapement of chinook and fall chum salmon in the Canadian mainstem Yukon River. ADF&G and BSFA conducted a tagging project on the Tanana River to estimate fall chum salmon abundance upriver of the confluence of the Kantishna River. ADF&G Sport Fish Division conducted a mark-recapture study in the Chatanika River to estimate escapement of chinook salmon. ADF&G conducted a fall chum salmon radio tagging feasibility study on the Toklat River in 1997. USFWS conducted a fall chum salmon tagging project in the mainstem Yukon River near Rampart and investigated the feasibility of utilizing radio tags.
8. Tower Projects. Tower counting projects were conducted by ADF&G Sport Fish Division on the Chena and Salcha Rivers to estimate chinook and summer chum salmon escapements to those streams. Cooperative counting tower projects were operated on the Nulato River (Nulato Tribal Council, BSFA, and ADF&G) and Clear Creek (BLM, BSFA, and USFWS), a tributary of the Hogatza River, to estimate chinook and summer chum salmon escapement. The Alaska Cooperative Extension Service and BSFA operated a tower to estimate summer chum and chinook salmon escapement in Kaltag Creek.
9. Weir Projects. USFWS operated weirs on the East Fork Andreafsky, Giasava, and South Fork Koyukuk Rivers to estimate salmon escapement. BLM operated a weir on Beaver Creek to estimate chinook and summer chum salmon escapement.
10. Subsistence Harvests. Subsistence surveys were conducted where subsistence and personal use permits are not required to estimate subsistence salmon fishery harvest and effort throughout the Yukon Area.

CF Division permanent full time staff assigned to the Yukon Area include eight positions: two area management biologists, two assistant area management biologists, three research project biologists, and one field office assistant. In addition, approximately 30 seasonal employees are hired annually to assist in conducting various management and research projects. The staff aids in the enforcement of regulations in cooperation with the Division of Fish and Wildlife Protection (FWP), Department of Public Safety.

State of Alaska funding for the Yukon Area salmon management and research program from July 1, 1996 through June 30, 1997 approximated \$1.2 million. An additional \$626,000 was allocated by the Federal

Government to address research issues and travel associated with U.S./Canada Yukon River salmon treaty negotiations, Yukon River Panel activities, and implementation of the Interim Agreement.

Alaskan Salmon Fishery Description

Commercial Fishery

The first recorded commercial salmon harvest in the Alaskan portion of the Yukon River drainage occurred in 1918. Relatively large harvests of chinook, chum, and coho salmon were taken during 1919-1921 (ADF&G 1985). The majority of these harvests were taken outside of the river mouth since catch restrictions were imposed within the river. The early commercial fishery met opposition and was closed during 1925-1931 because of concerns for the existing large subsistence fishery. Commercial fishing for chinook salmon was resumed at a much reduced level in 1932. A commercial fishery for chinook salmon has occurred annually since 1932. Commercial harvests of chum and/or coho occurred during 1918-1921, 1952-1954, 1956, and since 1961.

During 1954-1960, a 65,000 chinook salmon quota was in effect for the Alaskan portion of the river. Of this total, not more than 50,000 fish could be taken below the mouth of the Anuk River, 10,000 fish in the area between the mouths of the Anuk and Anvik Rivers and 5,000 fish upstream from the Anvik River. The current guideline harvest ranges have been in effect since 1981 (Appendix A.14). Chinook salmon commercial harvests began increasing during the late 1970s (Appendix A.4), because of increased efficiency of the fleet and, in some years, due to above average run strength. Concern for possible over-exploitation particularly on upper river stocks, resulted in reduced harvests during the late 1980s.

Summer chum salmon commercial harvests increased greatly during the 1980s as a result of regulation changes (e.g. mesh size specifications and earlier openings), greater availability of processing facilities and tendering, higher exvessel prices, development of Japanese markets, and the occurrence of several very large runs (Appendix A.5). In February 1990, the Board of Fisheries established a river-wide guideline harvest range of 400,000 to 1,200,000 summer chum salmon (Appendix A.15). The board established guideline harvest ranges for districts and subdistricts using the 1975-1989 average harvest shares. Summer chum salmon commercial harvests declined from 1990 through 1993 because of below average runs. Beginning in 1994, declining salmon flesh markets limited the harvest particularly in the lower river. In March 1994, the Alaska Board of Fisheries adopted the Anvik River Chum Salmon Fishery Management Plan, which established regulations allowing for a commercial summer chum salmon fishery within the Anvik River.

The directed commercial fishery for fall chum salmon began in 1961. Fall chum salmon commercial harvests increased beginning in 1979 (Appendix A.6). Observations of low spawning escapements in the mid-1980s resulted in more conservative management and reduced commercial harvests since 1986. Guideline harvest ranges for fall chum salmon were reduced in 1986, and increased again in 1990 by the board (Appendix A.16). The Yukon River Drainage Fall Chum Salmon Management Plan was adopted by the Board of Fisheries in March 1994. The plan identified the need for 400,000 fall chum salmon for escapement and approximately 200,000 fall chum salmon to provide for Alaskan subsistence and Canadian harvests. A total of 600,000 fall chum salmon are needed to allow for normal subsistence activities. Additionally, there has been an effort to rebuild both Canadian and Toklat River fall chum salmon stocks. Under the plan, commercial fishing in all districts may only be allowed when the projected run size inseason is greater than 650,000 fall chum salmon.

Coho salmon returns to the Yukon River are of lesser magnitude than fall chum salmon and are taken incidentally to the fall chum salmon commercial directed fishery.

Pink salmon commercial harvests have been very small due to an extremely limited market for Yukon River pink salmon to date.

The majority of commercial fishermen are residents of the Yukon River drainage. The development of the commercial salmon fishery has enabled many area residents to obtain a cash income. The cash income provides a means for many of the area residents to maintain a subsistence life-style. Income earned from commercial fishing is often used to obtain hunting and fishing gear (e.g. nets, boats, and motors) utilized for subsistence activities.

Most fishermen operate outboard powered skiffs of 18 to 24 feet in length. Very few skiffs utilize gillnet rollers or power reels of any type. There has been a large increase in the use of larger outboard motors, VHF radios, and fish finders, which has increased the efficiency of the fleet.

The majority of the salmon harvest is presently processed as a fresh or frozen product in contrast to earlier years when canning and salting were of greater importance (Appendix A.10). Salmon are processed at shore-based or floating operations, or transported by aircraft outside the area for processing. Production of salmon roe (purchased directly from fishermen) is prevalent in the Upper Yukon Area. Fish ticket reports containing a breakdown of salmon roe by species other than chum salmon have only been available since 1990. It is certain that relatively small amounts of chinook and coho salmon roe were reported as summer chum and fall chum salmon roe, respectively prior to 1990. A few salmon are sold to local markets. Small quantities of chinook, fall chum, and coho salmon are smoke-cured and sold as "strips," a local specialty product. In addition, undocumented quantities of chum and coho salmon taken commercially are dried and sold as dog food.

Lower Yukon Area

Since the onset of the commercial salmon fishery in 1918, the majority of the Yukon River harvest has occurred in Districts 1 and 2 where fishing and processing effort is concentrated and flesh quality is optimal. With the advent of the Commercial Fisheries Limited Entry (CFEC) program in 1976, fishing effort in terms of the number of participants stabilized, but efficiency has increased. From 1987 through 1996, an average of 707 CFEC gillnet permits have been issued annually (Appendix A.8.). Lower Yukon Area permits are designated as gillnet and either set or drift gillnets may be operated. Permit holders may transfer between Districts 1, 2, and 3. Set gillnets are commonly used in coastal areas near the river mouth, but drift gillnets are the predominant gear type elsewhere.

Chinook salmon harvest quotas were eliminated for Districts 1 and 2 in 1960. From 1961 through 1980, the fishery was regulated by scheduled weekly fishing periods with the season opened by a published regulatory date. Fishing time during the chinook salmon season was allowed for four days a week during 1961-1967, but was reduced to: 3-1/2 days a week beginning in 1968, 3 days a week in 1974, and 2-1/2 days a week in 1977. From 1982-1986, fishing periods of 24 hours duration generally occurred twice weekly. During 1987, 12-hour periods were introduced. Since 1989, commercial periods have been 6, 9, or 12 hours in duration. Since 1981, a 60,000 to 120,000 chinook salmon guideline harvest range has been in effect for Districts 1 and 2 combined (Table 1). In District 3, a guideline harvest range of 1,800-2,200 chinook salmon was established in 1979.

Sale of other species of salmon captured during the chinook salmon season, excluding the 1920s, has been allowed only since 1967. The incidental catch of summer chum salmon was limited during the chinook salmon season in the late 1960s as fishermen could use only gillnets of eight inch minimum stretched mesh. However, beginning in 1970, each fisherman could substitute up to 50 fathoms of gillnet of any mesh size in Districts 1 and 2. In 1973, all mesh size restrictions were lifted during the chinook salmon season (from June 1 through early July).

A regulation was adopted in 1973 which specified that gillnets of six inch mesh size or less could be fished after a specified date in early July in Districts 1 and 2. Prior to the 1976 fishing season, a regulation was adopted which established a flexible range of dates from June 27 to July 5 in Districts 1 and 2, and July 5-15 in District 3, after which only gillnets of six inch maximum mesh size could be used. Effective for the 1985 fishing season, a regulation was adopted which eliminated specific dates and implemented emergency order authority for establishing restricted mesh size periods (six inch maximum mesh size) in Districts 1, 2, and 3. Additionally, the Board of Fisheries issued a directive to the department to provide for summer chum salmon directed fishing periods prior to the end of the chinook salmon season if the summer chum salmon run was average or better in strength.

Similar to chinook salmon, fishing time during the fall chum salmon season in the Lower Yukon Area has gradually been reduced since the 1960s. From 1983 through 1985, two 12-hour fishing periods per week were allowed in Districts 1 and 2, except that fishing time remained at two days per week for setnet fishermen in the coastal Setnet Only Area of District 1 (Figure 20). More commercial fishing time has been allowed in the coastal Setnet Only Area because of the influence tides have on fishing efficiency. Beginning in 1983, a season closure of July 15 was established in the Lower Yukon Area to protect the early portion of the fall chum salmon run and to provide more time to evaluate run strength. Since 1986, fishing period duration has typically been 12 hours in the Setnet Only Area and six hours in the remainder of the Lower Yukon Area.

Upper Yukon Area

Prior to 1974, the Yukon River drainage above the confluence of the Koyukuk River was designated as a single district (District 4). By regulation, commercial fishing was allowed 7 days per week until the quotas of 2,000 chinook salmon and 2,000 fall chum and coho salmon combined were taken. These quotas were established for the purpose of allowing a limited commercial utilization to continue, which had occurred for many years. Fish wheels and set gillnets are the legal gear types for commercial salmon fishing in the Upper Yukon Area. Fishermen may not transfer between districts in the Upper Yukon Area.

In recognition of the developing upriver commercial fishery and the desire of fishermen in the upper portion of the drainage to be allowed increased participation, the Alaska Board of Fish and Game adopted several major regulation changes prior to the 1974 fishing season. District 4 was reduced in size and two new Districts, 5 and 6, were defined. Additionally, the weekly commercial salmon fishing period was reduced from 7 to 5 days per week. Regulations also provided for increases in the upriver commercial harvest quotas.

Since 1974, the Alaska Board of Fisheries has enacted a number of major regulation changes in the Upper Yukon Area. Weekly fishing periods were reduced in all districts (except the upper portion of District 5) from 5 to 4 days per week, and split-period (two 48-hour periods) fishing schedules were established in 1980. Chinook salmon, and fall chum and coho salmon combined quotas were replaced by flexible guideline harvest ranges beginning in 1979. District 4 boundaries were redefined and new subdistricts created to allow for the possibility of more stock-specific management of fall chum and coho salmon in 1979. New subdistricts within District 5 were created in 1981. In 1993, coho salmon were excluded from fall chum salmon guideline harvest ranges in the Upper Yukon Area. Since 1990, the duration of fishing periods has typically decreased with fishing time being based on inseason run assessment.

In the spring of 1988, the Alaska Board of Fisheries met in special session to take testimony on current and proposed salmon management practices on the Tanana River. This special session was a result of large scale illegal salmon and salmon roe sales documented in 1987 in portions of Districts 5 and 6. The board adopted regulations for District 6 which included: 1) reducing allowable commercial and subsistence fishing time from

two 48-hour periods to two 42-hour periods per week, 2) specifying that there would be no more than one 42-hour commercial fishing period per week during the fall season, and 3) requiring subsistence fishing permits for the entire Tanana River drainage and established inseason reporting requirements for a portion of Subdistrict 6-B and all of Subdistrict 6-C.

The board further instructed the staff to manage District 6 on the basis of existing guideline harvest ranges, indicating that these guidelines may be exceeded only if it can be determined that doing so would not jeopardize meeting subsistence and escapement requirements. Based on concerns for fall chum salmon spawning escapements in the Toklat River, the board in February 1990 reduced the Subdistricts 6-A and 5-A commercial fishing schedule to no more than one 24-hour period per week during the fall fishing season.

In most of the Upper Yukon Area, summer chum salmon flesh is difficult to market because of the high cost of transportation and generally advanced state of sexual maturity. However, the summer chum salmon roe quality is judged by the industry to be excellent. This has resulted in increased sales of summer chum salmon roe since 1980. Because of the large Subdistrict 4-A summer chum salmon roe fishery and difficulty in estimating the associated harvest, the guideline harvest range for that subdistrict was established in February 1990 as 113,000 to 338,000 summer chum, or the equivalent of 61,000 to 183,000 pounds of roe or some combination of fish and pounds of roe. In addition, regulations were adopted which stipulated that no more than 183,000 pounds of summer chum salmon roe from Subdistrict 4-A harvests may be sold annually. If the roe cap is reached, fishing effort may continue, but only the sale of chum salmon in the round will be allowed. The board also required that all salmon caught by CFEC permit holders during commercial fishing periods in Subdistrict 4-A be reported in numbers on fish tickets.

In March 1994, the Alaska Board of Fisheries adopted the Anvik River Chum Salmon Fishery Management Plan. Under this plan the Anvik River may be opened to summer chum salmon commercial fishing if a surplus greater than the escapement goal of 500,000 fish is available. The intent is to allow a harvest of Anvik River summer chum salmon which are in excess of the spawning escapement goal and to decrease the harvest pressure on non-Anvik River summer chum salmon stocks in the mainstem Yukon River near the Anvik River. All chinook salmon taken in the Anvik River during commercial fishing periods must be returned to the water alive.

During the November 1994 Board of Fisheries meeting, the Anvik River Chum Salmon Fishery Management Plan was amended to allow the following gear types: hand beach and purse seines, fish wheels with live boxes, and a single set gillnet not to exceed 25 fathoms in length and not larger than 5 1/4 inch mesh. However, the gillnet must be continuously attended to release chinook salmon. Beginning in 1994, the lower 12 miles of the Anvik River have been opened to commercial fishing (Figure 19). Hand beach seines have been the dominant gear type utilized in the fishery. Only summer chum salmon roe has been sold from the Anvik River fishery. A roe cap of 100,000 pounds of summer chum salmon roe was established by the board in March 1996.

Carcasses, resulting from roe extraction for commercial sales, appear to be fully utilized for subsistence purposes except for District 4 summer chum harvests since 1980. A portion of the carcasses resulting from this harvest is utilized for subsistence purposes (primarily for dog food), however, some wastage is suggested by the large difference between the estimated commercial harvest and the reported subsistence use in some years. District 4 commercial related summer chum salmon harvests were estimated from 1980-1988 based on fish ticket sales, estimated sex ratio as documented by the department operated test fish wheel located near Kaltag from 1981 to 1985, and an estimated average roe weight of one pound per female chum salmon. The one pound per female average roe weight was estimated based on the subjective judgment of processors and fishermen.

In 1989, a comprehensive study was conducted in District 4 to collect more accurate average roe weight per female and sex ratio data to estimate the total commercial related summer chum harvest (Sandone 1991). The

average roe weight per female for the 1989 season was calculated to be 0.9 pounds. A similar average roe weight per female was estimated in samples collected in 1988. Since 1989, the department has sampled commercial catches from fish wheels and gillnets in upper river districts to estimate the mean proportion of females and to estimate average roe weights per female.

Fish wheels are the primary type of gear for harvesting summer chum salmon because of local fishing conditions and the efficiency of the gear. Fish wheels account for roughly 45% of the commercial harvest of this species in the Upper Yukon Area.

Subsistence Fishery

Subsistence fishing occurs throughout most of the Yukon Area. Historically, subsistence salmon harvests were very large. Subsistence salmon harvests declined through the 1970s (ADF&G 1985). Beginning in the early 1980s, due, in part, to a renewed interest in sled dogs, the number of dogs within the Yukon Area has increased. Coincidentally, there has been an increase in the subsistence salmon harvest. In addition, the human population along the river is increasing, which may also contribute to increased subsistence harvests.

Subsistence fishermen operate gillnets in the main rivers and coastal marine waters. Fish wheels are also utilized by subsistence fishermen in the upper Yukon and Tanana Rivers. Beach seines are occasionally used in tributaries near spawning grounds to catch schooling or spawning salmon. Many people who fish for commercial purposes also operate as subsistence fishermen. In order to enforce commercial salmon fishing regulations, it is necessary to place some restrictions on the subsistence fishery. However, throughout the fishing season, substantially more fishing time is allowed for subsistence than for commercial purposes.

In general, prior to 1993, subsistence fishing has been managed and regulated to coincide with commercial fishing periods when the commercial fishing season is open. However, regulations adopted in 1993 and 1994 separated the subsistence and commercial fishing times in Districts 1, 2, 3, and Subdistrict 4-A. Subsistence fishing is closed 18 hours before, during, and 12 hours following a commercial period in these areas. In all districts, additional subsistence only fishing time may be allowed during the commercial fishing season. Typically, subsistence fishing is allowed seven days per week in Districts 1 through 5, and for two 42-hour periods per week in District 6, prior to and following the commercial fishing season.

In February 1990, the Alaska Board of Fisheries closed the lower Kantishna River and the Toklat River drainage to subsistence fishing for fall chum salmon as part of an effort to rebuild the Toklat River spawning stock. However, as a result of a request from Kantishna River subsistence fishermen for injunctive relief, the Alaska Superior Court provided for subsistence fishing to resume in the Kantishna River in 1991. In February 1992, the board adopted the Toklat River Fall Chum Salmon Rebuilding Management Plan, which allowed subsistence salmon fishing, but only with fish wheels equipped with liveboxes, and with the stipulation that all chum salmon must be returned alive to the water. In March 1993, the board provided a fishery harvest limit of 2,000 fall chum salmon and individual permit limits of 450 fall chum salmon. Additionally, fishermen were allowed to continue fishing after the fishery harvest limit was reached using a fish wheel with a livebox and releasing all fall chum salmon alive. In November 1994, the board amended the Toklat River Fall Chum Salmon Rebuilding Plan by allowing the department the ability to exceed the Kantishna River fall chum salmon subsistence fishery harvest limit in years that indicators suggest that the Toklat River fall chum salmon minimum escapement objective would be achieved.

There is usually little intentional wastage of the fish taken for subsistence purposes. A major portion of salmon taken for human consumption are frozen, dried or smoked for later use. Wet weather may cause drying fish to

spoil. Chinook salmon are used primarily for human consumption. However, while chum and coho salmon are also used for human consumption, large numbers are also taken to feed sled dogs.

Comprehensive annual surveys of the subsistence salmon fishery were initiated by the department in 1961. Survey methodology and technique varied from year to year historically, however, it is felt that the estimates reflect harvest trends. Since 1988, survey methods and corresponding harvest estimates are more comparable. Subsistence harvest data collected through the use of postseason household interviews, catch calendars, mail out questionnaires, and telephone interviews have been expanded for unknown fishing families or households on a community basis and expanded community harvests summed for district and total drainage estimates on an annual basis (Walker et al. 1989). Current methodology for estimating subsistence salmon harvests can be found in other reports (Bromaghin and Hamner 1993 and Borba and Hamner 1997).

Beginning in the early 1970s, subsistence salmon fishing permits have been required in three sections of the Upper Yukon Area as follows: 1) the Yukon River near the Yukon River bridge between Hess Creek and Dall River, 2) the upper portion of the Yukon River in District 5 between the upstream mouth of Twenty-Two Mile Slough and the U.S./Canada border, and 3) the Tanana River above the mouth of the Wood River. Beginning in 1988, subsistence salmon fishing permits have been required for the entire Tanana River drainage except for the Fairbanks Nonsubsistence Area. Households which fish in areas requiring a permit are required to obtain a permit, document their harvest, and return the permit upon expiration.

The majority of the subsistence salmon harvest is taken in the Upper Yukon Area (Appendix D.1-D.4). The practice of keeping sled dogs is much more common in the Upper Yukon Area and is considered a major factor affecting the level of subsistence salmon use. It is also likely that the sale of subsistence-caught salmon roe (legal from 1974 through 1977) increased subsistence chum salmon harvests in the Upper Yukon Area above normal use levels during that period. Estimates of illegal sales of fall chum and coho salmon, and salmon roe in Districts 5 and 6 in 1987 were included with subsistence harvests, because there was no fall commercial fishing season allowed that year.

Distinguishing between subsistence and commercial harvests has become more difficult with the development of commercial salmon roe fisheries. Fish harvested to produce commercial roe sales are also utilized for subsistence purposes, which confuses categorizing the type of harvest. It is probable that the unmarketable carcasses made available by the commercial roe fishery have simply replaced a large portion of the subsistence harvest. In 1990, the harvests that produce commercial salmon roe sales were separated from subsistence harvests in total utilization tables because of the difficulty in assigning a single use to the harvest. The commercial harvest is reported as fish sold in the round only. Estimated harvests of female salmon to produce roe sales, and the incidental harvest of male summer chum salmon in District 4 are reported as commercial-related harvest. The harvest of males in salmon roe fisheries other than the summer chum salmon fishery in District 4 are believed to be either sold or retained for subsistence use. Since 1986, subsistence surveys have been conducted so as to estimate the number of summer chum salmon taken by subsistence fishing means not related to commercial fishing. The proportion of the summer chum salmon subsistence harvest taken unrelated to commercial fishing in 1986 was used to estimate District 4 subsistence harvests from 1980 through 1985. The reported subsistence harvest was reduced in some districts and years (Appendix A.17-A.20) based upon assumptions of when and where fish harvested to produce commercial roe sales were included in reported subsistence harvests.

The commercial-related salmon harvest can be viewed as utilization for both commercial and subsistence purposes. To avoid double counting, the commercial related harvest estimate can be combined with the subsistence harvest estimate to provide the total potential subsistence use, or it can be combined with the number of salmon sold in the round to obtain the total estimated commercial harvest.

Personal Use Fishery

Personal use fishing is similar to subsistence fishing, but does not have subsistence fishing's statutory priority over other uses. Regulations providing for personal use fisheries have been in effect sporadically in the Yukon Area since 1988. In general, personal use fisheries have not resulted in new additional harvests, rather these harvests were historically documented as subsistence harvests. Under the statutes and regulations that were in effect from 1988 until July 1, 1990, Alaska residents who lived in non-rural areas were prohibited from participating in subsistence fishing and subsistence fisheries were limited to rural areas. In those years, non-rural residents harvested salmon under personal use fishing regulations, which could apply to both rural and non-rural areas.

In the McDowell case, which took effect July 1, 1990 the Alaska Supreme Court struck down the rural residency requirement for subsistence participation, ruling that the Alaska Constitution prevented allocation of fish and game to people based on the location of their residence. The result was that every resident of the State of Alaska became eligible for subsistence fishing and, according to a lower court ruling, subsistence fisheries were not limited to rural areas. In effect, this decision made the personal use category obsolete in the Yukon Area.

During a special session in 1992, the legislature revised the subsistence law to once again allow the Board of Fisheries and Game to divide the state into subsistence or nonsubsistence zones. Inside the nonsubsistence areas, personal use fishing was authorized, but subsistence fisheries were not. The 1992 law mandated customary and traditional subsistence fisheries in the rest of the state. All state residents were eligible to participate in all subsistence or personal use fisheries. The Fairbanks Nonsubsistence Area (Appendix D.11), which was centered around the Fairbanks North Star Borough, was the only nonsubsistence area created by the Joint Boards of Fisheries and Game in the Yukon Area.

In October 1993, a state superior court ruled in the Kenaitze case that the nonsubsistence 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 of the effect 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 for subsistence fishing in nonsubsistence areas during the 1994 season. On May 9, 1995, the Alaska Supreme Court reversed the superior court ruling, upholding the constitutionality of the nonsubsistence areas.

In 1995, the Joint Board of Fish and Game again adopted regulations that created the Fairbanks Nonsubsistence Area (Figure 2). No subsistence fishing is allowed within non-subsistence areas. Subdistrict 6-C falls entirely within the Fairbanks Nonsubsistence Area and personal use salmon fishing permits are required. Since 1995, Subdistrict 6-C has been managed under personal use regulations. There is a fishery harvest limit in Subdistrict 6-C of 750 chinook, 5,000 summer chum, and 5,200 fall chum and coho salmon combined.

Sport Fishery

In general, sport fish salmon harvests in the Yukon Area are relatively minor compared to commercial and subsistence harvests. The Tanana River drainage is the exception, as it supports a popular sport fishery. In 1988, the Board of Fisheries established a guideline harvest range of 300 to 700 chinook salmon for the Salcha River recreational fishery. In 1990, the Board established a guideline harvest range of 300 to 600 chinook salmon for the Chena River recreational fishery.

Canadian Harvests of Yukon River Salmon

Annual harvest data from the Canadian portion of the Yukon River drainage has been provided by DFO since 1962. The first recorded commercial salmon harvest in the Yukon River drainage occurred in 1903 when 70,000 pounds of chinook and fall chum salmon were taken in Yukon Territory, Canada (ADF&G 1985). Records indicate a Canadian commercial fishery occurred sporadically from 1903 to 1917 and continuously from 1918 to 1947 (Appendix A.3). No harvest records are available from 1948 to 1957. Since 1958, harvest records document the annual salmon harvest by species, and since 1961, by user group as well.

In the Canadian portion of the Yukon River drainage there are commercial, Aboriginal, domestic, and sport fisheries for salmon. The Aboriginal and domestic fisheries are in some ways comparable to subsistence and personal use fisheries in Alaska, although the Aboriginal fishery is only open to native people. All of the commercial salmon harvest in Canada occurs on the mainstem Yukon River. Canadian salmon harvests in the Porcupine River drainage currently consist only of an Aboriginal fishery.

U.S./Canada Yukon River Salmon Panel and Treaty Negotiations

Negotiations were initiated in 1985 between the U.S. and Canada regarding a Yukon River salmon treaty. The purpose of these negotiations is to develop coordinated conservation and management between the U.S. and Canada for the salmon stocks that spawn in the Canadian portion of the Yukon River drainage.

In the mid-1990s, there was realization that, while reaching a comprehensive long term agreement remained a formidable challenge given some of the key unresolved issues, there would be benefits that could be realized by more formally implementing the areas of agreement to date. In February 1995, an interim Yukon River Salmon Agreement (Agreement) went into effect through an exchange of diplomatic notes. A U.S./Canada Yukon River Panel (Panel) was formed to implement the Agreement. The Panel consists of six United States members and six Canadian members. The Panel also administers a Yukon River Salmon Restoration and Enhancement Fund (Fund). Both sides have to agree on an item before an action can be taken by the Panel. The U.S. side of the Panel consists of four Alaskan Yukon River drainage fishers, one Alaska State government official, and one U.S. federal government official. There is an advisory group of Alaska Yukon River drainage fishers providing input to the U.S. side. A Joint Technical Committee (JTC) provides technical support to the Panel. The focus of the Panel is on the salmon stocks that spawn in the Canadian portion of the Yukon River drainage. The Panel makes recommendations to the management agencies in Alaska and Canada.

Initially the Agreement was in place through 1997, with an option to extend if both sides agreed. There are a number of issues that remain to be resolved, and negotiations resumed in October 1997. The goal of the negotiations will be to reach a long-term agreement on the remaining issues and to incorporate the relevant elements of the Agreement. At the October negotiations, the Agreement was extended through March 31, 1998.

The Panel held its inaugural meeting in Whitehorse, Yukon Territory, in April 1996. A six-year stabilization plan had been completed in 1995 for Canadian Yukon River mainstem chinook salmon. The objective of the six-year stabilization plan was to prevent further declines in spawning escapement through achieving an escapement of at least 18,000 chinook for each year through 1995. In April 1996, the Panel agreed to the first six years of a rebuilding plan for Canadian mainstem chinook salmon stocks. Recognizing the desirability of rebuilding stocks, the Panel agreed to an interim, minimum spawning escapement objective for Canadian mainstem Yukon River chinook salmon of 28,000 fish for six years

beginning in 1996. The U.S. contribution to this effort is to endeavor to deliver 44,800 to 47,800 chinook salmon to the Canadian mainstem Yukon River. The Canadian contribution to this effort is to endeavor to manage the harvest of chinook salmon in the mainstem Yukon River drainage in Canada by all user groups combined within a guideline harvest range of 16,800 to 19,800 chinook salmon.

For Canadian Yukon River mainstem fall chum salmon, a 12-year rebuilding plan was agreed upon during the negotiation process beginning with the 1990 season. The objective of this plan is to rebuild the stock by achieving a spawning escapement of 80,000 or more fall chum salmon for all brood years in the four-year cycle by the year 2001. The U.S. contribution to this effort is to endeavor to deliver to the Canadian border on the mainstem Yukon River an agreed to number of fall chum salmon, which varies by year based upon the rebuilding schedule. The Canadian contribution to this effort is to endeavor to manage the harvest of fall chum salmon in the mainstem Yukon River drainage in Canada by all user groups combined within a guideline harvest range of 23,600 to 32,600 fall chum salmon.

Given the prospect of a poor 1997 fall chum salmon return, the Panel began discussions on how to deal with this challenge at the November 1996 meeting of the Panel in Anchorage. At the March 1997 meeting in Whitehorse, the Panel agreed to a rebuilding step spawning escapement goal of 55,000 fall chum salmon for the Canadian mainstem Yukon River for 1997.

A key component of the Agreement is administration of the Fund by the Panel to address the restoration and enhancement of Canadian origin salmon stocks. The U.S. contributes \$400,000 per year into the Fund. The Panel administers a call for proposals, and a review and decision-making process. In March 1997, the Panel agreed to fund 17 projects with a total cost of \$480,000. A call for proposals for 1998 projects has been completed and the review process is underway. The Panel will meet in the spring of 1998 to determine which projects to fund.

Marine Harvests of Yukon River Origin Salmon

High Seas Salmon Gillnet Fisheries

Chinook salmon of western Alaska origin were intercepted yearly by the Japanese mothership and landbased gillnet fisheries through 1991 (Appendix A.24). Current estimates indicate an average of 141,000 chinook salmon were taken during 1975-1983. Yukon River chinook salmon comprised the majority of western Alaska stocks taken in the Bering Sea mothership harvests. In 1980, a total of 438,000 western Alaska chinook salmon was estimated to have been taken in these fisheries which exceeded the domestic commercial catch in western Alaska for that year.

Until 1988, the Japanese mothership salmon fishery operated in parts of the U.S. Exclusive Economic Zone (EEZ, waters from 3 to 200 miles of the U.S. coast). Beginning in 1988, the mothership fishery occurred outside of the EEZ. In 1990, the Japanese mothership fishery was converted to a "nontraditional land based salmon fishery". The nontraditional land based salmon fishery ended in 1991. Estimates of the numbers of western Alaska chinook salmon in this harvest are not available.

Foreign, Joint-Venture, and U.S. Domestic Groundfish Fisheries

Information on incidental chinook salmon catches in offshore fisheries is presented in Appendix A.26. Foreign groundfish fisheries in the EEZ ended in the Gulf of Alaska in 1985 and in the Bering Sea in 1987. The joint-venture groundfish fishery ended in the Gulf of Alaska in 1988 and ended in the Bering Sea in 1990. These fisheries were replaced by U.S. domestic groundfish fisheries.

Due to the lack of an observer program, the numbers of salmon taken by the U.S./domestic groundfish fleet were estimated through 1989. NMFS initiated an observer program beginning in 1990. In 1997, U.S. groundfish fisheries captured 50,200 chinook salmon in the Bering Sea and Aleutian Islands area and 15,100 chinook salmon in the Gulf of Alaska (Appendix A.24). Generally, bycatch chinook salmon are one to two years away from maturity (D. Ackley, ADF&G, Juneau, personal communication 1998). Additionally, 67,500 other salmon species were taken in the Bering Sea and Aleutian Islands area, of which a majority were chum salmon. Management measures are taken to reduce salmon bycatch in the groundfish fishery.

Alaska Peninsula

The majority of chum salmon captured during June in the Unimak and Shumagin Islands area, located on the south side of the Alaska Peninsula, are bound for Bristol Bay, Asia, and the AYK Region, which includes the Yukon Area. The stocks contributing to the harvest in this fishery have been described by several studies, including a tagging study in 1987. Beginning in 1993, a genetic stock identification study has been conducted using fishery samples from South Unimak and Shumagin Islands. Results of this study indicate stock contribution was similar to the 1987 tagging study. Sockeye salmon is the target species in the June fishery, but incidental catches of chum salmon are taken. The sockeye salmon harvest is regulated by a quota that is annually adjusted according to the Bristol Bay sockeye salmon forecast.

Since 1993, a harvest cap of 700,000 chum salmon during the June fishery has been in effect. In addition, the board allows the department to open the fishing season and establish fishing periods based on sockeye to chum ratios in an effort to reduce incidental chum harvests. A total of 1,628,000 sockeye and 322,000 chum salmon was taken in the June fishery in 1997.

Norton Sound

A commercial harvest of 12,573 chinook salmon was taken in coastal Norton Sound waters in 1997. The chinook salmon commercial harvest was the highest since 1985 and 93% above the previous 5-year average harvest of 6,528 fish. Some Yukon River bound chinook salmon are known to be intercepted by this fishery.

Salmon Spawning Escapement

An essential requirement for management of the Yukon River salmon fisheries is documentation of annual salmon spawning escapements. Such documentation provides for:

1. Determination of appropriate escapement levels or goals for selected spawning areas or management units;
2. Evaluation of escapement trends;

3. Evaluation of the effectiveness of the management program, which in turn forms the basis for proposing regulatory changes and management strategies; and
4. Evaluation of stock status for use in projecting subsequent returns.

Escapement Assessment Methods

The Yukon River drainage is too extensive for complete comprehensive escapement coverage of all salmon spawning streams. Consequently, low-level aerial surveys from single-engine, fixed-wing aircraft form an integral component of the escapement assessment program. Nevertheless, comprehensive assessment studies employing such techniques as intensified ground surveys, mark-recapture programs, counting towers, weirs, and hydroacoustics are also conducted. Regardless of the method utilized, the overall objective of escapement assessment in the Yukon Area is to estimate abundance (or often indices of relative abundance), timing, and distribution of spawning salmon populations throughout the drainage. Specific objectives may vary by individual project, while individual project objectives may vary by year depending upon fiscal and personnel constraints.

There are both advantages and disadvantages related to each type of assessment method. The more comprehensive studies tend to provide estimates of total salmon abundance and are often less dependent upon weather and water conditions. However, due to costs associated with staffing and operating the more sophisticated assessment projects, only a few have been initiated over the years primarily on major spawning streams.

In addition, a department mainstem sonar project has been operational since 1986 to estimate total salmon passage by species through the lower Yukon River at river mile 123 near Pilot Station. Hydroacoustic techniques are used to estimate passage of fish and a comprehensive drift gillnet sampling program is conducted to apportion sonar counts to species. Another study designed to estimate salmon abundance by species in the Yukon River has been operated annually by DFO since 1982 (excluding 1984) near Dawson in Canada. That project involves a comprehensive mark-recapture study designed to estimate the abundance of chinook and chum salmon entering the Canadian portion of the mainstem Yukon River.

In contrast to the more comprehensive assessment projects, perhaps the greatest advantage of aerial surveys is the cost-effectiveness of obtaining escapement information throughout an extremely vast and remote area. Another advantage to aerial surveillance is that current or potential habitat-related problems arising from natural or man-induced causes can be identified. Among the disadvantages are that results may be highly variable if non-standardized procedures are used.

Variability in aerial survey accuracy is dependent upon a number of factors such as weather and water turbidity, timing of surveys with respect to peak spawning, aircraft type, survey altitude, experience of both pilot and observer, and species of salmon being assessed. It is recognized that aerial estimates are lower than actual stream abundance due to these factors. Further, peak abundance measured by aerial survey methods is significantly lower than total spawning abundance due to the die-off of early spawners, and arrival of fish after the survey. Aerial estimates in a given stream may demonstrate a wide range in the proportion of fish being estimated from year to year. To the extent that this variability can be controlled, peak aerial counts may serve as indices of relative abundance for examination of annual trends in escapement.

Aerial escapement estimates are obtained from as many spawning streams as possible within the confines of fiscal, personnel, and weather constraints. However, selected spawning streams or "index areas" which represent a larger geographic area have been identified and receive highest priority. Index areas have been designated due to

their importance as spawning areas and/or by their geographic location with respect to other unsurveyable salmon spawning streams in the general area.

Escapement Goals

Biological escapement goals (BEG's) have been established for several Yukon River drainage salmon spawning streams or areas (Appendix E.1). The underlying principle in setting the current BEGs was that maintenance of average or better spawning escapements should provide for sustained yield consistent with historic levels. Most of these goals represent the minimum number of desired spawners considered necessary to maintain the historical yield from the stocks and are based upon historical performance, i.e., they are predicated upon some measure of historic averages. Establishment of escapement goals based upon a rigorous analysis of maximum sustained yield is not possible at this time due to the nature of the Yukon River mixed stock fisheries, lack of stock identification data, and consequential inability to reconstruct total inriver stock-specific returns. Consequently, most escapement goals are based upon aerial survey index estimates which do not represent total escapement but are assumed to reflect relative spawner abundance when using standard survey methods under acceptable survey conditions. However, the goals established for Anvik River summer chum salmon and selected fall chum salmon spawning stocks represent the desired minimum target for total spawning abundance; being based upon a more comprehensive escapement data base.

AREA SALMON REPORT 1997

Total Yukon River Drainage Salmon Harvest 1997

The total estimated harvest (sport fish harvest in Alaska not available yet) for the entire Yukon River drainage in 1997 (including Canada) was 189,240 chinook, 328,342 summer chum, 170,059 fall chum, and 60,413 coho salmon (Table 15). The 1997 estimated harvests compared to the recent 5-year averages (1992-1996) were as follows: chinook, 3% above (Appendix A.17), summer chum, 46% below (Appendix A.18), fall chum, 25% below (Appendix A.19), and coho, 1% above average (Appendix A.20).

Alaskan Commercial Fishery 1997

Commercial sales totaled 300,116 salmon and 87,686 pounds of unprocessed salmon roe for the Alaskan portion of the Yukon River drainage in 1997 (Table 4). The catch was composed of 112,841 chinook, 95,242 summer chum, 56,713 fall chum, and 35,320 coho salmon in the round. In addition, 3,225 pounds of chinook roe, 83,267 pounds of summer chum roe, and 1,194 pounds of fall chum salmon roe were sold by commercial fishermen. Below average chum salmon abundance and declining salmon markets, particularly for summer chum salmon flesh and salmon roe, had a major impact on the commercial fishery, resulting in limited fishing and buying effort and harvests in some districts and lower exvessel value. During the fishing season, teleconferences with the Yukon River Drainage Fisheries Association (YRDFA) were conducted to obtain input from user groups and to exchange salmon run status information.

The total estimated commercial harvest including the estimated harvest to produce roe sold was 113,610 chinook, 228,252 summer chum, 58,187 fall chum, and 35,320 coho salmon (Table 4). The 1997 estimated salmon harvests compared to the recent 5-year averages (1992-1996) were as follows: chinook, 4% above (Appendix

A.4), summer chum, 53% below (Appendix A.5), fall chum, 30% below (Appendix A.6), and coho, 53% above average (Appendix A.7).

Department test fishing projects sold a total of 2,791 chinook, 2,557 summer chum, 867 fall chum and 498 coho salmon in District 1 and 20 chinook and 33 summer chum salmon in District 2 in 1997 (Table 12). These fish are not included in commercial sales.

The estimated value of the 1997 Yukon Area salmon fishery to fishermen was \$5.9 million, which was approximately 12% below the recent 5-year average value of \$6.7 million (Appendix A.12). Salmon buyers and processors operating in the Yukon Area during 1997 are listed in Table 2. The majority of the salmon harvest was processed as a fresh or frozen product. Commercial salmon harvest and salmon roe production is presented in Appendix A.10. Average prices paid to fishermen and average salmon weight are presented in Appendices A.11 and A.13, respectively.

In 1997, a total of 777 CFEC gillnet permits and 163 fish wheel permits (not including transfers) were issued (Table 3). A total of 725 permit holders participated in the fishery during 1997 (Table 11), which was 8% below the recent five-year-average of 792 permit holders and the lowest on record since 1972 (Appendix A.8 and A.9). Fishing effort was lower than normal because of below average chum salmon runs, and declining salmon markets and corresponding lower prices. A total of 640 permit holders fished in the Lower Yukon in 1997, which was 3% below the recent five-year-average. A total of 85 permit holders fished in the Upper Yukon Area, which was 34% below the five-year-average of 129 permits and the lowest since 1973. A total of 662 gillnet and 63 fish wheel permits were fished in 1997. The number of commercial fishing permits (fishermen) that made at least one salmon delivery by district during the season are shown in Appendix A.9.

Preliminary age composition data from the Lower Yukon Area indicated 6-year-old fish accounted for approximately 70.5% of the chinook salmon harvest. This higher than normal percentage (Appendix A.21), and corresponding number, of age-6 chinook salmon in 1997 was consistent with the above average return of 5-year-old fish in 1996, but inconsistent with the below average to average escapements documented in the 1991 parent year. Approximately 47% of the commercial harvest in District 1 was females. A total of nine fin-clipped chinook salmon from the Whitehorse hatchery were recovered during commercial catch sampling activities in Districts 1 and 2.

The estimated percentage of Canadian-spawned chinook salmon harvested in 1997 from all fisheries throughout the Yukon River drainage combined (Alaska and Canada) is not available yet (Appendix A.22). The estimates presented in Appendix A.24 are based on analyses of chinook salmon scale patterns, age composition ratios, and geographic distribution of harvests and escapements (Schneiderhan 1997).

Preliminary age composition information indicated age-5 summer chum salmon comprised approximately 67.2% of the harvest. Age-4 and age-6 summer chum salmon accounted for 29.0% and 3.6% of the harvest. Age-4 fall chum salmon dominated harvest samples, comprising approximately 57.2% of the harvest. Age-4 coho salmon comprised approximately 92.0% of the harvest. Historical age composition information is shown in Appendix A.21.

Lower Yukon Area Harvest

The 1997 Lower Yukon Area commercial salmon harvest totaled 105,747 chinook, 78,157 summer chum, 51,809 fall chum, and 34,506 coho salmon (Tables 4 and 11). The chinook salmon harvest was 4% above the

recent five-year average (1992-1996), the summer chum harvest was 52% below the recent five-year average, the fall chum harvest was 11% above the recent five-year average, and the coho harvest was 94% above the recent five-year average.

In 1997, a total of 705 CFEC gillnet permits were issued for the Lower Yukon Area (Table 3), of which, 640 permit holders fished at least once during 1997. Lower Yukon fishermen were paid an average (per pound) of \$2.46 for chinook, \$0.10 for summer chum, \$0.22 for fall chum, and \$0.32 for coho salmon (Appendix A.11). The average price paid for chinook salmon in the Lower Yukon Area was the highest since 1993. The average price paid for summer chum salmon continued to be low as observed in 1996. Because of the effects of lower salmon harvests across the state in 1997, prices for fall chum and coho salmon showed an increase over recent years. The estimated exvessel value of the Lower Yukon Area harvest was \$5.7 million which was 4% below the 1992-1996 average value (Appendix A.12). The average earnings per fisherman in the Lower Yukon Area was approximately \$8,870.

Five buyer-processors operated in the Lower Yukon Area in 1997. All of the commercial salmon harvest was shipped to fresh or fresh/frozen markets.

Upper Yukon Area Harvest

Upper Yukon Area commercial salmon sales in the round totaled 7,094 chinook, 17,085 summer chum, 4,904 fall chum, and 814 coho salmon in 1997 (Tables 4 and 11). Roe sales by species totaled 3,225 pounds for chinook, 83,267 pounds for summer chum, and 1,194 pounds for fall chum salmon. Summer chum salmon roe sales were 50% of the 1992-1996 average. Historical commercial harvest by statistical area is presented in Appendices C.4 -C.19.

The total estimated commercial salmon harvests reflect the estimated number of female salmon harvested to produce roe sold in Districts 4-6. In District 4, the estimated incidental catch of male summer chum salmon to produce roe sold is also included. Appendices C.1 to C.3 present commercial salmon sales and estimated harvest by gear type (set gillnet and fish wheel).

Six buyer-processors and ten catcher-sellers operated in the Upper Yukon Area during 1997. The number of buyers participating in the 1997 Subdistrict 4-A summer chum salmon roe fishery was only half the number that operated in 1996. Upper Yukon commercial fishermen received an estimated average price per pound of \$0.97 for chinook salmon, \$1.62 for chinook salmon roe, \$0.07 for summer chum salmon, \$1.08 for summer chum salmon roe, \$0.17 for fall chum salmon, \$1.75 for fall chum salmon roe, and \$0.20 for coho salmon (Appendix A.11). The average price paid for summer chum salmon roe of \$1.08 per pound in 1997 was the lowest on record, and approximately 35% of the average price of \$3.05 per pound in 1996. The estimated exvessel value of the 1997 Upper Yukon Area harvest was \$0.2 million (Appendix A.12). A total of 85 fishermen participated in the commercial fishery. The average earnings per fisherman was approximately \$2,540.

Chinook and Summer Chum Salmon Season

The 1997 preseason outlook was for a near average chinook salmon run and a below average to average summer chum salmon run. The commercial harvest in the Alaskan portion of the drainage was anticipated to be between 88,000 and 108,000 chinook and 200,000 to 600,000 summer chum salmon.

The Lower Yukon Area was generally free of ice by May 15 (Appendix A.23). The first chinook salmon catches were reported on May 22 near Sheldon Point by a subsistence fisherman. The department's test fishing projects recorded the first chinook and chum salmon catches on May 29 (Appendix B.12).

Based on lower river test fishing CPUE data, chinook salmon migratory timing was average. Approximately 50% of the chinook salmon run had entered the lower river by June 19. A record test fishing cumulative catch per unit effort (CPUE) of 35.6 for chinook salmon from Big Eddy and Middle Mouth 8.5 inch mesh size set gillnet sites indicated above average abundance in 1997 and similar to the large runs in 1994 and 1995 (Appendix B.12 and B.13). Initially, the indication of a strong run was viewed cautiously, as water levels were well below normal through June 20, which may have resulted in increased efficiency of the test fishery. In addition, one 8.5 inch mesh size gillnet site near Emmonak appeared to be catching chinook salmon with disproportionately high efficiency than actual abundance. For example, this site had a high chinook catch on June 17, but the numbers of fish caught during the commercial opening that day upstream of the test fishery were very low. Therefore, it was difficult to determine inseason how well the test fishery was performing as an indicator of abundance.

The test net cumulative CPUE of 81.6 for summer chum salmon indicated the 1997 run was near average in abundance (Appendix B.12 and B.14). Again, this indication of abundance was viewed cautiously, as water levels were below normal through June 20, and then water levels were much higher than normal with a lot of debris from June 28 until July 5. Summer chum salmon migratory timing appeared to be average with approximately 50% of the run entering the lower river by June 19 according to test fishing CPUE data. However, the run was more spread out in duration than typical.

The Pilot Station sonar project estimated a passage of 132,000 large chinook and 90,000 small chinook (jacks) for a total of 222,000 chinook, and 1,402,000 summer chum salmon (Appendix E.3). Because of operational changes, Pilot Station sonar data in 1997 could only be compared directly with data collected in 1995. Operational changes included changes to aiming criteria in 1995 to maximize the ability to detect passing fish, so all detected fish are classified as upstream oriented. Although the total passage estimates for chinook salmon were fairly similar for 1995 and 1997, the passage estimate in 1997 had a much higher proportion of small chinook salmon than the passage estimate of 37,000 small chinook in 1995. This higher proportion of small chinook salmon in the 1997 run was a factor in determining the allowable level of harvest in unrestricted mesh openings because of escapement quality considerations. The 1997 summer chum salmon passage estimate was substantially less than the 1995 estimate of 3,638,000 fish. It will take several more seasons to evaluate the results of the project to determine how sonar passage estimates relate to subsequent harvests and escapements on the spawning grounds.

The 1997 sonar project was adversely impacted by high water and debris during late June. Signal loss was compensated for except for portions of the left bank sonar range on the following dates: June 22, 24-25, 27, and 28, and July 4-5; and all of the left bank sonar range on 26 June and 1-3 July. In addition, a heavy debris load during the end of June forced removal of all sonar equipment from the water for 2 ½ days from 28 June to 1 July. No attempts were made to estimate the missing data during these blocks of time.

The commercial harvest of chinook salmon was above the midpoint of the guideline harvest range for Districts 1 and 2 and slightly above the upper end of the guideline harvest ranges in Districts 5 and 6. However, declining salmon market conditions resulted in no commercial openings in District 3, and a limited chinook salmon harvest in District 4. Because of a below average summer chum run and weak chum salmon flesh and roe markets, commercial harvests in all districts were below the lower end of the guideline harvest ranges except for District 6 where the harvest was at the midpoint. Chum salmon roe markets which had remained relatively stable through 1996 were very disappointing in 1997. A summary of emergency orders issued during the chinook and summer chum salmon fishing season is provided in Appendix A.25.

Districts 1, 2 and 3

The anticipated Lower Yukon Area commercial harvest was 82,000 to 100,000 chinook salmon. However, the harvest from fishing periods targeting chinook salmon with unrestricted mesh size gillnets was not expected to exceed 85,000 fish. The management concern is for the quality of escapements, that is, not only escapement abundance but the proportion of female salmon in the escapements. Large mesh size gillnets utilized during unrestricted mesh size openings target older, larger chinook salmon, which includes a much larger proportion of females than small mesh size periods. Fishing periods restricted to six inch or smaller mesh size gillnets result in much higher catches of smaller predominantly male chinook salmon. Therefore, the amount of harvest taken with the larger mesh chinook salmon gear and smaller mesh gear must be carefully considered.

The normal management strategy is to open the chinook salmon directed commercial fishery in the Lower Yukon Area when increasing subsistence and/or test net catches of chinook salmon have occurred over a seven- to ten-day period. There were discussions pre-season among the department, Lower Yukon Fish and Game Advisory Committee, and fishermen regarding the possibility of an earlier, short commercial fishing period being established as early as June 5 in either District 1 or 2, in an effort to spread out the chinook harvest and to target male chinook salmon early in the run. Since chinook salmon migratory timing was not as early as in 1996, the 1997 commercial fishing season opened on June 11 in District 1 after approximately seven days of increasing subsistence and test fishery catches.

Through June 22, a series of three 12-hour commercial fishing periods allowing the use of unrestricted mesh size gillnets were established in Districts 1 and 2 (Tables 5 and 6). After the combined District 1 and 2 harvest reached approximately 70,000 chinook salmon on June 23, fishing time for the fourth period in each district was reduced to 6 hours in duration. The last period with unrestricted mesh size gillnets was nine hours in duration in District 1 on June 26-27. On July 1-2, the department was willing to allow an additional unrestricted mesh size opening. However, all of the buyers were closing up because of quality concerns for late run chinook and cost savings measures. Based on test fishing CPUE data and Pilot Station sonar passage estimates, the run was assessed in-season to be above average but lower in magnitude than the 1995 run, and the harvest of chinook salmon with unrestricted mesh size gillnets was allowed to exceed 100,000 fish.

Six inch maximum mesh size fishing periods are utilized to target summer chum salmon in the Lower Yukon Area. Several buyers were interested in purchasing summer chums during the middle to late-June time period. There were four short chum salmon directed periods in 1997 between June 22 and June 30. Because of the low prices paid for summer chum salmon, lack of buyers in early July and below average return, the Lower Yukon Area summer chum harvest was below the lower end of the guideline harvest range. The much higher value of chinook salmon has resulted in a lot less interest in summer chum salmon by lower Yukon River fishermen. For example, in District 1 an average of 427 commercial fishers participated in unrestricted mesh size openings, while an average of 141 fishermen participated in restricted mesh size periods.

The combined total harvest of 105,747 chinook salmon for Districts 1 and 2 (Table 11) was 17% above the midpoint of the guideline harvest range of 90,000 fish and 4% above the 1992-1996 average harvest of 101,455 fish. A total of 102,114 chinook were harvested during unrestricted mesh size fishing periods and 3,611 chinook were harvested during fishing periods restricted to six inch maximum mesh size gillnets. A total of 22 chinook salmon were taken during the fall season. The average weight of chinook salmon was 21.2 pounds for the unrestricted mesh size harvest and 14.2 pounds for the six inch maximum mesh size harvest.

The combined commercial summer chum salmon harvest in District 1 and 2 of 78,157 fish (Table 11) was 52% below the recent 5-year-average harvest of 164,393 fish. A total of 49,953 summer chum salmon were caught during the unrestricted mesh size periods and 28,204 summer chum salmon were harvested during restricted mesh size fishing periods. The average weight of summer chum salmon was 7.2 pounds.

Although one fisherman and buyer expressed interest in taking summer chum salmon for the sale of roe in District 3, poor market conditions precluded commercial fishing in that district in 1997.

This was the second year that a regulation which reduced the maximum depth of commercial gillnets in the Lower Yukon Area was in effect. Beginning in 1996, the depth of gillnets was decreased from 70 meshes to 50 meshes for gillnets with six inch or less mesh size and from 60 meshes to 45 meshes for gillnets greater than six inch mesh size. There has been a mixed response from fishermen regarding the affect of this regulation change ranging from a minimal impact to a large impact on harvests.

District 4 and Anvik River Management Area

Limited salmon roe markets and lower prices resulted in lower effort and subsequently lower harvest rates in District 4. Because of low harvests, more fishing periods were allowed in District 4 fisheries than in recent years. The Anvik River Management Area had 11 fishing periods, the most since its inception in 1994. Subdistrict 4-A had 10 fishing periods and Subdistricts 4-B and 4-C had 8 fishing periods, the most for each subdistrict since 1989.

Subdistrict 4-A was opened to commercial fishing on July 1 (Table 8). Three 12-hour fishing periods were scheduled for the first week in Subdistrict 4-A. Because subsistence fishermen requested more fishing time for set gillnets and fish wheels, and to provide for additional escapement, two 12-hour commercial fishing periods were scheduled for the second week. Thereafter, the commercial fishing schedule was adjusted weekly in an attempt to assist buyers with market, shipping and processing concerns. In 1997, 24 permit holders participated in the Subdistrict 4-A fishery as compared to 62 in 1996. Based on the below average summer chum salmon run, the lower end of the guideline harvest range of 61,000 pounds of roe for Subdistrict 4-A was targeted inseason. A total of 56,301 pounds of summer chum salmon roe were sold in Subdistrict 4-A (Table 8). The total estimated commercial harvest was 100,389 summer chum salmon.

This was the fourth consecutive year that commercial fishing was allowed within the Anvik River Management Area. Commercial fishing for summer chum salmon has been allowed in the lower 12 miles of the Anvik River (Figure 19). A three 12-hour period per week fishing schedule was maintained throughout the entire season. Generally, fishing periods were scheduled concurrently with Subdistrict 4-A openings; two fishing periods were not concurrent. A total of 13,067 pounds of summer chum salmon roe were sold in the Anvik River Management Area (Table 8). The total estimated commercial harvest was 13,548 female summer chum salmon. The use of hand beach seine and purse seine gear allowed for the release of male chum and chinook salmon. The number of permit holders that fished in the Anvik River during concurrent periods with Subdistrict 4-A ranged from 1 to 9 and averaged 4. In 1997, 9 permit holders participated in the Anvik River fishery compared to 24 in 1996.

Subdistricts 4-B and 4-C had uninterrupted subsistence fishing allowed by emergency order until 24 hours before the commercial fishing season opened. Subdistricts 4-B and 4-C were opened to commercial fishing beginning on June 29. The sale of 4,863 pounds of summer chum salmon roe (Table 8) in Subdistricts 4-B and 4-C was the second lowest on record since 1980. The total estimated commercial harvest was 10,548 summer chum salmon. The chinook salmon harvest was 1,457 which was below the lower end of the

guideline harvest range. Only 12 permit holders participated in the Subdistricts 4-B and 4-C fishery as compared to 22 in 1996

District 5

In District 5, chinook salmon is the primary species of commercial value during the early season. Summer chum salmon do not contribute substantially to the commercial harvest because of the timing of the fishery, lower availability, poor flesh quality, and the high transportation costs to market.

The commercial fishing season was opened in Subdistricts 5-A, 5-B, and 5-C on July 4, after the chinook salmon run was believed to be well distributed throughout these subdistricts. The harvest of 3,071 chinook salmon (Table 9) was slightly above the upper end of the guideline harvest range of 2,800 fish for Subdistricts 5-A, 5-B, and 5-C. A total of 125 summer chum were sold.

Commercial fishing in Subdistrict 5-D commenced on July 12. The Subdistrict 5-D harvest of 607 chinook salmon was above the guideline harvest range of 300 to 500 chinook salmon. A total of 12 summer chum were sold.

District 6

The commercial fishing season opened July 11 in District 6. The total estimated commercial harvest in 1997 was 2,728 chinook and 25,287 summer chum salmon in District 6 (Table 10). The chinook salmon harvest exceeded the upper end of the guideline harvest range of 800 fish. The summer chum salmon harvest reached the mid-point of the guideline harvest range of 13,000-38,000 fish. Management of the fishery was primarily based on Chena and Salcha River tower counts and aerial survey results. The first two fishing periods were directed at the harvest of chinook salmon and the five following periods were directed at summer chum salmon. Based on commercial harvest and escapement data, the chinook salmon run to the Tanana River drainage was above average, while the summer chum salmon run appeared to be near average and stronger than expected based on the 1993 parent year escapements.

Fall Chum and Coho Salmon

Yukon River drainage fall chum salmon return primarily as age-4 or age-5 fish. However, age-3 and age-6 fish also contribute to the run. A Ricker spawner-recruit model was used to project the returns of fall chum salmon from the 1991 to 1994 parent-years that contributed to the 1997 run. This process resulted in a 1997 preseason projection of 750,100 fall chum salmon.

The preseason projection suggested that the major contributor to the 1997 fall chum salmon run would be age-4 fish returning from the 1993 brood year. In 1993, the Yukon River drainage experienced the lowest fall chum salmon run on record, and no commercial fishing was permitted during the fall season in the Alaskan portion of the drainage in that year. Additionally, severe restrictions, which included closures, were imposed on the recreational, personal use, and subsistence fisheries. Despite these efforts, the 1993 fall chum salmon escapements throughout most of the Yukon River drainage were poor. However, in 1993 the most favorable escapements observed, when compared to respective escapement goals, were within the Tanana River drainage. When compared to its historical contribution, it was anticipated that the fall chum salmon return to the Tanana River drainage would be a strong component of the 1997 return.

The preseason projection also suggested that one of the weaker components of the 1997 fall chum salmon run would be from the Canadian mainstem stocks. Management strategies to increase the number of fall chum salmon delivered to the border included a lower, overall commercial-exploitation rate on the entire fall chum salmon run. Additionally, attempts were made to allow the early portion of the fall chum salmon run to pass through the lower Yukon River prior to commercial fishing activities. It is believed that Canadian bound salmon represent a higher proportion of the fish during the early portion of the run.

The Alaska Board of Fisheries adopted the Yukon River fall chum salmon management plan that was in effect during the 1997 season in March 1996. This plan identifies the need for spawning escapement and subsistence needs for the Alaskan portion of the drainage, and the commitments for Canadian harvests. The plan is dependent on the department's ability to accurately assess the run size entering the river and taking appropriate management actions.

The 1997 management plan directed that Alaskan fall chum salmon commercial fisheries may only be allowed at run size projections greater than 600,000 fall chum salmon. The 1997 preseason projection of approximately 750,100 fall chum salmon suggested that an Alaskan fall chum salmon commercial harvest of up to 150,000 fall chum salmon could occur given healthy stocks and normal distribution. However, rebuilding efforts for Canadian and Toklat River drainage fall chum salmon stocks would reduce the allowable Alaskan commercial harvest.

As the 1997 run materialized inseason, the department used inseason management tools to adjust the run size projection and the corresponding, allowable Alaskan commercial harvest upward or downward. Lower Yukon River monitoring tools available to the department in 1997 included the lower Yukon River set gillnet test fishery (Appendix B.15 and B.16), the Mountain Village drift gillnet test fishery, Pilot Station sonar passage estimates, and subsistence catch reports. This information, in combination with the preseason projection, was the basis for the initial management decisions in the lower Yukon River commercial fisheries. A summary of emergency orders issued during the fall chum salmon fishing season is provided in Appendix A.26.

By early August, it was estimated that the 1997 fall chum salmon return would be large enough to support commercial fishing activities. The first commercial fishing period directed toward fall chum salmon occurred in District 1 on August 6. As the run progressed in time and migrated upriver, additional commercial fishing opportunities occurred throughout most of the Yukon River (Districts 1, 2, 4, and 5). Due to the lack of a buyer, no commercial fishing activities occurred during the fall season in District 3. Based primarily on Pilot Station sonar passage estimates, the 1997 Yukon River fall chum salmon return was estimated inseason to be approximately 675,000 fish through the end of August. This level of return, when compared to the management plan, could provide for a limited Alaskan commercial harvest at below the low end of each district(s) or subdistrict(s) guideline harvest range. The combined total of the low end of all Yukon Area guideline harvest ranges is 72,750 fall chum salmon.

A total of 56,713 fall chum salmon in the round and 1,194 pounds of fall chum salmon roe were sold in 1997 for an estimated harvest of approximately 58,187 fall chum salmon (Tables 4-11). The 1997 estimated harvest was approximately 70% of the recent (1992 to 1996) five-year-average of 83,142 fall chum salmon (Appendix A.6). All district(s) or subdistrict(s) harvests were between 49% and 86% of the low end of their respective guideline harvest range, except for District 6. As the fall chum salmon run progressed upriver, additional escapement and monitoring information became available. The 1997 inseason run strength indicators suggested that the Tanana River component of the fall chum salmon return was weaker than anticipated. Based upon inseason indicators, no fall season commercial fishing was allowed in District 6 in 1997.

Yukon River coho salmon have a slightly later but overlapping run timing with that of fall chum salmon (Appendix B.15-B.17). Comprehensive escapement information on coho salmon within the Yukon River drainage is limited. Yukon River coho salmon return as primarily age-4 fish. Results from limited escapement surveys conducted in 1993, assuming average survival, suggested that no better than an average abundance of coho salmon would return to the Yukon River drainage in 1997.

No commercial guideline harvest ranges have been established for Yukon River coho salmon. During the 1997 fishing season, the commercial harvest of coho salmon was a function of the timing, frequency, and duration of the periods established for the more numerous fall chum salmon. A total of 35,320 coho salmon were sold, all in the round (Tables 4-11). The majority (approximately 98%) of the coho salmon harvest occurred in Districts 1 and 2. The 1997 Yukon Area coho salmon harvest was 53% above the recent five-year-average (1992-1996) of 23,085 fish (Appendix A.7).

Alaskan Subsistence and Personal Use Fishery 1997

The number of salmon harvested in the 1997 Yukon Area subsistence and personal use fisheries were estimated from survey and fishing permit programs. Additionally, the numbers of fish given to the public for subsistence use from various test fish projects throughout the drainage were documented. Combining survey, permit, and test fishery information, an estimated total of 56,291 chinook, 97,500 summer chum, 95,425 fall chum, and 24,295 coho salmon were harvested by 1,246 subsistence and personal use fishing households in 1997 in the Alaskan portion of the Yukon River drainage (excluding Hooper Bay and Scammon Bay) (Table 13). An estimated total of 55,978 chinook, 97,109 summer chum, 95,141 fall chum, and 23,945 coho salmon were harvested for subsistence purposes in 1997 in the Alaskan portion of the Yukon River drainage (Appendix D.1-D.4). The chinook salmon harvest was 9% above the 1992-1996 average harvest of 51,461 fish (Appendix D.1); the summer chum salmon harvest (excluding commercial related harvest) was 14% below the recent 5-year average harvest of 113,450 fish (Appendix D.2); the fall chum salmon harvest was 16% below the recent 5-year average harvest of 113,391 fish (Appendix D.3); and the coho salmon harvest was 29% below the recent 5-year average of 33,585 fish (Appendix D.4). The 1997 fall chum salmon subsistence harvest was lower than average in part because of the disappointing return to the Tanana River drainage.

The coastal subsistence harvests near the villages of Hooper Bay and Scammon Bay were estimated to include 1,139 chinook and 15,711 summer chum salmon (Table 13 and Appendix D.5). A chum salmon tagging study conducted in 1986 (Kerkvliet 1986) indicated that residents of the Yukon Area coastal village of Hooper Bay harvest summer chum salmon bound primarily for the Yukon River. Additional information regarding the 1997 subsistence and personal use harvests in the Yukon Area can be found in Borba and Hamner, (in prep).

Survey Program

The majority of villages within the Yukon Area have no regulatory requirements to report their subsistence salmon harvest. To estimate the salmon harvest from these villages the department has implemented a voluntary survey program. The 1997 survey program utilized subsistence catch calendars, postseason household interviews, and postseason household telephone interviews and postcards to collect harvest information. Stratified random sampling techniques were used to select Yukon Area households to be interviewed during the 1997 postseason survey. Based on survey information collected in 1997, an estimated 1,093 households harvested an estimated total of 47,759 chinook, 101,184 summer chum, 53,059 fall chum, and 10,927 coho salmon in the survey portion of the Yukon Area including the coastal villages of Hooper Bay and Scammon Bay (Table 13).

Subsistence and Personal Use Permit Program

A portion of the Yukon Area requires subsistence or personal use fishermen to obtain an annual household permit prior to fishing. These areas include the Tanana River drainage, the Yukon River near the Yukon River bridge between Hess Creek and the Dall River, and the upper portion of District 5 between the upstream mouth of Twenty-Two Mile Slough and the U.S./Canada border. In these areas, fishermen are required to document their harvest on the household permit. Permits are to be returned to the department with household harvest information. A total of 544 subsistence and personal use permits were issued in 1997 (Table 14). Some households were issued separate Tolovana River pike and salmon fishing permits. A total of 502 subsistence and personal use permits (not including Stevens Village) had been returned to the department as of April 6, 1998. The number of permit holders and the reported harvest by household permits does not include Stevens Village. In Stevens Village, the permit information was used to supplement the postseason survey of the village. A total of 289 permit holders indicated they fished in 1997. The reported harvest from permits totals 7,514 chinook, 5,068 summer chum, 38,941 fall chum, and 12,183 coho salmon (Table 13). Historical subsistence permit harvest information is summarized in Appendix D.6 and D.7. The 1997 personal use salmon harvests for the Alaskan portion of the Yukon River drainage by 117 fishing permit holders, 62 of which fished, were estimated to be 313 chinook, 391 summer chum, 284 fall chum, and 350 coho salmon (Table 14). Historical personal use harvests are presented in Appendix D.8 through D.10.

Subsistence Salmon Use from Test Fisheries

From the test fishery projects throughout the drainage, a total of 2,157 chinook, 6,959 summer chum, 3,425 fall chum, and 1,185 coho salmon were given away to households for subsistence use in 1997. Residents of the villages of Emmonak, Kotlik, Mountain Village, and Pilot Station were the primary recipients of the fish given away from the test fisheries. These salmon were assumed to replace fish that would have been obtained through normal fishing activities; therefore salmon given away by the test fisheries were added to the village subsistence harvest of the recipient households.

Subsistence Salmon Use from Commercial Fisheries

A regulation adopted by the Alaska Board of Fisheries in February 1992, requires fishermen to report the number of salmon caught but not sold during commercial fishing periods on fish tickets. Compliance with this regulation is poor. A total of 61 summer chum salmon were reported caught but not sold during commercial fishing periods on fish tickets in the Lower Yukon Area in 1997. In the Upper Yukon Area, 411 chinook, 540 summer chum, and 6 fall chum salmon were reported caught but not sold. The salmon carcasses available for subsistence use as a result of the commercial sale of salmon roe are included in the commercial harvest in the commercial related category of Table 15. Subsistence surveys estimated 69,605 summer chum salmon were retained from commercial catches by District 4 households in 1997 for subsistence purposes.

Canadian Fisheries 1997

This summary of the fisheries in the Canadian portion of the Yukon River drainage is excerpted from material provided by the DFO.

The 1997 management plan for Canadian fisheries on the Yukon River was formulated to reflect the understandings reached in the Interim Yukon River Salmon Agreement. Accordingly, the guideline harvest

ranges, border passage, and spawning escapement goals for Canadian chinook and fall chum salmon, established in the interim agreement, provided the foundation for the 1997 management plan.

A total of 16,528 chinook, 15,580 fall chum, and 300 coho salmon were estimated to have been harvested by Aboriginal, domestic, sport, and commercial fisheries in the Canadian portion of the Yukon River drainage in 1997 (Table 15 and Appendix A.17, A.19, and A.20). The combined harvest in the Canadian mainstem Yukon River was 15,717 chinook, 9,286 fall chum, and 2 coho salmon. The harvest at Old Crow in the Porcupine River drainage was 811 chinook, 6,294 fall chum, and 298 coho salmon.

Commercial Fishery

The Canadian Yukon River commercial fishery harvested a total of 5,311 chinook, 8,068 fall chum, and 2 coho salmon in 1997 (Table 15 and Appendix A.4 and A.6). The chinook harvest was 51% below the recent five-year-average (1992-1996) catch of 10,913 chinook and the chum harvest was 65% below the recent five-year-average of 23,091 chum. This was the lowest combined commercial catch since 1976 and was attributed to poor market conditions, high water conditions throughout the chinook season and a closure in the fishery for the first half of the chum season due to an anticipated below average return.

A total of 27 commercial licenses was issued in 1997, one less than in 1996. The maximum number of commercial fishermen active during any one week of the chinook salmon season was 14 fishermen. During the chum season, the highest number of fishermen present in any one opening was only 5 fishermen. Most of the commercial chinook harvest was taken by gill nets set in eddies. Four fishwheels were in use during the chinook season. Although as many as 10 fish wheels have been used during the fall chum season in 1992 and 1993, there were only three fish wheels operated during the 1997 fall chum season.

Chinook Salmon

With the preseason expectation of a total run size of about 134,000 Canadian mainstem Yukon River chinook salmon in 1997, which was close to the recent cycle average of approximately 140,000 chinook, the elements of the chinook management plan adopted for 1997 included:

- 1) a minimum escapement goal of 28,000 chinook as agreed by the Yukon River Panel in the spring of 1996. This new goal, established as part of an upper Yukon chinook rebuilding plan, replaced the 1990-1995 stabilization goal of a minimum 18,000 chinook salmon;
- 2) a total Canadian mainstem Yukon River guideline harvest range for all users of 16,800 to 19,800 chinook salmon, which was the range agreed to in the interim Agreement.
- 3) a commercial guideline harvest range of 8,500 to 11,500 chinook, with a preseason target of 10,000 chinook. Based on the preseason forecast for an average return, the catch was expected to be close to the mid-point of the range; and
- 4) a 10-14 day delay in the opening of the fishery.

This fishing plan was similar to the plan developed for 1996 except for the schedule adopted for the fishery opening. From 1990 through 1996, annual management plans specified one-day/week openings for the first two weeks of the chinook season; in 1997, the one-day openings were forfeited in return for a three day opening which was scheduled to occur ten days after the run was deemed to have commenced. If a

conservation concern arose during this period. the three-day opening would be delayed until 14 days after the run had commenced.

Two limiting factors dominated the commercial fishery in 1997: the Han Fish Plant in Dawson City, which in years dating back to the early 1980's had been the primary market for the fishery, remained closed throughout the year, and, unusually high water conditions persisted throughout the chinook season. These factors resulted in below average weekly catches, reduced effort and catch per unit of effort (CPUE).

The commercial fishery opened on Sunday, July 13, ten days after the run had begun. The first chinook was caught in the DFO fish wheels on June 26, but catches remained very sporadic through July 3. The beginning of the run on July 3 was marked by a clearly increasing trend in the 3-day moving averages of the DFO fish wheel catches.

Below average effort levels in the commercial fishery, above average catches in the DFO fishwheels and a cumulative commercial catch that was approximately one half the weekly guideline harvest prompted an increase in fishing time to 5 days per week commencing July 20. As local markets dried up, the number of commercial fishers progressively declined over the chinook season.

Unlike previous years, inseason run forecasts did not play a significant role in the management of the fishery in 1997. Normally, inseason forecasts are used to adjust the total commercial chinook harvest target within the overall commercial guideline harvest range according to run size. Early in the 1997 season, it was clear that even the lower end of the commercial guideline harvest would not be achieved given the poor market conditions. The first inseason forecast of border escapement based on mark-recapture results was made in early August (using tag recoveries through August 1). This initial forecast of 42,000 to 60,000 chinook indicated an above average run of chinook into the upper Yukon River. Forecasts made during subsequent weeks continued to indicate a border escapement of approximately 60,000 chinook. The final inseason estimate was a border escapement forecast of approximately 53,000 chinook.

The total commercial chinook harvest of 5,311 fish, the lowest harvest since 1979 (Appendix A.17), was approximately one half the preseason target of 10,000 chinook salmon. For comparison, the commercial harvest since 1991 has ranged from 10,164 chinook in 1996 to 12,028 chinook in 1994. The preliminary postseason estimate of the border escapement indicated a Canadian commercial harvest rate of 10% on chinook salmon in 1997 compared to the recent cycle average harvest rate of 24% (1991-1996). Fishing effort during the chinook season was 44% below average (165 boat-days versus an average of 296 boat-days).

Fall Chum Salmon

The chum salmon run to the upper Yukon was expected to be poor in 1997 due to the record low escapement of 29,743 chum salmon in 1993 and the below average escapement of 49,082 chum in 1992. The 1997 Canadian chum salmon management plan was developed to address the expectation of a poor run and the objectives of the three-cycle rebuilding plan that has been agreed to in the interim Agreement. Accordingly, the plan included the following components:

- 1) an escapement goal of 55,000 upper Yukon chum salmon. This goal was adopted by the Yukon River Panel in March 1997 and was consistent with the three-cycle chum rebuilding plan which has as its long term objective, an escapement goal of >80,000 chum;

- 2) a guideline harvest range for all Canadian upper Yukon fisheries of 23,600 to 32,600 chum as agreed to within the interim Agreement. Given the poor run outlook, it was suggested that it would be optimistic to expect a total Canadian at harvest the lower end of the range of 23,600 chum;
- 3) a commercial guideline harvest range of 20,500 to 29,500 chum. However, given the conservation concern in 1997, there was little expectation that the commercial harvest would achieve even the lower end of the range;
- 4) subject to confirmation on August 8, the commercial and domestic fisheries were scheduled to be closed August 15 through September 12, i.e. the first half of the chum season. During this period, data was to be collected regarding the status of the run which would be used in decisions about openings after September 12. On September 12 and thereafter, if the chum run size to the upper Yukon River was forecast to be less than 60,000 fish, the commercial and domestic fisheries would be closed in the following week. A forecast of >60,000 could result in a restricted opening the following week. Openings in subsequent weeks were to be dependent on updates on run abundance, conservation concerns, allocation priorities, and the status of the cumulative harvest relative to harvest guidelines.

The plan to close the commercial chum fishery for the first half of the season was unprecedented. It was made possible by the development of a co-operative stock assessment program between the Yukon River Commercial Fishermen's Association and DFO to collect data that would allow non-lethal estimation of the run size during the proposed closure. This program, which employed five fishers and involved the use of four fish wheels to live-capture tagged chum salmon, was funded by the Yukon Restoration and Enhancement Fund of the Yukon River Panel.

On August 8, the indications of the fall chum run size were no better than expected: the cumulative catch of chum salmon in DFO fish wheels was 78% below average and the run indicators in the lower river in Alaska gave no reason for optimism - total run forecasts were below expectations. Therefore, the decision was made to proceed with the closure of the commercial and domestic fisheries from August 15 through September 12. During this period, the Yukon Commercial Fishermen's Association operated four fish wheels equipped with live boxes for approximately four days per week and caught a total of 3,746 chum, 122 of which bore a tag.

On September 12, all of the available chum mark-recapture data was reviewed along with run indicators in Yukon and Alaska. The DFO fish wheel catch relative to average had improved significantly; although the cumulative catch was still 18% below average, daily catch rates were at average levels. If the fish wheel catches were indicative of run strength, a run of 18% below average would translate into a total border escapement of approximately 85,000 chum. Based on mark-recapture data collected during the closure, the border escapement forecast ranged from approximately 63,000, if the run timing was normal, to 91,000 chum if the run timing was delayed by five days.

The indicators of run size in the upper Yukon, supported less specifically by Alaskan data, suggested the run would be greater than 60,000 chum, the threshold value that was selected in the Canadian fishery management plan for initiating a restricted commercial fishery. Therefore, a decision was made to open the fishery the following week for two days, from September 15-17. Only 5 fishermen chose to fish this opening and they landed a total of 2,357 chum salmon. The run forecast as of September 20 with two days of commercial tag recovery data and two days of live-capture data, ranged from 61,000 chum assuming average run timing, to 89,000 chum assuming the run was 5 days late. At a minimum, the total allowable catch (TAC) for the season was estimated to be 6,000 chum (61,000 minus the spawning escapement goal of 55,000) but the cumulative commercial catch was less than 2,400 chum to this point in time. Daily

DFO fish wheel catches had continued to hold at average to above average levels and the Alaskan run indicators had not changed for the worse. These factors prompted the announcement of a two-day fishery for the following week from September 22-24.

Based on the mark-recapture data updated through September 27, the run forecast increased significantly to a range of 79,000 to 97,000 chum. With the improvement in the run forecast, fishing times were extended to four days/week from September 29 through October 10. Although a three day fishery was posted for October 14-17, there was no fishing activity due to a sudden drop in air temperatures and the appearance of ice flows in the river just prior to the opening.

The total commercial chum harvest of 8,068 fish was the second lowest catch since 1978 (Appendix A.19). The lowest catch, 7,762 chum, occurred in 1993 when the fishery was closed September 21 due to conservation concerns. The 1997 catch was 67% below the recent four-year cycle average commercial catch of 24,220 (1993-1996). Based on preliminary tag recovery data, the harvest rate in the commercial fishery was approximately 8% compared to the 1993-1996 cycle average of 19%.

Total fishing effort during the chum season was 37 boat-days in 1997, by far the lowest on record and 75% below the 1993-1996 average of approximately 146 boat-days. Once the chum closure was announced in early August, most fishermen left the fishery for the season to seek employment elsewhere.

Canadian Aboriginal, Domestic and Sport Fisheries

The second year of a multi-year comprehensive survey of the Aboriginal fishery was conducted in 1997 as part of the implementation of the Yukon Comprehensive Land Claim Umbrella Final Agreement. The project entitled: *The Yukon River Drainage Basin Harvest Study*, is being conducted by LGL Ltd. Environmental Research Associates, and primarily involves intensive inseason surveys of catch and effort in the fishery throughout the upper Yukon drainage, excluding the Porcupine drainage. Catch estimates from the Porcupine River in the Old Crow area were determined independently from locally conducted, post season interviews for chinook and chum salmon and inseason for coho salmon.

The estimate of the 1997 total upper Yukon chinook salmon catch in the Aboriginal fishery was 8,888 fish, 22% above the 1992-1996 five-year-average of 7,282 chinook (Appendix A.17). For 1996, the final estimate of chinook harvest in the upper Yukon area has been updated to 8,451 fish. The Old Crow estimated chinook harvest was 811 fish in 1997.

The estimate of the 1997 harvest of upper Yukon chum salmon in the Aboriginal fishery was 1,218 fish compared to the recent five-year-average of 2,528 chum salmon (Appendix A.19). The chum harvest in 1996 was estimated to be 1,260 fish. In the Old Crow fishery, 6,294 chum and 298 coho salmon were harvested in the Porcupine River near Old Crow.

The domestic fishery harvest of 141 chinook salmon was well below the previous five-year-average of 267 fish. No chum salmon were reported caught in the fishery in 1997; chum salmon have not been recorded in the domestic fishery since 1989.

Prior to 1995, it was assumed that approximately 300 chinook were harvested annually by sport fishermen in Canadian sections of the Yukon River basin. The estimate for 1995 was increased to 700 chinook based on a number of observations by Fishery Officers that fishing pressure was much higher than in previous years. This was primarily due to the excellent return of chinook salmon in 1995.

A creel census was conducted in 1997 for the second consecutive year at the sport fishery located at the confluence of Tatchun Creek and the Yukon River. Preliminary results indicated that a total of 1,310 chinook salmon was caught of which 615 (47%) were retained. This represents respective increases of 34% and 36% over the number of fish caught and the number of chinook retained in 1996. In 1996, 846 chinook salmon were caught of which 395 chinook were kept. Fishing effort data for 1997 is not yet available.

As in 1996, it is assumed that the Tatchun Creek area sport harvest accounts for approximately 50% of the total recreational harvest of chinook salmon in the Yukon River watershed in Canada. The assumption is based on information provided by a national sport fishing survey which included data on the distribution of salmon fishing in the Yukon and northern British Columbia. Based on this assumption, it is estimated a total of 1,230 Yukon River chinook salmon was harvested through recreational fishing in 1997. The estimated recreational harvest for 1996 has been updated to 790 chinook salmon.

Escapement 1997

The 1997 program to monitor salmon spawning escapements in the Yukon River drainage was similar to that implemented in 1996. This was made possible due to both fiscal and personnel assistance from several other agencies and organizations. Comprehensive escapement assessment projects funded and operated by ADF&G in 1997 included monitoring chum salmon escapements to the Anvik and Sheenjek Rivers using hydroacoustic techniques. Replicate ground surveys and stream life data were used to estimate abundance of chum salmon spawners in the Toklat and Delta Rivers, and counting platforms were used by the Sport Fish Division to monitor timing and abundance of both chinook and chum spawners in the Chena and Salcha Rivers. Sport Fish Division also conducted a mark-recapture project in the Chatanika River to estimate chinook salmon escapement. The department operated the Yukon River sonar project at Pilot Station to provide daily estimates of salmon passage by species (Appendix E.3). The department conducted a third year, mark-recapture study in the upper Tanana River in 1997 through a cooperative agreement with Bering Sea Fisherman's Association (BSFA). The major objective of the study was to estimate the population of fall chum salmon in the Tanana River upstream of the confluence of the Kantishna River. The department also initiated a fall chum salmon radio tagging feasibility study in the Toklat River in 1997.

Projects funded and operated by USFWS to monitor salmon escapement in 1997 included weir operations on the East Fork Andreafsky, Gisasa, and South Fork Koyukuk Rivers as well as a hydroacoustic project on the Chandalar River. While the East Fork Andreafsky weir was operated to monitor summer chum and chinook salmon escapements, duration of the project was extended for a third year with assistance from BSFA, to provide information on timing and abundance of coho salmon. The Gisasa River weir provided comprehensive escapement information on summer chum and chinook salmon. Similarly, the South Fork Koyukuk River weir was operated to monitor timing and magnitude of salmon escapements (by species) during the period July through September. The 1997 Chandalar River operation consisted of using split-beam sonar techniques to monitor fall chum salmon escapements to that river.

Additional escapement assessment projects in the Alaskan portion of the Yukon River drainage, either jointly or entirely funded and operated by other organizations in 1997, included counting tower operations on the Nulato River, Kaltag and Clear Creeks and a weir operation on Beaver Creek. The Nulato River tower project was cooperatively operated by ADF&G and the Nulato Tribal Council (NTC), with funding provided by BSFA. BSFA, in cooperation with TCC and BLM, also operated a counting tower on Clear Creek, a tributary of the

Hogatza River in the Koyukuk River drainage. The Kaltag Creek tower project was operated by the Alaska Cooperative Extension 4-H program with partial funding from BSFA.

Projects conducted by the Canadian DFO in 1997 included a mark-recapture project near Dawson to estimate the total number of mainstem Yukon River chinook and chum salmon passing the US/Canada border into Yukon Territory. Several escapement projects were funded by the Yukon River Restoration and Enhancement Fund. Site specific studies included manning an enumeration window and passage gate at Whitehorse to monitor chinook salmon escapement upstream of Whitehorse as well as installing weirs in Wolf Creek (to determine the portion of chinook salmon passing the Whitehorse fishway bound for that stream), Blind Creek (Ross River), and Tatchun Creek. Additionally, DFO operated a weir on the Fishing Branch River to count chum salmon escapement.

In addition to the above projects, the second year of a cooperative multi-year interagency mark-recapture and radio-tracking study near Rampart to evaluate the distribution, abundance, and run characteristics of upper Yukon River fall chum salmon was conducted, with USFWS and NMFS the lead agencies. Work continued on constructing remote tracking stations necessary for the radio telemetry component of the study.

Remaining escapement information throughout the Yukon River drainage in 1997 was obtained primarily by aerial surveillance, although occasional ground surveys were also conducted. This included aerial and ground surveys funded by BSFA and conducted by TCC in portions of the Nenana River drainage to increase knowledge on chum and coho salmon escapements to that area.

Overall, conditions for conducting aerial surveys throughout much of Interior Alaska during the chinook and summer chum salmon season were considered marginal because of rainy and windy conditions prevailing in much of the drainage and smoke from wild fires. In the Canadian portion of the drainage, DFO was successful in surveying most major chinook salmon index streams in Yukon Territory. While aerial and ground surveys made of fall chum and coho salmon spawning streams in the Alaskan portion of the Yukon River were confined to the Tanana River drainage in 1997, DFO was successful in flying surveys of most fall chum salmon index streams in Yukon Territory.

Escapement estimates obtained in 1997 are shown in Appendix E.2 while Figures 14 through 18 show major Yukon River tributary systems.

Chinook Salmon

Chinook salmon spawning stocks are widely distributed throughout the Yukon River drainage. Appendices E.4 and E.5 present historic chinook salmon escapement data for selected streams during the period 1961-1997. Chinook salmon escapement goals established by the Department for eight Alaskan streams, or index areas, are: East (>1,500) and West Fork (>1,400) Andreafsky, Anvik (>1,300 entire drainage or >500 Yellow River to McDonald Creek), North (>800) and South Fork (>500) Nulato, Gisasa (>600), Chena (>1,700), and Salcha (>2,500) Rivers. These escapement goals are based upon aerial survey index counts which do not represent total escapement. It should be understood that caution must be used when comparing aerial survey results between years because of the variability inherent to this methodology. In addition, there is a rebuilding step escapement goal of 28,000 chinook for the Canadian mainstem Yukon River.²

² Although no escapement goals have been established for individual Canadian streams, an interim escapement goal of 33,000-43,000 chinook spawners for the mainstem upper Yukon River drainage (Yukon Territory) was established by the JTC in March 1987. However, a minimum rebuilding step escapement goal of 28,000 chinook

Escapement data from selected tributaries indicate that spawning escapement goals for lower river stocks (Yukon River drainage below the upper Koyukuk River) have generally been achieved, except for 1996. Escapement goals for middle river stocks (primarily Tanana River drainage) were readily achieved since 1993. Chinook salmon harvests are apportioned to region of origin using a combination of scale pattern analysis, age class composition similarity and geographic location of the harvest. Stock identification studies indicate that approximately 53% of the Alaskan chinook salmon harvest is spawned in Canada. Efforts to increase escapements to the Canadian mainstem Yukon River have resulted in larger spawning escapements there, averaging 28,000 fish since 1992.

Yukon River chinook salmon abundance in 1997 was assessed as above average based on the commercial harvest and escapement estimates from selected tributaries (Appendix E.4 and E.5). Total chinook salmon run abundance was estimated to be approximately 341,000 fish based on run reconstruction using Pilot Station sonar passage estimates and estimated harvest and escapement down river of the sonar. The return of six-year-old chinook salmon was larger than expected based on the large return of five-year-olds in 1996. Production from the 1991 parent year appears to have been very good given the escapements documented that year. Generally, chinook salmon escapements were very good throughout the drainage in 1997, with minimum escapement goals achieved in all but one surveyed tributary.

Chinook salmon escapement to the Andreafsky River appeared to be near the escapement goal level. An aerial survey count of 1,510 chinook salmon in the West Fork Andreafsky was 8% above the minimum escapement goal of 1,400 salmon. The East Fork Andreafsky River aerial survey count of 1,140 chinook salmon was 24% below the minimum escapement goal of 1,500 salmon. The USFWS weir count of 3,186 chinook salmon for the East Fork Andreafsky River was 45% of the 1995 weir count. Estimated age composition of the samples of chinook salmon collected at the weir site was 53% 4-year old, 16% 5-year-old, and 32% 6-year old salmon. Males were more numerous than females, accounting for 63% of the sample.

An aerial survey of the Anvik River on July 23, conducted under good conditions, resulted in a record count of 2,690 chinook salmon within the escapement index area, which exceeded the minimum goal of 500 salmon by 500%. The entire Anvik River survey including the tributaries was 3,979 chinook salmon compared to the minimum escapement goal of 1,300. Six-year-old chinook salmon dominated escapement samples, accounting for 44% of the total sample. Males were more numerous than females, accounting for 63% of the sample.

Although an aerial survey was not conducted on the Nulato River due to poor weather conditions, an estimate of chinook salmon escapement was provided from a salmon counting-tower project. The tower count of 4,766 chinook salmon was the highest recorded since inception of the project in 1994.

No aerial survey was conducted on the Gisasa River, a tributary to the Koyukuk River, because of poor weather. There is a minimum aerial survey escapement goal of 600 chinook salmon for the Gisasa River. The USFWS counted 3,764 chinook salmon migrating through the Gisasa River weir, which was approximately 94% of the 1995 weir count and second highest on record since initiation of the project in 1994. Estimated age composition of the samples of chinook salmon collected at the weir site was 37% 4-

salmon was established by the Yukon River Panel in April 1996. This goal, established for the period 1996-2001, replaced the 1990-1995 stabilization goal of >18,000 chinook salmon.

year old, 27% 5-year-old, and 36% 6-year old salmon. Males were more numerous than females, accounting for 74% of the sample.

A weir was in operation by the USFWS on the South Fork of the Koyukuk River in 1997 beginning July 6. However, due to high water levels, after August 15 there were only four days, August 24-27, when the weir was operable. A total of 1,642 chinook salmon were counted for the season. Six-year-old chinook salmon dominated escapement samples, accounting for 76% of the total sample. Females were more numerous than males, accounting for 62% of the sample.

Although no chinook salmon escapement goals have been established for other streams in the Koyukuk River, results of aerial surveys made on a few other tributaries in 1997 indicated escapements were good. For example, counts were 593 chinook salmon in Henshaw Creek and 432 in Jim River (Appendix E.2).

Since 1993, inseason assessment of chinook salmon escapement to the Tanana River drainage has been based on counts of chinook salmon passing the Chena and Salcha River tower sites operated by Sport Fish Division of ADF&G. High, turbid water hampered the operations on the Salcha River several times during the 1997 season. The preliminary tower count estimates for the Chena and Salcha Rivers were 13,390 and 18,396 chinook salmon, respectively. Based on commercial harvest and escapement data, the chinook salmon run to the Tanana River drainage was above average. An aerial survey of the Chena River conducted on July 18 under good conditions, resulted in a count of 3,495 chinook salmon in the index area, which was double the minimum escapement goal for this index area. An aerial survey of the Salcha River index area on August 1 under poor conditions resulted in a count of 3,457 chinook salmon, which was 38% above the minimum escapement goal. Estimated age composition of chinook salmon carcass samples collected from the Chena River was 37% 4-year old, 13% 5-year-old, and 48% 6-year old salmon. Males were more numerous than females, accounting for 60% of the sample from Chena River. Estimated age composition of chinook salmon carcass samples collected from the Salcha River was 14% 4-year old, 14% 5-year-old, and 69% 6-year old salmon. Sex composition was 50% females and 50% males for the Salcha River.

Observations on chinook spawning escapements in other tributaries of the Tanana River drainage indicated higher than average escapements in 1997. An aerial survey of Barton Creek in the Toklat River drainage on July 30, resulted in a count of 376 chinook salmon. On the same day a good survey of the mainstem Bearpaw River resulted in a count of 148 chinook salmon. A total of 97 chinook were observed on a fair survey of Seventeen Mile Slough on July 22. During 1997, a mark-recapture study was conducted by Sport Fish Division in the Chatanika River to estimate escapement of chinook salmon. The preliminary estimate was 3,429 chinook salmon. No escapement goal exists for this stream, however aerial surveys have been conducted intermittently in past years.

The Beaver Creek weir was operated by BLM between June 14 and August 11 in 1997. The weir count of 315 chinook salmon was 54% higher than the 1996 count. Peak passage occurred between July 19 and July 26.

The DFO mark-recapture population estimate of chinook salmon entering the Canadian portion of the mainstem Yukon in 1997 was 53,400. Subtracting the estimated Canadian commercial and non-commercial harvest (excluding Old Crow) from this population estimate results in a spawning escapement estimate to the Canadian mainstem Yukon River of 37,683 chinook salmon (Appendix E.5). This is 35% above the rebuilding step goal of 28,000 chinook salmon. Yukon Territory chinook salmon spawning streams surveyed by DFO in 1997 included a ground survey of Tatchun Creek, and aerial surveys of Tincup Creek (Kluane River drainage), the Little Salmon, Big Salmon, Nisutlin and Wolf Rivers (Teslin River drainage). Results from these surveys

revealed escapements ranged from between approximately 29% below (Nisutlin River) to 7% above (Wolf River) the 1991-1996 average escapements for these streams. The Ross River index area (Pelly River drainage) was not surveyed due to turbid water conditions.

The number of chinook salmon which returned to the Whitehorse fishway in 1997 totaled 2,084 of which 201 (10%) possessed an adipose-clip from previous hatchery releases. Approximately 51% of the chinook salmon passing through the fishway were females. The total number of chinook salmon spawned for hatchery brood stock in 1997 was 75 females and 150 males. A total of 61 adult chinook salmon (34% female) were passed through Wolf Creek weir, a small tributary of the Yukon River located several kilometers upstream of the Whitehorse Rapids fishway.

The Blind Creek weir project operated by the Ross River Dena Council provided a count of 957 chinook salmon between July 25 and August 22, 1997. Of the 918 fish sexed, 416 (45%) were female. A weir project was also conducted for the first time on Tatchun Creek (operated by Quixote Consulting and funded by the Yukon River Salmon Restoration and Enhancement Fund), from July 26 until September 3; 1,198 chinook salmon were counted. The Tatchun Creek foot survey result (266 chinook salmon) accounted for 40% of the weir count at the time the survey was conducted (August 19). The survey was hampered by unusually high water conditions and darkly stained water.

Additional aerial surveys were conducted on streams which have not been subject to long term regular monitoring and consequently are not currently used as indices of abundance. These surveys were conducted by Yukon First Nations through the DFO Aboriginal Fisheries Strategy. All or parts of the following rivers were flown: Morley River, Little Kalzas River, Mica Creek, Jennings River and upper Teslin River. The highest count (230 chinook salmon) was observed on the Morley River.

A limited amount of age, sex, and size sampling was conducted at spawning grounds on the Takhini River, Teslin River, and the Little Salmon River. Out of a total of 251 chinook salmon sampled, 147 (59%) were female. This contrasts with an observed sex composition of 28% female (N=194) in 1996.

Summer Chum Salmon

Summer chum salmon primarily spawn in tributaries from the mouth of the Yukon River to the Tanana River drainage. Appendix E.6 presents historic summer chum salmon escapement data for selected streams during the period 1973-1997. Escapement goals have been established for six major summer chum spawning streams as follows: East (>109,000) and West Fork (>116,000) Andreafsky, Anvik (>500,000), North Fork Nulato (>53,000), and in the Hogatza (Clear Creek at >8,000 and Caribou Creek at >9,000) Rivers. An additional escapement goal of >3,500 summer chum salmon exists for the Salcha River in the Tanana River drainage. With exception of the Anvik River objective, which is a total assessment based on sonar, all other escapement goals are based upon aerial survey indices of abundance during periods of peak spawning.

Escapements in the Anvik River, the largest single producer of summer chum salmon in the Yukon River drainage, have been above the escapement goal since 1991 (Table 15). However, spawning escapements to other Yukon River tributaries, based on limited aerial survey information, appeared to have been below desired levels in 1993. In general, escapement objectives appear to have been met in the majority of the drainage from 1994 through 1996. However, severe flooding in August 1994, particularly in the Koyukuk River drainage, and the lack of snowfall during the winter of 1995-1996 may affect the production from the 1994 and 1995 parent years.

Postseason analysis of comparative commercial harvest and escapement data indicate the 1997 summer chum salmon run was below average in magnitude. Total summer chum salmon run abundance was estimated to be approximately 1,593,000 fish based on run reconstruction using Pilot Station sonar passage estimates and estimated harvest and escapement down river of the sonar. Spawning escapements to selected tributaries showed variable results (Appendix E.2 and E.6). Those that met minimum goals or were considered adequate were Anvik, Nulato, Chena and Salcha Rivers and Kaltag and Clear Creeks. The East Fork Andreafsky, Gisasa and South Fork Koyukuk Rivers had poor escapements.

The 1997 Anvik River sonar-based escapement estimate of 609,118 summer chum salmon was approximately 22% above the minimum escapement goal of 500,000. However, the run was lower than expected based upon parent year escapements of 775,626 in 1992 and 517,409 in 1993. Five-year-old salmon dominated escapement samples, accounting for 54% of the sample. Females accounted for 57% of the samples.

Weir projects were operated by USFWS on the East Fork Andreafsky River, Gisasa River, and the South Fork of the Koyukuk River. A total of 51,139 summer chum salmon were counted passing through the weir on the East Fork Andreafsky River. This count was 53% below the 1996 weir count and the second lowest escapement recorded from a tower, weir, or sonar project on the East Fork Andreafsky River. Aerial surveys were not conducted on the Andreafsky River for summer chum salmon in 1997. The weir count indicated the minimum aerial survey escapement goal of 109,000 fish for the East Fork Andreafsky River was not met. However, it should be noted that the aerial survey escapement goals for the Andreafsky River are under review. Five-year-old salmon dominated escapement samples, accounting for 67% of the sample. Females accounted for 57% of the samples.

A total of 31,802 summer chum salmon were counted passing through the Gisasa River weir. A summer chum salmon escapement goal has not been established for this river. However, the 1997 weir count was 20% of the 1996 weir count and the lowest on record since project inception in 1994. Five-year-old summer chum salmon accounted for 78% of the pooled escapement samples, with 7% 4-year-old and 15% 6-year-old. Female salmon were slightly more numerous than males, accounting for 51% of the sample.

The USFWS operated a weir project on the South Fork of the Koyukuk River for the second consecutive year. During the period July 6 through August 15, 11,237 chum salmon were counted. This was 70% less than the 1996 count of 37,450. Sex ratio sampling indicated 36% were females.

Counting-tower projects were operated on Kaltag Creek, Nulato River, Clear Creek, and the Chena and Salcha Rivers. The estimated summer chum salmon escapement into Kaltag Creek in 1997, 48,018 salmon, was 7% less than the 1996 estimate and 38% less than the 1995 escapement estimate. Although no escapement goal has been established for Kaltag Creek, this escapement was considered adequate. The estimated summer chum salmon escapement into the Nulato River (both forks combined) was 157,975 salmon. Based on this tower count, it is believed the escapement goal was met. An aerial survey of the Nulato River was not conducted due to poor weather conditions. Five-year-old salmon dominated the escapement samples, accounting for 67% of the total. Approximately 49% of the sample were females. This was the third year the Clear Creek tower on the Hogatza River was operated. Summer chum salmon passage was estimated at 76,454 fish. Although the estimated escapement in 1997 was 24% and 35% lower than the escapement levels in 1996 and 1995, respectively, this escapement was considered adequate. Five-year-old summer chum salmon accounted for 74% of the pooled escapement samples, with 25% 4-year-olds and 1% 6-year-olds. Sex ratio sampling indicated 43% were female.

Observations on summer chum salmon escapements to other streams in the Koyukuk River in 1997 were made by aerial surveys. A total of 3,669 and 5,443 summer chum salmon were counted in Dakli River and Wheeler Creek, respectively (Appendix E.2). An aerial survey of Henshaw Creek and Jim River flown on July 29 under fair survey conditions resulted in estimates of 1,800 and 210 summer chum salmon, respectively.

Based on commercial harvest and escapement data, the summer chum salmon run to the Tanana River drainage was near average and stronger than expected based on 1993 parent year escapements. The Chena River tower count was 9,439 summer chum salmon, which was 74% of the 1996 count of 12,810, but similar to the average count of 9,182 for the years 1993, 1994 and 1996. High, turbid water hampered operations on the Salcha River tower at times during the 1997 season. The Salcha River tower count of 35,741 summer chum salmon was 52% below the 1996 count of 74,827 fish, but similar to the average count of 37,718 for the period of 1993 to 1996. A survey of the Salcha River was flown on August 1 under poor survey conditions and 3,968 summer chum were observed. The Salcha River aerial survey was 13% above the minimum escapement goal of 3,500 summer chum salmon. Estimated age composition of summer chum salmon carcass samples collected from the Salcha River was 17% 4-year old, 74% 5-year-old, and 9% 6-year old salmon. Sex composition was 32% females and 68% males for the Salcha River.

A weir operated on Beaver Creek by BLM recorded a passage of 34 summer chum salmon which was only 5% of the 1996 count of 654 summer chum salmon. Most passage was between July 26 and August 4.

Fall Chum Salmon

Major fall chum salmon spawning areas are located in the Chandalar River, Tanana River drainage, Porcupine River drainage and within the Canadian portion of the Yukon River drainage. Appendix E.7 presents historic fall chum salmon escapement data for selected streams since the early 1970s. The most complete database on Yukon River fall chum salmon escapements dates back to the early 1970s and exists for four streams: Delta, Toklat, Sheenjek, and Fishing Branch Rivers, the latter located in the Canadian Porcupine River drainage. Minimum escapement goals of total spawning abundance to these streams are 11,000, 33,000, 64,000, and 50,000 fall chum salmon, respectively. Additionally, annual estimates of border passage and subsequent spawning escapement also exist for Canadian fall chum stocks in the upper mainstem Yukon River. The minimum escapement goal for those stocks is 80,000 fall chum salmon (border passage less harvest).³

Fall chum salmon runs in 1992 and 1993 were poor, with spawning escapements below goals in most systems (Appendix E.7). Fall chum abundance and subsequent escapements were much greater from 1994 through 1996, with all fall chum salmon spawning escapement goals achieved in 1994 and 1995. However, the lack of snowfall during the winter of 1995-1996 may affect production from the 1995 parent year.

The total run size of Yukon River fall chum salmon in 1997, estimated as the Pilot Station sonar passage estimate summed with the commercial and estimated subsistence harvest downstream of the sonar site, was below the pre-season projection of 750,000 fish. The estimated number of fall chum salmon passing Pilot Station was 623,000 fish for the period July 19 through August 31. A preliminary estimate of 53,700 fish harvested below Pilot Station results in a total run size estimate of 676,700 fall chum salmon (Appendix

³The U.S. and Canada has negotiated a twelve year rebuilding plan, beginning in 1990 and ending after the 2001 season, for Canadian Yukon River mainstem fall chum salmon. The objective of the plan is to rebuild the stock by achieving a spawning escapement of 80,000 or more fall chum salmon for all (four) brood years by the year 2001. The plan will endeavor to rebuild the stronger parent years in four years (one cycle) and the weaker parent years in twelve years (three cycles) in equal increments.

Table E.8). This estimate is considered to be conservative as more fall chum salmon likely passed Pilot Station after August 31.

A review of upper river test fish data and escapement information indicates that the non-Tanana River run component, although not as strong as in 1995 and 1996, was comparatively much stronger than the Tanana River run component in 1997. Excluding the Fishing Branch River, escapements upstream of the Tanana River were assessed as good and above minimum goals. The preliminary fall chum salmon escapement estimate for the Chandalar River was approximately 199,874 fish and similar in magnitude to the large escapement estimates for that stream in 1995 and 1996. Assessment of escapement to the Porcupine River drainage was based upon observations made in the Sheenjek and Fishing Branch Rivers. Although sonar operations were suspended in the Sheenjek River for five to six days due to high water which prevailed in late August and early September 1997, total escapement was conservatively estimated to have exceeded 80,000 fish, thus meeting the minimum escapement goal of 64,000 fish. By comparison, the escapement goal for the Fishing Branch River was not achieved in 1997. Only 26,959 chum salmon were counted through the DFO weir from August 28 through October 15; 46% below the minimum escapement goal of 50,000 fish.

The preliminary mark-recapture abundance estimate made by USFWS for Yukon River fall chum salmon passing Rampart Rapids was approximately 393,000 fish for the period July 21 through September 28. This preliminary estimate is approximately 40% lower than the abundance estimate made in 1996 of approximately 660,000 fish for the period August 1 through September 19. Similarly, the sum of escapements to the Chandalar, Sheenjek and Fishing Branch Rivers together with the mainstem Yukon River border passage estimate in 1997 was also on the order of 40% lower than that estimated to these areas in 1996.

The 1997 preliminary DFO mark-recapture estimate of spawning escapement for Canadian mainstem Yukon River fall chum salmon was 85,439 fish. This is 56% above the 1997 targeted level of 55,000 fall chum salmon, which was the goal established by the Yukon River Panel as a step in the rebuilding of the 1993 brood year. This was the fourth consecutive year that estimated spawning escapement was above the long-term rebuilding goal minimum of 80,000 fall chum salmon.

Tanana River fall chum salmon escapement in 1997 was evaluated to be extremely weak and comparatively much lower than that realized to other areas of the Yukon River. The preliminary population estimate for the Toklat River, based upon expanded ground surveys of Toklat Springs, was 14,511 fall chum salmon. This estimate is 56% below the minimum escapement goal of 33,000 chum salmon. The Toklat River sonar project was not operated in 1997. Although estimates of abundance using hydroacoustic techniques have been higher than those generated from subsequent ground surveys on the Toklat River during 1994 through 1996, preliminary results indicate the variation in disparity between the two estimates among years has been substantial. ADF&G conducted a fall chum salmon radio tagging feasibility study on the Toklat River in 1997 to begin to address the relationship of sonar passage estimates of abundance with estimates obtained from subsequent spawning ground surveys.

For the upper Tanana River (upstream of the Kantishna River), the preliminary mark-recapture total abundance estimate was 71,661 fall chum salmon. This indicates that total fall chum run size in the upper Tanana River in 1997 was likely on the order of approximately 50% of that estimated in 1996 (approximately 135,000) and 25% of that estimated in 1995 (approximately 268,000).

The preliminary estimate of the total abundance of fall chum spawners in the Delta River in 1997 is 7,705 fish, approximately 30% below the minimum escapement goal of 11,000 chum salmon. While no escapement goals exist for other fall chum salmon spawning areas in the upper Tanana River, escapement during peak spawning

was estimated at 3,145 in Bluff Cabin Slough (Big Delta region). This is well below the 1987-1996 ten-year average of 6,300 fish.

The USFWS operated a weir on the South Fork Koyukuk River for the second consecutive year in 1997 to monitor salmon escapements. After August 15, operations were suspended due to high water conditions for nearly the remainder of the season. The weir was in operation only three and one-half additional days in late August (24th-27th). A total of 2,685 chum and no coho salmon were passed during that period.

A coded wire tag recovery project for Toklat River fall chum salmon originating from and released into the Sushana River in the Toklat Springs area was continued for the second year in 1997. A relatively low number of tagged fish were recovered in 1997. Therefore, it was difficult to estimate survival and contribution rates. A final report summarizing the results of this study will be completed in the future.

Coho Salmon

Coho salmon spawning escapement assessment is very limited in the Yukon River drainage due to funding limitations and often marginal survey conditions which prevail during the periods of peak spawning. Presently, only one escapement goal has been established for coho salmon in the Yukon River drainage. The Delta Clearwater River (DCR) in the Tanana River drainage has a minimum goal of 9,000 coho salmon based upon a boat survey during peak spawning. While most escapement information on coho salmon is from the Tanana River drainage (Appendix E.9), cooperative efforts of USFWS and BSFA in 1997 allowed the East Fork Andreafsky River summer season weir operation to be extended into September for a third consecutive year. This provided comprehensive escapement information concerning timing and abundance of coho salmon to a tributary in the lower Yukon River. A total of 9,462 coho salmon was passed through September 13, the last day of weir operations in 1997. This compares to 8,037 coho salmon counted past the weir through September 16 in 1996 and 10,901 through September 12 in 1995.

In 1997, the Sport Fisheries Division conducted a boat survey of the DCR index area on October 24 and estimated 11,525 coho salmon present, 28% above the minimum goal. An additional 2,375 coho salmon were observed in tributaries of the DCR by aerial survey on October 22. The Sport Fish Division also documented 2,775 coho salmon present in the outlet stream of Clearwater Lake from an aerial survey flown on October 22.

In the Toklat River drainage, only 274 coho salmon were counted by ground survey in Geiger Creek. Remaining escapement information on coho salmon in 1997 was obtained primarily by aerial surveys in portions of the Tanana River drainage, although limited ground surveys were also conducted at a few locations. A large part of this work was conducted by TCC, particularly in the Nenana River drainage. Estimated numbers of coho salmon spawners in the Nenana River drainage included 1,524 in Lost Slough, 1,996 in Seventeen Mile Slough, 1,446 in the mainstem Nenana River upstream of the Teklanika River, and 3,688 in the Clear-Glacier-Wood Creek complex of the Julius Creek drainage.

Enforcement 1997

The primary enforcement authority for violations of Fish and Game regulations is Fish and Wildlife Protection (FWP) within the Department of Public Safety. For purposes of enforcing commercial, personal use and subsistence fishing regulations within the Yukon Area, FWP has employees permanently stationed in Bethel, McGrath, Aniak, Galena, Coldfoot, and Fairbanks. Additionally, during the fishing season, officers are stationed at other locations along the Yukon and Tanana Rivers.

Lower Yukon Area

FWP conducted intensive patrols in the Lower Yukon Area during June 1997 utilizing three float planes and one skiff. In general, compliance with fishing regulations was good. There was one citation issued for using large mesh gillnet gear during a commercial fishing period restricted to six inch maximum mesh size gillnets in District 2. Several citations were also issued for lack of crew member licenses.

Upper Yukon Area

Aircraft and boat patrols were conducted in the Upper Yukon Area from Fairbanks and Galena during the summer and fall seasons. Warnings for improperly marked gear were given to several fishermen and one citation was issued for wanton waste of salmon near Ruby. One citation was issued for unmarked gear near Rampart. Overall few complaints were received and compliance with openings and closures was good.

Outlook For 1998

Chinook Salmon

Typically, the majority of chinook salmon returning to the Yukon River are 6-year-old fish; however, 5- and 7-year-old fish make a significant contribution to the run. Spawning ground escapements in 1992, the brood year for producing 6-year-old fish returning in 1998, were judged to be average to above average in magnitude. However, the return of this brood year as 5-year-old fish in 1997 appeared to be below average. The 7-year-old return is expected to be strong based upon the high contribution of age-6 fish in the 1997 run. The return of 5-year-old fish in 1998 is expected to be average to above average in abundance based on the spawning escapements observed in 1993. Overall, the 1998 chinook salmon run is anticipated to be near average in strength. The commercial harvest in Alaska is expected to be 88,000 to 108,000 chinook salmon (82,000 to 100,000 fish in the Lower Yukon Area and 6,000 to 8,000 fish in the Upper Yukon Area).

Summer Chum Salmon

The return of 5-year-old fish in 1998 is expected to be below average based on spawning escapements observed in 1993 and the contribution of 4-year-old fish in the 1997 run. An above average return of 4-year-old summer chum salmon is expected. Summer chum salmon spawning escapement to the Anvik River in 1994 was 1,125,000, more than double the minimum escapement goal of 500,000 fish. Escapements to other spawning areas in 1994 appeared to be above average based upon weir counts for the East Fork Andreafsky and Gisasa Rivers and tower counts on the Nulato, Chena and Salcha Rivers and Kaltag and Clear Creeks. Overall, the 1998 outlook is for an average to above average summer chum salmon run. The commercial harvest is expected to be 500,000 to 800,000 fish, but given the uncertainties associated with run distribution and market conditions, it may be less.

Fall Chum Salmon

Fall chum salmon return primarily as 4- or 5-year-old fish, although 3- and 6-year-old fish also contribute to the run. A Ricker spawner-recruit model was used to predict the returns of fall chum salmon from the 1992 to 1995 parent-years that will contribute to the 1998 run. This process resulted in a 1998 preseason projection of 880,000 fish with the following approximate age composition:

Age-3 fish	16,000 (1995 Brood Year)
Age-4 fish	649,000 (1994 Brood Year)
Age-5 fish	201,000 (1993 Brood Year)
Age-6 fish	14,000 (1992 Brood Year)

It is anticipated the major contributor to the 1998 run will be age-4 fish returning from the 1994 brood year. In that year fall chum salmon run strength was assessed inseason to be much weaker than it in fact was. Initially, this resulted in closures or restrictions to various fall season fisheries throughout the drainage on a run size much larger than originally believed. The resulting low exploitation on fall chum salmon resulted in excellent escapements throughout the drainage, with all escapement goals in 1994 being met.

Should the 1998 fall chum salmon run materialize as projected, run size will be sufficient to not only meet escapement and subsistence requirements, but to also provide for commercial opportunity. A run of 880,000 fall chum salmon is some 95,000 fish greater than the average run size for the 24-year period 1974 through 1997.

Coho Salmon

Although comprehensive escapement information on Yukon River drainage coho salmon is lacking, it is known that coho salmon have later and overlapping run timing with fall chum salmon and primarily return at age 4. Assuming average survival, an average to above average return of coho salmon is anticipated in 1998. This is based upon results of limited escapement surveys conducted in 1994, when escapements were considered average to above average in the areas examined. Of note, more than 60,000 coho salmon were counted in the Delta Clearwater River in 1994, the highest on record and in excess of the minimum escapement goal of 9,000 fish.

Currently, there are no Alaska Board of Fisheries established coho salmon guideline harvest ranges within the Yukon Area, and coho salmon are considered an incidental harvest during the fall season fishery which is directed at chum salmon. Under this management strategy, any commercial harvest of coho salmon in 1998 will be largely dependent upon the abundance of fall chum salmon and the accompanying management strategies to harvest fall chum salmon.

CAPE ROMANZOF DISTRICT HERRING FISHERY

Introduction

Pacific herring (*Clupea harengus pallasii*) are present in coastal waters of the Yukon Area during May and June. Spawning populations occur primarily in the Cape Romanzof area in Kokechik Bay and Scammon Bay (Appendix F.1) where spawning habitat consisting of rocky beaches and rockweed (*Pucus*) is available. The arrival of herring on the spawning grounds is greatly influenced by ocean water temperature and ice conditions. Typically herring appear immediately after ice breakup. Spawning usually occurs between mid-May and mid-June.

Herring are utilized by local residents for subsistence purposes. In addition, a commercial herring sac-roe fishery has occurred in the Cape Romanzof District since 1980. The Cape Romanzof District consists of all State waters from Dall Point to 62 degrees north latitude (Appendix F.1). In 1982, the Board of Fisheries reduced the area open to commercial fishing by closing the waters outside of Kokechik Bay. Gillnets are the only legal commercial

gear type. The use of mechanical shakers has been prohibited since 1988. Limited entry to the fishery began with a moratorium on new entrants in 1988. The fishery is now limited to 101 permits.

A total of \$30,800 in State funds were allocated to the Division of Commercial Fisheries to manage the commercial fishery and conduct herring research studies at Cape Romanzof in May and June of 1997, not including permanent staff salaries.

Commercial Fishery 1997

Commercial harvests increased steadily after inception of the fishery in 1980, reaching a peak harvest of 1,865 tons in 1986. Since 1986, there has been a trend of decreasing harvests.

In 1997, a total of 879 tons of Pacific herring were harvested by 65 fishers utilizing 65 fishing vessels (Appendix F.2 and F.4). The commercial harvest was 66% above the recent five-year-average (1992-1996) of 530 tons. All of the herring harvest was purchased as sac roe. The average sac roe recovery was 10.2%. The commercial harvest was allowed to reach near the preseason harvest projection of 900 tons. The commercial fishery consisted of 9 fishing periods, which were allowed between May 21 and May 25. Fishing periods ranged from 1 hour to 5 hours in duration for a total fishing time of 29.5 hours (Appendix F.2 and F.3). Fishing gear was restricted to one 50-fathom gillnet per vessel throughout the commercial season.

The estimated exvessel value of the 1997 harvest was \$186,300 (Appendix F.4). Average price for herring sac roe was \$208 per ton at 10% roe recovery. Three companies purchased herring. These companies were represented by one processing vessel and ten tenders during the fishery (Appendix F.5). Fishing effort was similar to the 1996 fishing season. Local Alaskan residents (defined as residents of Chevak, Hooper Bay, and Scammon Bay) accounted for 95% (62 permits) of the effort and 95% (839 tons) of the harvest.

As in other recent years, the fishery was put on a one hour advance notice prior to opening the commercial fishery. A countdown was provided fishermen prior to the opening and closing of periods on VHF radio. Commercial fishing periods were scheduled prior to high tide. In coordination with the department, commercial fishermen provided catch samples for evaluation by industry representatives prior to commercial periods (Appendix F.6). Samples were collected relatively early on the incoming tide to provide time for announcing periods. Typically, the samples indicated a high percentage of ripe females. Additionally, larger mesh sizes usually resulted in higher percentages of ripe females and higher roe recovery, while smaller mesh size catches generally had a lower roe recovery. Several fishing periods were announced several hours in advance based on reports of good roe quality during the prior fishing period.

The overall exploitation rate of herring was estimated postseason to be approximately 17.6% of the available biomass (Appendix F.4). A total of 560 herring were sampled from the commercial harvest. Samples were collected from 2-1/2 in, 2-7/8 in, 3 in, 3-1/8, 3-1/4, and 3-1/2 in mesh size gillnets. The estimated age composition of the commercial samples based on scale analysis was: age-5: 0.2%; age-6: 3.0%; age-7: 5.8%; age-8: 4.7%; age-9: 42.1%; age-10: 15.3%; age-11: 7.0%; age-12: 7.4%; age-13: 7.0%; and age-14 and older: 7.6% (Appendix F.10 and F.11).

Fish and Wildlife Protection officers were not present at Cape Romanzof in 1997. However, fishermen followed fishing period opening and closing times very well and buyers were timely and accurate with verbal reporting of purchases.

Subsistence Fishery 1997

During 1997, a subsistence harvest of 3.2 tons of herring was estimated to have been taken by 34 fishing families from Hooper Bay, Chevak, and Scammon Bay (Appendix F.7). In addition, 555 pounds of herring spawn-on-kelp (*ficus*) were harvested for subsistence purposes by 20 families (Appendix F.8). A combination of mail-out questionnaires and personal interviews were used to collect subsistence harvest information. A total of 74 households were contacted out of a total of 216 identified households. The subsistence harvest and effort figures represent only the harvest which was reported. Therefore, the reported harvest is a minimum estimate since not all fishing families were contacted and not all households who received questionnaires returned them. A majority of the fishermen that responded to questionnaires reported herring abundance appeared to be the same in 1997 as in 1996.

Stock Status

Due to excessive water turbidity in the Cape Romanzof area, it is usually not possible to estimate herring biomass using aerial survey techniques. Herring biomass has been estimated using a combination of information from aerial surveys, test and commercial catches, spawn deposition, and age composition. Five aerial surveys were flown during the 1997 season from May 12 through June 2 (Appendix F.9). A total of 2.45 hours were spent surveying the district. Because of poor survey conditions due to turbid water conditions, no aerial survey biomass estimate was possible in 1997. Based on spawn deposition study results and herring age composition, the 1997 biomass was estimated postseason to be between 4,500 and 5,500 tons with a midpoint of 5,000 tons.

Test fishing with variable mesh gillnets has been conducted since 1978 to determine distribution, timing and relative abundance of spawning herring, and to collect samples for age, sex, size and relative maturity information. Test fishing was conducted by the department from May 15 through June 7, 1997. A total of 2,373 herring were caught of which 1,367 fish were sampled for biological data. Herring comprised approximately 99% of the total catch of schooling species. Other fish captured during test fishing included flounder, saffron cod, sculpin, smelt, and whitefish.

The age composition of the variable mesh test gillnet samples showed a healthy range of ages. Age-5, 6, 7, 8, 9, 10, 11 and 12 herring accounted for 1.7%, 11.5%, 13.0%, 2.7%, 28.4%, 10.0%, 3.0% and 2.4% of test fishing samples, respectively (Appendix F.12 and F.13). Age-13 and older herring comprised 5.4% of test fishing samples. Newly recruited age-3 and age-4 herring represented 0.6% and 21.6% of test fishing samples.

Qualitative spawn deposition surveys have been conducted annually to document herring spawn distribution. Qualitative spawn deposition surveys began on May 12. The first observations were recorded on May 13 in Kokechik Bay. The spawn deposition during this initial spawning event was light.

The department initiated a new quantitative spawn deposition study in 1992 to develop a spawn deposition index. The major difficulty encountered in attempting to estimate biomass utilizing spawn deposition data in the past was the loss of spawn due to storms and desiccation. To address this problem, artificial substrates were located in intertidal spawning areas prior to spawning. The artificial substrate consisted of small steel platforms with 6 inch by 12 inch rectangular pieces of astroturf attached to a steel plate on each platform. Spawn deposited on the astroturf was removed and weighed daily at low tide. Daily removal of spawn allowed measurements of new spawn deposition and decreased the problem of spawn loss due to wave action and desiccation observed in previous studies.

In 1997, artificial substrates were located in the same general spawning locations as in 1992 through 1996. Forty platforms were placed just north of the department's field camp on May 14. However, high winds prevented checking the platforms the next five days. This delay in adjusting placement of platforms within the intertidal zone resulted in the project not being successful this season. Very little spawn was recorded on the platforms, although subjectively spawn deposition within the study area appeared to be similar to that in 1996. The project has indicated a trend of increasing spawn deposition within the study from 1992 through 1996 (Appendix F.15). However, it is uncertain whether the study area results are indicative of the total spawning biomass within the entire district.

Outlook for 1998

The projected return for 1998, based upon limited information, is expected to be between 3,300 and 4,200 tons. Age-10 herring are expected to dominate the biomass at 32%. Age-9 and older herring are expected to comprise approximately 54% of the returning biomass. The Bering Sea Herring management strategy is to harvest 0-20% of the estimated herring biomass. A 20% exploitation rate will be used to manage the fishery in 1998. The 1998 harvest projection is 650 to 850 tons with a midpoint of 750 tons.

Emergency order authority will be used to adjust the timing and length of fishing periods. It is very likely that gear will be restricted to one 50 fathom gillnet per vessel. A minimum level of biomass cannot be used to determine the opening of commercial fishing periods since turbid water conditions usually preclude aerial biomass assessments. The initial commercial fishing period will be established when it is determined that commercial quantities of marketable sac roe herring are present on the grounds. Test and commercial catch rates, number of fishing vessels, and spawn deposition observations will be used to determine timing and duration of commercial fishing periods. The department anticipates considerable test fishing effort utilizing volunteer commercial fishermen to assess roe quality. If sac roe quality is good, individual fishing periods may be extended. Allowing a harvest above or below the preseason projection will depend on assessment of herring abundance through aerial surveys, cumulative spawn deposition, test and commercial catch rates, and age composition data.

OTHER MARINE AND FRESHWATER FINFISH FISHERIES

Subsistence Fishery

Many subsistence fishermen operate gillnets in the main rivers and coastal marine waters to harvest marine and freshwater finfish other than salmon and herring. Beach seines are occasionally used near spawning grounds primarily capturing salmon or other schooling species of fish. Traps and fish weirs of various designs are also used, mainly in the fall and winter months, to capture whitefish (*Coregonus sp. and Prosopium sp.*), blackfish (*Dallia pectoralis*), and burbot (*Lota lota*). Sheefish (*Stenodous leucithys*), northern pike (*Esox lucius*), char (*Salvelinus sp.*), and "tomcod" (saffron cod) (*Eleginus gracilis*) are frequently taken through the ice by hand lines. Dip nets are used in late May to early June to take smelt in the delta area and in late October to early November to take Arctic lamprey (*Lamperta japonica*) in the main Yukon River downstream of Grayling.

Subsistence fisheries which target on non-salmon species such as pike, sheefish, and whitefish are inadequately documented and their overall significance is not well known. A comprehensive subsistence use survey was conducted in the lower Yukon River in 1978-1979 (Crawford 1979). Several studies have been conducted to

investigate sheefish migrations and to locate spawning areas in the Koyukuk River drainage (Alt 1968, 1969, 1970, 1974) and in the main Yukon River between Stevens Village and Fort Yukon (Alt 1986). In 1997, a sheefish tagging and radio telemetry study was initiated by the USFWS and ADF&G near Rampart. Fish wheels operated as part of a fall chum salmon mark-recapture study were utilized as part of this project. Adult sheefish captured at the Yukon River tagging site were marked with conventional tags and selected individuals were tagged with pulse-coded radio transmitters. Movement information collected during aerial radio tracking surveys was compared with data from the remote tracking stations. All of the radio-tagged fish that moved past the stations were recorded. During the fall of 1997, a number of marked sheefish were recaptured near Emmonak.

The spring sheefish migration occurs just prior to and during the beginning of the upstream migration of chinook salmon. A limited number of sheefish are harvested during late May and early June in the Lower Yukon River as sheefish migrate upriver. Fish wheels take relatively small numbers of whitefish and sheefish in the upper Yukon and Tanana Rivers during the commercial salmon fishery. Since 1993, subsistence salmon surveys included the collection of freshwater finfish harvest data. Estimated and reported subsistence catches of freshwater finfish from subsistence surveys in 1997 are presented in Appendix G.1 and subsistence catches of freshwater finfish taken under authority of a permit in the Upper Yukon Area in 1997 are presented in Appendix G.2.

Commercial Fishery

Regulations adopted by the Alaska Board of Fisheries allow the Department of Fish and Game to issue permits for the commercial harvest of freshwater species of fish such as whitefish, sheefish, char, northern pike, blackfish and Arctic lamprey. Commercial fisheries for species other than salmon have been allowed in widely scattered locations throughout the Yukon and Tanana River drainages and in the Colville River on the North Slope. The Colville River is located in the Northern Area. Most of these fisheries are limited, experimental operations, and occur only sporadically.

Permits for the taking of non-salmon species have been issued for various locations in the Lower Yukon Area. Reported harvests for those fisheries are presented in Appendix G.3. No permits were issued in 1997. Set gillnets are primarily used for taking whitefish and sheefish in the Lower Yukon Area. Typically, the catch is marketed in local village stores or in Bethel. A commercial fishery for whitefish has existed in the Colville River delta (located approximately 60 miles west of Prudhoe Bay) since 1964. Fishing generally takes place during late June and July for broad and humpback whitefish; and October through early December for arctic and least cisco (Appendix G.4). Set gillnets are used as capture gear, and fishing during fall months occurs under the ice. Not all fish reported on permits for this area are sold. In the Upper Yukon Area, commercial freshwater fisheries targeting primarily whitefish have been permitted in recent years (Appendix G.5). Permit authorization is not required for the sale of these species when taken incidentally during commercial salmon fishing (Appendix G.6-G.8).

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TABLES AND FIGURES

Table 1. Guideline harvest ranges and mid-points for commercial harvest of Yukon River chinook, summer chum and fall chum salmon in Alaska, 1997.

Chinook Salmon						
District or Subdistrict	Guideline Harvest Range ^a					
	Lower		Mid-Point		Upper	
	Numbers	Percent	Numbers	Percent	Numbers	Percent
1 and 2	60,000	89.1	90,000	91.6	120,000	92.9
3	1,800	2.7	2,000	2.0	2,200	1.7
4	2,250	3.3	2,550	2.6	2,850	2.2
5A, B, C	2,400	3.6	2,600	2.6	2,800	2.2
5D	300	0.4	400	0.4	500	0.4
6	600	0.9	700	0.7	800	0.6
Total	67,350	100.0	98,250	100.0	129,150	100.0

Summer Chum Salmon						
District or Subdistrict	Guideline Harvest Range ^b					
	Lower		Mid-Point		Upper	
	Numbers	Percent	Numbers	Percent	Numbers	Percent
1 and 2	251,000	62.9	503,000	62.9	755,000	62.9
3	6,000	1.5	12,500	1.6	19,000	1.6
4A ^c	113,000	28.3	225,500	28.2	338,000	28.2
4B, C	16,000	4.0	31,500	3.9	47,000	3.9
5	1,000	0.3	2,000	0.3	3,000	0.3
6	13,000	3.3	25,500	3.2	38,000	3.2
Total	400,000	100.0	800,000	100.0	1,200,000	100.0

Anvik River Management Area roe cap of 100,000 pounds ^d

Fall Chum Salmon						
District or Subdistrict	Guideline Harvest Range ^e					
	Lower		Mid-Point		Upper	
	Numbers	Percent	Numbers	Percent	Numbers	Percent
1, 2, and 3	60,000	82.5	140,000	71.2	220,000	68.6
4B, C	5,000	6.9	22,500	11.4	40,000	12.5
5A, B, C	4,000	5.5	20,000	10.2	36,000	11.2
5D	1,000	1.4	2,500	1.3	4,000	1.2
6	2,750	3.8	11,625	5.9	20,500	6.4
Total	72,750	100.0	196,625	100.0	320,500	100.0

^a The chinook salmon guideline harvest ranges have been in effect since 1981.

^b Summer chum salmon guideline harvest ranges were established in February 1990 based on the average harvest shares from 1975-1989.

^c Or the equivalent roe poundage of 61,000 to 183,000 pounds or some combination of fish and pounds of roe.

^d The current Anvik River Management Area roe cap was established in March 1996.

^e The current fall chum salmon guideline harvest ranges were established in 1990.

Table 2. Salmon processors, buyers, catcher-sellers, and associated data, Yukon Area, 1997.

Commercial operation (Processing location/ buying station)	Product	District
Yukon Delta Fish Marketing CO-OP, Inc. P.O. Box 169 Emmonak, AK 99581 (Emmonak)	Frozen Salmon Fresh Salmon Chinook Chum Salmon Roe	1 and 2
Bering Sea Fisheries, Inc. 4413 83rd Ave. SE Everett, WA 98205 (Lamont Slough)	Frozen Salmon Chinook Chum, Coho Salmon Roe	1 and 2
Boreal Fisheries P.O. Box 561 Graham, WA 98338 (Old Andreafsky)	Fresh Salmon Chinook Chum, Coho Salmon Roe	1 and 2
Great Pacific Seafoods, Inc. Box 81165 Seattle, WA 98108 (Emmonak)	Fresh Salmon Chinook Chum, Coho Salmon Roe	1 and 2
Maserculiq Fish Processors P.O. Box 118535 Marshall, AK 99585 (Marshall)	Fresh Salmon Chinook Chum Salmon Roe	2
Great Northern Seafoods, Inc. Box 240365 Anchorage, AK 99524 (Anvik)	Frozen Salmon Chinook Chum Salmon Roe	4
Sea Crest Inc. 6240 Rockhill Circle Anchorage, AK 99516 (Galena)	Frozen Salmon Fresh Salmon Chinook, Chum Salmon Roe	4
Dainty Island Fisheries PO Box 49 Galena, AK 99741 (Galena)	Smoked Salmon Chinook Chum	4

Table 2. Salmon processors, buyers, catcher-sellers, and associated data, Yukon Area, 1997.

Commercial operation (Processing location/ buying station)	Product	District
Interior Alaska Fish Processors, Inc. 2400 Davis Road Fairbanks, AK 99701 (Fairbanks, Nenana, North Pole)	Frozen Salmon Chinook, Chum, Coho Salmon Roe	4, 5, and 6
Yutana Fisheries PO Box 83809 Fairbanks, AK 99701 Or PO Box 38 Manley, AK 99756 (Kaltag, Manley)	Frozen Salmon Fresh Salmon Chinook, Chum, Coho Salmon Roe	4, 5, and 6
Steven's Fisheries PO Box 38 Nenana, AK 99760 (Nenana)	Frozen Salmon Fresh Salmon Chinook, Chum, Coho Salmon Roe	6
Brian Asplund (catcher/seller) PO Box 18 Circle, AK 99733 (Circle)	Fresh Salmon Chinook, Chum	5
Darrell Carroll (catcher/seller) PO Box 217 Fort Yukon, AK 99740 (Fort Yukon)	Fresh Salmon Chinook, Chum	5
Charlie Campbell (catcher/seller) MHF Enterprise PO Box 111 Tanana, AK 99777 (Tanana)	Fresh Salmon Chinook, Chum	5
Merrill J. Hakala (catcher/seller) 140 Front St. Fairbanks, AK 99701 (Circle, Fairbanks)	Fresh Salmon Chinook, Chum	5
Alfred Wright (catcher/seller) PO Box 60531 Fairbanks, AK 99706 (Fairbanks)	Fresh Salmon Chinook, Chum	5

Table 2. Salmon processors, buyers, catcher-sellers, and associated data, Yukon Area, 1997.

Commercial operation (Processing location/ buying station)	Product	District
Linda Johnson (catcher/seller) Box 57 Manley, AK 99756 (Fairbanks)	Fresh Salmon Chinook, Chum	5
Renee and Peter Merry (catcher/seller) 1293 Shypoke Drive Fairbanks, AK 99709 (Fairbanks)	Fresh Salmon Chinook, Chum	5
Steve O'Brien (catcher/seller) PO Box 42 Manley Hot Springs, AK 99756 (Fairbanks)	Fresh Salmon Chinook	5
Gary Hinzman (catcher/seller) 1366 Opportunity Way Fairbanks, AK 99709 (Fairbanks)	Fresh Salmon Chinook, Chum	6
John Childs (catcher/seller) 2091 Yellow Snow Rd. Fairbanks, AK 99709 (Fairbanks)	Fresh Salmon Chinook, Chum	6

Table 3. Commercial Fisheries Entry Commission salmon gear permits issued by residence, Yukon Area, 1997. ^a

District	Residence	GillNet Permits (S04Y)
1, 2, and 3	Alakanuk	73
	Aleknagik	1
	Anchorage	27
	Aniak	1
	Bethel	16
	Big Lake	1
	Chevak	2
	Chuathbaluk	1
	Cooper Landing	1
	Eek	1
	Elim	1
	Emmonak	100
	Fairbanks	14
	Glennallen	1
	Holy Cross	7
	Hooper Bay	2
	Iliamna	1
	Kalskag	1
	Koliganek	1
	Kotlik	76
	Lower Kalskag	1
	Manley Hot Springs	2
	Marshall	38
	Mountain Village	88
	Newtok	1
	Nome	2
	Palmer	1
	Pilot Station	52
	Pitkas Point	2
	Russian Mission	10
	Sand Point	1
	Scammon Bay	42
	Shaktolik	1
	Sheldon Point	27
	Sitka	1
	St. Marys	70
	Stebbins	12
	Sutton	1
	Talkeetna	4
	Tok	1
	Unalakleet	4
	Wasilla	7
	Whittier	1
	Belews Creek, NC	1
	Cameron Mills, NY	1
	Dillon, MT	1
	Everett, WA	1
Rock Hill, SC	1	
Seattle, WA	1	
Stanwood, WA	1	
Twisp, WA	1	
Total Lower Yukon		705

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Table 3. (p. 2 of 2).

District	Residence	GillNet Permits (S04P)	Fish Wheel Permits (S08P)	Total
4, 5, and 6	Anchorage	4	2	6
	Anchor Pt.	0	2	2
	Aniak	1	0	1
	Anvik	5	9	14
	Barrow	0	1	1
	Cantwell	1	0	1
	Circle City	0	1	1
	Dot Lake	0	1	1
	Eagle River	0	1	1
	Fairbanks	23	22	45
	Ft. Yukon	0	1	1
	Gakona	1	0	1
	Galena	4	26	30
	Grayling	5	4	9
	Healy	1	0	1
	Holy Cross	1	0	1
	Huslia	0	1	1
	Kaltag	3	15	18
	Koyukuk	0	2	2
	Manley Hot Springs	2	4	6
	Minto	0	1	1
	Nenana	6	21	27
	Nome	1	0	1
	North Pole	0	2	2
	Nulato	0	15	15
	Palmer	1	0	1
	Rampart	4	2	6
	Ruby	2	8	10
	Salcha	1	0	1
	Soldotna	1	0	1
	Stevens Village	1	3	4
	Tanana	3	15	18
	Wasilla	0	2	2
New York, NY	0	1	1	
Palm Desert, CA	1	0	1	
Portland, OR	0	1	1	
Total Upper Yukon		72	163	235
Grand Total Yukon Area		777	163	940

^a Counts are for initial issues only and do not include transfers. Counts include interim use permits.

Table 4. Commercial salmon and salmon roe sales by statistical area, Yukon Area, 1997.^{a, b}

Statistical Area	Chinook			Summer Chum			Fall Chum			Coho			Total Salmon		
	Numbers	Roe	Estimated	Numbers	Roe	Estimated	Numbers	Roe	Estimated	Numbers	Roe	Estimated	Numbers	Roe	Estimated
334-11	4,570	0	4,570	10,764	0	10,764	0	0	0	0	0	0	15,334	0	15,334
12	5,865	0	5,865	9,519	0	9,519	2,870	0	2,870	1,355	0	1,355	19,609	0	19,609
13	2,844	0	2,844	6,190	0	6,190	3,452	0	3,452	2,322	0	2,322	14,808	0	14,808
14	6,648	0	6,648	10,374	0	10,374	3,768	0	3,768	2,414	0	2,414	23,204	0	23,204
15	12,460	0	12,460	5,429	0	5,429	3,943	0	3,943	2,742	0	2,742	24,574	0	24,574
16	4,703	0	4,703	1,650	0	1,650	1,596	0	1,596	4,153	0	4,153	12,102	0	12,102
17	21,443	0	21,443	10,719	0	10,719	6,747	0	6,747	5,180	0	5,180	44,089	0	44,089
18	7,851	0	7,851	5,270	0	5,270	5,107	0	5,107	3,284	0	3,284	21,512	0	21,512
Subtotal District 1	66,384	0	66,384	59,915	0	59,915	27,483	0	27,483	21,450	0	21,450	175,232	0	175,232
334-21	13,939	0	13,939	7,126	0	7,126	5,040	0	5,040	2,197	0	2,197	28,302	0	28,302
22	13,344	0	13,344	7,938	0	7,938	9,827	0	9,827	6,449	0	6,449	37,558	0	37,558
23	2,280	0	2,280	673	0	673	2,316	0	2,316	1,238	0	1,238	6,507	0	6,507
24	6,104	0	6,104	1,667	0	1,667	5,972	0	5,972	3,025	0	3,025	16,768	0	16,768
25	3,696	0	3,696	838	0	838	1,171	0	1,171	147	0	147	5,852	0	5,852
Subtotal District 2	39,363	0	39,363	18,242	0	18,242	24,326	0	24,326	13,056	0	13,056	94,987	0	94,987
334-31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal District 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Lower Yukon	105,747	0	105,747	78,157	0	78,157	51,809	0	51,809	34,506	0	34,506	270,219	0	270,219

-Continued-

Table 4. (p. 2 of 2)

Statistical Area	Chinook			Summer Chum			Fall Chum			Coho			Total Salmon		
	Numbers	Roe	Estimated	Numbers	Roe	Estimated	Numbers	Roe	Estimated	Numbers	Roe	Estimated	Numbers	Roe	Estimated
334-42	326	14	333	1,942	4,786	10,484	463	0	463	19	0	19	2,750	4,800	11,299
43	1,124	0	1,124	120	77	250	1,995	0	1,995	795	0	795	4,034	77	4,164
44	0	0	0	0	14,188	26,023	0	0	0	0	0	0	0	14,188	26,023
45	0	0	0	0	526	912	0	0	0	0	0	0	0	526	912
46	0	0	0	0	41,587	73,454	0	0	0	0	0	0	0	41,587	73,454
47	0	0	0	0	13,067	13,548	0	0	0	0	0	0	0	13,067	13,548
Subtotal District 4	1,450	14	1,457	2,062	74,231	124,671	2,458	0	2,458	814	0	814	6,784	74,245	129,400
334-51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52	1,314	0	1,314	0	0	0	1,595	1,194	3,069	0	0	0	2,909	1,194	4,383
53	1,757	0	1,757	125	0	125	0	0	0	0	0	0	1,882	0	1,882
54	262	0	262	12	0	12	40	0	40	0	0	0	314	0	314
55	345	0	345	0	0	0	811	0	811	0	0	0	1,156	0	1,156
Subtotal District 5	3,678	0	3,678	137	0	137	2,446	1,194	3,920	0	0	0	6,261	1,194	7,735
334-61	38	0	38	3,162	0	3,162	0	0	0	0	0	0	3,200	0	3,162
62	1,662	2,816	2,334	9,168	6,525	16,709	0	0	0	0	0	0	10,830	9,341	16,709
63	266	395	356	2,556	2,511	5,416	0	0	0	0	0	0	2,822	2,906	5,416
Subtotal District 6	1,966	3,211	2,728	14,886	9,036	25,287	0	0	0	0	0	0	16,852	12,247	28,015
Total Upper Yukon	7,094	3,225	7,863	17,085	83,267	150,095	4,904	1,194	6,378	814	0	814	29,897	87,686	165,150
Grand Total Yukon Area	112,841	3,225	113,610	95,242	83,267	228,252	56,713	1,194	58,187	35,320	0	35,320	300,116	87,686	435,369

^a Sales reported in numbers of fish sold in the round and pounds of unprocessed roe. Does not include ADF&G test fishery sales.

^b Estimated harvest includes the estimated number of females to produce the roe sold, except for in District 3 and 4 where the estimated harvest also includes male summer chum salmon.

Table 5. Commercial salmon harvest by fishing period, set and drift gillnets combined, District 1, Lower Yukon Area, 1997. ^a

Period	Period Dates	Hours Fished Set/Drift	No. of Fishers	Period Catch			Cumulative Catch		
				Chinook	Coho	Chum	Chinook	Coho	Chum
1	6/11-6/12	12	408	11,369	0	4,062	11,369	0	4,062
2	6/16-6/17	12	431	11,154	0	8,786	22,523	0	12,848
3	6/19-6/20	12	440	20,139	0	7,428	42,662	0	20,276
5	6/23-6/23	6	433	7,394	0	3,019	50,056	0	23,295
6	6/26-6/27	9	423	13,006	0	11,159	63,062	0	34,464
Unrestricted Mesh Size Subtotal		51	456	63,062	0	34,464			
4	6/22-6/22	3	174	2,075	0	14,839	2,075	0	14,839
7	6/28-6/28	4	129	770	0	7,010	2,845	0	21,849
8	6/30-6/30	6	119	465	0	3,602	3,310	0	25,451
Restricted Mesh Size Subtotal ^b		13	256	3,310	0	25,451			
<i>Summer Season Total</i>		64	457	66,372	0	59,915			
9	8/06-8/06	6/6	43	5	964	1,985	5	964	1,985
10	8/11-8/11	9/6	78	2	2,719	3,880	7	3,683	5,865
11	8/13-8/13	9/6	117	1	5,869	6,737	8	9,552	12,602
12	8/16-8/16	9/6	139	2	6,829	9,382	10	16,381	21,984
13	8/18-8/18	9/6	116	2	5,069	5,499	12	21,450	27,483
<i>Fall Season Total</i>		42/30	176	12	21,450	27,483			
Grand Total		108/94	463	66,384	21,450	87,398			

^a Harvest reported in numbers of fish sold in the round. Does not include ADF&G test fishery sales.

^b Six inch maximum mesh size restriction in effect.

^c During the fall chum season (8/06-8/18), the district was divided into a Setnet Only Area (4 to 9 hour periods) and a Gillnet Area (6 to 9 hour periods).

Table 6. Commercial salmon harvest by fishing period, set and drift gillnets combined, District 2, Lower Yukon Area, 1997. ^a

Period	Period Dates	Hours Fished	No. of Fishers	Period Catch			Cumulative Catch		
				Chinook	Coho	Chum	Chinook	Coho	Chum
1	6/15-6/16	12	173	7,266	0	2,275	7,266	0	2,275
2	6/18-6/19	12	175	9,583	0	4,908	16,849	0	7,183
3	6/22-6/23	12	176	15,248	0	5,913	32,097	0	13,096
5	6/25-6/26	6	171	6,955	0	2,393	39,052	0	15,489
Unrestricted Mesh Size Subtotal		42	188	39,052	0	15,489			
4	6/25-6/25	4	20	301	0	2,753	301	0	2,753
Restricted Mesh Size Subtotal ^b		4	20	301	0	2,753			
<i>Summer Season Total</i>		46	188	39,353	0	18,242			
6	8/08-8/08	6	84	0	2,130	6,200	0	2,130	6,200
7	8/11-8/11	6	62	4	1,367	1,845	4	3,497	8,045
8	8/13-8/13	6	91	3	3,071	7,299	7	6,568	15,344
9	8/18-8/18	6	106	3	6,488	8,982	10	13,056	24,326
<i>Fall Season Total</i>		24	130	10	13,056	24,326			
Grand Total		70	221	39,363	13,056	42,568			

^a Harvest reported in numbers of fish sold in the round. Does not include ADF&G test fishery sales.

^b Six inch maximum mesh size restriction in effect.

Table 7. Commercial salmon harvest by fishing period, set and drift gillnets combined, District 3, Lower Yukon Area, 1997. a

Period	Period Dates	Hours Fished	No. of Fishermen	Period Catch							Cumulative Catch			
				Chinook	Coho	Chum		Pink		Chinook	Coho	Chum	Pink	
						Number	Pounds of Roe	Estimated Harvest	Pounds of Roe					Estimated Harvest
No Commercial Fishing Periods Because of Lack of Buyers														

Table 8. Commercial salmon and salmon roe sales and effort by fishing period, set gillnets and fish wheels combined, District 4, Upper Yukon Area, 1997.

Subdistrict 4-A												
Period	Period Dates	Hours Opened	No. of Fishermen	Chinook Salmon		Chinook Expansion		Summer Chum Salmon		Summer Chum Expansion		
				Number ^a	Pounds of Roe	Roe Weight ^b	Estimated Harvest ^c	Number ^a	Pounds of Roe	Percent Females ^b	Roe Weight ^b	Estimated Harvest ^d
1	7/01-7/02	12	12	0	0	2.00	0	0	4,365	0.51	0.94	6,161
2	7/02-7/03	12	15	0	0	2.00	0	0	8,880	0.53	0.98	17,096
3	7/04-7/05	12	13	0	0	2.00	0	0	7,946	0.57	0.95	13,694
4	7/08-7/09	12	16	0	0	2.00	0	0	7,321	0.55	0.94	13,357
5	7/10-7/11	12	18	0	0	2.00	0	0	5,351	0.55	0.95	10,241
6	7/13-7/14	12	18	0	0	2.00	0	0	3,956	0.63	0.93	6,507
7	7/15-7/16	12	17	0	0	2.00	0	0	6,342	0.61	0.92	11,255
8	7/17-7/18	12	16	0	0	2.00	0	0	5,243	0.62	0.93	9,159
9	7/19-7/20	12	15	0	0	2.00	0	0	4,405	0.69	0.93	7,036
10	7/21-7/22	12	12	0	0	2.00	0	0	2,492	0.69	0.93	3,883
Subtotal		120	24	0	0	2.00	0	0	56,301			100,369
Guideline Harvest Range:										113,000 to 338,000 Summer Chum Salm		
Anvik River Management Area												
Period	Period Dates	Hours Opened	No. of Fishermen	Summer Chum Salmon		Summer Chum Expansion						
				Number ^a	Pounds of Roe	Percent Females	Roe Weight ^b	Estimated Harvest ^c				
1	7/01-7/02	12	5	0	3,196	100.0	0.98	3,261				
2	7/02-7/03	12	6	0	3,610	100.0	0.98	3,684				
3	7/04-7/05	12	2	0	1,399	100.0	0.96	1,457				
4	7/08-7/09	12	2	0	1,229	100.0	0.96	1,280				
5	7/09-7/10	12	3	0	992	100.0	0.94	1,055				
6	7/11-7/12	12	0	0	0	100.0	0.93	0				
7	7/13-7/14	12	3	0	642	100.0	0.93	690				
8	7/15-7/16	12	2	0	789	100.0	0.92	858				
9	7/17-7/18	12	1	0	696	100.0	0.95	733				
10	7/19-7/20	12	1	0	514	100.0	0.97	530				
11	7/21-7/22	12	0	0	0	100.0	0.97	0				
Subtotal		132	9	0	13,067			13,548				

-Continued-

Table 8. (p. 2 of 2)

Subdistricts 4-B and 4-C Summer Season												
Period	Period Dates	Hours Opened	No. of Fishermen	Chinook Salmon		Chinook Expansion		Summer Chum Salmon		Chum Salmon Expansion		
				Number ^a	Pounds of Roe	Roe Weight ^b	Estimated Harvest ^c	Number ^a	Pounds of Roe	Percent Females ^b	Roe Weight ^b	Estimated Harvest ^d
1	6/29-7/01	48	4	211	0	2.19	211	0	0	0.58	0.94	0
2	7/02-7/04	48	5	462	0	2.19	462	136	0	0.58	0.94	136
3	7/06-7/08	48	9	444	0	2.19	444	606	1,990	0.68	0.94	3,719
4	7/09-7/11	48	4	155	0	2.19	155	166	1,006	0.50	0.85	2,553
5	7/13-7/15	48	6	100	0	2.19	100	121	643	0.62	0.93	1,236
6	7/17-7/19	48	5	59	0	2.19	59	96	261	0.62	0.95	539
7	7/20-7/22	48	6	13	6	2.19	16	491	578	0.62	0.95	1,472
8	7/23-7/25	48	5	6	8	2.19	10	426	385	0.62	0.95	1,079
Subtotal		384	12	1,450	14		1,457	2,062	4,863			10,734
Guideline Harvest Range:				2,250 to 2,850 Chinook Salmon				16,000 to 47,000 Summer Chum Salmon				
Subdistricts 4-B and 4-C Fall Season												
Period	Period Dates	Hours Opened	No. of Fishermen	Coho Salmon		Coho Expansion		Fall Chum Salmon		Fall Chum Salmon Expansion		
				Number ^a	Pounds of Roe	Roe Weight ^b	Estimated Harvest ^c	Number ^a	Pounds of Roe	Percent Females	Roe Weight ^b	Estimated Harvest ^c
9	8/20-8/22	48	3	32	0	0.80	32	685	0	-	0.69	685
10	8/31-9/01	48	2	57	0	0.80	57	297	0	-	0.69	297
11	9/03-9/05	48	2	279	0	0.80	279	565	0	-	0.69	565
12	9/07-9/09	48	2	194	0	0.80	194	308	0	-	0.69	308
13	9/10-9/12	48	2	252	0	0.80	252	403	0	-	0.69	403
Subtotal		240	3	814	0		814	2,458	0			2,458
Guideline Harvest Range:				5,000 to 40,000 Fall Chum Salmon								

^a Number of salmon sold in the round.

^b Weighted average roe weight in pounds per female and weighted average of percent females. Actual expansion based on samples collected by statistical area and gear type.

^c Estimated harvest is the number of fish sold in the round plus estimated females harvested to produce roe sold.

^d Estimated harvest is the estimated number of males and females harvested to produce roe sold. Numbers sold in the round are assumed to be primarily males and are not added to estimated harvest to avoid double counting.

Table 9. Commercial salmon and salmon roe sales and effort by fishing period, set gillnets and fish wheels combined, District 5, Upper Yukon Area, 1997.

Subdistricts 5-A, B, C Summer Season											
Period	Date	Hours Opened	Number of Fishermen	Chinook Salmon		Chinook Expansion		Summer Chum Salmon		Chum Expansion	
				Number	Pounds of Roe	Roe Weight ^a	Estimated Harvest ^b	Number	Pounds of Roe	Roe Weight ^a	Estimated Harvest ^b
1	7/04-7/06	36	16	1,690	0	2.35	1,690	19	0	0.90	19
2	7/08-7/09	24	18	1,381	0	2.35	1,381	106	0	0.90	106
Subtotal		60	26	3,071	0		3,071	125	0		125
Guideline Harvest Range:						2,400 to 2,800 Chinook			1,000 to 3,000 Summer Chum Salmon		

Subdistrict 5-A, B, C Fall Season									
Period	Date	Hours Opened	Number of Fishermen	Coho	Fall Chum Salmon		Chum Expansion		
					Number	Pounds of Roe	Roe Weight ^a	Estimated Harvest ^b	
3	9/01-9/02	15	6	0	1,595	1,043	0.81	2,883	
4	9/15-9/16	18	3	0	0	151	0.81	186	
Subtotal		33	6	0	1,595	1,194		3,069	
Guideline Harvest Range:					1,000 to 4,000 Fall Chum Salmon				

-Continued-

Table 9. (p.2 of 2)

Subdistrict 5-D Summer Season								
Period	Date	Hours Opened	Number of Fishermen	Chinook	Summer Chum Salmon		Chum Expansion	
					Number	Pounds of Roe	Roe Weight ^a	Estimated Harvest ^b
1	7/12-7/14	36	3	309	12	0	0.90	12
2	7/16-7/18	36	2	113	0	0	0.90	0
3	7/21-7/21	24	3	185	0	0	0.90	0
Subtotal		96	3	607	12	0		12

Guideline Harvest Range: 300 to 500 Chinook Salmon

Subdistrict 5-D Fall Season								
Period	Date	Hours Opened	Number of Fishermen	Coho	Fall Chum Salmon		Chum Expansion	
					Number	Pounds of Roe	Roe Weight ^a	Estimated Harvest ^b
4	9/09-9/11	42	1	0	417	0	0.90	417
5	9/16-9/18	42	2	0	434	0	0.90	434
Subtotal		84	2	0	851	0		851

Guideline Harvest Range: 1,000 to 4,000 Fall Chum Salmon

^a Weighted average roe weight in pounds per female. Actual expansion based on samples collected by statistical area and gear type.

^b Estimated harvest is the number of fish sold in the round plus estimated number of females harvested to produce roe sold.

Table 10. Commercial salmon and salmon roe sales and effort by fishing period, set gillnets and fish wheels combined, District 6, Upper Yukon Area, 1997.

District 6 Summer Season												
Period	Date	Hours Opened	Number of Fishermen	Chinook Salmon		Chinook Expansion		Summer Chum Salmon		Summer Chum Expansion		
				Number	Pounds of Roe	Roe Weight ^a	Estimated Harvest ^b	Number	Pounds of Roe	Roe Weight ^a	Estimated Harvest ^b	
1	7/11-7/13	42	10	1,120	1,792	4.10	1,558	199	400	0.80	699	
2	7/14-7/16	42	12	703	759	4.10	888	2,284	597	0.80	3,030	
3	7/25-7/27	42	12	71	249	4.68	124	2,997	626	0.88	3,709	
4	7/28-7/30	42	11	45	257	4.68	99	2,811	2,027	0.88	5,114	
5	8/01-8/03	42	11	26	97	4.68	46	3,253	2,898	0.88	6,547	
6	8/04-8/06	42	8	0	41	4.68	9	2,154	1,804	0.88	4,204	
7	8/08-8/10	42	6	1	16	4.68	4	1,188	684	0.88	1,984	
Subtotal		294	15	1,966	3,211		2,728	14,886	9,036		25,287	
Guideline Harvest Range:				600 to 800 Chinook				13,000 to 38,000 Summer Chum Salmon				

District 6 Fall Season												
Period	Date	Hours Opened	Number of Fishermen	Coho Salmon		Coho Expansion		Fall Chum Salmon		Fall Chum Expansion		
				Number	Pounds of Roe	Roe Weight ^a	Estimated Harvest ^b	Number	Pounds of Roe	Roe Weight ^a	Estimated Harvest ^b	
No Commercial Periods Allowed												
Subtotal												
Guideline Harvest Range:				2,750 to 20,500 Fall Chum Salmon								

^a Estimated average roe weight in pounds per female. Actual expansion based on samples collected by statistical area and gear type.

^b Estimated harvest is the number of fish sold in the round plus estimated number of females harvested to produce roe sold.

Table 11. Yukon River drainage commercial salmon sales and estimated harvest by district and country, 1997. a

Districts	Number of Fishermen c	Chinook			Summer Chum			Fall Chum			Coho		
		Sold in Round	Pounds of Roe	Estimated Harvest b	Sold in Round	Pounds of Roe	Estimated Harvest b	Sold in Round	Pounds of Roe	Estimated Harvest b	Sold in Round	Pounds of Roe	Estimated Harvest b
1	463	66,384	0	66,384	59,915	0	59,915	27,483	0	27,483	21,450	0	21,450
2	221	39,363	0	39,363	18,242	0	18,242	24,326	0	24,326	13,056	0	13,056
Subtotal	640	105,747	0	105,747	78,157	0	78,157	51,809	0	51,809	34,506	0	34,506
Subtotal District 3	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Lower Yukon	640	105,747	0	105,747	78,157	0	78,157	51,809	0	51,809	34,506	0	34,506
Anvik River	9	0	0	0	0	13,067	13,548	0	0	0	0	0	0
4-A	24	0	0	0	0	58,301	100,389 d	0	0	0	0	0	0
4-BC	12	1,450	14	1,457	2,062	4,663	10,734 d	2,458	0	2,458	814	0	814
Subtotal District 4	39	1,450	14	1,457	2,062	74,231	124,671 d	2,458	0	2,458	814	0	814
5-ABC	27	3,071	0	3,071	125	0	125	1,595	1,194	3,069	0	0	0
5-D	4	607	0	607	12	0	12	851	0	851	0	0	0
Subtotal District 5	31	3,678	0	3,678	137	0	137	2,446	1,194	3,920	0	0	0
Subtotal District 6	15	1,966	3,211	2,728	14,866	8,036	25,267	0	0	0	0	0	0
Total Upper Yukon	65	7,094	3,225	7,863	17,085	83,267	150,095	4,904	1,194	6,378	814	0	814
Total Alaska	725	112,841	3,225	113,610	95,242	83,267	228,252	56,713	1,194	56,187	35,320	0	35,320
Total Canada	14	5,311	0	5,311	-	-	-	8,068	0	8,068	2	0	2
Grand Total	739	118,152	3,225	118,921	95,242	83,267	228,252	64,781	1,194	66,255	35,322	0	35,322

a Does not include ADF&G test fishery sales.

b Unless otherwise noted, estimated harvest is the number of fish sold in the round plus the estimated number of females harvested to produce roe sold (pounds of roe sold divided by weighted average roe weight per female).

c Number of unique permits fished by district, subdistrict or area. Totals by area may not add up due to transfers between districts or subdistricts.

d Estimated harvest includes both males and females harvested to produce roe sold (pounds of roe sold divided by weighted average roe weight per female divided by average percent females in the harvest). Summer chum salmon sold in the round in District 4 are assumed to be males and are included in the estimated harvest calculation.

Table 12. Salmon sold from Department test fishing catches, Yukon Area, 1997.

District	Chinook	Summer Chum	Fall Chum	Coho
1 a	2,791	2,557	867	498
2 b	20	33	0	0
Lower Yukon Total	2,811	2,590	867	498

a Sales reported in numbers of fish sold in the round from set gillnets.

b Sales reported in numbers of fish sold in the round from drift gillnets.

Table 13. Subsistence and personal use salmon harvest estimates which include test fish harvests given away for subsistence use, and related information, Yukon River 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	95	0	0
Scammon Bay	9/15		40	178	526	3,401	0	0	39	0	0
Coastal District Total			136	494	1,139	15,711	0	0	134	0	0
Sheldon Pt.	9/12		24	48	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
Kotik	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	99	428	2,081	11,310	2,898	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	287	1,511	1,508	388	258	14	20	0
District 2 Subtotal			286	1,075	9,350	26,971	4,680	2,424	37	248	0
Russian Mission	9/23		18	222	1,459	585	0	10	4	11	0
Holy Cross	9/22		38	137	3,472	487	420	20	10	27	0
Shageluk	9/25		21	133	1,380	9,244	387	736	21	0	0
District 3 Subtotal			75	492	6,311	10,316	787	766	35	38	0
Lower Yukon River Total			584	2,250	23,211	64,535	8,599	5,013	203	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	25	0
Kaitag	10/15		34	85	1,036	73	1,142	60	0	28	7
Nulato	10/14		40	96	1,578	115	697	444	8	31	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	11	0	7
District 4 Yukon R. Subtotal			217	847	11,415	17,540	11,403	3,404	68	104	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	3,918	270	50	19	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	382	591	6,690	331	350	37	0	0
District 4 Subtotal			255	1,209	12,006	24,230	11,734	3,754	105	104	41
Tanana	10/20-10/21		36	455	3,596	2,526	25,058	3,045	15	0	20
Rampart	10/10		10	46	2,203	738	646	34	9	0	1
Fairbanks NSB	permits	h	25	159	955	424	491	28	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	2	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	6,119	248	13	0	17
Circle	permits		10	97	1,091	257	3,707	210	4	0	8
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	130	0	60

-Continued-

Table 13. (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
Chaikytsik	10/8	4	64	0	0	938	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	139	0	61
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
Nenana	permits	30	583	1,082	1,899	3,799	5,147	12	0	18
Healy	permits	5	108	4	22	3,272	1,818	5	0	0
Fairbanks NSB	permits	n	92	285	489	662	4,315	1,580	68	0
Delta Junction	permits	3	2	0	0	0	0	3	0	0
Other	permits	o	24	184	0	0	200	0	22	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	88,828	19,282	391	104	137
Survey Village Subtotals		1,093	5,099	47,759	101,184	53,059	10,927	515	481	83
Permit Area Subtotals		289	2,467	7,514	5,068	38,941	12,185	213	0	54
Subsistence Permit Subtotals		j	227	2,467	7,201	4,677	38,657	11,833	154	0
Personal Use Permit Subtotals		62	-	313	391	284	350	59	0	3
Test Fish Subtotals		p	-	2,157	6,959	3,425	1,185	-	-	-
Alaska, Yukon River Total		q	1,246	7,072	56,291	97,500	95,425	24,295	594	481
Alaska, Yukon Area Total		1,382	7,566	57,430	113,211	95,425	24,295	728	481	137

- 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 460 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 283 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.
- j 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 Totals.

Table 14. Preliminary reported subsistence and personal use salmon harvested under the authority of a permit, listed by permit area, Yukon Area, 1997. a

Permit Fishing Area	Type	Permit		Percent Returned	Number of Permits Returned that Fished	Reported Harvest				
		Issued	Returned			Chinook	Summer Chum	Fall Chum	Coho	
Subsistence Use										
Yukon River near Haul Road Bridge	SY	44	42	95%	28	1,588	683	491	26	
Yukon River near Circle and Eagle	SE	98	93	95%	60	3,184	393	13,616	212	
Tanana River Subdistrict 6A	SA	28	27	96%	16	852	536	9,313	3,169	
Tanana River Subdistrict 6B	SB	103	95	92%	55	1,825	3,282	8,723	7,892	
Tanana River Upstream of Subdistrict 6C	SU	61	58	95%	26	0	0	200	0	
Kantishra River Subdistrict 6A	SK	5	5	100%	5	35	6	1,308	534	
Tolovana River Pike	ST	88	75	85%	40	0	0	6	0	
<i>Subsistence Permit Subtotals</i>		427	395	93%	230	7,484	4,900	38,657	11,833	
Personal Use										
Tanana River Subdistrict 6C	PC	112	109	97%	61	313	391	284	350	
Tanana River Whitefish	PW	5	5	100%	1	0	0	0	0	
<i>Personal Use Permit Subtotals</i>		117	114	97%	62	313	391	284	350	
Permit Totals		544 b	509	94%	292 c	7,797	5,291	38,941	12,183	

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 15. Yukon River drainage total utilization of salmon by district and country, 1997. a,b

District	Fishery	Chinook	Summer Chum	Fall Chum	Coho
1	Commercial	86,384	59,915	27,483	21,450
	Subsistence	7,550	27,248	3,132	1,823
	Test Fish Sales	2,791	2,557	867	498
	Total	76,725	89,720	31,482	23,771
2	Commercial	39,363	18,242	24,326	13,056
	Subsistence	9,350	26,971	4,680	2,424
	Test Fish Sales	20	33	0	0
	Total	48,733	45,246	29,006	15,480
3	Commercial	0	0	0	0
	Commercial Related c	0	0	0	0
	Subsistence	6,311	10,316	787	766
	Total	6,311	10,316	787	766
Total Lower Yukon	Commercial	105,747	78,157	51,809	34,506
	Commercial Related c	0	0	0	0
	Subsistence	23,211	64,535	8,599	5,013
	Test Fish Sales	2,811	2,590	867	498
Total	131,769	145,282	61,275	40,017	
4	Commercial	1,450	2,062	2,458	814
	Commercial Related c	7	122,608	0	0
	Subsistence	12,006	24,230	11,734	3,754
	Total	13,463	148,901	14,192	4,568
5	Commercial	3,678	137	2,446	0
	Commercial Related c	0	0	1,474	0
	Subsistence	18,049	4,520	55,258	3,583
	Total	21,727	4,657	59,178	3,583
6	Commercial	1,966	14,886	0	0
	Commercial Related c	762	10,401	0	0
	Subsistence	2,712	3,824	19,550	11,595
	Personal use	313	391	284	350
Total	5,753	29,502	19,834	11,945	
Total Upper Yukon	Commercial	7,094	17,085	4,904	814
	Commercial Related c	769	133,010	1,474	0
	Subsistence	32,767	32,574	86,542	18,932
	Personal use	313	391	284	350
Total	40,943	183,060	93,204	20,096	
Total Yukon Area (Alaska)	Commercial	112,841	95,242	56,713	35,320
	Commercial Related c	769	133,010	1,474	0
	Subsistence	55,978	97,109	95,141	23,945
	Personal use	313	391	284	350
	Sport Fish d	1,913	466	0	1,470
	Test Fish Sales	2,811	2,590	867	498
Total	174,625	328,808	154,479	61,583	
Total Canada	Commercial	5,311	0	8,068	2
	Aboriginal f	9,987	0	7,512	298
	Sport Fish	1,230	0	0	0
	Total	16,528	0	15,580	300
Grand Total	Commercial	118,152	95,242	64,781	35,322
	Commercial Related c	769	133,010	1,474	0
	Subsistence g	65,965	97,109	102,653	24,243
	Personal use	313	391	284	350
	Sport Fish	3,143	466	0	1,470
	Test Fish Sales	2,811	2,590	867	498
Total	191,153	328,808	170,059	61,883	

a Commercial harvest includes only fish sold in the round.

b Does not include 1,139 chinook, 15,711 summer chum salmon harvested in Hooper and Scammon Bay for subsistence use. No fall chum or coho salmon were harvested for subsistence use.

c Commercial related is the estimated harvest of females to produce roe sales; the estimated harvest of male summer chum salmon not sold is also included in Districts 3 and 4.

d Estimated sport fish harvest for Alaskan portion of Yukon River drainage. A majority of harvest occurs in Tanana River drainage. Assume majority of chums caught during summer season.

f Combined Aboriginal and domestic fisheries; includes Porcupine River Aboriginal fishery harvest.

g Includes Canadian Aboriginal and domestic fisheries; includes Porcupine River Aboriginal fishery harvest.

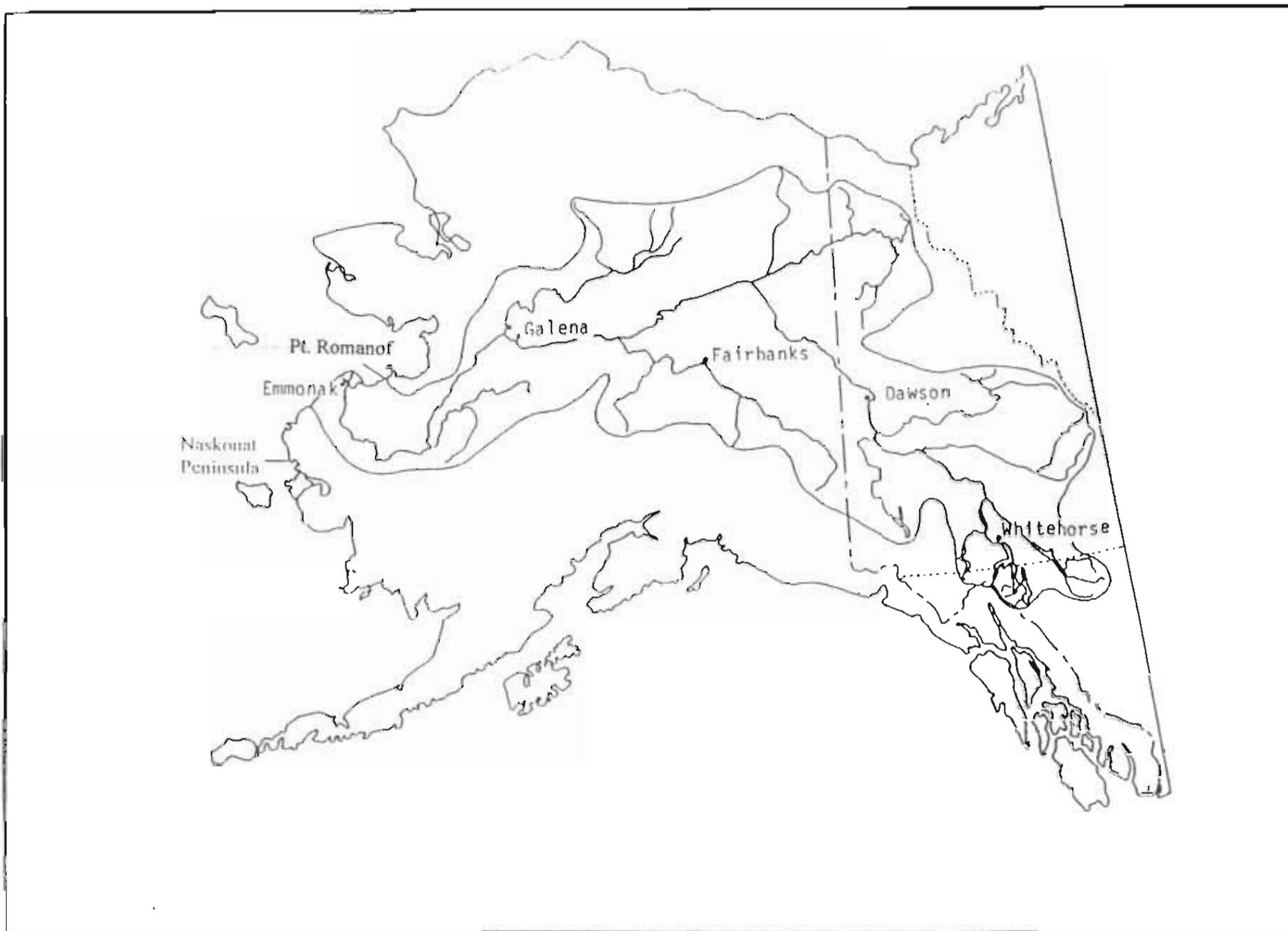
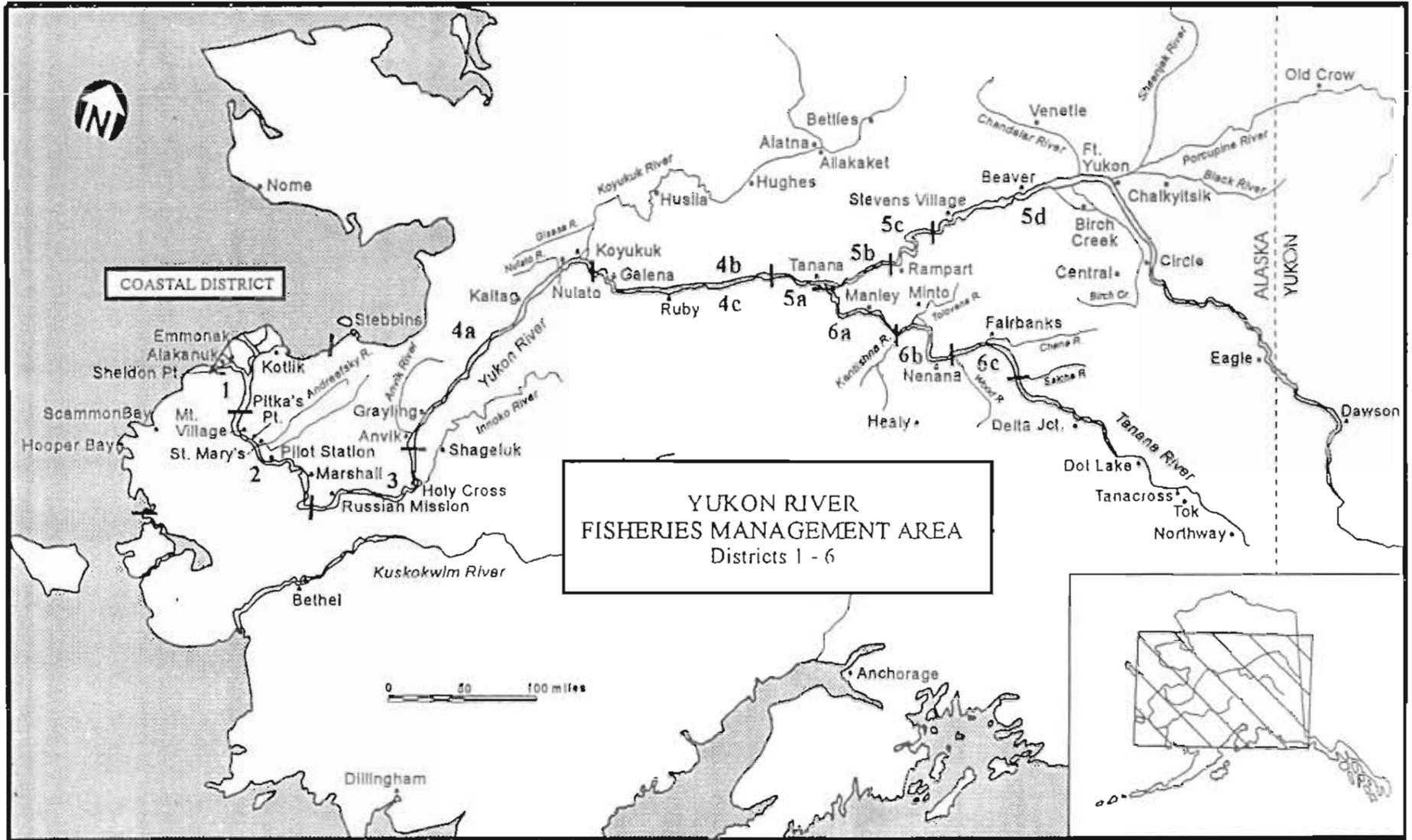


Figure 1. The Yukon River drainage, 330,000 square miles.



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Figure 2. Map of the Alaskan portion of the Yukon River drainage showing communities and fishing districts.

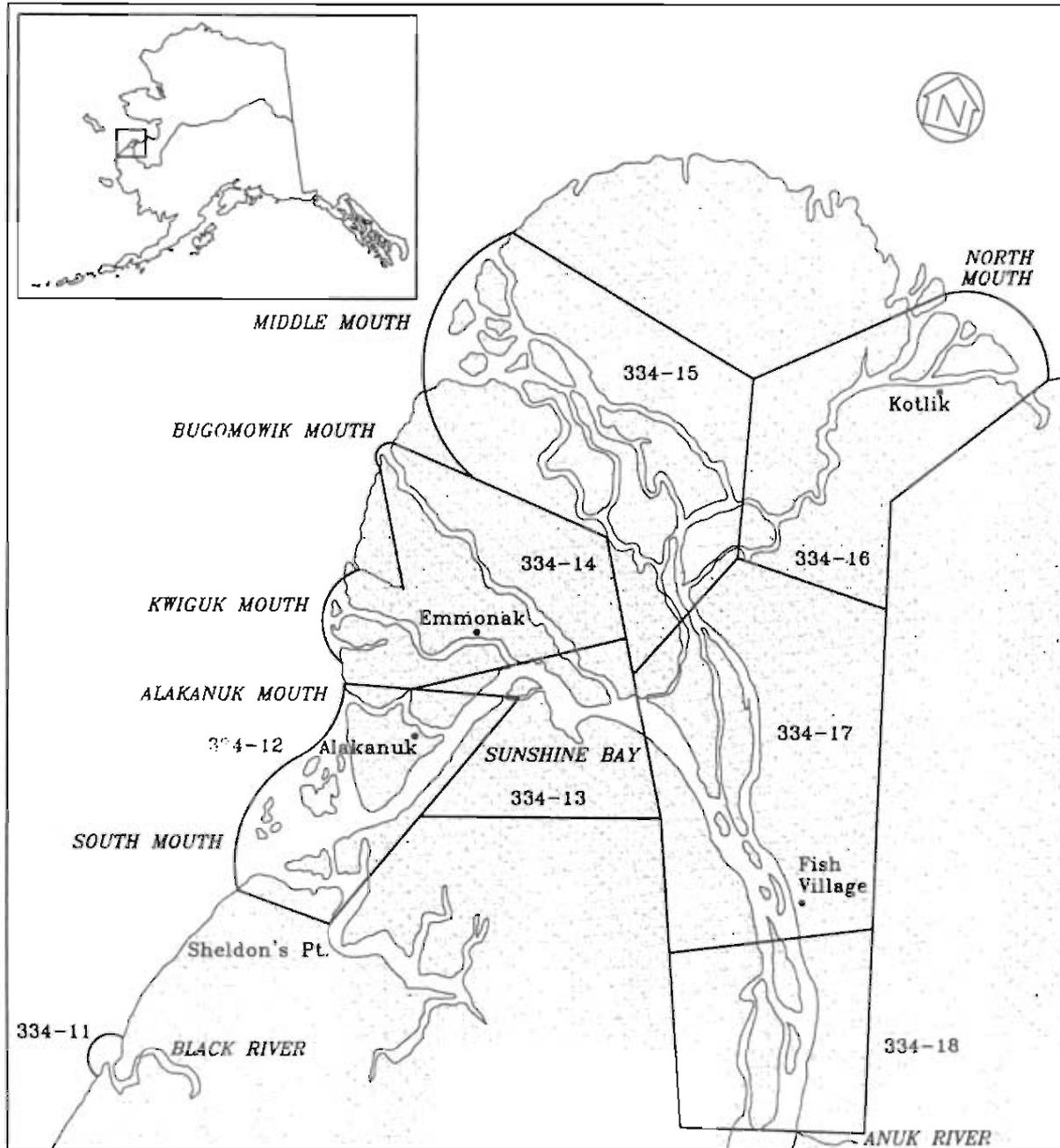


Figure 3. District 1 of Yukon management area with statistical areas.

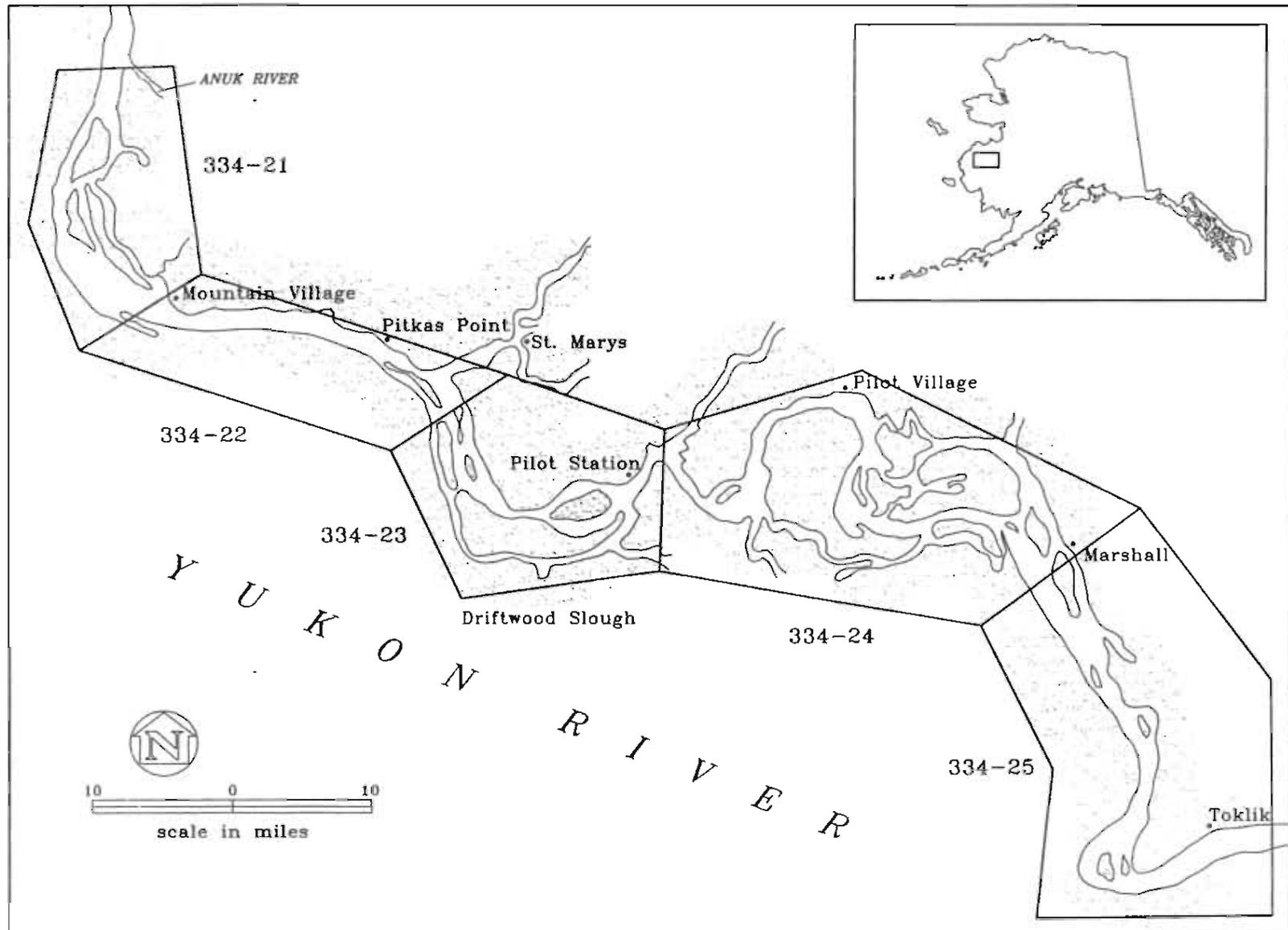


Figure 4. District 2 of Yukon management area with statistical areas.

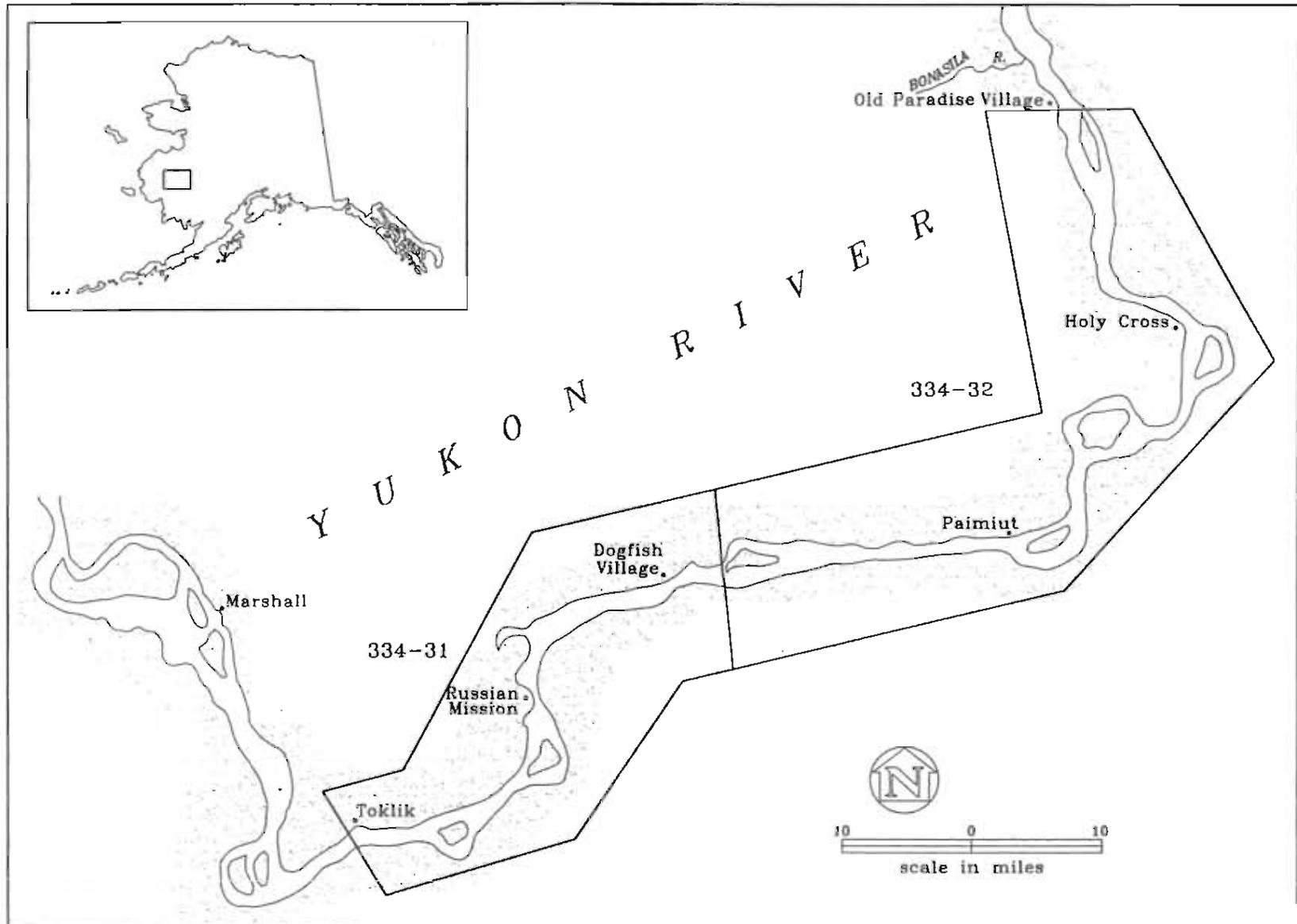


Figure 5. District 3 of Yukon management area with statistical areas.

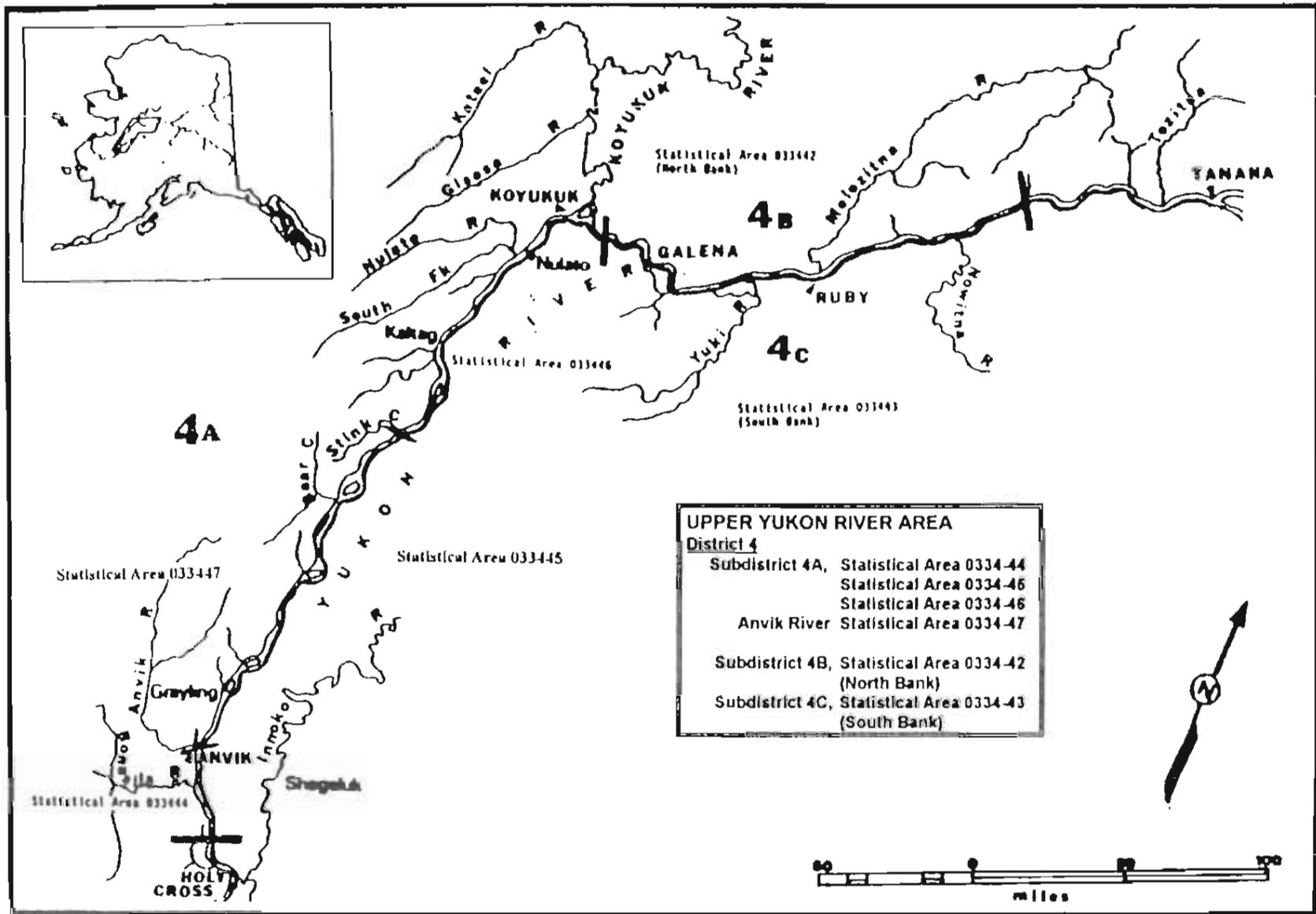


Figure 6. District 4 of Yukon Management area with statistical areas.

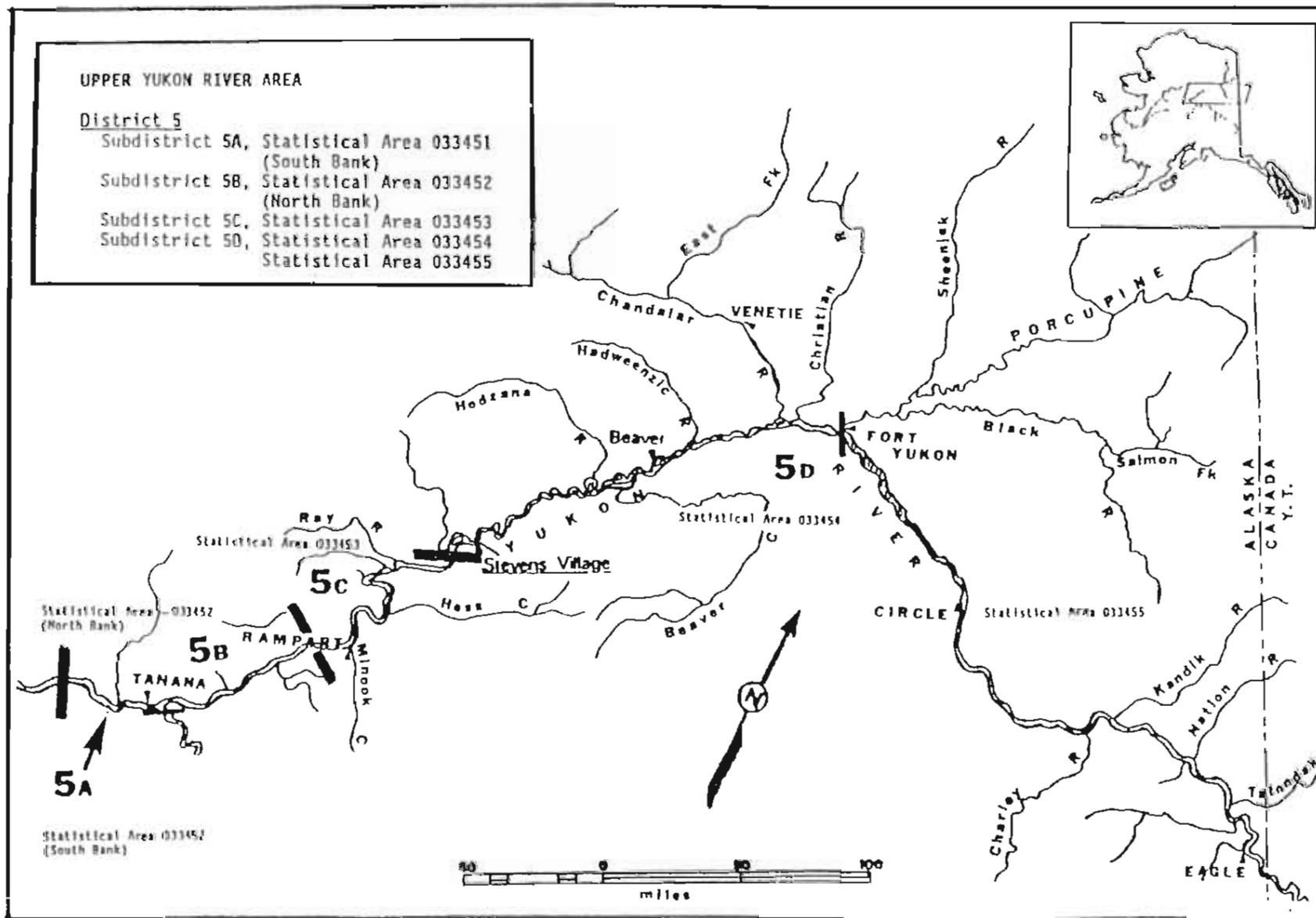


Figure 7. District 5 of Yukon management area with statistical areas.

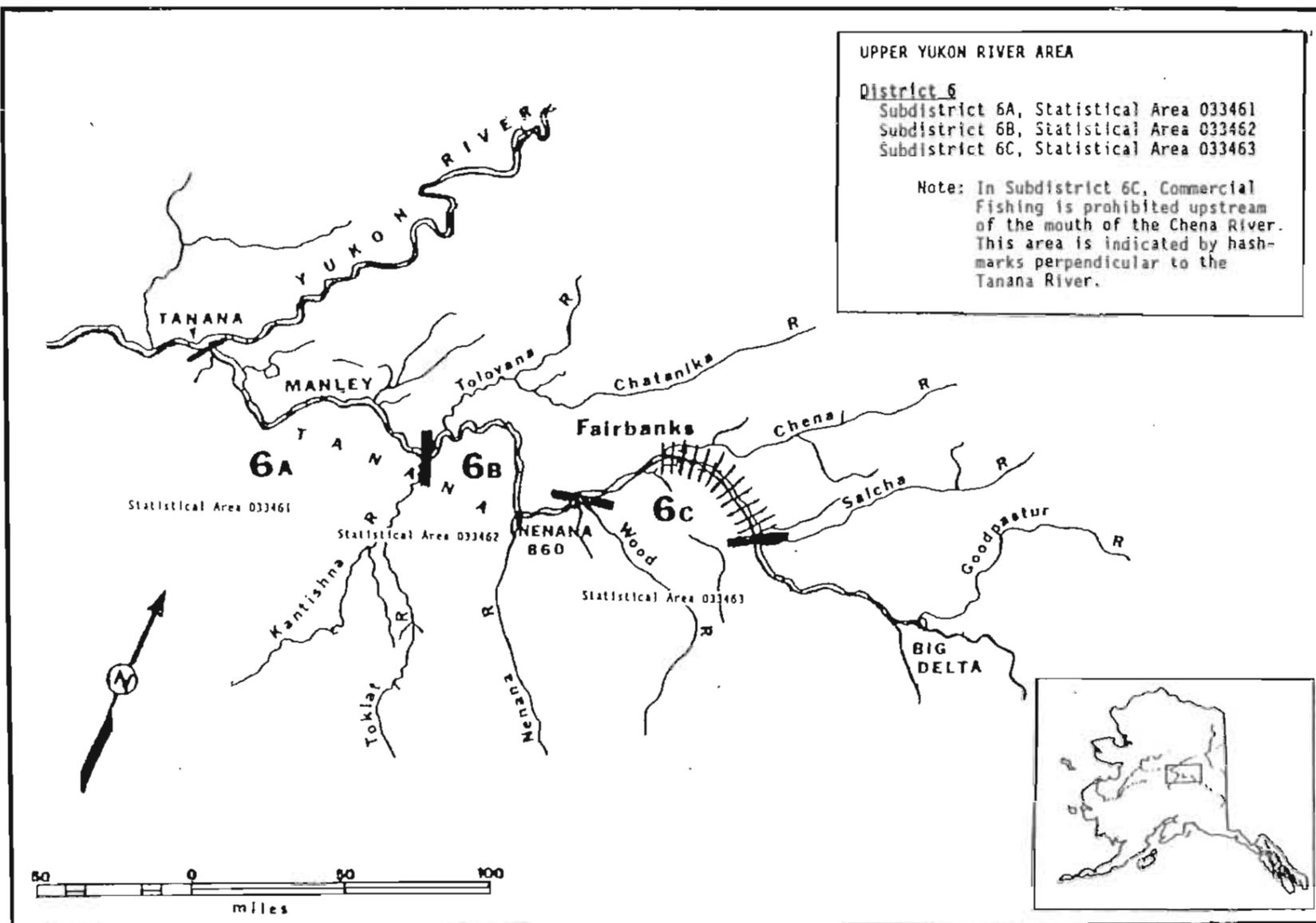


Figure 8. District 6 of Yukon management area with statistical areas.

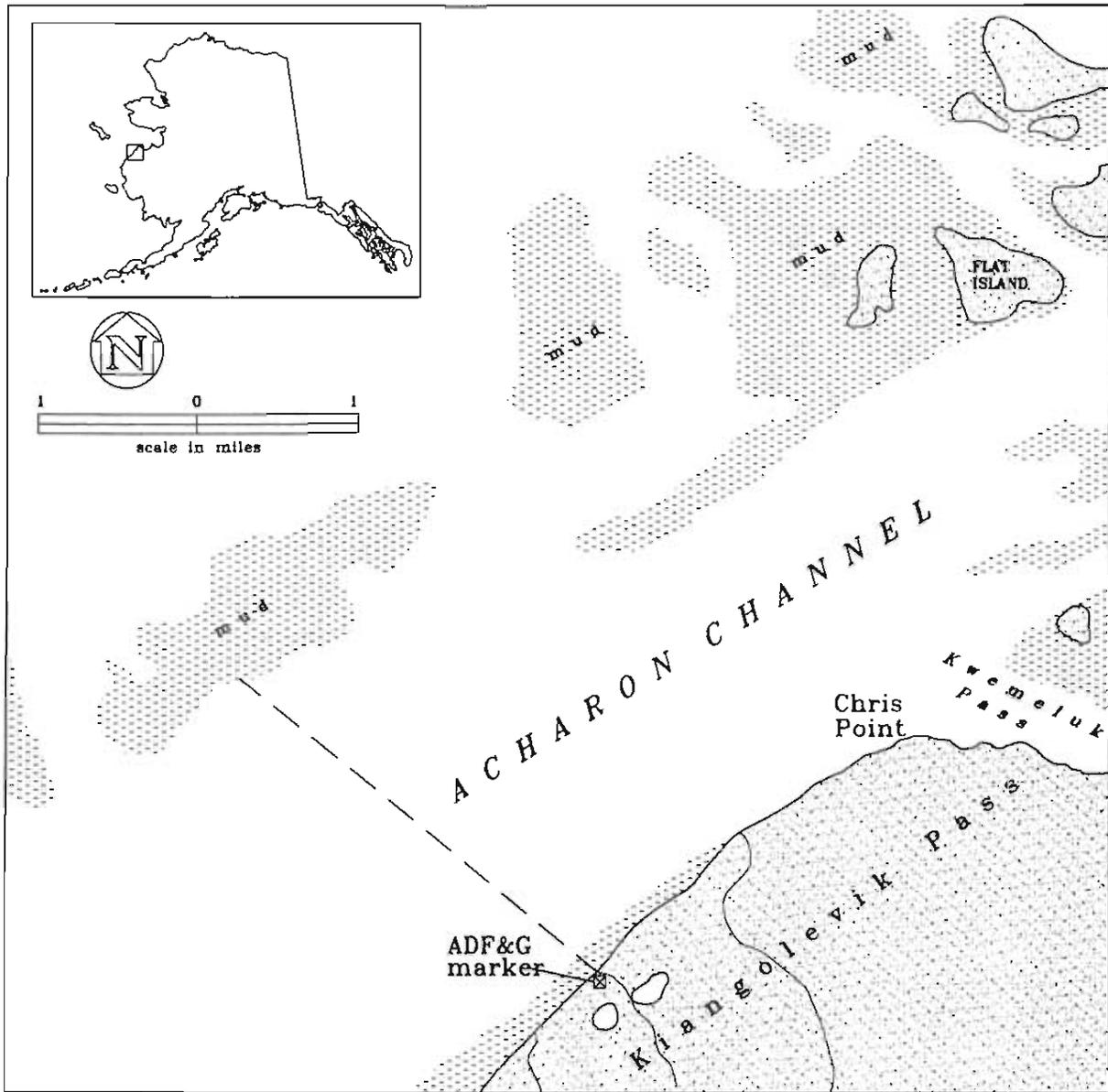


Figure 9. Closed waters of Acharon Channel, west of a 2-1/2 nautical mile long line bearing 285° from an ADF&G regulatory marker located on river bank at terminus of rivulet between two lakes approximately 2-1/2 miles below Chris Point to the opposite side of the channel; the line may be marked by a series of yellow and green barrels placed by the Department between shore markers, south mouth Yukon River.

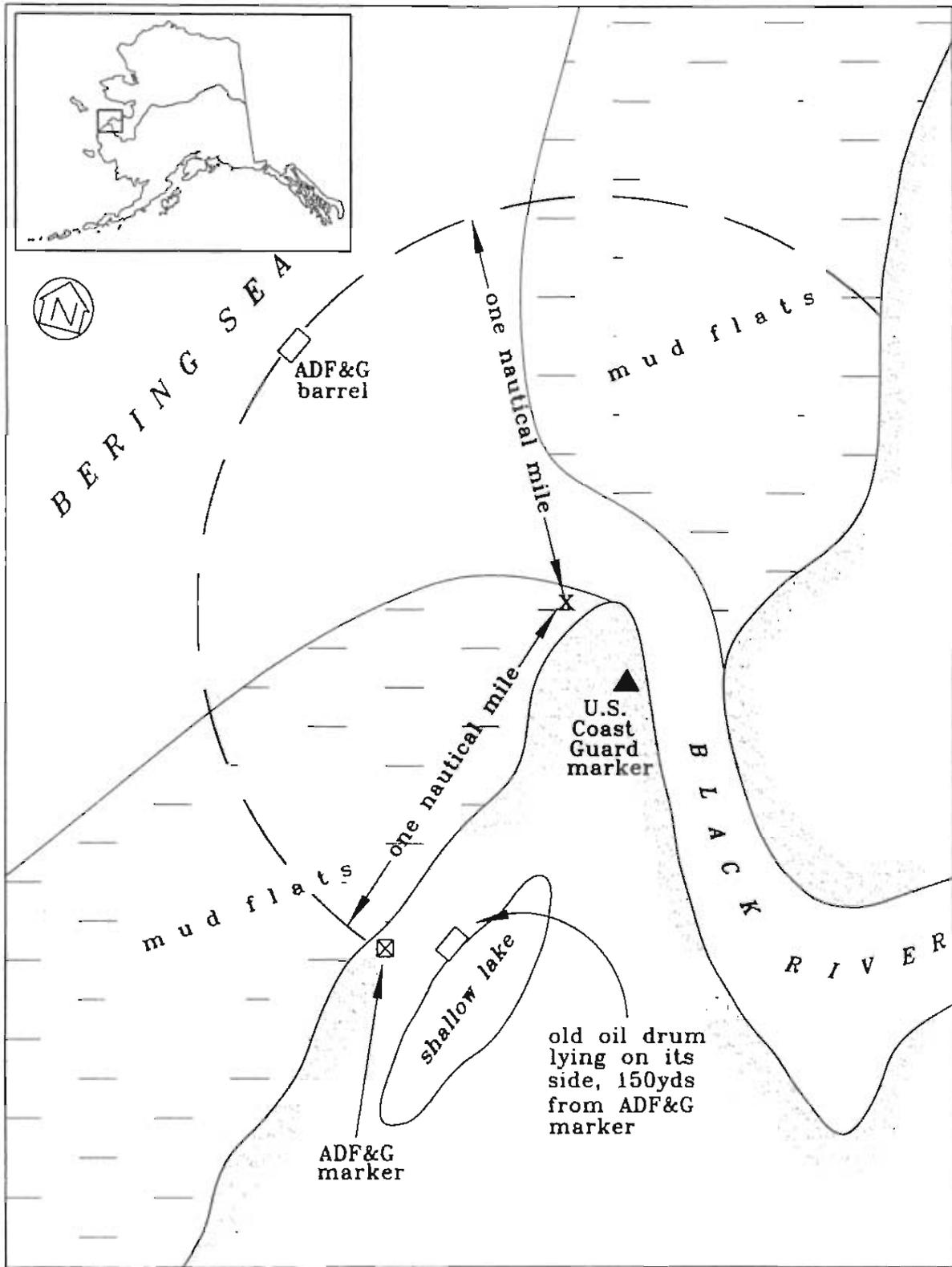


Figure 10. Closed waters west of a one nautical mile radius from the mouth of Black River, Yukon Area.

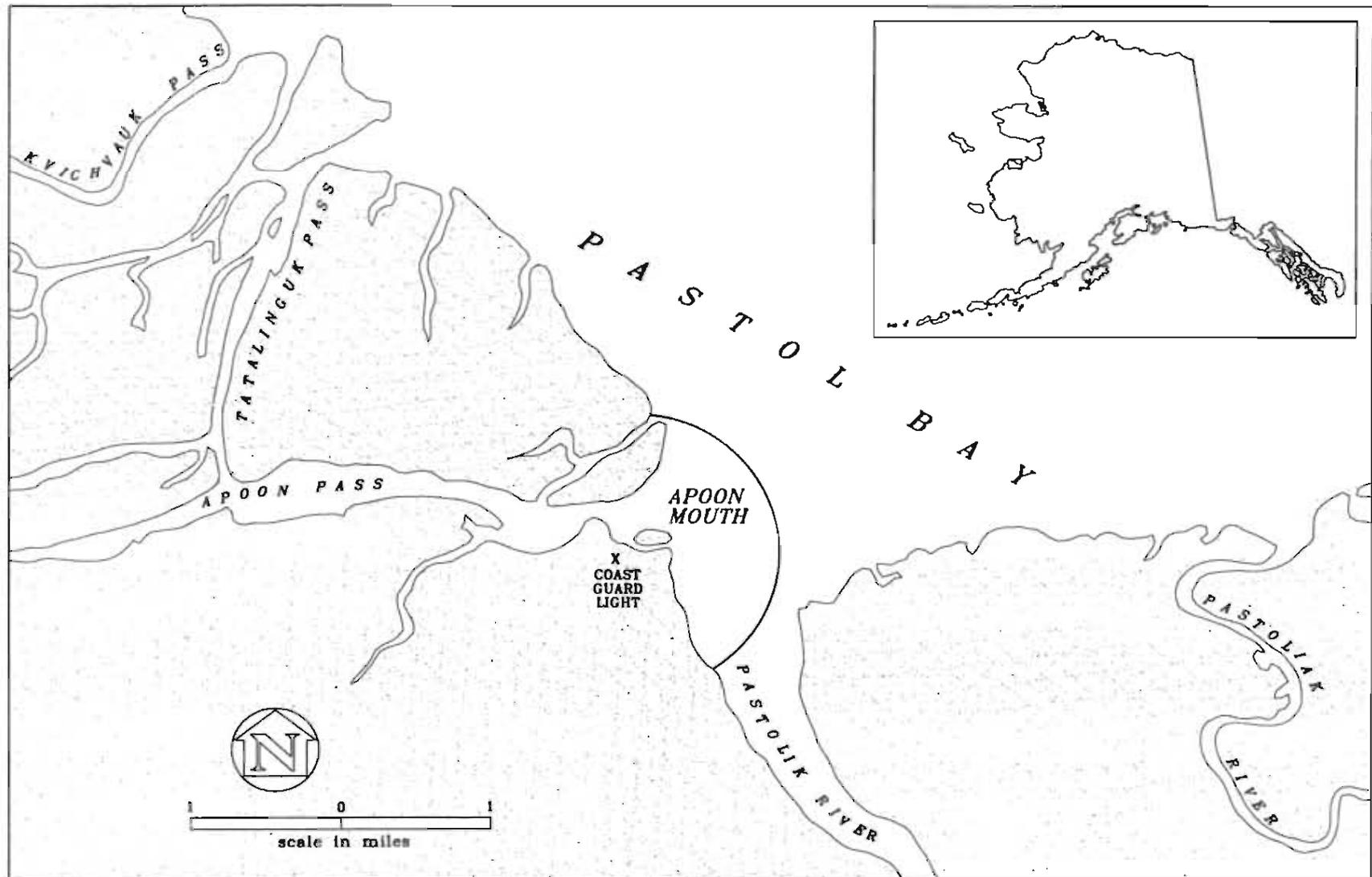


Figure 11. Closed waters east of a one nautical mile radius from a U.S. Coast Guard light at the mouth of Apoon Pass, Yukon River.

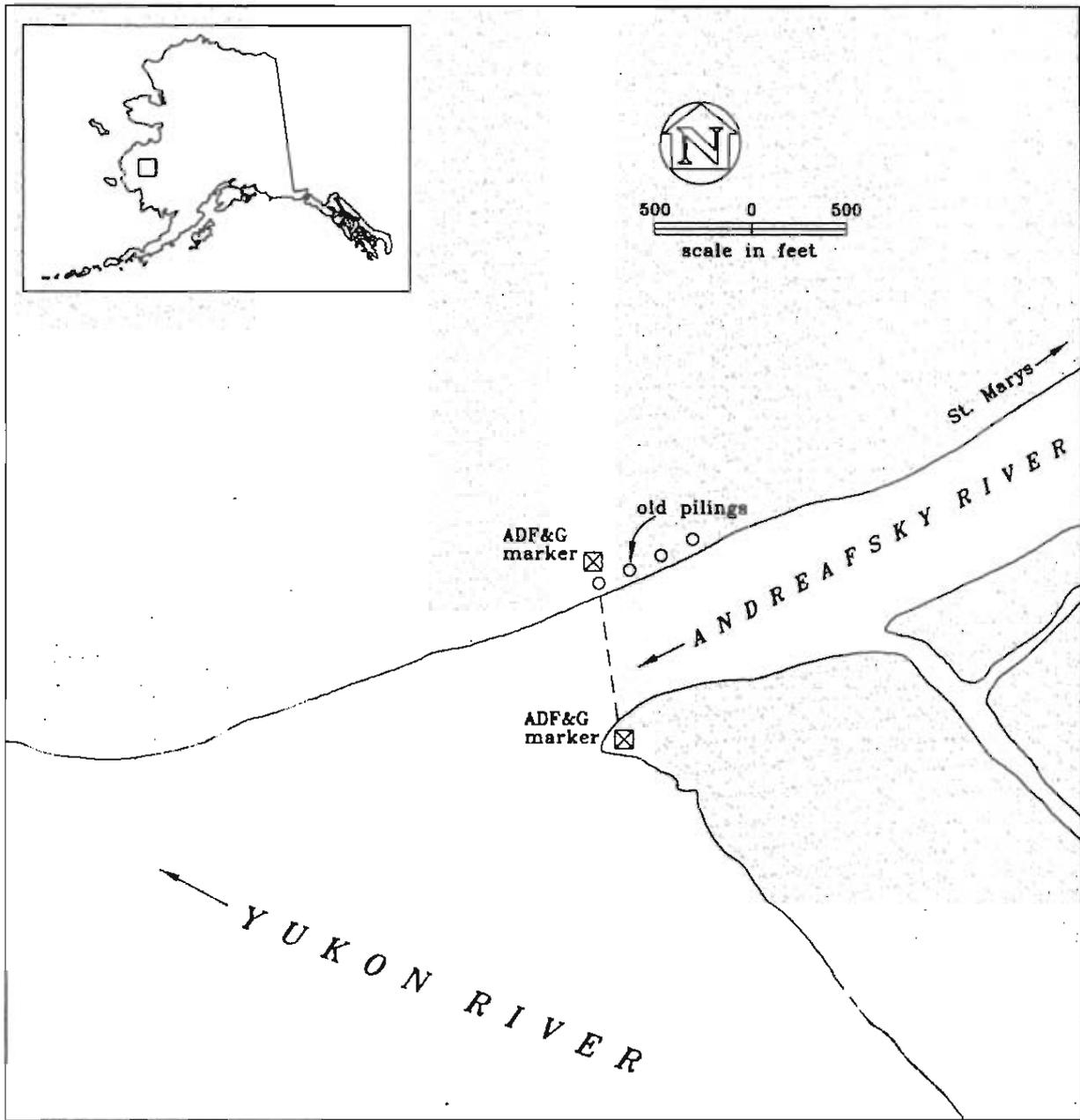


Figure 12. Closed waters of the Andraefsky River upstream of a line from Department regulatory markers placed on each side of the river at its mouth. Yukon River.

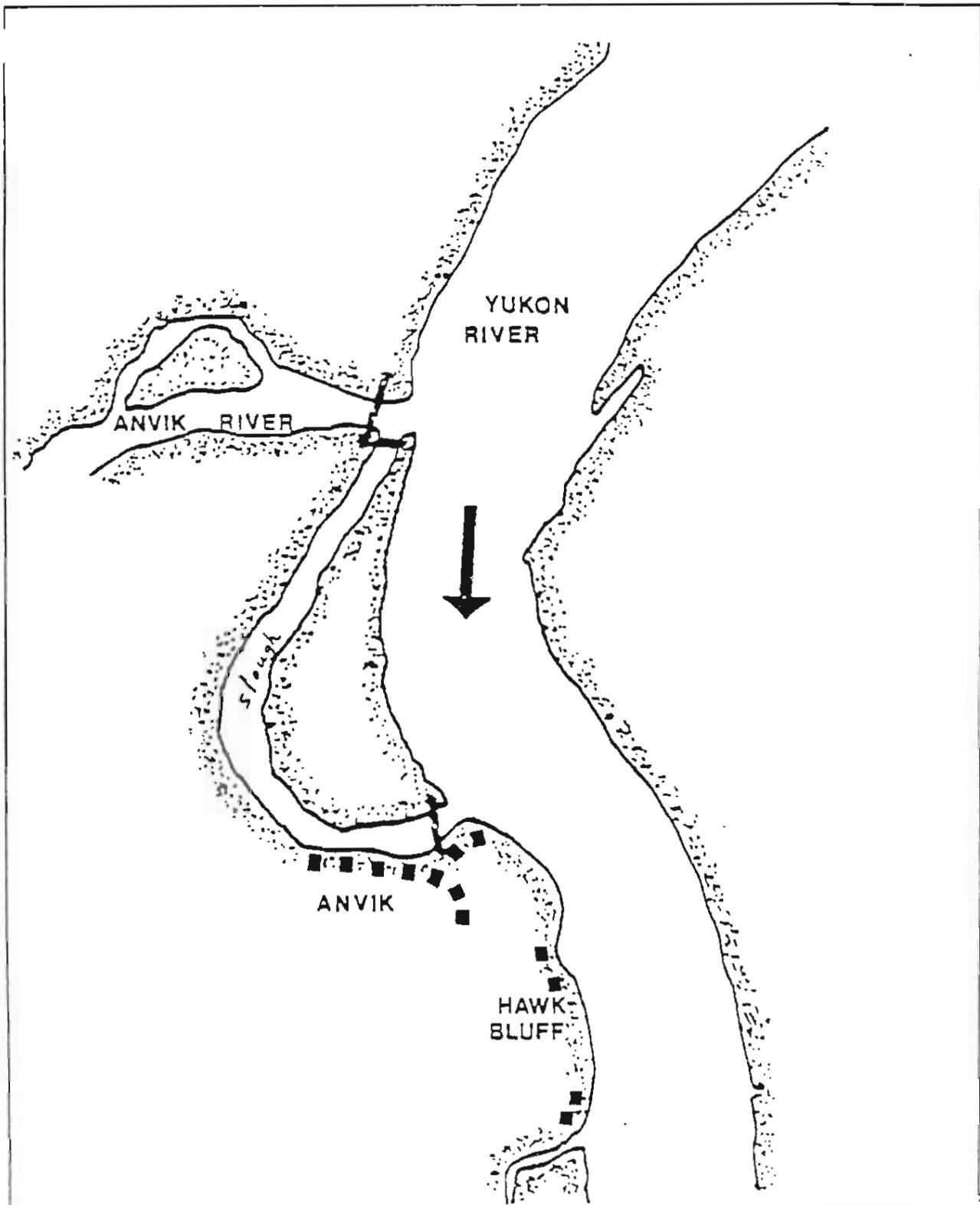


Figure 13. Closed waters of Anvik River mouth. (5AAC 05.350. (CLOSED WATERS (8) waters of the Anvik River upstream of a line between department regulatory markers placed on each side of the river at its mouth). Markers (6) placed north and south banks of the Anvik River mouth and at upstream and downstream mouths of slough (Old Anvik River Channel).

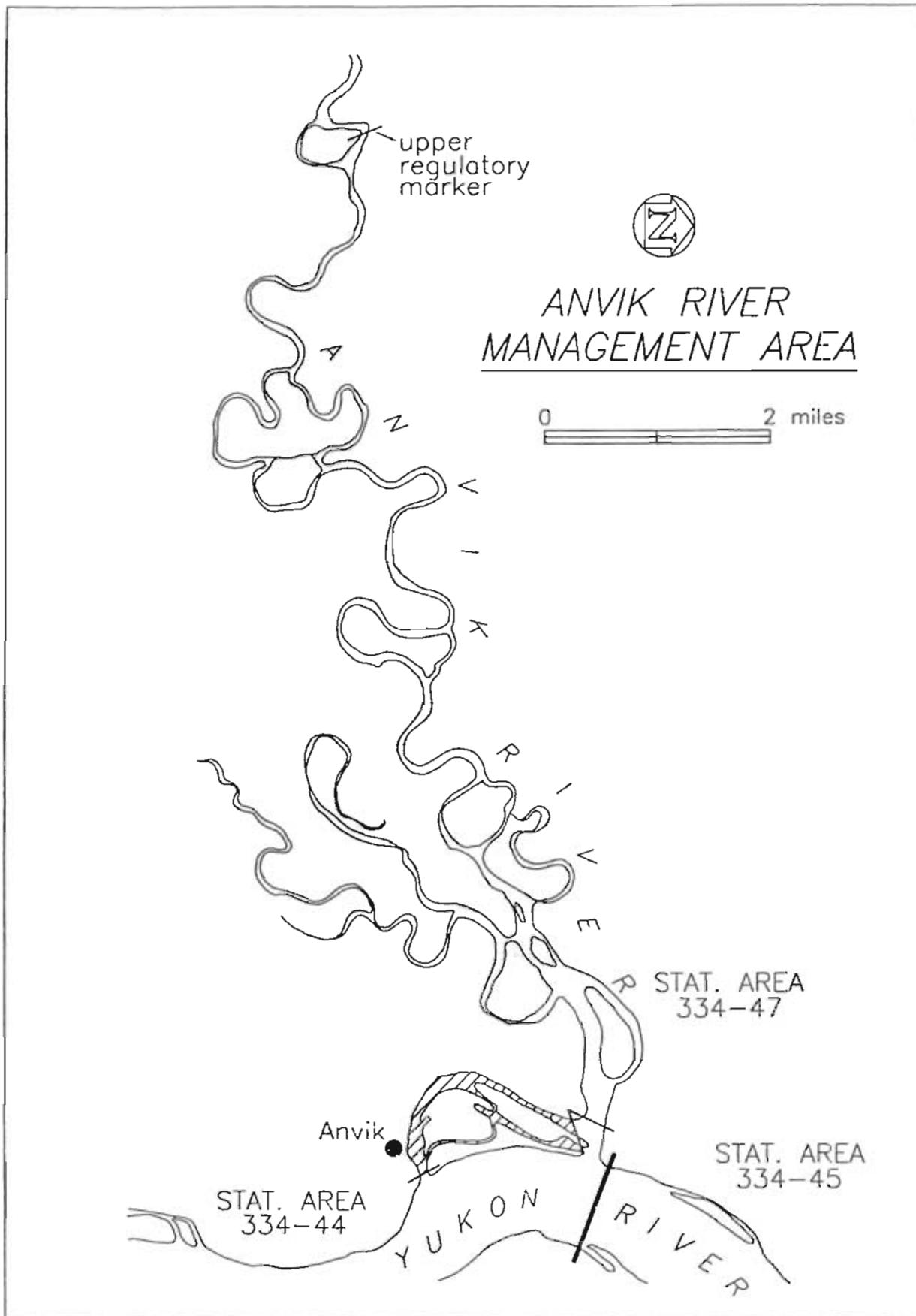


Figure 19. Anvik River Management Area.

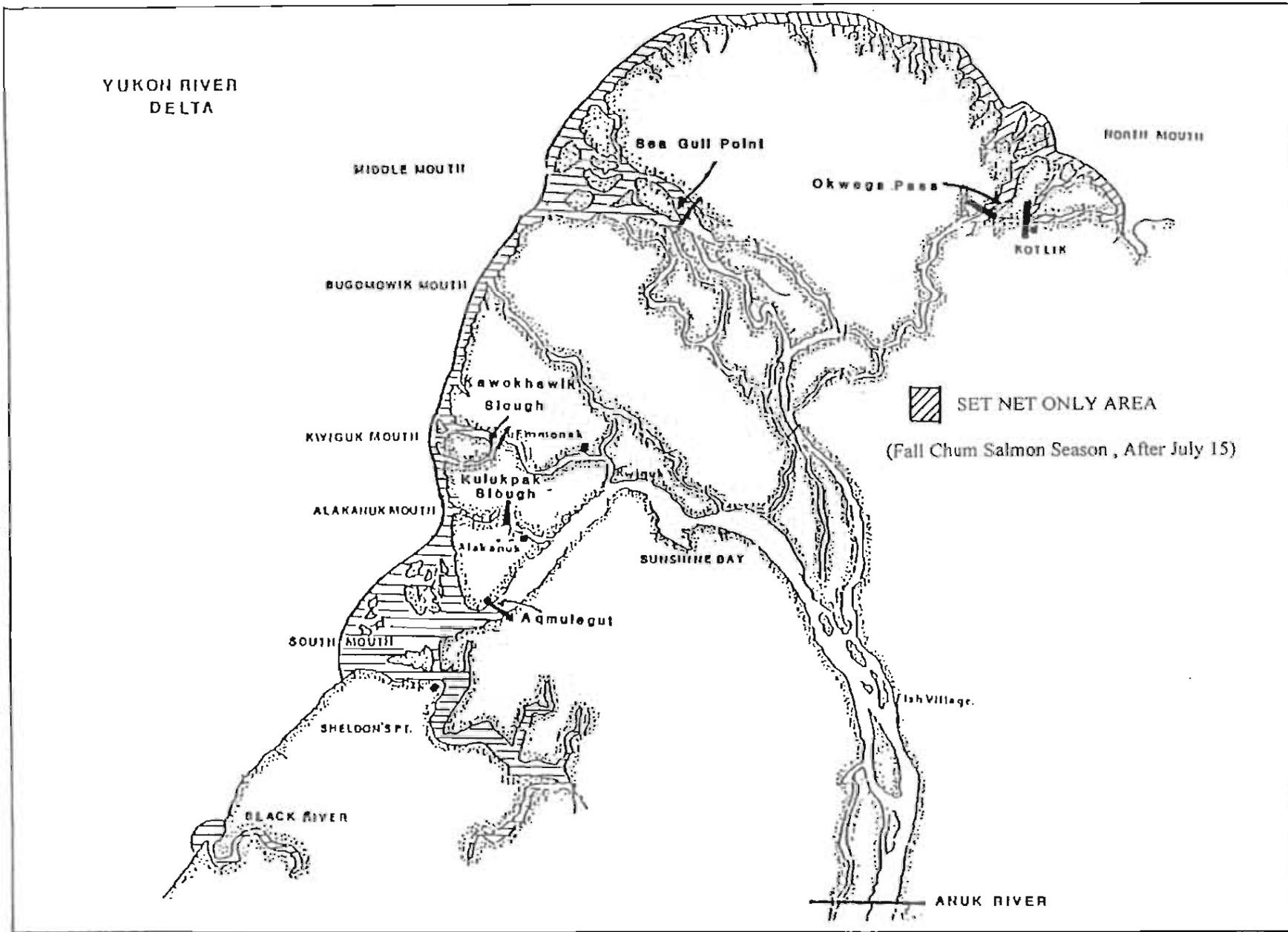


Figure 20. Set Net Only area of District 1, lower Yukon area.

APPENDIX A

YUKON RIVER DRAINAGE WIDE SALMON

Appendix A.1. List of indigenous fishes found in the Yukon Area.^a

Species Code ^b	Scientific Name	Common Name
601	<i>Lampetra japonica</i>	Arctic Lamprey
570	<i>Stenodus leucichthys</i>	Inconnu(Sheefish)
588	<i>Coregonus nasus</i>	Broad Whitefish
589	<i>Coregonus pidschian</i>	Humpback Whitefish
583	<i>Coregonus sardinella</i>	Least Cisco
585	<i>Coregonus laurettae</i>	Bering Cisco
586	<i>Prosopium cylindraceum</i>	Round Whitefish
587	<i>Prosopium coulteri</i>	Pygmy Whitefish
610	<i>Thymallus arcticus</i>	Arctic Grayling
550	<i>Salvelinus namaycush</i>	Lake Trout
520	<i>Salvelinus alpinus</i>	Arctic Char
530	<i>Salvelinus malma</i>	Dolly Varden
410	<i>Oncorhynchus tshawytscha</i>	Chinook Salmon
420	<i>Oncorhynchus nerka</i>	Sockeye Salmon
430	<i>Oncorhynchus kisutch</i>	Coho Salmon
440	<i>Oncorhynchus gorbusha</i>	Pink Salmon
450	<i>Oncorhynchus keta</i>	Chum Salmon
513	<i>Osmerus mordax</i>	Rainbow Smelt
514	<i>Hypomesus olidus</i>	Pond Smelt
500	<i>Esox lucius</i>	Northern Pike
630	<i>Dallia pectoralis</i>	Alaska Blackfish
650	<i>Couesius plumbeus</i>	Lake Chub
640	<i>Catostomus catostomus</i>	Longnose Sucker
670	<i>Percopsis omiscomaycus</i>	Trout Perch
590	<i>Lota lota</i>	Burbot(lush)
661	<i>Pungitius pungitius</i>	Ninespine Stickleback
162	<i>Cottus cognatus</i>	Slimy Sculpin
ESTUARINE		
113	<i>Eleginus gracilis</i>	Saffron Cod
122	<i>Liopsetta glacialis</i>	Arctic Flounder
127	<i>Limanda aspera</i>	Yellowfin Sole
129	<i>Platichthys stellatus</i>	Starry Flounder
192	<i>Hexagrammos stelleri</i>	Whitespotted Greenling
230	<i>Clupea harengus pallas</i>	Pacific Herring
516	<i>Mallotus villosus</i>	Capelin
NA	<i>Megalocottus platycephalus</i>	Sculpin

^a Includes fishes found in the Yukon River drainage in Canada.

^b The species code is a three-digit number that identifies the type of fish caught on harvest fish tickets.

Appendix A.2. (continuation page 2 of 2)

<u>Location</u>	<u>Mileage from Mouth</u>	<u>Location</u>	<u>Mileage from Mouth</u>
Mouth, Wood River	894	Mouth, Seventymile River	1,194
Rosie Creek Bluffs	912	Eagle	1,213
Mouth, Chena R.(Fairbanks)	920		
Mouth, Salcha River	965	<u>U.S.-Canadian border</u>	<u>1,224</u>
Benchmark #735 Slough	991	Mouth, Fortymile River	1,269
Mouth, Little Delta R.	1,000	Dawson	1,319
Mouth, Delta Creek	1,014	Mouth, Klondike River	1,320
Mouth, Clear Creek	1,015	Mouth, Sixty Mile River	1,369
(Richardson-Clearwater)		Mouth, Stewart River	1,375
Mouth, Shaw Creek	1,021	McQuesten	1,455
Mouth, Delta River	1,031	Stewart Crossing	1,491
(Big Delta)		Mayo	1,520
Delta Junction	1,041	Mouth, Hess River	1,594
Mouth, Goodpaster River	1,049	Mouth, White River	1,386
Bluff Cabin Slough	1,050	Mouth, Donjek River	1,455
Outlet, Clearwater Lake	1,052	Mouth Kluane River	1,541
Outlet, Clearwater Crk	1,053	Outlet Kluane L.	1,587
(Delta Clearwater)		Burwash Landing	1,595
Mouth, Gerstle River	1,059	Kluane	1,625
Outlet, Healy Lake	1,071	Fort Selkirk	1,477
Outlet, Lake George	1,086	Mouth, Pelly River	1,478
Tanacross	1,128	Pelly Crossing	1,410
Outlet, Tellin Lake	1,188	Mouth, MacMillan River	1,442
Mouth, Nabesna River	1,210	Ross River	1,602
Northway Junction	1,214	Minto	1,499
Mouth, Chisana River	1,215	Mouth Tatchun Creek	1,530
Mouth, Sheep Creek	1,297	Carmacks	1,547
Rampart Rapids	731	Mouth, Little Salmon River	1,583
Rampart	763	Mouth, Big Salmon River	1,621
Mouth, Hess Creek	789	Mouth, N. Big Salmon R.	1,641
Mouth, Ray River	817	Mouth, S. Big Salmon R.	1,657
Highway Bridge -	820	Outlet, Big Salmon Lake	1,714
Pipeline Crossing		Mouth, Teslin River	1,654
Mouth, Dall River	841	Roaring Bull Rapids	1,707
Stevens Village	847	Johnson's Crossing	
Mouth, Hodzana River	897	(Outlet, Teslin L.)	1,756
Beaver	932	Teslin	1,780
Mouth Hadweenzic River	952	Mouth Nisutlin River	1,788
Mouth, Chandalar River		Mouth, Sidney Creek	1,837
(Venetie Landing)	982	Mouth, Hundred Mi. Creek	1,851
Venetie	1,025	Mouth, McNeil River	1,867
Fort Yukon	1,002	Outlet, Nisutlin Lake	1,892
Mouth, Porcupine River	1,002	Outlet, Lake Laberge	1,679
Mouth, Black River	1,026	Inlet, Lake Laberge	1,712
Chalkyitsik	1,084	Mouth, Takhini River	1,718
Mouth, Salmon Fork R.	1,142	Whitehorse	1,745
Mouth, Sheenjek River	1,054	Outlet, Marsh Lake	1,764
Mouth, Coleen River	1,157	Mouth, M'Clintock River	1,769
Mouth, Salmon Trout R.	1,193	Outlet, Little Atlin L.	1,788
U.S. - Canadian Border	1,219	Outlet, Atlin Lake	1,812
Old Crow	1,259	Atlin	1,844
Fishing Branch R.	1,600	Tagish	1,786
spawning area		Outlet, Tagish Lake	1,788
Circle	1,061	Carcross	1,810
Woodchopper	1,110	(Outlet L. Bennett)	
Mouth, Charley River	1,124	Bennett	1,835
Mouth, Kandik River	1,135		
Mouth, Nation River	1,166		
Mouth, Tatonduk River	1,186		

Appendix A.3. Alaskan and Canadian total utilization of Yukon River drainage salmon, 1903-1997.

Year	Alaska ^{a, b}			Canada ^c			Total		
	Chinook	Other Salmon	Total	Chinook	Other Salmon	Total	Chinook	Other Salmon	Total
1903						4,666			4,666
1904									
1905									
1906									
1907									
1908						7,000			7,000
1909						9,238			9,238
1910									
1911									
1912									
1913						12,133			12,133
1914						12,573			12,573
1915						10,466			10,466
1916						9,566			9,566
1917									
1918	12,239	1,500,065	1,512,304			7,066	12,239	1,500,065	1,519,370
1919	104,822	738,790	843,612			1,800	104,822	738,790	845,412
1920	78,467	1,015,655	1,094,122			12,000	78,467	1,015,655	1,106,122
1921	69,646	112,098	181,744			10,840	69,646	112,098	192,584
1922	31,825	330,000	361,825			2,420	31,825	330,000	364,245
1923	30,893	435,000	465,893			1,833	30,893	435,000	467,726
1924	27,375	1,130,000	1,157,375			4,560	27,375	1,130,000	1,161,935
1925	15,000	259,000	274,000			3,900	15,000	259,000	277,900
1926	20,500	555,000	575,500			4,373	20,500	555,000	579,873
1927		520,000	520,000			5,366		520,000	525,366
1928		670,000	670,000			5,733		670,000	675,733
1929		537,000	537,000			5,226		537,000	542,226
1930		633,000	633,000			3,660		633,000	636,660
1931	26,693	565,000	591,693			3,473	26,693	565,000	595,166
1932	27,899	1,092,000	1,119,899			4,200	27,899	1,092,000	1,124,099
1933	28,779	603,000	631,779			3,333	28,779	603,000	635,112
1934	23,365	474,000	497,365			2,000	23,365	474,000	499,365
1935	27,665	537,000	564,665			3,466	27,665	537,000	568,131
1936	43,713	560,000	603,713			3,400	43,713	560,000	607,113
1937	12,154	346,000	358,154			3,746	12,154	346,000	361,900
1938	32,971	340,450	373,421			860	32,971	340,450	374,281
1939	28,037	327,650	355,687			720	28,037	327,650	356,407
1940	32,453	1,029,000	1,061,453			1,153	32,453	1,029,000	1,062,606
1941	47,608	438,000	485,608			2,806	47,608	438,000	488,414
1942	22,487	197,000	219,487			713	22,487	197,000	220,200
1943	27,650	200,000	227,650			609	27,650	200,000	228,259
1944	14,232		14,232			986	14,232		15,218
1945	19,727		19,727			1,333	19,727		21,060
1946	22,782		22,782			353	22,782		23,135
1947	54,026		54,026			120	54,026		54,146
1948	33,842		33,842				33,842		33,842
1949	36,379		36,379				36,379		36,379
1950	41,808		41,808				41,808		41,808
1951	56,278		56,278				56,278		56,278
1952	38,637	10,868	49,505				38,637	10,868	49,505
1953	58,859	385,977	444,836				58,859	385,977	444,836
1954	64,545	14,375	78,920				64,545	14,375	78,920
1955	55,925		55,925				55,925		55,925
1956	62,208	10,743	72,951				62,208	10,743	72,951
1957	63,623		63,623				63,623		63,623
1958	75,625	337,500	413,125	11,000	1,500	12,500	86,625	339,000	425,625
1959	78,370		78,370	8,434	3,098	11,532	86,804	3,098	89,902
1960	67,597		67,597	9,653	15,608	25,261	77,250	15,608	92,858

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Year	Alaska ^{a, b}			Canada ^c			Total		
	Chinook	Other Salmon	Total	Chinook	Other Salmon	Total	Chinook	Other Salmon	Total
1961	141,152	461,597	602,749	13,246	9,076	22,322	154,398	470,673	625,071
1962	105,844	434,663	540,507	13,937	9,436	23,373	119,781	444,099	563,880
1963	141,910	429,396	571,306	10,077	27,696	37,773	151,987	457,092	609,079
1964	109,818	504,420	614,238	7,408	12,187	19,595	117,226	516,607	633,833
1965	134,706	484,587	619,293	5,380	11,789	17,169	140,086	496,376	636,462
1966	104,887	309,502	414,389	4,452	13,192	17,644	109,339	322,694	432,033
1967	146,104	352,397	498,501	5,150	16,961	22,111	151,254	369,358	520,612
1968	118,632	270,818	389,450	5,042	11,633	16,675	123,674	282,451	406,125
1969	105,027	424,399	529,426	2,624	7,776	10,400	107,651	432,175	539,826
1970	93,019	585,760	678,779	4,663	3,711	8,374	97,682	589,471	687,153
1971	136,191	547,448	683,639	6,447	16,911	23,358	142,638	564,359	706,997
1972	113,098	461,617	574,715	5,729	7,532	13,261	118,827	469,149	587,976
1973	99,670	779,158	878,828	4,522	10,135	14,657	104,192	789,293	893,485
1974	118,053	1,229,678	1,347,731	5,631	11,646	17,277	123,684	1,241,324	1,365,008
1975	76,883	1,307,037	1,383,920	6,000	20,600	26,600	82,883	1,327,637	1,410,520
1976	105,582	1,026,908	1,132,490	5,025	5,200	10,225	110,607	1,032,108	1,142,715
1977	114,338	1,090,330	1,204,668	7,527	12,479	20,006	121,865	1,102,809	1,224,674
1978	129,465	1,631,479	1,760,944	5,881	9,566	15,447	135,346	1,641,045	1,776,391
1979	159,232	1,631,072	1,790,304	10,375	22,084	32,459	169,607	1,653,156	1,822,763
1980	197,665	1,730,893	1,928,558	22,846	23,718 ^d	46,564	220,511	1,754,611	1,975,122
1981	188,477	2,097,826	2,286,303	18,109	22,781 ^d	40,890	206,586	2,120,607	2,327,193
1982	152,808	1,265,360	1,418,168	17,208	16,091 ^d	33,299	170,016	1,281,451	1,451,467
1983	198,436	1,678,380	1,876,816	16,952	29,490 ^d	46,442	217,388	1,707,870	1,925,258
1984	162,683	1,547,270	1,709,953	16,795	29,767 ^d	46,562	179,478	1,577,037	1,756,515
1985	187,327	1,657,176	1,844,503	19,301	41,515 ^d	60,816	206,628	1,698,691	1,905,319
1986	146,004	1,757,290	1,903,294	20,364	14,843 ^d	35,207	166,368	1,772,133	1,938,501
1987	188,386	1,244,884	1,433,270	17,614	44,786 ^d	62,400	206,000	1,289,670	1,496,070
1988	148,979	2,313,931	2,462,910	21,427	33,915 ^d	55,342	170,406	2,347,846	2,518,252
1989	157,824	2,272,375	2,430,199	17,944	23,490 ^d	41,434	175,768	2,295,865	2,471,633
1990	150,351	1,047,979	1,198,330	19,238	34,302 ^d	53,540	167,114	1,059,943	1,251,870
1991	153,499	1,321,534	1,475,033	20,607	35,653 ^d	56,260	174,106	1,357,167	1,531,293
1992	169,641	878,869	1,048,510	17,893	21,310 ^d	39,203	167,534	900,179	1,087,713
1993	163,078	342,197	505,275	16,611	14,150 ^d	30,761	179,689	356,347	536,036
1994	172,315	577,233	749,548	21,218	38,342 ^d	59,560	193,533	615,575	809,108
1995	177,663	1,437,837	1,615,500	20,887	46,109 ^d	66,996	198,550	1,483,946	1,682,496
1996	138,562	1,121,181	1,259,743	19,672	24,395 ^d	44,067	158,234	1,145,576	1,303,610
1997	174,625	544,870	719,495	16,528	15,860 ^d	32,408	191,153	560,750	751,903

^a Catch in number of salmon. Includes estimated number of salmon harvested for the commercial production of roe.

^b Commercial and subsistence harvest, and ADF&G test fishery sales combined in numbers of fish, including "equivalent fish". (typically 1 lb of roe per female) converted from roe sales. See ADF&G 1995 Yukon Area Annual

Management Report for data sources and methods of catch estimation used for some years.

^c Commercial, Aboriginal Fishery, Domestic, and sport catches combined.

^d Includes the Old Crow Aboriginal fishery harvest of coho salmon.

Appendix A.4. Commercial chinook salmon sales and estimated harvest by area, district, and country, Yukon River drainage, 1961-1997.

Year	Lower Yukon Area ^b				Upper Yukon Area ^a									Canada Total	Grand Total				
					District 4			District 5			District 6					Subtotal			
	District 1	District 2	District 3	Subtotal	Number	Roe	Estimated Harvest ^c	Number	Roe	Estimated Harvest ^c	Number	Roe	Estimated Harvest ^c			Number	Roe	Estimated Harvest ^c	Estimated Harvest ^c
1961	84,466	29,026	4,368	117,860	-	-	-	-	-	-	-	-	-	1,804	-	1,804	119,664	3,446	123,110
1962	67,099	22,224	4,687	94,010	-	-	-	-	-	-	-	-	-	724	-	724	94,734	4,037	98,771
1963	85,004	24,221	7,020	116,245	-	-	-	-	-	-	-	-	-	803	-	803	117,048	2,283	119,331
1964	67,555	20,246	4,705	92,506	-	-	-	-	-	-	-	-	-	1,081	-	1,081	93,587	3,208	96,795
1965	89,268	23,763	3,204	116,235	-	-	-	-	-	-	-	-	-	1,863	-	1,863	118,098	2,265	120,363
1966	70,788	16,927	3,612	91,327	-	-	-	-	-	-	-	-	-	1,988	-	1,988	93,315	1,942	95,257
1967	104,350	20,239	3,618	128,207	-	-	-	-	-	-	-	-	-	1,449	-	1,449	129,656	2,187	131,843
1968	79,465	21,392	4,543	105,400	-	-	-	-	-	-	-	-	-	1,126	-	1,126	106,526	2,212	108,738
1969	71,688	14,756	3,595	90,039	-	-	-	-	-	-	-	-	-	988	-	988	91,027	1,640	92,667
1970	56,648	17,141	3,705	77,494	-	-	-	-	-	-	-	-	-	1,651	-	1,651	79,145	2,611	81,756
1971	86,042	19,226	3,490	108,758	-	-	-	-	-	-	-	-	-	1,749	-	1,749	110,507	3,178	113,685
1972	70,052	17,655	3,841	91,748	-	-	-	-	-	-	-	-	-	1,092	-	1,092	92,840	1,769	94,609
1973	56,981	13,859	3,204	74,044	-	-	-	-	-	-	-	-	-	1,309	-	1,309	75,353	2,199	77,552
1974 ^d	71,840	17,948	3,480	93,268	685	-	685	2,663	-	2,663	1,473	-	1,473	4,821	-	4,821	98,089	1,808	99,897
1975	44,585	11,315	4,177	60,077	389	-	389	2,872	-	2,872	500	-	500	3,761	-	3,761	63,838	3,000	66,838
1976	62,410	16,558	4,148	83,114	409	-	409	3,151	-	3,151	1,102	-	1,102	4,662	-	4,662	87,776	3,500	91,276
1977	69,915	16,722	3,965	90,602	985	-	985	4,162	-	4,162	1,008	-	1,008	6,155	-	6,155	96,757	4,720	101,477
1978	59,066	32,924	2,916	94,846	608	-	608	3,079	-	3,079	635	-	635	4,322	-	4,322	99,168	2,975	102,143
1979	75,007	41,498	5,018	121,523	1,989	-	1,989	3,389	-	3,389	772	-	772	6,150	-	6,150	127,673	6,175	133,848
1980	90,382	50,004	5,240	145,626	1,521	-	1,521	4,891	-	4,891	1,947	-	1,947	8,359	-	8,359	153,985	9,500	163,485
1981	99,506	45,781	4,023	149,310	1,347	-	1,347	6,374	-	6,374	967	-	967	9,347	-	9,347	158,018	8,593	166,611
1982	74,450	39,132	2,809	116,191	1,087	-	1,087	5,385	-	5,385	981	-	981	7,453	-	7,453	123,644	8,640	132,284
1983	95,457	43,229	4,106	142,792	601	-	601	3,606	-	3,606	911	-	911	5,118	-	5,118	147,910	13,027	160,937
1984	74,671	36,697	3,039	114,407	961	-	961	3,669	-	3,669	867	-	867	5,497	-	5,497	119,904	9,885	129,789
1985	90,011	48,365	2,588	140,964	664	-	664	3,418	-	3,418	1,142	-	1,142	5,224	-	5,224	146,188	12,573	158,761
1986	53,035	41,849	901	95,785	502	-	502	2,733	-	2,733	950	-	950	4,185	-	4,185	99,970	10,797	110,767
1987	76,643	47,458	2,039	126,140	1,524	-	1,524	3,758	-	3,758	3,338	-	3,338	8,620	-	8,620	134,760	10,864	145,624
1988 ^f	56,120	35,120	1,767	93,007	3,159	-	3,159	3,436	-	3,436	762	-	762	7,357	-	7,357	100,364	13,217	113,581
1989	61,570 ^g	33,166	1,645	96,381	2,790	-	2,790	3,286	-	3,286	1,741	-	1,741	7,817	-	7,817	104,198	9,789	113,987
1990	51,199 ^h	33,061	2,341	86,601	3,536	8	3,538	3,353	47	3,365	1,757	1,678	2,156	8,646	1,731	9,059	96,660	11,324	108,984
1991 ⁱ	56,332	39,260	2,344	97,936	2,448	2,222	3,582	3,810	62	3,826	688	1,545	1,072	6,942	3,829	8,480	106,416	10,906	117,322
1992 ^k	74,212	38,139	1,819	114,170	1,651	2,273	2,394	3,852	7	3,855	572	884	753	6,075	3,164	7,002	121,172	10,877	132,049
1993	49,286	37,293	1,501	88,080	1,349	701	1,577	3,008	0	3,008	1,113	1,313	1,445	5,470	2,014	6,030	94,110	10,350	104,460
1994	62,241	41,692	1,114	105,047	2,216	564	2,443	3,739	10	3,744	2,135	1,820	2,606	8,090	2,394	8,793	113,840	12,028	125,868
1995	76,106	41,458	0	117,564	262	626	499	3,242	0	3,242	1,660	4,731	2,747	5,164	5,357	6,488	124,052	11,146	135,198
1996	56,642	30,209	0	86,851	45	202	137	2,497	518	2,757	278	750	447	2,820	1,470	3,341	90,192	10,164	100,356
1997	66,384	39,363	0	105,747	1,450	14	1,457	3,678	0	3,678	1,966	3,211	2,728	7,094	3,225	7,863	113,610	5,311	118,921
5 Yr Ave 1987-1991	60,373	37,613	2,027	100,013	2,691	-	2,918	3,529	-	3,534	1,657	-	1,814	7,876	-	8,267	108,280	11,220	119,500
5 Yr Ave 1992-1996	63,697	37,758	887	102,342	1,105	873	1,410	3,268	107	3,321	1,152	1,900	1,600	5,524	2,880	6,331	108,673	10,913	119,586

a Harvest reported in numbers of fish sold in the round and pounds of roe sold. Since 1990, efforts were made to separate chinook roe from summer chum roe. Does not include department test fish sales.

b All fish sold in the round. Includes department test fish sales prior to 1988.

c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold.

d In 1974, District 4 was subdivided to include Districts 5 and 6.

f Includes the illegal sales of 653 chinook salmon in District 5, and 2,136 chinook salmon in District 6.

g Includes the illegal sales of 3,211 chinook salmon.

h Includes the illegal sales of 1,101 chinook salmon.

i Includes the illegal sales of 2,711 chinook salmon in District 1, and 284 chinook salmon in District 2.

k Includes the illegal sales of 1,218 chinook salmon in District 1, and 207 chinook salmon in District 2.

Appendix A.5. Commercial summer chum salmon sales and estimated harvest by area and district, Yukon River drainage in Alaska, 1967-1997.

Year	Lower Yukon Area							
	District 1 b	District 2 b	District 3 a			Subtotal		
			Number	Roe	Estimated Harvest ^c	Number	Roe	Estimated Harvest ^c
1967	9,453	1,425	57			10,935	-	10,935
1968	12,995	1,407	68			14,470	-	14,470
1969	56,886	5,080	-			61,966	-	61,966
1970	117,357	19,649	-			137,006	-	137,006
1971	93,928	8,112	50			100,090	-	100,090
1972	114,234	20,907	527			135,668	-	135,668
1973	221,644	63,402	463			285,509	-	285,509
1974 ^d	466,004	74,152	1,721			541,877	-	541,877
1975	418,323	99,139	-			517,462	-	517,462
1976	273,204	99,190	9,802			382,196	-	382,196
1977	250,652	105,679	3,412			359,743	-	359,743
1978	393,785	227,548	27,003			648,336	-	648,336
1979	369,934	172,838	40,015			582,787	-	582,787
1980	391,252	308,704	44,782			744,738	-	744,738
1981	507,158	351,878	54,471			913,507	-	913,507
1982	249,516	182,344	4,086			435,946	-	435,946
1983	451,164	248,092	14,600			713,856	-	713,856
1984	292,676	236,931	1,087			530,694	-	530,694
1985	247,486	186,099	1,792			437,377	-	437,377
1986	381,127	288,427	442			669,996	-	669,996
1987	222,899	174,876	3,501			401,275	-	401,275
1988	845,322	424,461	13,965			1,083,748	-	1,083,748
1989	544,373 ^f	343,032	7,578			894,983	-	894,983
1990	146,725	131,755	643			279,123	-	279,123
1991	140,470 ^h	175,149	8,912			324,531	-	324,531
1992 ⁱ	177,329	147,129	65			324,523	-	324,523
1993	73,659	19,332	463			93,454	-	93,454
1994	42,332	12,869	35			55,236	-	55,236
1995	142,266	83,817	0			226,083	-	226,083
1996	92,506	30,727	0	935	1,534	123,233	935	124,767
1997	59,915	18,242	0	0	0	78,157	0	78,157
5 Yr Ave. 1987-1991	339,958	249,855	6,920	-	-	596,732	-	596,732
5 Yr Ave. 1992-1996	105,618	58,775	113	-	-	164,506	-	164,813

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Year	Upper Yukon Area ^a												Total		
	District 4			District 5			District 6			Subtotal					
	Number	Roe	Estimated Harvest ^c	Number	Roe	Estimated Harvest ^c	Number	Roe	Estimated Harvest ^c	Number	Roe	Estimated Harvest ^c	Number	Roe	Estimated Harvest ^c
1967	-	-	-	-	-	-	-	-	-	0	0	0	10,935	0	10,935
1968	-	-	-	-	-	-	-	-	-	0	0	0	14,470	0	14,470
1969	-	-	-	-	-	-	-	-	-	0	0	0	61,968	0	61,968
1970	-	-	-	-	-	-	-	-	-	0	0	0	137,006	0	137,006
1971	-	-	-	-	-	-	-	-	-	0	0	0	100,090	0	100,090
1972	-	-	-	-	-	-	-	-	-	0	0	0	135,668	0	135,668
1973	-	-	-	-	-	-	-	-	-	0	0	0	285,509	0	285,509
1974 ^d	27,866	-	27,866	6,831	-	6,831	13,318	-	13,318	48,015	0	48,015	589,892	0	589,892
1975	165,054	-	165,054	12,997	-	12,997	14,782	-	14,782	192,833	0	192,833	710,295	0	710,295
1976	211,307	-	211,307	774	-	774	6,617	-	6,617	218,698	0	218,698	600,894	0	600,894
1977	169,541	-	169,541	1,274	-	1,274	4,317	-	4,317	175,132	0	175,132	534,875	0	534,875
1978	364,184	16,920	381,104	4,892	605	5,497	34,814	8,236	43,050	403,890	25,761	429,651	1,052,228	25,761	1,077,987
1979	169,430	35,317	204,747	8,608	1,009	9,617	18,491	3,891	22,382	196,529	40,217	236,746	779,316	40,217	819,533
1980	147,560	135,824	283,384	456	-	456	35,855	3,282	39,137	183,871	139,106	322,977	928,609	139,106	1,067,715
1981	59,718	187,032	330,445	1,238	49	1,285	32,477	1,987	34,464	93,431	189,068	366,194	1,005,938	189,068	1,279,701
1982	3,647	151,281	257,719	213	21	234	21,597	1,517	23,114	25,457	152,819	281,067	461,403	152,819	717,013
1983	6,672	148,125	255,388	42	1,856	1,898	24,309	18	24,327	31,023	149,999	281,613	744,879	149,999	995,469
1984	1,009	166,842	278,070	645	47	692	56,249	335	56,584	57,903	167,224	335,346	588,597	167,224	866,040
1985	12,007	247,085	427,483	700	-	700	66,913	1,540	68,453	79,620	248,625	496,636	516,997	248,625	934,013
1986	300	269,545	465,535	690	-	690	50,483	2,146	52,629	51,473	271,691	518,854	721,469	271,691	1,188,850
1987	29,991	121,474	209,800	362	44	406	10,610	450	11,060	40,963	121,968	221,266	442,238	121,968	622,541
1988	24,051	254,526	490,074	722	363	1,085	40,129	1,648	41,775	64,902	256,535	532,934	1,148,650	256,535	1,616,682
1989	18,554	283,305	510,244	154	373	527	42,115	4,871	46,986	60,823	288,549	557,757	955,806	288,549	1,452,740
1990	12,364	105,723	222,550	11	594	671	11,127 ^g	3,059	14,633	23,502	109,376	238,054	302,625	109,376	517,177
1991	6,381	137,232	309,644	4	28	35	18,197	4,716	23,892	24,562	141,976	333,571	349,113	141,976	698,102
1992 ^h	2,659	110,809	211,396	102	295	430	5,029	1,892	7,228	7,750	112,996	219,054	332,313	112,996	543,577
1993	27	22,447	42,957	0	0	0	3,041	515	3,705	3,068	22,962	46,662	96,522	22,962	140,116
1994	3,611	89,717	171,607	229	212	464	21,208	7,828	31,434	25,048	97,757	203,505	80,284	97,757	258,741
1995	8,873	281,074	554,587	107	188	316	24,711	9,475	37,428	33,661	290,737	592,331	259,774	290,737	818,414
1996	0	295,190	510,240	0	302	338	22,360	18,332	46,890	22,360	313,824	557,466	145,593	314,759	682,233
1997	2,062	74,231	124,671	137	0	137	14,886	9,036	25,287	17,065	83,267	150,095	95,242	83,267	228,252
5 Yr Ave. 1987-1991	18,268	180,452	348,462	251	280	545	24,436	2,948	27,709	42,954	183,681	376,716	639,686	183,681	973,448
5 Yr Ave. 1992-1996	3,034	159,847	298,157	88	199	309	15,270	7,608	25,337	18,351	167,655	323,804	182,897	167,842	488,616

^a Harvest reported in numbers of fish sold in the round and pounds of roe. Roe sales may include some pink and chinook salmon roe. Does not include department test fish sales.

^b All sales are fish in the round in District 1 and 2. Includes department test fish sales prior to 1988.

^c The estimated harvest is the fish sold in the round plus the estimated number of females caught to produce the roe sold. In addition, the estimated harvest for Districts 3 and 4 includes the estimated number of unsold males harvested.

^d In 1974, District 4 was subdivided to include Districts 5 and 6.

^e Includes the illegal sales of 150 summer chum salmon in District 1.

^f Does not include 1,233 female summer chum salmon sold in Subdistrict 5-C with roe extracted and roe sold separately. These fish are included in estimated harvest to produce roe sold.

^g Includes the illegal sales of 1,023 summer chum salmon.

^h Includes the illegal sales of 31 summer chum salmon in District 1, and 91 summer chum salmon in District 2.

Appendix A.6. Commercial fall chum salmon sales and estimated harvest by area, district, and country, Yukon River drainage, 1961-1997.

Year	Lower Yukon Area ^a				Upper Yukon Area ^a									Subtotal	Estimated Harvest ^c	Total Harvest	Canada Total	Grand Total	
	District 1	District 2	District 3	Subtotal	District 4			District 5			District 6								
					Numbers	Roe	Estimated Harvest ^c	Numbers	Roe	Estimated Harvest ^c	Numbers	Roe	Estimated Harvest ^c						
1961	42,461	-	-	42,461	-	-	-	-	-	-	-	-	0	0	0	42,461	3,276	45,737	
1962	53,116	-	-	53,116	-	-	-	-	-	-	-	-	0	0	0	53,116	936	54,052	
1963	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	2,196	2,196	
1964	8,347	-	-	8,347	-	-	-	-	-	-	-	-	0	0	0	8,347	1,929	10,276	
1965	22,936	-	-	22,936	-	-	-	-	-	-	-	-	381	0	381	23,317	2,071	25,388	
1966	69,836	-	1,209	71,045	-	-	-	-	-	-	-	-	0	0	0	71,045	3,157	74,202	
1967	36,451	-	1,823	38,274	-	-	-	-	-	-	-	-	0	0	0	38,274	3,343	41,617	
1968	49,857	-	3,068	52,925	-	-	-	-	-	-	-	-	0	0	0	52,925	453	53,378	
1969	128,866	-	1,722	130,588	-	-	-	-	-	-	-	-	722	0	722	131,310	2,279	133,589	
1970	200,306	4,858	3,285	208,449	-	-	-	-	-	-	-	-	1,146	0	1,146	209,595	2,479	212,074	
1971	188,533	-	-	188,533	-	-	-	-	-	-	-	-	1,061	0	1,061	189,594	1,761	191,355	
1972	136,711	12,898	1,313	150,922	-	-	-	-	-	-	-	-	1,254	0	1,254	152,176	2,532	154,708	
1973	173,783	45,304	-	219,087	-	-	-	-	-	-	-	-	13,003	0	13,003	232,090	2,806	234,896	
1974 ^d	176,036	53,540	552	230,128	9,213	-	9,213	23,551	-	23,551	26,884	-	26,884	59,648	0	59,648	289,776	2,544	292,320
1975	158,183	51,666	5,590	215,439	13,666	-	13,666	27,212	-	27,212	18,692	-	18,692	59,570	0	59,570	275,009	2,500	277,509
1976	105,851	21,212	4,250	131,313	1,742	-	1,742	5,387	-	5,387	17,948	-	17,948	25,077	0	25,077	156,390	1,000	157,390
1977	131,758	51,994	15,851	199,603	13,980	-	13,980	25,730	-	25,730	18,673	-	18,673	58,383	0	58,383	257,986	3,990	261,976
1978	127,947	51,646	11,527	191,120	10,988	1,721	12,709	21,016	5,220	26,236	13,259	3,687	16,946	45,263	10,628	55,891	247,011	3,356	250,367
1979	109,406	94,042	25,955	229,403	48,899	3,199	52,098	47,459	8,097	55,556	34,185	7,170	41,355	130,543	18,466	149,009	378,412	9,084	387,496
1980	106,829	83,881	13,519	204,229	27,978	4,347	32,325	41,771	605	42,376	19,452	68	19,520	89,201	5,020	94,221	298,450	9,000	307,450
1981	167,834	154,883	19,043	341,760	12,082	1,311	13,393	86,620	6,955	93,575	25,989	3,019	29,008	124,891	11,285	136,176	477,738	15,260	492,998
1982	97,484	96,581	5,815	199,880	3,894	167	4,061	13,593	42	13,635	6,820	596	7,416	24,307	805	25,112	224,992	11,312	236,304
1983	124,371	85,645	10,018	220,034	4,482	1,963	6,445	43,993	0	43,993	34,089	3,101	37,190	82,564	5,064	87,628	307,662	25,990	333,652
1984	78,751	70,803	6,429	155,983	7,625	2,215	9,840	24,060	57	24,117	20,564	58	20,620	52,249	2,328	54,577	210,560	22,932	233,492
1985	129,948	40,490	5,164	175,602	24,452	2,525	26,977	25,338	0	25,338	42,352	0	42,352	92,142	2,525	94,667	270,269	35,746	306,015
1986	59,352	51,307	2,793	113,452	2,045	0	2,045	22,053	395	22,448	1,892	182	2,074	25,990	577	26,567	140,019	11,464	151,483
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40,591	40,591
1988	44,890	31,845	2,090	78,825	15,662	1,421	17,083	16,989	0	16,989	21,844	1,806	23,695	54,495	3,227	57,722	136,547	30,263	166,810
1989	74,235	97,558	15,332	187,125	11,776	3,407	15,183	18,215	3,989	22,204	49,090	7,353	56,443	79,081	14,749	93,830	280,955	17,549	298,504
1990	25,269	37,077	3,715	66,061	4,989	2,351	8,166	7,778	1,058	8,978	43,182	7,535	50,975	55,949	10,944	68,117	134,178	27,537	161,715
1991	59,724	102,628	9,213	171,565	3,737	1,616	6,091	27,355	3,625	32,114	28,195	14,154	44,448	59,287	19,395	82,653	254,218	31,404	285,622
1992	0	0	0	0	0	0	0	0	0	0	15,721	2,806	19,022	15,721	2,806	19,022	19,022	18,576	37,598
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7,762	7,762
1994	0	0	0	0	0	0	0	3,630	0	3,630	1	3,276	4,369	3,631	3,276	7,999	7,999	30,035	38,034
1995	79,345	90,831	0	170,176	2,924	4,126	8,731	9,778	18,815	30,033	67,855	9,560	74,117	80,557	32,501	112,881	283,057	39,012	322,069
1996	33,629	29,651	0	63,280	2,918	0	2,918	11,878	8,498	21,858	10,266	6,173	17,574	25,082	14,671	42,350	105,630	20,069	125,699
1997	27,483	24,326	0	51,809	2,458	0	2,458	2,446	1,194	3,820	0	0	4,904	1,194	6,378	58,187	8,068	66,255	
5 Yr. Ave. 1967-1991	40,824	53,822	6,070	100,715	7,233	1,759	9,305	14,067	1,734	16,057	28,462	6,170	35,103	49,762	9,663	60,464	161,180	29,469	190,648
5 Yr. Ave. 1992-1996	22,595	24,096	0	46,691	1,168	825	2,330	5,057	5,463	11,104	18,769	4,363	23,016	24,994	10,651	36,450	83,142	23,091	106,232

^a Sales reported in numbers of fish sold in the round and pounds of unprocessed roe, which may include small amounts of coho salmon roe. Since 1990, efforts were made to separate coho roe from fall chum roe. Does not include department test fish sales.

^b All fish sold in the round. Includes department test fish sales prior to 1988.

^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold.

^d In 1974, District 4 was subdivided to include Districts 5 and 6.

^e Does not include 864 female fall chum salmon sold in Subdistrict 6-C with roe extracted and roe sold separately. Females are accounted for in the estimated harvest to produce roe sold.

Appendix A.7. Commercial coho salmon sales and estimated harvest by area and district, Yukon River drainage in Alaska, 1961-1997.

Year	Lower Yukon Area ^b				Upper Yukon Area ^a									Total Estimated Harvest				
	District 1	District 2	District 3	Subtotal	District 4			District 5			District 6				Subtotal			
					Number	Roe	Estimated Harvest ^c	Number	Roe	Estimated Harvest ^c	Number	Roe	Estimated Harvest ^c		Number	Roe	Estimated Harvest ^c	
1961	2,855	-	-	2,855	-	-	-	-	-	-	-	-	-	-	-	-	-	2,855
1962	22,926	-	-	22,926	-	-	-	-	-	-	-	-	-	-	-	-	-	22,926
1963	5,572	-	-	5,572	-	-	-	-	-	-	-	-	-	-	-	-	-	5,572
1964	2,446	-	-	2,446	-	-	-	-	-	-	-	-	-	-	-	-	-	2,446
1965	350	-	-	350	-	-	-	-	-	-	-	-	-	-	-	-	-	350
1966	19,254	-	-	19,254	-	-	-	-	-	-	-	-	-	-	-	-	-	19,254
1967	9,925	-	1,122	11,047	-	-	-	-	-	-	-	-	-	-	-	-	-	11,047
1968	13,153	-	150	13,303	-	-	-	-	-	-	-	-	-	-	-	-	-	13,303
1969	13,989	-	1,009	14,998	-	-	-	-	-	-	-	-	-	-	-	-	95	15,093
1970	12,632	-	-	12,632	-	-	-	-	-	-	-	-	-	-	-	-	558	13,188
1971	12,165	-	-	12,165	-	-	-	-	-	-	-	-	-	-	-	-	38	12,203
1972	21,705	506	-	22,211	-	-	-	-	-	-	-	-	-	-	-	-	22	22,233
1973	34,860	1,781	-	36,641	-	-	-	-	-	-	-	-	-	-	-	-	-	36,641
1974 ^d	13,713	176	-	13,889	0	-	0	1,409	-	1,409	1,479	-	1,479	2,888	-	2,888	-	16,777
1975	2,268	200	-	2,468	0	-	0	5	-	5	53	-	53	58	-	58	-	2,546
1976	4,064	17	-	4,081	0	-	0	0	-	0	1,103	-	1,103	1,103	-	1,103	-	5,184
1977	31,720	5,319	538	37,577	0	-	0	2	-	2	1,264	-	1,264	1,266	-	1,266	-	38,863
1978	16,460	5,835	758	23,053	32	-	32	1	-	1	3,066	-	3,066	3,099	-	3,099	-	26,152
1979	11,369	2,850	-	14,219	155	-	155	0	-	0	2,791	-	2,791	2,946	-	2,946	-	17,165
1980	4,829	2,660	-	7,489	30	-	30	0	-	0	1,226	-	1,226	1,256	-	1,256	-	8,745
1981	13,129	7,848	419	21,396	0	-	0	0	-	0	2,284	-	2,284	2,284	-	2,284	-	23,680
1982	15,115	14,179	67	29,361	15	-	15	0	-	0	7,760	-	7,760	7,795	-	7,795	-	37,176
1983	4,595	2,557	-	7,152	0	-	0	0	-	0	6,166	-	6,166	6,166	-	6,166	-	13,320
1984	29,472	43,064	621	73,157	1,095	-	1,095	0	-	0	7,688	-	7,688	8,783	-	8,783	-	81,940
1985	27,676	17,125	171	44,972	938	-	938	0	-	0	11,762	-	11,762	12,700	-	12,700	-	57,672
1986	24,824	21,197	793	46,814	0	-	0	0	-	0	441	-	441	441	-	441	-	47,255
1987	0	0	0	0	0	-	0	0	-	0	0	-	0	0	-	0	-	0
1988	36,028	34,756	1,419	72,205	2	-	2	8	-	8	13,972	-	13,972	13,982	-	13,982	-	86,187
1989	22,987	38,402	3,968	65,377	3	-	3	84	-	84	16,084	-	16,084	16,171	-	16,171	-	81,548
1990	12,160	16,405	918	29,483	0	-	0	0	-	0	11,549 ^f	4,042	14,804	11,549	4,042	14,804	-	44,267
1991	54,095	40,898	1,905	96,898	14	0	14	0	0	0	6,268	4,299	9,774	6,282	4,299	9,788	-	106,686
1992	0	0	0	0	0	0	0	0	0	0	6,556	1,680	7,979	6,556	1,680	7,979	-	7,979
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	0
1994	0	0	0	0	0	0	0	0	0	0	120	5,588	4,451	120	5,588	4,451	-	4,451
1995	21,625	18,466	0	40,113	0	0	0	0	0	0	5,626	2,229	6,900	5,626	2,229	6,900	-	47,013
1996	27,705	20,974	0	48,679	161	0	161	0	0	0	3,803	4,829	7,142	3,964	4,829	7,303	-	55,982
1997	21,450	13,056	0	34,506	814	0	814	0	0	0	0	0	0	814	0	814	-	35,320
5 Yr Ave. 1967-1991	25,054	26,093	1,646	52,793	4	0	4	18	0	18	9,575	-	10,927	9,597	-	10,949	-	63,742
5 Yr Ave. 1992-1996	9,866	7,892	0	17,758	32	-	32	0	0	0	3,261	2,865	5,294	3,293	2,865	5,327	-	23,085

^a Sales reported in numbers of fish sold in the round and pounds of roe. Since 1990, efforts were made to separate coho and fall chum salmon roe. Does not include department test fish sales.

^b All sales are fish in the round. Includes department test fish sales prior to 1968.

^c The estimated harvest is the fish sold in the round plus the estimated number of females caught to produce the roe sold.

^d In 1974, District 4 was subdivided to include Districts 5 and 6.

^f Does not include 438 female coho salmon sold in District 6-C with roe extracted and roe sold separately. These fish are included in estimated harvest to produce roe sold.

Appendix A.8. Commercial Fisheries Entry Commission (CFEC) salmon permits issued by gear type, Yukon Area, 1976-1997. ^a

Year	Lower Yukon Set or Drift Gillnet		Upper Yukon Set Gillnet		Upper Yukon Fishwheel		Total	
	Permits Issued	Permits Fished	Permits Issued	Permits Fished	Permits Issued	Permits Fished	Permits Issued	Permits Fished
1976	678	b	118	b	169	b	b	b
1977	700	609	69	44	160	130	929	783
1978	699	650	71	47	158	137	928	834
1979	708	661	70	50	165	129	943	840
1980	709	654	71	52	163	128	943	834
1981	711	666	70	45	162	125	943	836
1982	710	664	76	45	166	111	952	820
1983	708	655	73	40	164	115	945	810
1984	708	674	73	39	159	99	940	812
1985	708	664	71	40	159	113	938	817
1986	707	670	71	30	161	101	939	801
1987	706	656	71	33	161	108	938	797
1988	707	677	71	43	160	124	938	844
1989	707	682	70	42	160	127	937	851
1990	708	675	71	35	157	116	936	826
1991	708	680	72	36	155	110	935	826
1992	707	678	71	32	165	111	943	821
1993	707	682	72	35	166	88	945	805
1994	707	659	72	30	165	73	944	762
1995	707	663	73	36	166	106	946	805
1996	707	628 ^c	72	28 ^c	166	107 ^c	945	763 ^c
1997	705	640 ^c	72	22 ^c	163	63 ^c	940	725 ^c

^a Information obtained from CFEC unless otherwise indicated. Includes permanent and interim-use permits.

^b Information unavailable.

^c Data source: ADF&G.

Appendix A.9. Number of commercial salmon fishing gear permit holders by district and season, Yukon Area, 1971-1997. ^a

Chinook and Summer Chum Salmon Season									
Year	Lower Yukon Area				Upper Yukon Area				Total
	District 1	District 2	District 3	Subtotal ^b	District 4	District 5	District 6	Subtotal	
1971	405	154	33	592	-	-	-	-	592
1972	428	153	35	614	-	-	-	-	614
1973	438	167	38	643	-	-	-	-	643
1974	396	154	42	592	27	31	20	78	670
1975	441	149	37	627	93	52	36	181	808
1976	453	189	42	684	80	46	29	155	839
1977	392	188	46	626	87	41	18	146	772
1978	429	204	22	655	80	45	35	160	815
1979	425	210	22	657	87	34	30	151	808
1980	407	229	21	657	79	35	33	147	804
1981	448	225	23	696	80	43	26	149	845
1982	450	225	21	696	74	44	20	138	834
1983	455	225	20	700	77	34	25	136	836
1984	444	217	20	681	54	31	27	112	793
1985	425	223	18	666	74	32	27	133	799
1986	441	239	7	687	75	21	27	123	810
1987	440	239	13	692	87	30	24	141	833
1988	458	250	22	730	95	28	33	156	886
1989	445	243	16	704	98	32	29	159	863
1990	453	242	15	710	92	27	23	142	852
1991	489	253	27	769	85	32	22	139	908
1992	438	263	19	720	90	28	19	137	857
1993	448	238	6	692	75	30	18	123	815
1994	414	250	7	671	55	28	20	103	774
1995	439	233	0	672	87	28	21	136	808
1996	448	189	9	646	87	23	15	125	771
1997	457	188	0	645	39	29	15	83	724

Fall Chum and Coho Salmon Season									
Year	Lower Yukon Area				Upper Yukon Area				Total
	District 1	District 2	District 3	Subtotal ^b	District 4	District 5	District 6	Subtotal	
1971	352	-	-	352	-	-	-	-	352
1972	353	75	-	428	-	-	-	-	428
1973	445	183	3	631	-	-	-	-	631
1974	322	121	6	449	17	23	22	62	511
1975	428	185	12	625	44	33	33	110	735
1976	422	194	28	644	18	36	44	98	742
1977	337	172	37	546	28	34	32	94	640
1978	429	204	28	661	24	43	30	97	758
1979	458	220	32	710	31	44	37	112	822
1980	395	232	23	650	33	43	26	102	752
1981	462	240	21	723	30	50	30	110	833
1982	445	218	15	678	15	24	25	64	742
1983	312	224	18	554	13	29	23	65	619
1984	327	216	12	555	18	39	26	83	638
1985	345	222	13	580	22	39	25	86	666
1986	282	231	14	527	1	21	16	38	548
1987	-	-	-	-	-	-	-	-	-
1988	328	233	13	574	20	20	32	72	646
1989	332	229	22	583	20	24	28	72	655
1990	301	227	19	547	11	11	27	49	596
1991	319	238	19	576	8	21	25	54	630
1992	-	-	-	-	-	-	22	22	22
1993	-	-	-	-	-	-	-	-	-
1994	-	-	-	-	-	1	11	12	12
1995	189	172	0	361	4	12	20	36	397
1996	158	109	0	267	1	17	17	35	302
1997	176	130	0	306	3	8	-	11	315

-Continued-

COMBINED SEASON

Year	Lower Yukon Area				Upper Yukon Area				Total
	District 1	District 2	District 3	Subtotal ^b	District 4	District 5	District 6	Subtotal	
1971	473	154	33	660	-	-	-	27	687
1972	478	153	35	664	-	-	-	-	664
1973	529	205	38	772	-	-	-	47	819
1974	485	190	42	717	28	43	27	98	815
1975	491	197	39	727	95	57	46	198	925
1976	482	220	44	746	96	62	56	214	960
1977	402	208	54	609	96	53	39	188	797
1978	472	221	29	650	82	53	38	173	823
1979	461	230	33	661	90	49	40	179	840
1980	432	247	27	654	88	51	38	177	831
1981	507	257	26	666	94	56	31	181	847
1982	455	244	22	664	76	53	27	156	820
1983	458	235	26	655	79	47	31	157	812
1984	453	236	26	676	58	45	33	136	812
1985	434	247	24	666	76	48	33	157	823
1986	444	259	18	672	75	30	27	132	804
1987	440	239	13	659	87	30	24	141	800
1988	460	260	24	683	97	35	38	170	853
1989	452	257	23	687	99	38	32	169	856
1990	459	258	22	679	92	31	30	153	832
1991	497	272	29	680	85	33	28	146	826
1992	438	263	19	679	90	28	25	143	822
1993	448	238	6	682	75	30	18	123	805
1994	414	250	7	659	55	28	20	103	762
1995	446	254	0	664	87	31	24	142	806
1996	455	217	9	628	87	29	19	135	763
1997	463	221	0	640	39	31	15	85	725

^a Number of permit holders which delivered fish.

^b 1984-1995 is the unique number of permits fished. Prior year totals are additive for District 1, 2, and 3.

Some individual fishermen in the Lower Yukon Area may have operated in more than one district during the year.

^c No commercial fall season, except in District 6 in 1992 and in Subdistrict 5-D and District 6 in 1994.

Appendix A.10. Commercial salmon pack by species and type of processing, Yukon Area, 1960-1997. ^a

Year	Cases (48#)			Fresh-Frozen (round wt. in lbs.)			Cured Chinook		Cured Chum		Salmon Roe (lbs.)
	Chinook	Coho	Chum	Chinook	Coho	Chum	Tierces	Half Tierces	Tierces	Half Tierces	
1960	13,000			b	b	b	250	180			
1961	19,474			b	b	b	504	146			
1962	15,959	512	1,760	b	b	b	464	280			
1963	16,400	1,190		b	b	b	b	b			
1964	12,041			b	17,000	66,770	537	499			
1965	18,149			275,000	2,500	160,500	670	67			
1966	14,026	836	2,812	414,000	61,355	301,240	398	60			
1967	21,503		126	475,900	66,400	366,496	627	96			1,755
1968	19,499		816	561,690	93,154	454,409	351	170			21,000
1969	9,560	1,104	4,499	423,597	26,973 ^c	829,586 ^c	647	95	15		29,000
1970	6,431	1,002	6,413	716,600	12,900	1,725,000	447	191	51		26,300
1971	6,500	502	3,213	1,058,034	45,836	1,432,455	659	229	139		55,177
1972	7,418	1,005	6,249	1,002,395	83,960	1,495,922	497	147			85,278
1973	5,227	1,008	9,902	1,339,317	181,928	2,929,532	61	133		72	137,594
1974	6,660	603	21,074	1,062,666	58,816	3,879,300	381	56	57		208,842
1975	5,297	40	14,226	781,902	13,299	4,751,941	80	53	45	119	201,404
1976	3,921	80	11,375	1,398,779	29,778	4,256,679	93	92	72	10	226,893
1977	4,642	415	9,428	1,513,484	270,241	4,877,918	180	237	26		210,568
1978	5,711	74	9,340	1,473,354	168,241	8,639,156	222	117	7	75	261,422
1979	6,277	22	7,854	2,014,156	108,011	8,098,075	112	91		2	410,540
1980	8,764	130	15,783	3,341,262	56,295	8,781,062	29	18		37	579,927
1981	1,107	378	11,573	3,686,238	130,097	11,398,680	25	13	9	28	507,550
1982		7	751	2,790,456	246,500	4,992,877		19		1	584,053
1983		198	1,181	3,000,843	72,447	10,637,613	5	39		7	426,220
1984		5	1,768	2,426,205	590,526	5,516,532		36		16	468,244
1985				2,953,199	409,725	5,462,462		9		20 ^d	476,024
1986				2,012,324	299,054	5,960,857		15		28 ^e	502,952
1987				2,830,312	0	3,013,889		36			286,099
1988 ^f				1,970,879	624,734	9,111,943		10		22 ^g	577,746
1989 ^f				2,005,949	585,216	8,864,714		6		16	303,296
1990 ^f				1,846,081	283,504	3,166,199		3		1,368 ⁱ	261,016
1991 ^h				2,047,188	706,902	3,978,482				2,547 ⁱ	350,174
1992				2,537,833	40,685	2,398,093					260,590
1993				1,905,414	0	634,931					97,630
1994				2,260,301	744	528,666					183,873
1995				2,635,972	317,357	3,524,754					498,925
1996				1,836,242	400,960	1,733,129					443,939
1997				2,324,306	255,228	1,089,678					190,359

^a Pack represents type of processing when fish were shipped out of districts; roe includes unprocessed roe sold by fishers and estimated production of roe from in the round purchases.

^b Information not available.

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

^d Additionally 13 half tierces of coho salmon were packed.

^e Additionally 2 half tierces of coho salmon were packed.

^f Does not include District 6 test fish sales.

^g Additionally 1 half tierce of coho salmon was packed.

^h Beginning in 1991, no ADF&G test fish sales are included.

ⁱ Chum salmon are represented in pounds of salted fillets.

Appendix A.11. Estimated average prices paid to fishermen, Yukon Area, 1964-1997.

Year	Lower Yukon Area				Upper Yukon Area									
	Chinook	Summer Chum	Fall Chum	Coho	Chinook	Chinook Roe	Summer Chum	Summer Chum Roe	Fall Chum	Fall Chum Roe	Coho	Coho Roe	Salmon Roe	
1964	0.17		0.03											
1965	0.20													
1966	0.20													
1967	0.19	0.05	0.05	0.07										
1968	0.18	0.06	0.06											
1969	0.19	0.08	0.08	0.08										
1970	0.22	0.09	0.09	0.12										
1971	0.24	0.10	0.10	0.12										
1972	0.24	0.11	0.11	0.13										
1973	0.30	0.16	0.16	0.18										
1974	0.38	0.21	0.21	0.25	0.50		0.15		0.13		0.15		0.75	
1975	0.42	0.20	0.20	0.21	0.92		0.17		0.14		0.17		1.16	
1976	0.51	0.24	0.24	0.27	0.74		0.19		0.16		0.19		1.33	
1977	0.85	0.40	0.45	0.50	1.37		0.27	2.66	0.22		0.27		2.66	
1978	0.90	0.45	0.47	0.60	0.87		0.24	^a	0.25		0.24		^a	
1979	1.09	0.52	0.68	0.80	1.00		0.25	3.00	0.29		0.25		3.00	
1980	1.04	0.20	0.28	0.38	0.85		0.23	2.50	0.27		0.29		2.50	
1981	1.20	0.40	0.55	0.60	1.00		0.20	3.00	0.35		0.35		3.00	
1982	1.41	0.40	0.55	0.69	1.02		0.18	2.75	0.28		0.37		2.75	
1983	1.40	0.34	0.34	0.35	1.08		0.16	1.66	0.19		0.31		1.66	
1984	1.50	0.26	0.32	0.50	0.95		0.23	1.78	0.26		0.24		1.78	
1985	1.50	0.35	0.47	0.53	0.86		0.23	1.94	0.25		0.33		1.94	
1986	1.63	0.38	0.49	0.71	0.89		0.22	2.08	0.14		0.21		2.08	
1987	1.98	0.49	-	-	0.79		0.19	2.22	-		-		2.22	
1988	2.97	0.66	1.01	1.38	1.04		0.23	4.33	0.32		0.37		4.33	
1989	2.77	0.34	0.50	0.66	0.84		0.24	4.41	0.28		0.35		4.41	
1990	2.84	0.24	0.45	0.68	0.72		0.11	4.41	0.29		0.34		4.38	
1991	3.70	0.36	0.34	0.44	0.70	2.92	0.18	4.21	0.23	3.56	0.30	2.50	4.03	
1992	4.12	0.27	-	-	0.91	2.82	0.30	4.53	0.39	4.50	0.39	2.18	4.45	
1993	2.70	0.38	-	-	1.06	5.52	0.35	8.53	-	-	-	-	8.29	
1994	2.07	0.21	-	-	0.92	3.11	0.20	3.77	0.16	1.50	0.48	1.50	3.57	
1995	2.09	0.16	0.15	0.29	0.77	2.64	0.13	3.57	0.13	2.96	0.14	2.51	3.49	
1996	1.95	0.09	0.10	0.26	0.95	2.57	0.07	3.05	0.13	1.71	0.09	2.16	2.97	
1997	2.46	0.10	0.22	0.32	0.97	1.62	0.07	1.08	0.17	1.75	0.20	-	1.11	
5-Year Ave. 1992-1996	2.58	0.22	-	-	0.92	3.33	0.21	4.69	-	-	-	-	4.55	

^a Data unavailable.

Appendix A.12. Value of commercial salmon fishery to Yukon Area fishermen, 1977-1997.

Year	Summer Season							Fall Season							Total Value
	Chinook			Summer Chum			Total Season	Fall Chum			Coho			Total Season	
	Lower Yukon	Upper Yukon	Subtotal	Lower Yukon	Upper Yukon	Subtotal		Lower Yukon	Upper Yukon	Subtotal	Lower Yukon	Upper Yukon	Subtotal		
	Value	Value		Value	Value		Value	Value	Value		Value	Value		Value	
1977	1,841,033	148,766	1,989,799	1,007,280	306,481	1,313,761	3,303,560	718,571	102,170	820,741	140,914	2,251	143,165	963,906	4,267,466
1978	2,048,674	66,472	2,115,146	2,071,434	655,738	2,727,172	4,842,318	691,854	103,091	794,945	96,823	6,105	102,928	897,873	5,740,191
1979	2,763,433	124,230	2,887,663	2,242,564	444,924	2,687,488	5,575,151	1,158,485	347,814	1,506,299	83,466	6,599	90,065	1,596,364	7,171,515
1980	3,409,105	113,662	3,522,767	1,027,738	627,249	1,654,987	5,177,754	394,162	198,088	592,250	17,374	2,374	19,748	611,998	5,789,752
1981	4,420,669	206,380	4,627,049	2,741,178	699,876	3,441,054	8,068,103	1,503,744	356,805	1,860,549	87,385	4,568	91,953	1,952,502	10,020,605
1982	3,768,107	162,699	3,930,806	1,237,735	452,837	1,690,572	5,621,378	846,492	53,258	899,750	135,828	18,786	154,614	1,054,364	6,675,742
1983	4,093,562	105,584	4,199,146	1,734,270	281,883	2,016,153	6,215,299	591,011	128,950	719,961	17,497	11,472	28,969	748,930	6,964,229
1984	3,510,923	102,354	3,613,277	926,922	382,776	1,309,698	4,922,975	374,359	103,417	477,776	256,050	12,823	268,873	746,649	5,669,624
1985	4,294,432	82,644	4,377,076	1,032,700	593,801	1,626,501	6,003,577	634,616	178,125	812,741	176,254	26,797	203,051	1,015,792	7,019,369
1986	3,165,078	73,363	3,238,441	1,746,455	634,091	2,380,546	5,618,987	399,321	30,309	429,630	211,942	556	212,498	642,128	6,261,115
1987	5,428,933	136,196	5,565,129	1,313,618	323,611	1,637,229	7,202,358	0	0	0	0	0	0	0	7,202,358
1988	5,463,800	142,284	5,606,084	5,001,100	1,213,991	6,215,091	11,821,175	638,700	151,300	790,000	734,400	34,116	768,516	1,558,516	13,379,691
1989	5,181,700	106,178	5,289,878	2,217,700	1,377,117	3,594,817	8,884,695	713,400	223,996	937,396	323,300	33,959	357,259	1,294,655	10,179,350
1990	4,820,859	105,295	4,926,154	497,571	506,611	1,004,182	5,930,336	238,165	174,965	413,130	137,302	37,026	174,328	587,458	6,517,794
1991	7,128,300	97,140	7,225,440	782,300	627,177	1,409,477	8,634,917	438,310	157,831	596,141	300,182	21,556	321,738	917,879	9,552,796
1992	9,957,002	168,999	10,126,001	606,976	525,204	1,132,180	11,258,181	0	54,161	54,161	0	19,529	19,529	73,690	11,331,871
1993	4,884,044	113,217	4,997,261	226,772	203,762	430,534	5,427,795	0	0	0	0	0	0	0	5,427,795
1994	4,169,270	124,270	4,293,540	79,206	396,685	475,891	4,769,431	0	8,517	8,517	0	8,739	8,739	17,256	4,786,687
1995	5,317,508	87,059	5,404,567	241,598	1,060,322	1,301,920	6,706,487	185,036	167,571	352,607	80,019	11,292	91,311	443,918	7,150,405
1996	3,491,582	47,282	3,538,864	89,020	966,277	1,055,297	4,594,161	48,579	45,438	94,017	96,795	13,020	109,815	203,832	4,797,993
1997	5,450,433	110,713	5,561,146	56,535	96,806	153,341	5,714,487	56,526	7,252	63,778	79,973	1,062	81,035	174,813	5,889,300
5 Yr Avg															
1992-1996	5,563,881	106,165	5,670,047	248,714	630,450	879,164	6,551,211	46,723	55,137	101,860	35,363	10,516	45,879	147,739	6,698,950

Appendix A.13. Average weight of commercial salmon catch in pounds, Yukon Area, 1964-1997.^a

Year	Lower Yukon Area				Upper Yukon Area			
	Chinook	Summer Chum	Fall Chum	Coho	Chinook	Summer Chum	Fall Chum	Coho
1964	22.6							
1965	23.0							
1966	23.0							
1967	24.0			7.3				
1968	26.5							
1969	23.9			6.7				
1970	22.3			7.1				
1971	22.6			6.9				
1972	24.6	6.6	7.6	7.1				
1973	24.5	6.8	7.9	7.1				
1974	23.7	6.5	7.5	7.0	17.3	6.7	7.7	6.7
1975	22.0	6.5	7.5	7.2	17.7	6.6	8.0	6.6
1976	21.9	6.5	7.5	6.6	18.4	6.4	8.0	7.5
1977	23.9	7.0	8.0	7.5	17.6	6.5	8.0	6.5
1978	24.0	7.1	7.7	7.0	20.2	6.8	7.4	6.4
1979	20.9	7.4	7.4	7.3	20.2	6.6	7.7	6.5
1980	22.5	6.9	6.9	6.4	16.0	6.6	7.7	6.5
1981	24.8	7.5	8.0	6.8	23.7	7.1	7.4	5.7
1982	23.0	7.1	7.7	6.7	21.4	7.1	7.5	6.5
1983	20.5	7.2	7.9	7.0	19.1	6.6	7.7	6.0
1984	20.5	6.8	7.5	7.0	19.6	6.4	7.3	6.1
1985	20.3	6.7	7.7	7.4	18.4	6.1	7.5	6.4
1986	20.2	6.9	7.2	6.3	19.7	6.1	8.0	6.0
1987	21.7	6.8			20.0	6.8		
1988	19.6	7.0	7.9	7.3	18.6	6.9	7.9	6.6
1989	19.9	7.2	7.5	7.3	17.9	6.8	7.4	6.0
1990	19.6	7.3	7.7	6.8	16.8	6.9	7.0	6.2
1991	20.4	6.7	7.4	7.0	17.6	6.5	6.8	5.7
1992	21.5	6.9			19.9	5.6	6.8	6.2
1993	20.5	6.6			17.8	7.2		
1994	20.3	6.5			15.7	5.8	6.2	6.2
1995	21.6	6.7	7.5	6.9	17.8	5.4	7.0	7.0
1996	20.6	7.8	7.7	7.6	16.2	6.0	6.2	7.2
1997	20.9	7.2	7.6	7.3	15.4	5.9	6.4	6.5
5-Year Ave 1992-1996	20.9	6.9			17.5	6.0		

^a Information not available for some years. Data obtained from age-length-weight samples or fish ticket entries.

Appendix A.14 Commercial chinook salmon quotas or guideline harvest ranges (GHR), Yukon Area, 1974-1997.

Year	Districts 1 and 2 GHR	District 3 Quota/GHR	District 4 Quota/GHR	Subdistricts 5-ABC Quota/GHR	Subdistricts 5-D Quota/GHR	District 6 Quota/GHR
1974	-	3,000	1,000	3,000 a		1,000
1975	-	3,000	1,000	3,000 a		1,000
1976	-	3,000	1,000	3,000 a		1,000
1977	-	3,000	1,000	3,000 a		1,000
1978	-	2,000	1,000	3,000 a		1,000
1979 b	-	1,800-2,200	900-1,100	2,700-3,300 a		900-1,100
1980	-	1,800-2,200	900-1,100	2,700-3,300 a		900-1,100
1981	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1982	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1983	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1984	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1985	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1986	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1987	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1988	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1989	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1990	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1991	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1992	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1993	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1994	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1995	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1996	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800
1997	60,000-120,000	1,800-2,200	2,250-2,850	2,400-2,800	300-500	600-800

a Quota or guideline harvest range for all of District 5.

b Beginning in 1979, quotas were replaced by guideline harvest ranges.

Appendix A.15. Commercial summer chum salmon guideline harvest ranges (GHR), Yukon Area, 1990-1997.

Year	Districts 1 and 2	District 3	Subdistrict 4-A		Anvik River	Subdistrict 4-BC	District 5	District 6
	GHR	GHR	GHR		Roe Cap	GHR	GHR	GHR
			Pounds of Roe a	Numbers of Fish				
1990	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000		16,000-47,000	1,000-3,000	13,000-38,000
1991	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000		16,000-47,000	1,000-3,000	13,000-38,000
1992	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000		16,000-47,000	1,000-3,000	13,000-38,000
1993	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000		16,000-47,000	1,000-3,000	13,000-38,000
1994	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	b	16,000-47,000	1,000-3,000	13,000-38,000
1995	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	50,000	16,000-47,000	1,000-3,000	13,000-38,000
1996	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000	13,000-38,000
1997	251,000-755,000	6,000-19,000	61,000-183,000	113,000-338,000	100,000	16,000-47,000	1,000-3,000	13,000-38,000

a Summer chum salmon roe cap of 183,000 pounds.

b No summer chum salmon roe cap established for Anvik River Management Area in 1994.

Appendix A.16. Commercial fall chum salmon quotas or guideline harvest ranges (GHR), Yukon Area, 1974-1997. a

Year	Districts 1, 2, and 3	District 4	Subdistricts 4-BC	District 5	Subdistricts 5-ABC	Subdistrict 5-D	District 6
	Quota/GHR	Quota	GHR	Quota/GHR	GHR	GHR	Quota/GHR
1974	200,000	10,000	-	25,000	-	-	15,000
1975	200,000	10,000	-	25,000	-	-	15,000
1976	200,000	10,000	-	25,000	-	-	15,000
1977	200,000	10,000	-	25,000	-	-	15,000
1978	200,000	10,000	-	25,000	-	-	15,000
1979 b	120,000-220,000	-	10,000-40,000	10,000-40,000	-	-	7,500-22,500
1980	120,000-220,000	-	10,000-40,000	10,000-40,000	-	-	7,500-22,500
1981	120,000-220,000	-	10,000-40,000	-	8,000-36,000	2,000-4,000	5,500-20,500
1982	120,000-220,000	-	10,000-40,000	-	8,000-36,000	2,000-4,000	5,500-20,500
1983	120,000-220,000	-	10,000-40,000	-	8,000-36,000	2,000-4,000	5,500-20,500
1984	120,000-220,000	-	10,000-40,000	-	8,000-36,000	2,000-4,000	5,500-20,500
1985	120,000-220,000	-	10,000-40,000	-	8,000-36,000	2,000-4,000	5,500-20,500
1986	0-110,000	-	0-20,000	-	0-18,000	0-2,000	0-10,250
1987	0-110,000	-	0-20,000	-	0-18,000	0-2,000	0-10,250
1988	0-110,000	-	0-20,000	-	0-18,000	0-2,000	0-10,250
1989	0-110,000	-	0-20,000	-	0-18,000	0-2,000	0-10,250
1990	60,000-220,000	-	5,000-40,000	-	4,000-36,000	1,000-4,000	2,750-20,500
1991	60,000-220,000	-	5,000-40,000	-	4,000-36,000	1,000-4,000	2,750-20,500
1992	60,000-220,000	-	5,000-40,000	-	4,000-36,000	1,000-4,000	2,750-20,500
1993	60,000-220,000	-	5,000-40,000	-	4,000-36,000	1,000-4,000	2,750-20,500
1994	60,000-220,000	-	5,000-40,000	-	4,000-36,000	1,000-4,000	2,750-20,500
1995	60,000-220,000	-	5,000-40,000	-	4,000-36,000	1,000-4,000	2,750-20,500
1996	60,000-220,000	-	5,000-40,000	-	4,000-36,000	1,000-4,000	2,750-20,500
1997	60,000-220,000	-	5,000-40,000	-	4,000-36,000	1,000-4,000	2,750-20,500

a Fall chum and coho salmon combined quota or guideline harvest range for Upper Yukon Area (1974-1992). Beginning in 1993, regulations were changed to exclude coho salmon.

b In 1979, quotas were replaced by guideline harvest ranges.

Appendix A.17. Yukon River chinook salmon total utilization in numbers of fish by district, area and country, 1961-1997. *

Year	District 1				District 2				District 3			Lower Yukon Area Subtotals					
	Sublist	Comm ^{k,a}	Personal Use	ADF&G Test Fish	Total	Sublist	Comm ^{k,a}	ADF&G Test Fish	Total	Sublist	Comm	Total	Sublist	Comm	Personal Use	ADF&G Test Fish	Total
1961		84,466			84,466		29,026		29,026		4,368	4,368		117,860			117,860
1962		67,099			67,099		22,224		22,224		4,687	4,687		94,010			94,010
1963		85,004			85,004		24,221		24,221		7,020	7,020		116,245			116,245
1964		67,555			67,555		20,246		20,246		4,705	4,705		92,506			92,506
1965		89,268			89,268		23,763		23,763		3,204	3,204		116,235			116,235
1966		70,788			70,788		16,927		16,927		3,612	3,612		91,327			91,327
1967		104,350			104,350		20,239		20,239		3,618	3,618		128,207			128,207
1968		79,465			79,465		21,392		21,392		4,543	4,543		105,400			105,400
1969		71,688			71,688		14,756		14,756		3,595	3,595		90,039			90,039
1970		56,648			56,648		17,141		17,141		3,705	3,705		77,494			77,494
1971		86,042			86,042		19,226		19,226		3,490	3,490		108,758			108,758
1972		70,052			70,052		17,855		17,855		3,841	3,841		91,748			91,748
1973		56,981			56,981		13,859		13,859		3,204	3,204		74,044			74,044
1974		71,840			71,840		17,948		17,948		3,480	3,480		93,268			93,268
1975		44,585			44,585		11,315		11,315		4,177	4,177		60,077			60,077
1976		62,410			62,410		16,556		16,556		4,148	4,148		83,114			83,114
1977		69,915			69,915		16,722		16,722		3,965	3,965		90,602			90,602
1978	5,246	59,006			64,252	3,964	32,924		36,888	3,902	2,916	6,818	13,112	94,846			107,958
1979	2,879	75,007			77,886	4,268	41,488		45,756	3,325	5,018	8,343	10,472	121,523			131,995
1980	3,669	90,382			94,051	3,674	50,004		53,678	4,818	5,240	10,058	12,161	145,626			157,787
1981	2,282	99,506			101,788	3,580	45,781		49,361	4,011	4,023	8,034	9,873	149,310			159,183
1982	2,311	74,450			76,761	2,109	39,132		41,241	3,359	2,609	5,968	7,779	116,191			123,970
1983	6,263	95,457			101,720	9,065	43,229		52,294	4,910	4,106	9,016	20,238	142,792			163,030
1984	4,624	74,671			79,295	7,172	36,697		43,869	4,394	3,039	7,433	16,190	114,407			130,597
1985	3,071	90,011			93,082	3,468	48,365		51,833	3,342	2,588	5,930	9,881	140,964			150,845
1986	5,275	53,035			58,310	6,483	41,849		48,332	4,305	901	5,206	16,063	95,785			111,848
1987	7,278	76,643	0		83,921	9,866	47,458		57,324	4,708	2,039	6,747	21,852	126,140	0		147,992
1988	3,938	56,120	67	989	61,114	3,823	35,120	68	39,011	4,547	1,767	6,314	12,308	93,007	67	1,057	106,439
1989	4,585	61,570	286	794	67,215	7,147	33,166	59	40,372	4,778	1,645	6,423	16,490	96,381	286	853	114,010
1990	6,619	51,199	450	1,063	59,331	9,546	33,061	152	42,759	4,093	2,341	6,434	20,258	86,601	450	1,215	108,524
1991	5,925	56,332		485	62,742	7,617	39,260	113	46,990	3,187	2,344	5,531	16,729	97,936		598	115,263
1992	5,141	74,212		930	80,283	7,074	38,139	0	45,213	4,991	1,819	6,810	17,206	114,170		930	132,306
1993	10,423	49,286		1,408	61,117	11,516	37,293	164	48,973	6,602	1,501	8,103	28,541	88,080		1,572	118,193
1994	6,654	62,241		1,561	70,456	9,034	41,692	70	50,796	6,149	1,114	7,263	21,837	105,047		1,631	128,515
1995	5,960	76,106		2,078	84,144	9,037	41,458	74	50,569	5,419	0	5,419	20,416	117,564		2,152	140,132
1996	3,646	56,642		1,698	61,986	7,780	30,209	0	37,989	6,783	0	6,783	18,209	86,851		1,698	106,758
1997	7,550	66,384		2,791	76,725	9,350	39,363	20	48,733	6,311	0	6,311	23,211	105,747		2,811	131,769
Avg. Harvest:																	
1992-1996	6,365	63,697		1,535	71,597	8,888	37,758	62	46,708	5,989	887	6,876	21,242	102,342		1,597	125,181
1987-1996	6,015	62,035			69,231	8,244	37,686		46,000	5,126	1,457	6,583	19,385	101,176			121,813

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Year	District 4				District 5				District 6					Upper Yukon Area Subtotals								
	Subsist	Comm	Comm-Related ²	Total	Subsist	Comm ²	Comm-Related ²	Personal Use	Total	Subsist	Comm ²	Comm-Related ²	Personal Use	ADF&G Test Fish	Total	Subsist	Comm	Comm-Related ²	Personal Use	ADF&G Test Fish	Total	
1961																1,804	0				1,804	
1962																724	0				724	
1963																803	0				803	
1964																1,081	0				1,081	
1965																1,863	0				1,863	
1966																1,968	0				1,968	
1967																1,449	0				1,449	
1968																1,128	0				1,128	
1969																988	0				988	
1970																1,651	0				1,651	
1971																1,748	0				1,748	
1972																1,092	0				1,092	
1973																1,309	0				1,309	
1974		685	0	685		2,663	0	2,663		1,473	0					4,821	0				4,821	
1975		389	0	389		2,872	0	2,872		500	0					3,761	0				3,761	
1976		409	0	409		3,151	0	3,151		1,102	0					4,962	0				4,962	
1977		985	0	985		4,162	0	4,162		1,008	0					6,155	0				6,155	
1978	5,549	608	0	6,157	10,405	3,079	0	13,484	1,231	635	0			1,866	17,185	4,322	0				21,507	
1979	7,203	1,989	0	9,192	11,997	3,389	0	15,386	1,333	772	0			2,105	20,533	6,150	0				26,683	
1980	11,053	1,521	0	12,574	17,684	4,891	0	22,575	1,826	1,847	0			3,773	30,563	8,359	0				38,922	
1981	4,432	1,347	0	5,779	13,300	6,374	0	19,674	2,085	987	0			3,072	19,817	8,708	0				28,525	
1982	5,077	1,087	0	6,164	12,859	5,385	0	18,244	2,443	981	0			3,424	20,379	7,453	0				27,832	
1983	9,754	601	0	10,355	16,780	3,608	0	20,388	2,706	911	0			3,617	29,240	5,118	0				34,358	
1984	7,850	961	0	8,811	14,989	3,689	0	18,658	3,599	867	0			4,466	26,238	5,497	0				31,735	
1985	7,425	664	0	8,089	15,090	3,418	0	18,508	7,375	1,142	0			8,517	29,890	5,224	0				35,114	
1986	9,530	502	0	10,032	15,944	2,733	0	18,677	3,701	950	0			4,651	29,175	4,185	0	0			33,360	
1987	7,914	1,524	0	9,438	17,556	3,758	0	21,314	4,096	3,338	0			7,434	29,566	8,620	0	1,708			39,892	
1988	9,515	3,159	0	12,674	17,200	3,436	0	20,636	4,884	762	0	623	24	6,293	31,599	7,357	0	2,058	24		41,038	
1989	9,074	2,790	0	11,864	20,338	3,266	0	23,604	2,546	1,741	0	453	440	5,160	31,956	7,817	0	2,330	440		42,543	
1990	11,122	3,536	2	14,660	14,589	3,353	12	17,952	2,818	1,757	399	451	833	6,058	28,329	8,646	413	2,144	833		40,365	
1991	11,100	2,446	1,136	14,682	16,429	3,810	16	20,255	2,515	686	386	0	91	3,678	30,044	6,942	1,538	0	91		38,615	
1992	8,291	1,651	743	10,685	17,661	3,852	3	21,516	2,438	572	181	0	32	3,223	26,420	6,075	927	0	32		35,454	
1993	11,914	1,349	228	13,491	22,111	3,008	0	25,119	2,709	1,113	332	426	0	4,580	36,734	5,470	580	426	0		43,190	
1994	10,530	2,216	227	12,973	19,628	3,739	5	23,372	2,568	2,135	471	0	0	5,174	32,726	8,090	703	0	0		41,519	
1995	9,474	262	237	9,973	16,866	3,242	0	20,108	1,779	1,680	1,087	399	0	4,925	28,118	5,164	1,324	399	0		35,006	
1996	8,193	45	92	8,330	15,727	2,497	260	18,484	1,177	278	169	215	0	1,839	25,097	2,820	521	215	0		28,653	
1997	12,008	1,450	7	13,463	18,049	3,678	0	21,727	2,712	1,968	762	313	0	5,753	32,767	7,094	769	313	0		40,943	
Avg. Harvest:																						
1992-1996	9,680	1,105	305	11,090	18,405	3,288	54	21,726	2,134	1,152	448	208	6	3,948	30,219	5,524	607	208	6		36,764	
1987-1996	8,713	1,898	267	11,877	17,813	3,398	30	21,912	2,733	1,404	303			4,838	30,259	6,700	598	928			38,626	

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Year	Yukon Area Totals						Canada: Yukon Territories						Total Yukon River Drainage										
	Subsid. ¹	Comm.	Comm-Related ²	Personal Use	ADF&G Test Fish	Sport Fish ³	Mainstem Yukon						Subsid. ⁴	Comm.	Comm-Related ²	Personal Use	ADF&G Test Fish	Sport Fish	Total				
							Non-Commercial			Comm.	Total	Old Crow											
							Domestic	Aboriginal	Sport ⁵			Aboriginal								Total			
1961	21,488	119,864	0			141,152		9,300	3,446	12,746	500	13,246	31,288	123,110				154,398					
1962	11,110	94,734	0			105,844		9,300	4,037	13,337	600	13,937	21,010	98,771				119,781					
1963	24,862	117,048	0			141,910		7,750	2,283	10,033	44	10,077	32,656	119,331				151,987					
1964	16,231	93,567	0			109,818		4,124	3,208	7,332	76	7,408	20,431	96,795				117,226					
1965	18,608	118,098	0			134,706		3,021	2,265	5,286	94	5,380	19,723	120,363				140,086					
1966	11,572	93,315	0			104,887		2,445	1,942	4,387	65	4,452	14,082	95,257				109,339					
1967	16,448	129,856	0			146,104		2,920	2,187	5,107	43	5,150	19,411	131,843				151,254					
1968	12,106	106,526	0			118,632		2,800	2,212	5,012	30	5,042	14,936	108,738				123,674					
1969	14,000	91,027	0			105,027		957	1,640	2,597	27	2,624	14,984	92,667				107,651					
1970	13,874	79,145	0			93,019		2,044	2,811	4,855	8	4,863	16,928	81,756				97,682					
1971	25,684	110,507	0			136,191		3,260	3,178	6,438	9	6,447	28,953	113,685				142,638					
1972	20,258	92,840	0			113,098		3,960	1,789	5,729		5,729	24,218	94,609				118,827					
1973	24,317	75,353	0			99,670		2,319	2,199	4,518	4	4,522	26,640	77,552				104,192					
1974	19,964	98,089	0			118,053	406	3,342	1,808	5,556	76	5,631	23,787	99,897				123,684					
1975	13,045	63,838	0			76,883	400	2,500	3,000	5,905	100	6,000	16,045	66,838				82,883					
1976	17,806	87,776	0			105,582	500	1,000	3,500	5,000	25	5,025	19,331	91,276				110,607					
1977	17,581	96,757	0		156	114,494	531	2,247	4,720	7,498	29	7,527	20,388	101,477			156	122,021					
1978	30,297	99,168	0		523	129,988	421	2,485	2,975	5,881		5,881	33,203	102,143			523	135,869					
1979	31,005	127,873	0		554	159,232	1,200	3,000	6,175	10,375		10,375	35,205	133,648			554	169,607					
1980	42,724	153,985	0		956	197,665	3,500	7,546	300	9,500	20,846	2,000	22,846	55,770	163,485		1,256	220,511					
1981	29,690	158,018	0		769	188,477	237	8,879	300	8,593	18,009	100	18,109	38,906	166,611		1,069	206,586					
1982	28,156	123,644	0		1,006	152,808	435	7,433	300	8,640	16,808	400	17,208	36,426	132,284		1,306	170,016					
1983	49,478	147,910	0		1,048	198,436	400	5,025	300	13,027	18,752	200	18,952	55,103	160,937		1,348	217,388					
1984	42,428	119,904	0		251	162,683	260	5,850	300	9,885	16,295	500	16,795	49,038	129,789		851	179,478					
1985	39,771	146,188	0		1,368	187,327	478	5,800	300	12,573	19,151	150	19,301	48,199	158,761		1,668	206,628					
1986	45,238	99,970	0		796	146,004	342	8,825	300	10,797	20,064	300	20,364	54,505	110,767		1,096	166,368					
1987	51,418	134,760	0	1,706	502	188,386	330	6,069	300	10,864	17,563	51	17,614	57,868	145,624		1,706	206,000					
1988	43,907	100,364	0	2,125	1,081	944	148,421	282	7,178	850	13,217	100	21,427	51,467	113,581		2,125	1,081	1,594	169,848			
1989	48,446	104,198	0	2,616	1,293	1,053	157,606	400	6,930	300	9,789	17,419	525	17,944	56,301	113,987		2,616	1,293	1,353	175,550		
1990	48,587	95,247	413	2,594	2,048	544	149,433	247	7,109	300	11,324	19,980	258	19,238	56,201	106,571		413	2,594	2,048	844	168,671	
1991	46,773	104,878	1,538	0	689	773	154,651	227	9,011	300	10,906	20,444	163	20,607	56,174	115,784		1,538	0	689	1,073	175,258	
1992	45,626	120,245	927	0	962	431	168,191	277	6,349	300	10,877	17,803	100	17,903	52,352	131,122		927	0	962	731	186,094	
1993	65,275	93,550	560	426	1,572	1,895	163,078	243	5,576	300	10,350	16,469	142	16,611	71,236	103,900		560	426	1,572	1,995	179,889	
1994	54,563	113,137	703	0	1,631	2,281	172,315	373	8,089	300	12,028	20,790	428	21,218	63,453	125,165		703	0	1,631	2,581	193,533	
1995	48,535	122,728	1,324	399	2,152	2,525	177,863	300	7,945	700	11,146	20,091	796	20,887	57,576	133,874		1,324	399	2,152	3,225	198,550	
1996	43,306	89,671	321	215	1,898	3,151	138,562	141	8,451	850	10,164	19,608	26	19,672	51,964	99,835		321	215	1,898	4,001	158,234	
1997	55,978	112,841	769	313	2,811	1,913	174,625	288	8,888	1,230	5,311	15,717	811	16,528	65,965	118,152		769	313	2,811	3,143	191,153	
Avg. Harvest:																							
1962-1998	51,461	107,866	807	208	1,603	2,017	163,962	267	7,282	490	10,913	18,952	306	19,258	59,316	118,779		807	208	1,603	2,507	183,220	
1987-1998	48,644	107,878	599	1,008		1,380	161,831	282	7,271	430	11,067	19,049	263	19,312	57,459	118,944		1,008	1,458	1,820		181,143	

¹ Subsistence harvest not available by district until 1978. ADF&G test fish is the number of fish sold by test fisheries. Does not include coastal subsistence harvest in Hooper Bay and Scammon Bay.

² Includes estimates of illegal sales (refer to Appendix A.4).

³ Includes department test fish sales prior to 1988.

⁴ Commercial related refers to the estimated harvest of female chinook salmon to produce roe sold.

⁵ Estimated sport fish harvest for Alaskan portion of the Yukon River drainage. A majority of the sport fish harvest occurs in the Tanana River drainage (District 6).

⁶ Canadian sport fish harvest unknown prior to 1980.

⁷ Includes Alaskan subsistence harvest and Canadian Domestic and Aboriginal harvests.

Appendix A.18. Yukon River summer chum salmon total utilization in numbers of fish by district and area, 1961-1997. ^a

Year	District 1					District 2				District 3			Lower Yukon Area Subtotals				
	Subsist	Comm ^b	Personal Use	ADF&G Test Fish	Total	Subsist	Comm ^b	ADF&G Test Fish	Total	Subsist	Comm	Total	Subsist	Comm ^b	Personal Use	ADF&G Test Fish	Total
1961		0					0				0			0			
1962		0					0				0			0			
1963		0					0				0			0			
1964		0					0				0			0			
1965		0					0				0			0			
1966		0					0				0			0			
1967		9,453			9,453		1,425		1,425		57	57		10,935			10,935
1968		12,995			12,995		1,407		1,407		68	68		14,470			14,470
1969		56,886			56,886		5,080		5,080		0	0		61,966			61,966
1970		117,357			117,357		19,649		19,649		0	0		137,006			137,006
1971		93,928			93,928		6,112		6,112		50	50		100,090			100,090
1972		114,234			114,234		20,907		20,907		527	527		135,668			135,668
1973		221,644			221,644		63,402		63,402		463	463		285,509			285,509
1974		466,004			466,004		74,152		74,152		1,721	1,721		541,877			541,877
1975		418,323			418,323		99,139		99,139		0	0		517,462			517,462
1976		273,204			273,204		99,190		99,190		9,802	9,802		382,196			382,196
1977		250,652			250,652		105,679		105,679		3,412	3,412		359,743			359,743
1978	30,897	393,785			424,682	21,684	227,548		249,232	1,706	27,003	28,709	54,287	648,336			702,623
1979	16,144	369,934			386,078	23,276	172,838		196,114	9,531	40,015	49,546	48,951	582,787			631,738
1980	15,972	391,252			407,224	13,681	308,704		322,385	5,727	44,782	50,509	35,380	744,738			780,118
1981	11,310	507,158			518,468	14,218	351,878		366,096	7,430	54,471	61,901	32,958	913,507			946,465
1982	18,452	249,516			267,968	18,442	182,344		200,786	5,840	4,086	9,926	42,734	435,946			478,680
1983	24,679	451,164			475,843	27,386	248,092		275,488	4,609	14,600	19,209	56,684	713,856			770,540
1984	28,459	292,676			321,135	26,996	236,931		263,927	7,351	1,087	8,438	62,806	530,694			593,500
1985	24,349	247,486			271,835	19,795	188,099		207,894	3,687	1,792	5,479	47,831	437,377			485,208
1986	38,854	381,127			419,981	41,496	288,427		329,923	12,238	442	12,680	92,588	669,996			762,584
1987	30,760	222,898	0		253,658	33,134	174,876		208,010	12,178	3,501	15,677	76,070	401,275	0		477,345
1988	28,934	645,322	416	2,876	677,548	28,787	424,461	711	453,959	14,609	13,965	28,574	72,330	1,083,748	416	3,587	1,160,081
1989	52,844	544,373	381	3,408	601,006	39,703	343,032	930	383,665	12,824	7,578	20,402	105,371	894,983	381	4,338	1,005,073
1990	36,999	146,725	256	2,186	186,166	28,453	131,755	752	160,960	9,521	643	10,164	74,973	279,123	256	2,938	357,290
1991	27,790	140,470		1,373	169,633	20,703	175,149	703	196,555	5,545	8,912	14,457	54,038	324,531		2,076	380,645
1992	33,239	177,329		1,918	212,486	24,731	147,129	0	171,860	9,599	65	9,664	67,569	324,523		1,918	394,010
1993	34,285	73,659		1,379	109,323	25,417	19,332	490	45,239	7,559	463	8,022	67,261	93,454		1,869	162,584
1994	44,753	42,332		2,789	89,854	28,652	12,869	443	41,964	8,551	35	8,586	81,956	55,238		3,212	140,404
1995	34,990	142,266		5,672	182,928	27,190	83,817	401	111,408	12,143	0	12,143	74,323	226,083		6,073	306,479
1996	27,289	92,506		7,309	127,104	28,426	30,727	0	59,153	11,368	1,534	12,902	67,083	124,767		7,309	199,158
1997	27,248	59,915		2,557	89,720	26,971	18,242	33	45,246	10,316	0	10,316	64,535	78,157		2,590	145,282
Ave. Harvest:																	
1992-1998	34,911	105,618		3,809	144,339	26,883	58,775	267	85,925	9,844	419	10,263	71,638	164,813		4,076	240,627
1987-1998	35,188	222,788			260,971	28,520	154,315		183,277	10,390	3,670	14,059	74,097	380,772			458,307

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Year	District 4				District 5				District 6					Upper Yukon Area Subtotals					
	Subsist ¹	Comm-Related ²	Avuk River ³	Total	Subsist ¹	Comm-Related ²	Personal Use	Total	Subsist ¹	Comm-Related ²	Personal Use	ADF&G Test Fish	Total	Subsist	Comm-Related	Personal Use	ADF&G Test Fish	Total	
1951		0	0			0	0			0	0				0	0			
1952		0	0			0	0			0	0				0	0			
1953		0	0			0	0			0	0				0	0			
1954		0	0			0	0			0	0				0	0			
1955		0	0			0	0			0	0				0	0			
1956		0	0			0	0			0	0				0	0			
1957		0	0			0	0			0	0				0	0			
1958		0	0			0	0			0	0				0	0			
1959		0	0			0	0			0	0				0	0			
1970		0	0			0	0			0	0				0	0			
1971		0	0			0	0			0	0				0	0			
1972		0	0			0	0			0	0				0	0			0
1973		0	0			0	0			0	0				0	0			0
1974		27,868	0	27,868	6,831	0	0	6,831	13,218	0	0	13,218	48,015	0	0	0	0	0	48,015
1975		165,054	0	165,054	12,997	0	0	12,997	14,782	0	0	14,782	192,833	0	0	0	0	0	192,833
1976		211,307	0	211,307	774	0	0	774	6,617	0	0	6,617	218,698	0	0	0	0	0	218,698
1977		169,541	0	169,541	1,274	0	0	1,274	4,317	0	0	4,317	175,132	0	0	0	0	0	175,132
1978	93,139	364,164	16,920	474,243	20,423	4,892	605	26,920	3,534	34,814	8,236	46,584	117,096	403,890	25,761	0	0	0	546,747
1979	81,838	169,430	35,317	286,585	22,869	8,608	1,009	32,486	2,312	18,491	3,891	24,694	107,019	196,529	40,217	0	0	0	343,765
1980	117,305	147,560	135,824	400,689	8,594	458	0	9,050	6,426	35,955	3,282	45,563	132,325	183,871	139,106	0	0	0	455,302
1981	48,452	59,718	270,727	378,897	27,259	1,236	49	28,544	8,960	32,477	1,987	43,424	84,671	93,431	272,763	0	0	0	450,865
1982	57,967	3,647	254,072	315,686	9,770	213	21	10,004	6,942	21,597	1,517	30,096	74,679	26,457	255,610	0	0	0	355,746
1983	46,713	6,672	248,716	302,101	22,087	42	1,856	23,985	23,896	24,309	18	48,023	92,496	31,023	250,590	0	0	0	374,109
1984	49,230	1,009	277,061	327,300	31,488	645	47	32,180	23,106	56,249	335	79,690	103,824	57,903	277,443	0	0	0	439,170
1985	59,839	12,007	415,478	487,322	26,996	700	0	27,696	23,078	66,913	1,540	91,531	109,913	79,620	417,016	0	0	0	606,549
1986	53,020	300	465,235	518,555	21,833	690	0	22,523	14,896	50,483	2,146	67,525	80,749	51,473	467,381	0	0	0	608,603
1987	48,911	29,991	179,809	258,711	20,544	362	44	21,350	25,153	10,610	450	36,213	94,608	40,963	180,303	4,262	0	0	320,136
1988	86,605	24,051	466,023	576,679	28,960	722	363	30,045	8,686	40,129	1,646	51,703	124,251	64,902	468,032	1,809	0	0	658,994
1989	40,935	18,564	491,690	551,179	12,981	154	373	13,508	7,868	42,115	4,871	54,856	61,784	60,823	496,934	1,510	6,267	0	627,318
1990	26,534	12,364	210,186	249,084	9,817	11	660	10,488	4,285	11,127	3,706	19,118	40,636	23,502	214,552	1,571	5,325	0	265,586
1991	35,289	6,381	303,263	344,913	24,184	4	31	24,199	5,069	18,197	5,695	28,961	64,502	24,582	308,989	0	1,858	0	399,931
1992	35,812	2,659	208,737	247,208	12,612	102	328	13,042	9,504	5,029	2,199	16,732	57,928	7,790	211,264	0	49	0	277,031
1993	20,076	27	42,930	63,033	11,245	0	0	11,245	6,798	3,041	664	10,503	38,119	3,068	43,594	674	0	0	85,455
1994	27,488	3,611	145,423	176,522	12,506	229	235	12,970	10,544	21,208	10,226	31,778	50,538	25,048	178,457	0	0	0	254,043
1995	25,084	8,673	480,970	514,727	7,655	107	209	7,971	11,661	24,711	12,717	35,089	44,400	33,691	558,640	780	0	0	637,511
1996	16,425	0	425,607	442,032	11,509	0	336	11,845	7,486	22,360	24,530	31,916	35,420	22,360	535,106	905	0	0	593,791
1997	24,230	2,062	109,061	135,353	4,520	137	0	4,657	3,824	14,886	10,401	19,111	32,574	17,085	133,010	391	0	0	183,060
Avg. Harvest:																			
1982-1996	24,977	3,034	252,733	323,134	11,105	88	222	11,415	9,199	15,270	10,067	34,476	45,281	18,391	205,412	472	10	0	369,566
1987-1996	36,314	10,651	296,484	343,449	15,199	169	258	15,526	9,705	19,853	6,670	26,228	61,219	30,673	319,587	1,151	0	0	413,980

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Year	Yukon Area Totals						Total
	Subsit	Comm	Comm-Related	Personal Use	ADF&G Test Fish	Sport Fish ^a	
1961	305,317	0	0				305,317
1962	261,856	0	0				261,856
1963	297,094	0	0				297,094
1964	361,080	0	0				361,080
1965	336,848	0	0				336,848
1966	154,508	0	0				154,508
1967	206,233	10,935	0				217,168
1968	133,880	14,470	0				148,350
1969	156,191	81,966	0				238,157
1970	166,504	137,006	0				303,510
1971	171,487	100,090	0				271,577
1972	108,006	135,688	0				243,694
1973	161,012	285,509	0				446,521
1974	227,811	589,802	0				817,703
1975	211,888	710,295	0				922,183
1976	186,872	600,894	0				787,766
1977	159,502	534,875	0			310	694,693
1978	171,363	1,052,226	25,761			451	1,249,821
1979	155,970	779,316	40,217			328	975,831
1980	167,705	928,609	139,106			483	1,235,903
1981	117,629	1,006,938	272,783			612	1,397,942
1982	117,413	461,403	255,610			780	835,206
1983	149,180	744,879	250,590			998	1,145,647
1984	166,630	588,597	277,443			585	1,033,255
1985	157,744	516,997	417,016			1,267	1,093,024
1986	162,337	721,469	467,361	0		895	1,372,062
1987	170,678	442,238	180,303	4,262		846	798,327
1988	196,581	1,148,650	468,032	2,225	3,587	1,037	1,820,112
1989	167,155	955,806	496,934	1,891	10,605	2,131	1,634,522
1990	115,909	302,625	214,552	1,827	8,263	472	643,348
1991	116,540	348,113	308,989	0	3,934	1,037	781,613
1992	125,497	332,313	211,264	0	1,967	1,308	672,349
1993	105,360	96,522	43,594	674	1,869	564	248,603
1994	132,494	80,284	178,457	0	3,212	350	394,797
1995	118,723	259,774	558,640	780	8,073	1,174	945,164
1996	102,503	147,127	535,106	905	7,309	1,654	794,804
1997	97,108	95,242	133,010	391	2,590	466	328,806
Ave. Harvest							
1962-1996	116,918	183,204	305,412	472	4,686	1,050	611,143
1967-1996	135,316	411,445	319,567	1,256		1,077	873,364

- a Subsistence harvest estimates not available by district until 1978. Harvests prior to 1977 were estimated because catches of salmon other than chinook salmon were not differentiated by species. ADF&G test fish is the number of salmon sold by test fisheries.
- b Includes estimates of legal sales (refer to Appendix A.4). Includes department test fish sales prior to 1988.
- c In 1978 and 1979, the commercial related harvest was subtracted from the subsistence harvest because it was assumed this harvest was included in the reported subsistence harvest. From 1980 through 1987, the District 4 subsistence harvest was also reduced to account for commercial related harvests being reported in the subsistence harvest. It was calculated that 80.2% of the reported subsistence harvest (excluding Innoko and Koyukuk River catches) was commercial related.
- d Beginning in 1988, subsistence surveys documented subsistence only fishing catches and commercial related use separately.
- e In District 4, excluding the Anvik River, commercial related refers to the estimated number of females and incidental males harvested to produce roe sold.
- f Only roe has been sold in the Anvik River commercial fishery. The commercial related harvest shown is the estimated number of females harvested to produce roe sold.
- g From 1978 through 1988, the commercial related harvest was subtracted from the subsistence harvest in Districts 5 and 6 because it was assumed that this harvest was included in the reported subsistence harvest during that time period.
- h In District 5 and 6, commercial related refers to the number of females harvested to produce roe sold.
- i Estimated sport fish harvest for all chum salmon (assume majority of chums caught during summer season) in Alaskan portion of the drainage. A majority of the sport fish harvest occurs in the Tanana River drainage (District 8).

Appendix A.19 Yukon River fall chum salmon total utilization in numbers of fish, by district, area and country, 1961-1997. *

Year	District 1			District 2				District 3			Lower Yukon Area Subtotals						
	Subsist	Comm ^b	Personal Use	ADF&G Test Fish	Total	Subsist	Comm ^b	ADF&G Test Fish	Total	Subsist	Comm	Total	Subsist	Comm	Personal Use	ADF&G Test Fish	Total
1961		42,461			42,461				0			0		42,461			42,461
1962		53,116			53,116				0			0		53,116			53,116
1963					0				0			0		0			0
1964		8,347			8,347				0			0		8,347			8,347
1965		22,936			22,936				0			0		22,936			22,936
1966		69,836			69,836				0	1,209	1,209	0		71,045			71,045
1967		36,451			36,451				0	1,823	1,823	0		38,274			38,274
1968		49,857			49,857				0	3,068	3,068	0		52,925			52,925
1969		128,866			128,866				0	1,722	1,722	0		130,588			130,588
1970		200,306			200,306		4,858	4,858	0	3,285	3,285	0		208,449			208,449
1971		188,533			188,533				0			0		188,533			188,533
1972		136,711			136,711		12,898	12,898	0	1,313	1,313	0		150,922			150,922
1973		173,783			173,783		45,304	45,304	0			0		219,087			219,087
1974		176,036			176,036		53,540	53,540	0		552	552		230,128			230,128
1975		158,183			158,183		51,666	51,666	0	5,590	5,590	0		215,439			215,439
1976		105,851			105,851		21,212	21,212	0	4,250	4,250	0		131,313			131,313
1977		131,758			131,758		51,994	51,994	0	15,851	15,851	0		199,603			199,603
1978	390	127,947			128,337	1,297	51,646	52,943	0	266	11,527	11,793	1,953	191,120			193,073
1979	15,788	109,406			125,194	14,662	94,042	108,704	0	2,443	25,955	28,398	32,893	229,403			262,296
1980	7,433	106,829			114,262	12,435	83,881	96,316	0	2,320	13,519	15,839	22,188	204,229			226,417
1981	15,540	167,834			183,374	11,770	154,883	166,653	0	3,043	19,043	22,086	30,353	341,760			372,113
1982	10,016	97,484			107,500	9,511	96,581	106,092	0	1,659	5,815	7,474	21,186	199,880			221,066
1983	8,238	124,371			132,609	10,341	85,645	95,986	0	2,863	10,018	12,881	21,442	220,034			241,476
1984	8,885	78,751			87,636	11,394	70,803	82,197	0	2,233	6,429	8,662	22,512	155,983			178,495
1985	13,275	129,948			143,223	11,544	40,490	52,034	0	2,290	5,164	7,454	27,109	175,602			202,711
1986	9,000	59,352			68,352	13,483	51,307	64,790	0	2,155	2,793	4,948	24,638	113,452			138,090
1987	18,467	0	0		18,467	13,454	0	13,454	0	3,287	0	3,287	35,208	0	0		35,208
1988	5,475	44,890	5	639	51,009	8,600	31,845	16	40,461	1,747	2,090	3,837	15,822	78,825	5	655	95,307
1989	4,914	74,235	18	3,641	82,808	10,015	97,558	348	107,921	1,023	15,332	16,355	15,952	187,125	18	3,989	207,084
1990	5,335	25,269	60	2,088	32,732	6,187	37,077	96	43,360	2,056	3,715	5,771	13,578	86,081	60	2,164	81,863
1991	3,935	59,724		2,455	66,114	5,628	102,628	96	108,352	615	9,213	9,828	10,178	171,565		2,551	184,294
1992	5,216	0		0	5,216	7,382	0	0	7,382	2,358	0	2,358	14,956	0		0	14,956
1993	7,770	0		0	7,770	3,094	0	0	3,094	1,449	0	1,449	12,313	0		0	12,313
1994	4,887	0		0	4,887	4,151	0	0	4,151	862	0	862	9,900	0		0	9,900
1995	4,698	79,345		1,121	85,164	3,317	90,831	0	94,148	1,672	0	1,672	9,687	170,176		1,121	180,984
1996	4,147	33,629		1,717	39,493	5,287	29,851	0	34,938	2,706	0	2,706	12,140	63,280		1,717	77,137
1997	3,132	27,483		867	31,482	4,680	24,326	0	29,006	787	0	787	8,599	51,809		867	61,275
Ave. Harvest:																	
1992-1996	5,344	22,505		568	28,506	4,646	24,096	0	28,743	1,809	0	1,809	11,799	46,691		568	59,058
1987-1996	6,484	31,709			39,366	6,712	38,959		45,726	1,778	3,035	4,813	14,973	73,703			89,905

(Continued)

Year	District 4				District 5				District 6					Upper Yukon Area Subtotals							
	Subsist ¹	Comm	Comm-Related ²	Total	Subsist ¹	Comm	Comm-Related ²	Personal Use	Total	Subsist ¹	Comm	Comm-Related ²	Personal Use	ADF&G Test Fish	Total	Subsist	Comm	Comm-Related	Personal Use	ADF&G Test Fish	Total
1961																	0	0			0
1962																	0	0			0
1963																	0	0			0
1964																	0	0			0
1965																	381	0			381
1966																	0	0			0
1967																	0	0			0
1968																	0	0			0
1969																	722	0			722
1970																	1,146	0			1,146
1971																	1,061	0			1,061
1972																	1,254	0			1,254
1973																	13,003	0			13,003
1974		9,213	0	9,213	23,951	0		23,951	26,884	0				26,884		59,648	0			59,648	
1975		13,666	0	13,666	27,212	0		27,212	18,692	0				18,692		59,570	0			59,570	
1976		1,742	0	1,742	5,387	0		5,387	17,948	0				17,948		25,077	0			25,077	
1977		13,980	0	13,980	25,730	0		25,730	18,673	0				18,673		58,383	0			58,383	
1978	6,931	10,988	1,721	21,640	46,485	21,016	5,220	72,721	26,870	13,259	3,687			43,816	82,286	45,263	10,628			138,177	
1979	34,697	48,899	3,199	86,795	102,695	47,459	8,097	158,251	44,596	34,185	7,170			85,951	181,988	130,543	18,466			330,997	
1980	19,328	27,978	4,347	51,653	75,861	41,771	605	118,237	50,260	19,452	68			69,780	145,449	89,201	5,020			239,670	
1981	18,662	12,082	1,311	32,055	104,612	86,620	6,956	198,187	23,613	25,989	3,019			52,621	146,887	124,691	11,285			282,863	
1982	20,152	3,894	167	24,213	71,786	13,593	42	85,421	18,968	6,820	598			26,384	110,906	24,307	805			136,018	
1983	32,246	4,482	1,963	38,691	105,103	43,993	0	149,096	29,073	34,089	3,101			66,263	166,422	82,564	5,064			254,050	
1984	28,937	7,625	2,215	38,777	98,376	24,060	57	122,493	22,670	20,564	56			43,290	149,983	92,249	2,328			204,560	
1985	22,750	24,452	2,525	49,727	117,125	25,338	0	142,463	36,963	42,352	0			79,315	176,838	92,142	2,525			271,505	
1986	26,126	2,045	0	28,171	87,729	22,053	395	110,177	24,973	1,892	182			27,047	138,828	25,990	577			165,395	
1987	41,467	0	0	41,467	141,335	0	0	15,750	157,085	124,567	0	3,316		127,903	307,389	0	0	19,066		326,456	
1988	16,958	15,662	1,421	34,041	84,209	16,989	0	1,762	102,960	34,597	21,844	1,806	2,114	27,008	87,369	135,764	54,495	3,227	3,876	27,008	224,370
1989	24,540	11,776	3,407	39,723	112,001	18,215	3,989	3,294	137,499	58,654	49,090	7,353	1,770	16,984	133,851	195,195	79,081	14,749	5,064	16,984	311,073
1990	19,241	4,989	3,177	27,407	90,513	7,778	1,198	3,723	103,212	44,568	43,182	7,793	1,393	7,060	103,996	154,322	85,949	12,168	9,116	7,060	234,615
1991	20,675	3,737	2,354	26,966	74,002	27,355	4,759	106,116	40,469	28,195	15,253	0	1,385	86,302	135,346	59,287	23,366	0	1,385	219,384	
1992	21,232	0	0	21,232	45,701	0	0	45,701	25,713	15,721	3,301	0	1,407	46,142	92,646	15,721	3,301	0	1,407	113,075	
1993	10,832	0	0	10,832	43,764	0	0	43,764	9,853	0	0	163	0	10,016	64,449	0	0	163	0	64,612	
1994	13,325	0	0	13,325	66,396	3,630	0	70,026	33,597	1	4,368	0	0	37,966	113,318	3,631	4,368	0	0	121,317	
1995	14,057	2,924	5,807	22,788	57,594	9,778	20,255	87,627	49,168	67,855	6,262	863	0	124,148	120,819	80,557	32,324	863	0	234,563	
1996	16,786	2,918	0	19,704	63,473	11,878	9,980	85,331	36,467	10,266	7,308	356	0	54,397	116,726	25,062	17,288	356	0	159,432	
1997	11,734	2,458	0	14,192	55,258	2,446	1,474	59,178	19,550	0	0	284		19,834	86,542	4,954	1,474	284	0	93,204	
Ave. Harvest:																					
1992-1996	15,246	1,168	1,161	17,576	55,386	5,057	6,047	66,490	30,960	18,769	4,248	276	281	54,534	101,592	24,994	11,456	276	281	138,600	
1987-1996	19,931	4,201	1,617	25,749	77,899	9,562	4,018	93,932	45,767	23,615	8,444	998		81,209	143,597	37,378	11,079	3,450		200,896	

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Year	Alaska Yukon Area Totals					Canadian Totals					Yukon Drainage (Alaska/Canada) Totals							
	Subsist	Comm	Comm-Related	Personal Use	ADF&G Test Fish	Total	Old Crow Aboriginal	Mainstem Yukon River Aboriginal	Domestic	Comm	Subtotal	Total	Subsist or Non-Comm ²	Comm	Comm-Related	Personal Use	ADF&G Test Fish	Total
1961	101,772	42,461	0			144,233	2,000	3,800		3,276	7,076	9,076	107,572	45,737	0			153,309
1962	87,285	53,116	0			140,401	2,000	6,500		836	7,436	9,436	95,785	54,052	0			149,837
1963	99,031	0	0			99,031	20,000	5,500		2,196	7,696	27,696	124,031	2,196	0			126,227
1964	120,360	8,347	0			128,707	6,056	4,200		1,929	6,129	12,187	130,618	10,276	0			140,894
1965	112,283	23,317	0			138,600	7,535	2,183		2,071	4,254	11,789	122,001	25,388	0			147,389
1966	51,503	71,045	0			122,548	8,605	1,430		3,157	4,587	13,192	61,538	74,202	0			135,740
1967	68,744	38,274	0			107,018	11,768	1,850		3,343	5,193	16,961	82,362	41,617	0			123,979
1968	44,627	52,925	0			97,552	10,000	1,160		453	1,833	11,633	55,807	53,378	0			109,185
1969	52,063	131,310	0			183,373	3,377	2,120		2,279	4,399	7,776	57,560	133,589	0			191,149
1970	55,501	209,595	0			265,096	620	612		2,479	3,091	3,711	56,733	212,074	0			268,807
1971	57,162	189,594	0			246,756	15,000	150		1,761	1,911	16,911	72,312	191,355	0			263,667
1972	36,002	152,176	0			188,178	5,000	0		2,532	2,532	7,532	41,002	154,708	0			195,710
1973	53,670	232,090	0			285,760	6,200	1,129		2,808	3,935	10,135	80,999	234,896	0			295,895
1974	93,776	289,776	0			383,552	7,000	1,636	466	2,544	4,646	11,646	102,878	292,320	0			395,198
1975	86,591	275,009	0			361,600	11,000	2,500	4,600	2,500	9,600	20,600	104,691	277,509	0			382,200
1976	72,327	156,390	0			228,717	3,100	100	1,000	1,000	2,100	5,200	76,527	157,390	0			233,917
1977	82,771	257,986	0			340,757	5,580	1,430	1,499	3,990	6,919	12,479	91,260	261,976	0			353,236
1978	84,239	236,383	10,628			331,250	5,000	482	728	3,356	4,566	8,566	90,449	239,739	10,628			340,816
1979	214,881	359,946	18,466			593,293		11,000	2,000	9,084	22,084	22,084	227,881	369,030	18,466			615,377
1980	167,637	293,430	5,020			466,087	6,000	3,218	4,000	9,000	16,218	22,218	180,855	302,430	5,020			488,305
1981	177,240	466,451	11,285			654,976	3,000	2,410	1,611	15,260	19,281	22,281	184,261	481,711	11,285			677,257
1982	132,092	224,187	805			357,084	1,000	3,096	683	11,312	15,091	16,091	136,871	235,499	805			373,175
1983	187,864	302,598	5,064			495,526	2,000	1,200	300	25,990	27,490	29,490	191,364	328,588	5,064			525,016
1984	172,495	208,232	2,328			383,055	4,000	1,800	535	22,932	25,267	29,267	178,830	231,164	2,328			412,322
1985	203,947	257,744	2,525			474,216	3,500	1,740	279	35,746	37,765	41,265	209,466	303,480	2,525			515,481
1986	163,466	139,442	577			303,485	657	2,200	222	11,464	13,886	14,543	166,545	150,906	577			318,028
1987	342,597	0	0	19,066		361,663	135	3,622	132	40,591	44,345	44,480	346,486	40,591	0	19,066		406,143
1988	151,586	133,320	3,227	3,881	27,663	319,677	1,071	1,882	349	30,263	32,494	33,565	154,898	163,583	3,227	3,881	27,663	353,242
1989	211,147	266,206	14,749	5,082	20,973	518,157	2,909	2,462	100	17,549	20,111	23,020	216,618	283,755	14,749	5,082	20,973	541,177
1990	167,900	122,010	12,168	5,176	9,224	316,478	2,410	3,675	0	27,537	31,212	33,622	173,985	149,547	12,168	5,176	9,224	350,100
1991	145,524	230,852	23,366	0	3,936	403,678	1,576	2,438	0	31,404	33,842	35,418	149,538	262,256	23,366	0	3,936	439,096
1992	107,602	15,721	3,301	0	1,407	128,031	1,935	304	0	18,576	18,880	20,815	109,841	34,297	3,301	0	1,407	148,846
1993	76,762	0	0	163	0	76,925	1,668	4,660	0	7,762	12,422	14,090	83,090	7,762	0	163	0	91,015
1994	123,218	3,631	4,368	0	0	131,217	2,654	5,319	0	30,035	35,364	38,008	131,191	33,666	4,368	0	0	169,225
1995	130,506	250,733	32,324	863	1,121	415,547	5,489	1,099	0	39,012	40,111	45,600	137,094	289,745	32,324	863	1,121	461,147
1996	128,866	88,342	17,288	356	1,717	236,569	3,025	1,260	0	20,069	21,329	24,354	133,151	108,411	17,288	356	1,717	260,923
1997	95,141	56,713	1,474	284	867	154,479	6,294	1,218	0	8,068	9,286	15,580	102,653	64,781	1,474	284	867	170,059
Ave. Harvest:																		
1992-1998	113,391	71,685	11,456	276	849	197,858	2,954	2,528	0	23,091	25,619	26,573	118,873	94,776	11,456	276	849	226,231
1987-1996	158,571	111,082	11,079	3,459		290,794	2,287	2,672	58	26,280	29,010	31,297	163,588	137,361	11,079	3,459		322,091

² Subsistence harvest estimates not available by district until 1978. Subsistence harvests prior to 1977 were estimated because catches of salmon other than chinook salmon were not differentiated by species. Minimum estimates of fall chum subsistence catches for 1961-1978 because surveys were conducted prior to the end of the fishing season.

³ Includes department test fish sales prior to 1988.

⁴ From 1978 through 1988, the commercial related harvest was subtracted from the subsistence harvest in Districts 4, 5 and 6 because it was assumed that this harvest was included in the reported subsistence harvest during that time period. Beginning in 1989, subsistence surveys attempted to document subsistence only fishing catches and commercial related use separately.

⁵ In Districts 4, 5 and 6, commercial related refers to the estimated number of females harvested to produce roe sold.

⁶ Includes an estimated 95,768 fall chum salmon legally sold in District 5.

⁷ Includes an estimated 119,168 fall chum salmon legally sold in District 6.

⁸ Includes Alaskan subsistence harvest and Canadian Domestic and Aboriginal harvests.

Appendix A.20. Yukon River coho salmon total utilization in numbers of fish, by district, area, and country, 1961-1997. *

Year	District 1			District 2				District 3			Lower Yukon Area Subtotals						
	Subsist	Comm ^b	Personal Use	ADF&G Test Fish	Total	Subsist	Comm ^b	ADF&G Test Fish	Total	Subsist	Comm	Total	Subsist	Comm	Personal Use	ADF&G Test Fish	Total
1961		2,855			2,855		0		0		0	0		2,855			2,855
1962		22,928			22,928		0		0		0	0		22,928			22,928
1963		5,572			5,572		0		0		0	0		5,572			5,572
1964		2,446			2,446		0		0		0	0		2,446			2,446
1965		350			350		0		0		0	0		350			350
1966		19,254			19,254		0		0		0	0		19,254			19,254
1967		9,925			9,925		0		0		1,122	1,122		11,047			11,047
1968		13,153			13,153		0		0		150	150		13,303			13,303
1969		13,989			13,989		0		0		1,009	1,009		14,998			14,998
1970		12,632			12,632		0		0		0	0		12,632			12,632
1971		12,165			12,165		0		0		0	0		12,165			12,165
1972		21,705			21,705		506		506		0	0		22,211			22,211
1973		34,860			34,860		1,781		1,781		0	0		36,641			36,641
1974		13,713			13,713		176		176		0	0		13,889			13,889
1975		2,288			2,288		200		200		0	0		2,488			2,488
1976		4,064			4,064		17		17		0	0		4,081			4,081
1977		31,720			31,720		5,319		5,319		538	538		37,577			37,577
1978	1,142	16,460			17,602	598	5,835		6,433	223	758	981	1,963	23,053			25,016
1979	3,184	11,369			14,553	1,132	2,850		3,982	74	0	74	4,390	14,219			18,609
1980	1,808	4,829			6,637	4,801	2,660		7,461	91	0	91	6,700	7,489			14,189
1981	3,769	13,129			16,898	3,736	7,848		11,584	510	419	929	8,015	21,396			29,411
1982	11,192	15,115			26,307	10,229	14,179		24,408	675	87	762	22,096	29,381			51,477
1983	3,590	4,595			8,185	6,072	2,557		8,629	917	0	917	10,579	7,152			17,731
1984	6,095	29,472			35,567	7,066	43,064		50,130	740	621	1,361	13,901	73,157			87,058
1985	3,246	27,676			30,922	4,834	17,125		21,959	376	171	547	8,456	44,972			53,428
1986	2,725	24,824			27,549	9,140	21,197		30,337	954	793	1,747	12,819	46,614			59,633
1987	6,396	0	0		6,396	6,894	0		6,894	754	0	754	14,044	0	0		14,044
1988	4,389	36,028	0	407	40,824	7,104	34,758	18	41,880	1,667	1,419	3,086	13,160	72,205	0	425	85,790
1989	5,077	22,967	59	1,685	29,808	5,039	38,402	120	43,561	537	3,988	4,525	10,653	65,377	59	1,805	77,894
1990	3,301	12,160	8	1,194	16,663	6,344	16,405	30	22,779	1,028	918	1,944	10,671	29,483	8	1,224	41,386
1991	1,808	54,095		2,094	57,997	3,297	40,898	86	44,281	1,340	1,905	3,245	6,445	96,898		2,180	105,523
1992	5,426	0		0	5,426	6,587	0	0	6,587	1,549	0	1,549	13,562	0	0	0	13,562
1993	2,343	0		0	2,343	1,695	0	0	1,695	279	0	279	4,317	0	0	0	4,317
1994	3,272	0		0	3,272	3,881	0	0	3,881	363	0	363	7,516	0	0	0	7,516
1995	2,251	21,625		193	24,069	2,142	18,488	0	20,630	891	0	891	5,284	40,113		193	45,590
1996	2,445	27,705		1,728	31,878	3,475	20,974	0	24,449	444	0	444	6,364	48,679		1,728	56,771
1997	1,823	21,450		498	23,771	2,424	13,056	0	15,480	766	0	766	5,013	34,506		498	40,017
Ave. Harvest																	
1992-1996	3,147	9,868		384	13,398	3,556	7,892	0	11,448	705	0	705	7,409	17,758		384	25,551
1987-1996	3,671	17,460			21,868	4,646	16,993		21,664	885	823	1,708	9,202	35,276			45,239

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Appendix A.20. (p 2 of 3).

Year	District 4				District 5				District 6					Upper Yukon Area Subtotals								
	Subsist	Comm	Comm-Related ¹	Total	Subsist	Comm	Comm-Related ¹	Personal Use	Total	Subsist	Comm	Comm-Related ¹	Personal Use	ADF&G Test Fish	Total	Subsist	Comm	Comm-Related ¹	Personal Use	ADF&G Test Fish	Total	
1961																						
1962																						
1963																						
1964																						
1965																						
1966																						
1967																						
1968																						
1969																					95	
1970																					558	
1971																					38	
1972																					22	
1973																					0	
1974		0	0			1,409	0	1,409		1,479	0				1,479		2,888	0			2,888	
1975		0	0			5	0	5		53	0				53		58	0			58	
1976		0	0			0	0	0		1,103	0				1,103		1,103	0			1,103	
1977		0	0			2	0	2		1,284	0				1,284		1,284	0			1,284	
1978	145	32	0	177	970	1	0	971	4,709	3,066	0				7,775	5,824	3,099	0			8,923	
1979	197	155	0	352	595	0	0	595	4,612	2,791	0				7,403	5,404	2,946	0			8,350	
1980	7,734	30	0	7,764	561	0	0	561	5,163	1,226	0				6,389	13,456	1,256	0			14,714	
1981	2,239	0	0	2,239	1,713	0	0	1,713	9,261	2,284	0				11,545	13,213	2,284	0			15,497	
1982	2,952	15	0	2,967	3,428	0	0	3,428	7,418	7,760	0				15,198	13,798	7,760	0			21,563	
1983	3,948	0	0	3,948	2,448	0	0	2,448	6,932	6,168	0				13,100	13,326	6,168	0			19,494	
1984	2,867	1,095	0	3,962	17,467	0	0	17,467	14,785	7,688	0				22,473	35,119	8,783	0			43,902	
1985	3,949	838	0	4,887	8,098	0	0	8,098	11,761	11,762	0				23,523	23,808	12,700	0			36,508	
1986	2,458	0	0	2,458	5,870	0	0	5,870	13,321	441	0				13,762	21,649	441	0			22,090	
1987	3,479	0	0	3,479	11,842	0	0	58 11,900	53,006	0	0	2,465			55,471	68,327	0	0	2,523		70,850	
1988	4,714	2	0	4,716	19,755	8	0	103 19,866	30,201	13,972	0	1,147	13,295		54,670	54,670	13,982	0	1,250	13,295	83,107	
1989	4,030	3	0	4,033	7,187	84	0	82 7,253	16,841	16,084	0	731	2,140		37,796	30,058	16,171	0	813	2,140	49,182	
1990	3,614	0	0	3,614	11,562	0	0	18 11,580	17,613	11,549	3,255	1,155	1,426		34,998	32,789	11,549	3,255	1,173	1,426	50,192	
1991	4,451	14	0	4,465	4,931	0	0	4,931	21,561	6,268	3,506	0	791		32,126	30,943	6,262	3,506	0	791	41,522	
1992	8,429	0	0	8,429	12,376	0	0	12,376	17,554	6,556	1,423	0	1,629		27,162	36,359	6,556	1,423	0	1,629	47,967	
1993	1,167	0	0	1,167	5,984	0	0	5,984	4,304	0	0	0	0		4,304	11,455	0	0	0	0	11,455	
1994	3,515	0	0	3,515	4,174	0	0	4,174	29,389	120	4,331	0	0		33,840	37,078	120	4,331	0	0	41,529	
1995	1,934	0	0	1,934	2,205	0	0	2,205	16,802	5,826	1,074	417	0		26,119	22,941	5,826	1,074	417	0	30,258	
1996	2,467	181	0	2,628	6,588	0	0	6,588	14,893	3,803	3,339	198	0		22,233	23,948	3,864	3,339	198	0	31,449	
1997	3,754	814	0	4,568	3,583	0	0	3,583	11,595	0	0	350	0		11,945	18,932	814	0	350	0	20,096	
Ave. Harvest:																						
1992-1996	3,502	32	0	3,535	6,265	0	0	6,265	16,968	3,261	2,033	123	326		22,732	26,756	3,293	2,033	123	326	32,532	
1987-1996	3,780	18	0	3,798	6,660	9	0	6,669	22,616	6,418	1,693	611		33,266	35,057	6,445				2,142	45,760	

-Continued-

Year	Alaska Yukon Area Totals							Canadian Totals					Yukon Drainage (Alaska/Canada) Totals							
	Subsid	Comm	Comm-Related ¹	Personal Use	ADF&G Test Fish	Sport Fish ²	Total	Old Crew Aboriginal	Mainstem Yukon River			Total	Subsist or Non-Comm	Comm	Comm-Related ¹	Personal Use	ADF&G Test Fish	Sport Fish	Total	
									Aboriginal	Domestic	Comm									
1961	9,192	2,855	0				12,047						9,192	2,855	0				12,047	
1962	9,480	22,926	0				32,406						9,480	22,926	0				32,406	
1963	27,699	5,572	0				33,271						27,699	5,572	0				33,271	
1964	12,187	2,446	0				14,633						12,187	2,446	0				14,633	
1965	11,789	350	0				12,139						11,789	350	0				12,139	
1966	13,192	19,254	0				32,446						13,192	19,254	0				32,446	
1967	17,164	11,047	0				28,211						17,164	11,047	0				28,211	
1968	11,613	13,303	0				24,916						11,613	13,303	0				24,916	
1969	7,776	15,093	0				22,869						7,776	15,093	0				22,869	
1970	3,966	13,188	0				17,154						3,966	13,188	0				17,154	
1971	16,912	12,203	0				29,115						16,912	12,203	0				29,115	
1972	7,532	22,233	0				29,765						7,532	22,233	0				29,765	
1973	10,236	36,641	0				46,877						10,236	36,641	0				46,877	
1974	11,646	16,777	0				28,423						11,646	16,777	0				28,423	
1975	20,708	2,546	0				23,254						20,708	2,546	0				23,254	
1976	5,241	5,184	0				10,425						5,241	5,184	0				10,425	
1977	16,333	38,863	0			112	55,308						16,333	38,863	0			112	55,308	
1978	7,787	26,152	0			302	34,241						7,787	26,152	0			302	34,241	
1979	9,794	17,165	0			50	27,009						9,794	17,165	0			50	27,009	
1980	20,158	8,745	0			67	28,970	1,500			0	1,500	21,658	8,745	0			67	30,470	
1981	21,228	23,680	0			45	44,953	500			0	500	21,728	23,680	0			45	45,453	
1982	35,894	37,176	0			97	73,167				0	0	35,894	37,176	0			97	73,167	
1983	23,905	13,320	0			199	37,424				0	0	23,905	13,320	0			199	37,424	
1984	49,020	81,940	0			831	131,791	500			0	500	49,520	81,940	0			831	132,291	
1985	32,264	57,672	0			808	90,744	250			0	250	32,514	57,672	0			808	90,994	
1986	34,468	47,255	0			1,535	83,258	300			0	300	34,768	47,255	0			1,535	83,558	
1987	82,371	0	0	2,523		1,292	86,186	308			0	308	82,677	0	0	2,523		1,292	86,492	
1988	67,830	86,167	0	1,250	13,720	2,420	171,407	350			0	350	68,180	86,167	0	1,250	13,720	2,420	171,757	
1989	40,711	81,548	0	872	3,945	1,811	128,887	470			0	470	41,181	81,548	0	872	3,945	1,811	129,357	
1990	43,460	41,032	3,255	1,181	2,650	1,947	93,525	680			0	680	44,140	41,032	3,255	1,181	2,650	1,947	94,205	
1991	37,388	103,180	3,506	0	2,971	2,775	149,820	238			0	238	37,623	103,180	3,506	0	2,971	2,775	150,055	
1992	51,921	6,556	1,423	0	1,629	1,666	63,195	495			0	495	52,416	6,556	1,423	0	1,629	1,666	63,690	
1993	15,772	0	0	0	0	897	16,669	60			0	60	15,832	0	0	0	0	897	16,729	
1994	44,594	120	4,331	0	0	2,174	51,219	332			2	2	44,826	122	4,331	0	0	2,174	51,653	
1995	28,225	45,939	1,074	417	193	1,278	77,128	509			0	509	28,734	45,939	1,074	417	193	1,278	77,635	
1996	30,312	52,643	3,339	198	1,728	1,588	89,808	41			0	41	30,353	52,643	3,339	198	1,728	1,588	89,849	
1997	23,945	35,320	0	350	498	1,470	61,583	298			2	2	24,243	35,322	0	350	498	1,470	61,583	
Avg. Harvest:																				
1992-1998	34,165	21,052	2,033	123	710	1,521	59,803	287			0	0	34,452	21,052	2,033	123	710	1,521	59,891	
1987-1998	44,258	41,721	1,693	644		1,785	92,784	348			0	0	44,606	41,721	1,693	644		1,785	93,132	

a. Subsistence harvest estimates not available by district until 1978. Subsistence harvests prior to 1977 were estimated because catches of salmon other than chinook salmon were not differentiated by species.

Minimum estimates of coho subsistence catches for 1961-1978 because surveys were conducted prior to the end of the fishing season. ADF&G test fish is the number of fish sold by test fisheries.

b. Includes department test fish sales prior to 1988.

c. In Districts 4, 5 and 6, commercial related refers to the estimated number of females harvested to produce roe sold.

d. Includes an estimated 5,015 coho salmon illegally sold in District 5.

f. Includes an estimated 31,276 coho salmon illegally sold in District 6.

g. Estimated sport fish harvest for Alaskan portion of the Yukon River drainage. A majority of the sport fish harvest occurs in the Tanana River drainage (District 6).

h. Includes Alaskan subsistence harvest and Canadian Aboriginal harvest.

Appendix A.21. Percent age composition of combined commercial and subsistence salmon harvest, Yukon River drainage, 1982-1997. ^a

Species	Year	Sample Size	Age in Years (Percent of Total)						Total
			3	4	5	6	7	8	
Chinook Salmon	1982	3,795	0.2	6.8	18.5	58.3	15.9	0.3	100.0
	1983	3,801	0.0	6.6	21.0	62.9	9.4	0.0	100.0
	1984	3,700	0.0	3.7	27.0	56.0	13.1	0.1	100.0
	1985	4,567	0.1	5.7	13.2	69.4	11.3	0.3	100.0
	1986	5,785	0.3	3.9	27.2	42.8	25.1	0.6	100.0
	1987	5,300	0.0	4.2	8.4	72.5	14.5	0.3	100.0
	1988	5,108	0.1	14.8	22.8	31.5	29.4	1.4	100.0
	1989	3,901	0.5	7.2	30.3	51.1	10.2	0.6	99.9
	1990	3,416	0.0	17.2	26.9	49.4	6.3	0.2	100.0
	1991	3,879	0.0	5.8	45.1	42.6	6.4	0.1	100.0
	1992	3,772	0.1	8.1	20.1	68.6	3.1	0.0	100.0
	1993	4,034	0.2	15.8	25.4	50.5	8.0	0.0	100.0
	1994	3,692	0.3	4.1	47.2	44.5	3.8	0.0	99.9
	1995	5,559	0.0	7.8	13.7	74.7	3.6	0.2	100.0
	1996	5,861	0.0	2.4	44.0	35.6	17.9	0.2	100.1
1997	5,134	0.0	7.5	17.8	70.5	4.2	0.1	100.1	
Summer Chum Salmon	1982	3,419	2.0	61.2	34.4	2.4			100.0
	1983	4,110	1.0	53.8	44.4	0.8			100.0
	1984	2,722	2.0	73.7	23.9	0.5			100.0
	1985	2,472	1.4	68.6	29.2	0.8			100.0
	1986	3,473	0.1	29.1	69.8	1.0			100.0
	1987	2,184	0.4	60.8	31.8	6.9			100.0
	1988	5,112	0.0	70.1	29.1	0.8			100.0
	1989	3,778	0.4	38.7	60.5	0.4			100.0
	1990	3,155	0.4	38.3	58.9	2.4			100.0
	1991	5,015	1.3	48.0	49.8	0.9			100.0
	1992	4,303	0.2	31.0	65.0	3.8			100.0
	1993	2,011	0.4	47.5	47.7	4.5			100.1
	1994	3,820	0.1	51.3	46.6	2.0			100.0
	1995	4,740	0.6	51.9	45.3	2.1			99.9
	1996	3,863	0.4	46.2	48.8	4.5	0.1		100.0
1997	3,195	0.2	29.0	67.2	3.6	0.0		100.0	
Fall Chum Salmon	1982	2,918	6.5	58.6	34.5	0.3			100.0
	1983	1,735	0.7	91.4	8.0	0.0			100.0
	1984	1,902	6.6	55.6	37.5	0.4			100.0
	1985	2,801	5.2	83.4	11.0	0.4			100.0
	1986	1,715	7.4	89.6	2.5	0.5			100.0
	1987	1,513	5.0	77.1	17.5	0.4			100.0
	1988	4,030	4.1	45.7	46.6	3.5			99.9
	1989	4,939	1.0	87.0	11.8	0.2			100.0
	1990	2,351	2.8	74.9	21.7	0.6			100.0
	1991	5,314	2.7	75.4	21.7	0.2			100.0
	1992	3,069	1.2	45.9	51.8	1.1			100.0
	1993	1,616	0.1	62.8	35.2	1.8			99.9
	1994	1,295	2.4	66.4	31.1	0.1			100.0
	1995	1,731	0.8	59.2	37.4	2.6			100.0
	1996	1,391	0.3	52.3	43.9	3.5			100.0
1997	1,245	0.3	57.2	41.6	0.9			100.0	
Coho Salmon	1982	320	4.1	87.3	8.6				100.0
	1983	121	4.1	91.7	4.1				100.0
	1984	619	12.9	73.7	13.4				100.0
	1985	462	14.1	76.3	9.6				100.0
	1986	491	2.2	88.6	9.2				100.0
	1987	0							0.0
	1988	1,091	12.2	85.5	2.3				100.0
	1989	749	20.0	74.5	5.5				100.0
	1990	428	28.9	67.1	3.9				99.9
	1991	615	8.3	91.6	0.1				100.0
	1992	920	24.1	74.4	1.6				100.1
	1993	522	15.5	83.5	1.0				100.0
	1994	752	22.9	76.2	0.9				100.0
	1995	664	41.7	58.0	0.3				100.0
	1996	944	10.4	87.2	2.4				100.0
1997	516	6.1	92.0	2.0				100.1	

^a Age composition estimated from samples collected from each gear type, by district and fishery, or from samples from adjacent fisheries and/or test fisheries of the same gear type. Fisheries for which no appropriate samples were available were not apportioned to age.

Appendix A.22. Percent of total Yukon River chinook salmon harvest (Alaska and Canada combined) attributed to region of origin, 1982-1996. ^a

Year	Lower River Stocks (U.S.) ^b	Middle River Stocks (U.S.) ^c	Canadian-Spawmed Stocks	Total
1982	15	23	62	100
1983	12	39	49	100
1984	29	36	35	100
1985	31	20	49	100
1986	26	6	68	100
1987	17	19	64	100
1988	27	12	61	100
1989	26	16	58	100
1990	19	22	59	100
1991	26	28	46	100
1992	18	23	59	100
1993	22	13	65	100
1994	16	24	60	100
1995	12	13	75	100
1996	31	7	62	100
1997 ^d				
5-Year Ave. 1992-1996	20	16	64	100
10-Year Ave. 1987-1996	21	18	61	100

^a Based on analysis of chinook salmon scale patterns, age composition, and geographic distribution of harvests and escapements.

^b Lower River stocks include tributary streams that drain the Andreafsky Hills and Kaltag Mountains between rivermiles 100 and 500.

^c Middle River stocks include the Upper Koyukuk River and Tanana River tributaries.

^d Data not available yet.

Appendix A.23. Selected environmental and salmon catch information,
Yukon River, 1961-1997.

Year	Average Nome April Air Temp. (° F)	Tanana River Nenana Ice Breakup	Iceout Yukon Delta Area	First Chinook Caught Yukon Delta Area	First Summer Chum Caught Delta Area	First District 1 Commercial period	
1961	18	5/05		6/05		6/05	a
1962	18	5/12	6/10	6/07		6/11	a
1963	18	5/05	5/29			6/03	a
1964	13	5/20	>6/12			6/15	a
1965	20	5/07	6/01	6/06		6/07	a
1966	15	5/08	6/06	6/09		6/10	a
1967	23	5/04		5/20	5/30	6/02	
1968	14	5/08			6/05	6/03	
1969	22	4/28	5/25	5/26	6/02	6/02	
1970	15	5/04	late May	6/06	6/05	6/06	
1971	13	5/08	6/05	6/11	6/15	6/11	
1972	12	5/10	6/03	6/09	6/11	6/09	
1973	18	5/04	6/01	5/30	6/05	6/05	
1974	21	5/06	late May	5/27	6/01	6/03	
1975	13	5/10	6/01	6/01	6/13	6/09	
1976	10	5/02	6/01	6/12	6/13	6/14	
1977	9	5/06	6/01	6/09	6/11	6/11	
1978	25	4/30	5/20	5/26	5/26	6/08	
1979	26	4/30	5/20	5/24	5/28	6/04	
1980	24	4/29	5/18	5/27	5/31	6/08	
1981	24	4/30	5/18	5/25	5/28	6/05	
1982	12	5/10	6/02	6/06	6/06	6/14	
1983	25	4/29	5/21	5/25	5/30	6/09	
1984	12	5/09	6/01	6/02	6/08	6/18	
1985	1	5/11	6/05	6/14	6/16	6/24	
1986	12	5/08	6/01	6/06	6/07	6/14	h
1987	19	5/05	5/31	5/31	6/04	6/15	
1988	23	4/27	5/20	5/27	5/27	6/09	h
1989	25	5/01	5/31	5/29	6/03	6/13	h
1990	26	4/23	5/28	5/29	5/31	6/14	
1991	25	5/01	5/24	5/29	5/29	6/13	
1992	22	5/14	5/30	6/13	6/13	6/20	
1993	28	4/24	5/19	5/26	5/28	6/14	
1994	20	4/29	5/22	5/24	5/28	6/13	
1995	26	4/26	5/18	5/24	5/26	6/12	
1996	21	5/05	5/19	5/24	5/24	6/10	
1997	27	4/30	5/15	5/22	5/25	6/11	

a Information not available.

b Subsistence or trot net fishery.

c Caught 6/09 Mt. Village, back calculated arrival date to mouth.

d Caught 6/03 Pilot Station, back calculated arrival date to mouth.

e Caught 5/23 Marshall, back calculated arrival date to mouth.

f Caught 6/05 Pitkas Point, back calculated arrival date to mouth.

g Caught 6/01 Kalskag, back calculated arrival date to mouth.

h Special six inch maximum mesh size fishing period.

i Caught 6/01 St. Marys, back calculated arrival date to mouth.

j Average May air temperature was 8.2 degrees fahrenheit below normal.

k The mainstem Yukon River was ice free, but ice remained along the coast until June 10.

m Average April air temperature was 9 degrees fahrenheit above normal.

Appendix A.24. Total catch and estimated catch of Western Alaska (including Canadian Yukon) chinook salmon (in thousands of fish) taken in Japanese high seas salmon gillnet fisheries and total catch of chinook salmon taken in foreign and joint-venture trawl fisheries, 1964-1997.

Year	Japanese Mothership Gillnet		Japanese Landbased Driftnet		Japanese Total Gillnet		Bering Sea-Aleutian Area Trawl				Gulf of Alaska Trawl		
	Western Alaska	Total	Western Alaska	Total	Western Alaska	Total	Foreign	Joint Venture Groundfish ^d	U.S. Domestic	Total	Foreign	Joint Venture/U.S. Groundfish ^e	Total
	Origin		Origin		Origin								
1964	179	410	40	208	219	618							
1965	106	185	20	102	126	267							
1966	108	208	22	118	130	328							
1967	71	128	22	115	93	243							
1968	244	352	18	97	262	459							
1969	367	554	17	88	384	642							
1970	312	437	28	148	340	595							
1971	132	206	27	139	159	345							
1972	189	261	20	107	209	388							
1973	56	119	31	165	87	284							
1974	208	361	36	188	244	549							
1975	108	162	20	137	128	299							
1976	117	285	42	201	159	486							
1977	55	93	31	146	86	239					4.8		4.8
1978	36	105	63	210	99	315	39.1			39.1			
1979	69	126	45	182	114	286	100.4			100.4	16.9	1.0	17.9
1980	416	704	22	160	438	864	113.1	1.9		115.0	31.6	0.2	31.8
1981	30	88	55	190	85	276	35.6	0.3		36.2	28.6	0.0	28.6
1982	45	107	41	165	86	272	13.9	1.7		15.6	4.7	1.2	5.9
1983	31	87	44	178	75	265	9.8	0.5		10.3	5.9	3.6	9.5
1984	36	82	21	92	57	174	9.5	1.7		11.2	11.1	63.2	74.3
1985	25	66	22	100	47	167	7.1	2.5	1.5	11.1	0.3	13.6	13.9
1986	24	60	20	76	44	137	1.0	4.8	3.4	9.2	0.0	20.8	20.8
1987	20	39		74		116	1.0	8.4	12.8	22.2		0.8	0.8
1988	23	26		47		73		5.6	24.7	30.3		0.1	0.1
1989		16		51		67		8.6	31.8	40.4		6.7	6.7
1990						23			14.0	14.0		14.8	14.8
1991						45			35.8	35.8		37.6	37.6
1992 ^g									37.4	37.4		16.0	16.0
1993 ^h									46.0	46.0		24.6	24.6
1994									44.4	44.4		13.6	13.6
1995									22.5	22.5		14.6	14.6
1996									63.2	63.2		15.8	15.8
1997									50.2	50.2		15.1	15.1

^a Species composition unknown.

^b Information not available.

^c Longline harvest only, no trawling conducted in 1986.

^d Joint-venture harvest reported through 1989 (fishery ended in 1990).

^e Joint-venture harvest reported through 1988 when fishery ended. U.S. ground fish fishery harvest reported beginning in 1989.

^f Japanese mothership fishery converted to "nontraditional landbased salmon fishery".

^g U.S. fishery entirely replaced directed foreign and joint-venture groundfish harvests.

Appendix A.25. List of emergency orders pertaining to the Districts 1-6 chinook and summer chum salmon fishery, Yukon Area, 1997.

E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
3-S-LY-01-97	June 11	Opened the commercial salmon fishing season effective 6:00 p.m. Wednesday June 11, 1997 in District 1 of the Lower Yukon Area.	The first chinook salmon was caught by a subsistence fisherman on May 20 near Sheldon Point. The first chinook salmon was caught in a department test gillnet on May 29, 1997. Test fishing and subsistence catches of chinook salmon increased moderately on June 4 and remained steady until June 8. Test fishing catches of chinook and summer chum increased substantially on June 9. At this time, adequate numbers of chinook salmon are present in Districts 1 and 2 to provide for subsistence needs. Approximately 2 weeks of chinook salmon passage prior to June 11 should provide adequate escapement from this portion of the chinook salmon return. Chinook salmon run timing appears to be near average. Summer chum salmon run timing appears to be average.
3-S-LY-02-97	June 11	Established a 12-hour fishing period and allowed the taking of salmon for commercial purposes with unrestricted mesh size gillnets from 6:00 p.m. Wednesday June 11, 1997 until 6:00 a.m. Thursday June 12, 1997 in District 1 of the Lower Yukon Area.	Adequate numbers of chinook salmon are present in Districts 1 and 2 to provide for subsistence needs. Approximately seven days of increasing chinook salmon passage will occur by June 10 to June 11 and should provide adequate escapement from this portion of the chinook salmon return. Chinook salmon run timing appears to be near average and most similar to the 1988 and 1991 runs.
3-S-LY-03-97	June 15	Opened the commercial salmon fishing season effective 6:00 p.m. Sunday June 15, 1997 in District 2 of the Lower Yukon Area.	Test fishing and subsistence catches of chinook salmon increased moderately on June 4 and remained steady until June 8. Test fishing catches of chinook and summer chum increased substantially on June 9. At this time, adequate numbers of chinook salmon are present in Districts 1 and 2 to provide for subsistence needs. Approximately 2 weeks of chinook salmon passage prior to June 11 should provide adequate escapement from this portion of the chinook salmon return. Chinook salmon run timing appears to be near average. Summer chum salmon run timing appears to be average.
3-S-LY-04-97	June 15	Established a 12-hour fishing period and allowed the taking of salmon for commercial purposes with unrestricted mesh size gillnets	Adequate numbers of chinook salmon are present in Districts 1 and 2 to provide for subsistence needs. Approximately seven to ten days of increasing chinook salmon passage will occur by June 8 to June 11

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E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
		from 6:00 p.m. Sunday June 15, 1997 until 6:00 a.m. Monday June 16, 1997 in District 2 of the Lower Yukon Area.	and should provide adequate escapement from this portion of the chinook salmon return. Chinook salmon run timing appears to be near average and most similar to the 1988 and 1991 runs. Summer chum salmon run timing appears to be average. The abundance of chinook and summer chum salmon appears to be near average at this time. However, the percentage of 4-year-old summer chum salmon appears to be very low compared to average.
3-S-LY-05-97	June 16	Established a 12-hour fishing period and allowed the taking of salmon for commercial purposes with unrestricted mesh size gillnets from 6:00 p.m. Monday June 16, 1997 until 6:00 a.m. Tuesday June 17, 1997 in District 1.	Test fish data and Pilot Station Sonar data indicates that the chinook salmon run timing is early and most similar to the 1995 run. Summer chum salmon run timing also appears to be early. The Pilot Station Sonar count to date is approximately 65,584 chinook and 133,355 chum salmon. The test fish CPUE through June 13 is 7.98 for chinook and 27.57 for chum salmon compared to an average of 6.18 and 16.62, respectively. The age composition of chum salmon from test fish catches between June 8 and June 10 is 12.6% age-4, 76.5% age-5 and 10.9% age-6 fish. Test fishing data indicates the chinook salmon run is near average in abundance.
3-S-LY-06-97	June 18	Established a 12-hour fishing period and allowed the taking of salmon for commercial purposes with unrestricted mesh size gillnets from 6:00 p.m. Wednesday June 18, 1997 until 6:00 a.m. Thursday June 19, 1997 in District 2.	The Pilot Station Sonar passage estimate to date is approximately 78,891 chinook and 207,912 chum salmon. The test fish CPUE through June 16 is 11.86 for chinook and 33.84 for chum salmon compared to an average of 8.67 and 24.73, respectively. However, water levels are lower than normal and may increase the efficiency of the test nets. The incidental commercial harvest of chum salmon in unrestricted mesh size openings appears to be lower than normal. The age composition of chum salmon from test fish catches between June 11 and June 16 indicates a low return of 4-year-old chum salmon to date.
3-S-LY-07-97	June 19	Established a 12-hour fishing period and allowed the taking of salmon for commercial purposes with unrestricted mesh size gillnets from 6:00 p.m. Thursday June 19, 1997 until 6:00 a.m. Friday June 20, 1997 in District 1.	Summer chum salmon run timing appears to be average at this time. The Pilot Station Sonar passage estimate to date is approximately 83,900 chinook and 230,000 chum salmon. The test fish CPUE through June 17 is 12.88 for chinook and 34.58 for chum salmon compared to an average of 9.66 and 28.31, respectively.
3-S-LY-08-97	June 22	Established a 12-hour fishing period and	The Pilot Station Sonar passage estimate through June 20 is

E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
		<p>allowed the taking of salmon for commercial purposes with unrestricted mesh size gillnets from 6:00 p.m. Sunday June 22, 1997 until 6:00 a.m. Monday June 23, 1997 in District 2.</p>	<p>approximately 138,000 chinook and 460,000 chum salmon. The test fish CPUE through June 20 is 20.19 for chinook and 41.71 for chum salmon compared to an average of 12.60 and 38.54, respectively. However, water levels are lower than normal and may increase the efficiency of the test nets. The age composition of chum salmon from test fish catches between June 15 and June 19 indicates a low return of 4-year-old chum salmon to date.</p>
3-S-LY-09-97	June 22	<p>Allowed subsistence salmon fishing for an additional 6 hours in District 1 from 3:00 p.m. Saturday June 21, 1997 until 9:00 p.m. Saturday June 21, 1997.</p>	<p>Current subsistence fishing regulations close subsistence 18 hours before, during and 12 hours after a commercial fishing period. Due to the short notice of the commercial opening there was less than 18 hours between the announcement and the beginning of the period. To allow time for subsistence fishermen to remove their gear, it was warranted to allow an additional 6 hours of subsistence fishing.</p>
3-S-LY-10-97	June 22	<p>Established a 3-hour fishing period and allows the taking of salmon for commercial purposes only with gillnets of six inch or smaller mesh size from 9:00 a.m. Sunday June 22, 1997 until 12:00 noon Sunday June 22, 1997 in District 1.</p>	<p>The Pilot Station Sonar passage estimate through June 20 is approximately 138,000 chinook and 460,000 chum salmon. The test fish CPUE through June 20 is 20.19 for chinook and 41.71 for chum salmon compared to an average of 12.60 and 38.54, respectively. However, water levels are lower than normal and may increase the efficiency of the test nets. The age composition of chum salmon from test fish catches between June 15 and June 19 indicates a slight increase in the percent of 4-year-old chum salmon to date</p>
3-S-LY-11-97	June 23	<p>Established a 6-hour fishing period and allowed the taking of salmon for commercial purposes with unrestricted mesh size gillnets from 6:00 p.m. Monday June 23, 1997 until 12:00 midnight Monday June 23, 1997 in District 1.</p>	<p>The Pilot Station Sonar passage estimate through June 20 is approximately 138,000 chinook and 460,000 chum salmon. The age composition of chum salmon from test fish catches between June 15 and June 19 indicates a low return of 4-year-old chum salmon to date. The commercial harvest to date for Districts 1 and 2 combined is estimated to be 60,000 chinook and 27,000 chum salmon.</p>
3-S-LY-12-97	June 25	<p>Established a 4-hour fishing period and allowed the taking of salmon for commercial purposes only with gillnets of six inch or smaller mesh size from 6:00 a.m. Wednesday June 25, 1997 until 10:00 a.m. Wednesday June 25, 1997 in District 2.</p>	<p>The Pilot Station Sonar passage estimate through June 22 is approximately 156,500 chinook and 619,000 chum salmon. The test fish CPUE through June 22 is 25.53 for chinook and 46.71 for chum salmon compared to an average of 14.61 and 45.15, respectively. The age composition of chum salmon from test fish catches between June 15 and June 19 indicates a slight increase in the percent of 4-year-old</p>

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E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
			chum salmon to date. The commercial harvest to date for Districts 1 and 2 combined is estimated to be 62,000 chinook and 43,000 chum salmon.
3-S-LY-13-97	June 25	Established a 6-hour fishing period and allowed the taking of salmon for commercial purposes with unrestricted mesh size gillnets from 12:00 midnight Wednesday June 24, 1997 until 6:00 a.m. Thursday June 26, 1997 in District 2.	The Pilot Station Sonar passage estimate through June 23 is approximately 168,000 chinook and 691,000 chum salmon. The test fish CPUE through June 23 is 27.24 for chinook and 49.26 for chum salmon compared to an average of 15.44 and 48.30, respectively. However, water levels are lower than normal and may increase the efficiency of the test nets. The commercial harvest to date for Districts 1 and 2 combined is estimated to be 84,000 chinook and 52,000 chum salmon. Test fishing data indicates the chinook salmon run is average to above average in abundance.
3-S-LY-14-97	June 26	Established a 9-hour fishing period and allowed the taking of salmon for commercial purposes with unrestricted mesh size gillnets from 6:00 p.m. Thursday June 26, 1997 until 3:00 a.m. Friday June 27, 1997 in District 1.	The Pilot Station Sonar passage estimate through June 24 is approximately 177,000 chinook and 819,000 chum salmon. The test fish CPUE through June 24 is 28.39 for chinook and 51.08 for chum salmon compared to an average of 16.31 and 51.18, respectively. However, water levels are lower than normal and may increase the efficiency of the test nets. The commercial harvest to date for Districts 1 and 2 combined is estimated to be 84,000 chinook and 54,500 chum salmon. Test fishing data and Pilot Station sonar data indicate the chinook salmon run is above average in abundance and the summer chum salmon run is below average to average in abundance.
3-S-LY-15-97	June 28	Established a 4-hour fishing period and allows the taking of salmon for commercial purposes only with gillnets of six inch or smaller mesh size from 10:00 a.m. Saturday June 28, 1997 until 2:00 p.m. Saturday June 28, 1997 in District 1.	The Pilot Station Sonar passage estimate through June 26 is approximately 190,000 chinook and 893,000 chum salmon. However, the sonar project has been experiencing some difficulty with operations because of high water conditions the last couple of days. The test fish CPUE through June 26 is 30.40 for chinook and 54.28 for chum salmon compared to an average of 17.84 and 57.36, respectively. However, water levels were lower than normal through June 23 and may have increased the efficiency of the test nets. The age composition of chum salmon from test fish catches between June 24 and June 26 indicates a low return of 4-year-old chum salmon to date. The commercial harvest to date for Districts 1 and 2 combined is

E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
			estimated to be 104,000 chinook and 68,000 chum salmon.
3-S-LY-16-97	June 30	Established a 6-hour fishing period and allows the taking of salmon for commercial purposes only with gillnets of six inch or smaller mesh size from 12:00 p.m. Monday June 30, 1997 until 6:00 p.m. Monday June 30, 1997 in District 1.	The Pilot Station sonar project estimated a passage of approximately 565,000 chum salmon from June 20 through June 25. Sonar passage estimate through June 28 is approximately 193,000 chinook and 914,000 chum salmon. However, the sonar project has been experiencing some difficulty with operations because of high water conditions beginning on June 28. Based on average run timing, the projected season total passage is 1.6 to 2.0 million summer chum salmon. The test fish CPUE through June 28 is 31.47 for chinook and 62.25 for chum salmon compared to an average of 19.25 and 62.25, respectively. However, water levels were lower than normal through June 23 and may have increased the efficiency of the test nets. The age composition of chum salmon from test fish catches between June 26 and June 28 indicates a low return of 4-year-old chum salmon to date. The commercial harvest to date for Districts 1 and 2 combined is estimated to be 105,000 chinook and 75,000 chum salmon.
3-S-LY-17-97	July 2	Opened the commercial salmon fishing season effective 6:00 p.m. Wednesday July 2, 1997 in that portion of District 3 upriver from Brother Mark's Slough, located approximately 8 miles below Holy Cross, to the District 4 boundary line.	Sonar passage estimate through June 29 is approximately 193,000 chinook and 914,000 chum salmon. However, the sonar project has been experiencing difficulty with operations because of high water conditions beginning on June 22. Based on average run timing, the projected season total passage is 1.6 to 2.0 million summer chum salmon. Adequate numbers of chinook and chum salmon are present to provide for subsistence and escapement needs from this portion of the salmon returns. Although the salmon roe market is poor, some interest in a harvest of chum salmon has been expressed from the village of Holy Cross in the upper portion of District 3. Because of the limited area of interest, it is warranted to only open the upper portion of District 3 to commercial fishing so that the lower portion of the district can remain on a seven day per week subsistence fishing schedule.
3-S-LY-18-97	July 2	Established two 12-hour fishing periods and allowed the taking of salmon for commercial purposes only with gillnets of six inch or	Test fishing and Pilot Station sonar data indicates the chinook salmon run is above average in abundance and the summer chum salmon run is below average to average in abundance. The test fish CPUE

E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
		smaller mesh size from 6:00 p.m. Wednesday July, 2, 1997 until 6:00 a.m. Thursday July 3, 1997 and from 6:00 p.m. Friday July 4, 1997 until 6:00 a.m. Saturday July 5, 1997 in that portion of District 3 upriver from Brother Mark's Slough, located approximately 8 miles below Holy Cross, to the District 4 boundary line.	through June 30 is 31.93 for chinook and 58.15 for chum salmon compared to an average of 20.44 and 66.76, respectively. However, water levels were lower than normal through June 23 and may have increased the efficiency of the test nets. This affects the comparability of the test fish CPUE to other years and Pilot Station sonar passage estimates.
3-S-LY-19-97	July 2	Rescinds emergency order number 3-S-LY-18-97.	Although there was some market interest for chum salmon roe, and for a commercial harvest of chum salmon near the village of Holy Cross in the upper portion of District 3, the department was notified on July 2 that no buyer is available. Based on the lack of a buyer and to allow subsistence fishing to continue on a seven day per week schedule, canceling the two commercial fishing periods is warranted.
3-S-UY-01-97	June 10	Opened the Yukon Area Subdistrict 4-A subsistence drift gillnet salmon fishing season on June 10, 1997.	The Yukon River chinook salmon migration timing appears to be normal. By regulations, that portion of Subdistrict 4-A above Stink Creek opens to subsistence drift gillnet fishing on June 21, while that portion of Subdistrict 4-A below Stink Creek opens on June 15. Allowing an earlier opening date for the Subdistrict 4-A drift gillnet fishery is not expected to adversely affect the king salmon escapement. The strength of the Yukon River king salmon return appears sufficient in numbers to provide for escapement and meet subsistence needs. Opening the Subdistrict 4-A subsistence drift gillnet season on June 10 is warranted to provide additional opportunities for subsistence fishermen catches to meet their king salmon subsistence needs.
3-S-UY-02-97	June 16	Established uninterrupted subsistence salmon fishing in Subdistricts 4-B and 4-C from Monday, June 16, until 24 hours prior to the opening of the commercial salmon fishing season.	Unlike adjacent districts or subdistricts, the subsistence salmon fishing schedule in Subdistricts 4-B and 4-C is altered on June 15 by regulation. Prior to June 15, subsistence fishermen are allowed uninterrupted subsistence salmon fishing time. On June 15, the Subdistricts 4-B and 4-C subsistence fishing schedule is altered by regulation to two 48-hour periods per week. Prior to 1990, this subsistence fishing schedule

E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
			change coincided with the opening of the Subdistricts 4-B and 4-C commercial salmon fishing season. However, since 1990, the opening of the commercial salmon fishing season in Subdistricts 4-B and 4-C have been considerably later than June 15.
3-S-UY-03-97	June 29	Opened the Yukon Area Subdistricts 4-B and 4-C commercial salmon fishing season effective 6:00 p.m. Sunday June 29, 1997.	Based on department test net catches at the mouth of the Yukon River, Pilot Station sonar passage estimates, subsistence catch reports, commercial catch statistics in Districts 1 and 2, and preliminary escapement monitoring project information, the Yukon River chinook salmon run strength appears to be at least average and the summer chum salmon run strength appears to be below average to average. With initial subsistence salmon needs being fulfilled and a harvestable surplus available, it is warranted to open the Subdistricts 4-B and 4-C commercial salmon fishing season.
3-S-UY-04-97	June 29	Established a schedule of two 48-hour commercial salmon fishing periods per week in Yukon Area Subdistricts 4-B and 4-C effective 6:00 p.m. Sunday June 29, 1997.	Based on department test net catches at the mouth of the Yukon River, Pilot Station sonar passage estimates, subsistence catch reports, commercial catch statistics in Districts 1 and 2, and preliminary escapement monitoring project information, the Yukon River chinook salmon run strength appears to be at least average and the summer chum salmon run strength appears to be below average to average.
3-S-UY-05-97	July 1	Opened the Yukon Area Subdistrict 4-A commercial salmon fishing season effective 6:00 p.m. Tuesday July 1, 1997.	Based on Department test-net catches, Pilot Station sonar passage estimates, subsistence harvest reports, and commercial catch statistics in Districts 1 and 2, the Yukon River summer chum salmon run strength appears to be below average to average. Based on the Pilot Station sonar passage to date and the estimated escapement of 120,000 summer chum salmon at Anvik River sonar through June 27, it is projected that the summer chum salmon escapement to Anvik River will exceed the minimum objective of 500,000 fish.
3-S-UY-06-97	July 1	Established three 12-hour fishing periods and allowed the taking of salmon for commercial purposes in Yukon Area Subdistrict 4-A from 6:00 p.m. Tuesday, July 1, until 6:00 a.m. Wednesday, July 2; from 6:00 p.m. Wednesday, July 2 until 6:00 a.m. Thursday, July 3; and from	Based on the Pilot Station sonar passage to date and the estimated escapement of 120,000 summer chum salmon at Anvik River sonar through June 27, it is projected that the summer chum salmon escapement to Anvik River will exceed the minimum objective of 500,000 fish. Poor summer chum salmon flesh markets limited the chum salmon harvest from the Lower Yukon Area. This level of salmon

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E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
		6:00 p.m. Friday, July 4 until 6:00 a.m. Saturday, July 5, 1997.	abundance and decreased lower-river exploitation will allow for the summer chum salmon directed commercial fishery in Subdistrict 4-A to approach the low end to mid-point of the guideline harvest range of 61,000 to 183,000 pounds of roe. Processor and commercial fishing effort is expected to be low due to current market conditions.
3-S-UY-07-97	July 1	Opened the lower 12 miles of the Anvik River and established three 12-hour commercial fishing periods.	The biological escapement goal for the Anvik River is a minimum of 500,000 summer chum salmon. In 9 days of counting, the sonar project at Anvik River mile-40 estimated the passage of 120,000 summer chum salmon through June 27, 1997. Based on average run timing it is projected that the summer chum salmon escapement to Anvik River will exceed the minimum objective of 500,000 fish.
3-S-UY-08-97	June 30	Provided 24 additional hours to a subsistence king salmon drift gillnet fishing period in Subdistrict 4-A, from 6:00 p.m. Monday June 30 until 6:00 p.m. Tuesday July 1, 1997 which normally would be closed to subsistence salmon fishing by regulation.	Current regulations prohibit subsistence fishing during the 24 hours immediately before the opening of the commercial salmon fishing season. In the spring of 1997 the Board of Fisheries adopted regulations to allow subsistence drift gillnetting for king salmon in Subdistrict 4-A only, from 6:00 p.m. Sunday until 6:00 p.m. Tuesday and from 6:00 p.m. Wednesday until 6:00 p.m. Friday during the commercial fishing season. The opening of the commercial fishing season by Emergency Order 3-UY-05-97, at 6:00 p.m. Tuesday July 1 would, under regulation, close the subsistence drift gillnet fishing for king salmon on Monday June 30 at 6:00 p.m. This is in the middle of a normal subsistence drift gillnet period.
3-S-UY-09-97	July 4	Opened the Yukon Area Subdistricts 5-A, 5-B and 5-C commercial salmon fishing season effective 6:00 p.m. Friday July 4, 1997.	Based on department test net catches at the mouth of the Yukon River, Pilot Station sonar passage estimates, subsistence catch reports, commercial catch statistics in Districts 1 and 2, and preliminary escapement monitoring project information, the Yukon River chinook salmon run strength appears to be at least average in. With initial subsistence salmon needs being fulfilled and a harvestable commercial surplus of chinook salmon available, a commercial fishery in Subdistricts 5-A, 5-B and 5-C is now warranted.
3-S-UY-10-97	July 4	Established a 36 hour commercial fishing period and allowed the taking of salmon for	At this time the department is targeting the mid-point to upper end of the chinook salmon Subdistrict 5-A, 5-B and 5-C guideline harvest

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E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
		commercial purposes in Yukon Area Subdistricts 5-A, 5-B and 5-C effective 6:00 p.m. Friday July 4, 1997.	range of 2,400 to 2,800 fish. Chinook salmon have been present in Subdistricts 5-A, 5-B and 5-C since at least June 8 and should be well distributed throughout the area at this time. With initial subsistence salmon needs being fulfilled and a harvestable commercial surplus of chinook salmon available, a 36-hour commercial fishing period in Subdistricts 5-A, 5-B and 5-C is now warranted.
3-S-UY-11-97	July 8	Established one 12-hour fishing period and allowed the taking of salmon for commercial purposes in Yukon Area Subdistrict 4-A from 6:00 p.m. Tuesday, July 8, until 6:00 a.m. Wednesday, July 9, 1997.	Based on the Pilot Station sonar passage to date and the estimated escapement of 338,000 summer chum salmon at Anvik River sonar through July 4, it is projected that the summer chum salmon escapement to Anvik River will exceed the minimum objective of 500,000 fish. No commercial fishing will occur from 6:00 a.m. Saturday, July 5, until 6:00 p.m. Tuesday, July 8, to allow the opportunity for subsistence fishing with fish wheels and setnets in Subdistrict 4-A. With initial subsistence salmon needs being fulfilled and a harvestable commercial surplus of summer chum salmon available, allowing one 12-hour commercial fishing period in Subdistrict 4-A is now warranted.
3-S-UY-12-97	July 8	Opened the lower 12 miles of the Anvik River and established the fourth commercial fishing period. Period four will be from 6:00 p.m. Tuesday, July 8, until 6:00 a.m. Wednesday, July 9, 1997, a 12-hour period.	The sonar project at Anvik River mile-40 estimated the passage of 338,000 summer chum salmon through July 4, 1997. Based on average run timing it is projected that the summer chum salmon escapement to Anvik River will exceed the minimum objective of 500,000 fish.
3-S-UY-13-97	July 8	Established a 24-hour commercial fishing period and allowed the taking of salmon for commercial purposes in Yukon Area Subdistricts 5-A, 5-B and 5-C from 6:00 p.m. Tuesday, July 8, 1997 until 6:00 p.m. Wednesday, July 9, 1997.	The commercial salmon harvest, based on verbal processor reports for the first 36-hour period is approximately 1,600 chinook salmon. At this time the department is targeting the mid-point to upper end of the chinook salmon Subdistrict 5-A, 5-B and 5-C guideline harvest range of 2,400 to 2,800 fish. With initial subsistence salmon needs being fulfilled and a harvestable commercial surplus of chinook salmon available, a 24-hour commercial fishing period in Subdistricts 5-A, 5-B and 5-C is now warranted.
3-S-UY-14-97	July 10	Established a subsistence salmon only fishing period during the Yukon Area Subdistricts 5-A, 5-B, and 5-C commercial salmon fishing	The commercial salmon harvest, based on verbal processor reports for the first 36-hour period is approximately 1,600 chinook salmon. At this time the department is targeting the mid-point to upper end of the

E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
		season. The subsistence only fishing period in Subdistricts 5-A, 5-B, and 5-C will be a 3-day period from 6:00 p.m. Thursday, July 10, until 6:00 p.m. Sunday, July 13, 1997.	chinook salmon Subdistrict 5-A, 5-B and 5-C guideline harvest range of 2,400 to 2,800 fish. The department anticipates that the guideline harvest range will be met during the second commercial fishing period scheduled from 6:00 p.m. July 8 until 6:00 p.m. July 9, 1997. In order to provide additional subsistence fishing opportunity, it is warranted to establish a 3-day subsistence only fishing period. By regulation, subsistence salmon fishing will be open five days per week from 6:00 p.m. Tuesday until 6:00 p.m. Sunday beginning Monday July 14, 1997 until further notice.
3-S-UY-15-97	July 10	Established one 12-hour fishing period and allowed the taking of salmon for commercial purposes in Yukon Area Subdistrict 4-A from 6:00 p.m. Thursday, July 10, until 6:00 a.m. Friday, July 11, 1997.	Based on the Pilot Station sonar passage to date and the estimated escapement of 409,000 summer chum salmon at Anvik River sonar through July 7, it is projected that the summer chum salmon escapement to Anvik River will exceed the minimum objective of 500,000 fish. The estimated commercial harvest is 22,000 pounds of summer chum salmon roe in Subdistrict 4-A through July 7. Buyer and commercial fishing effort is expected to be low due to poor market conditions. With initial subsistence salmon needs being fulfilled and a harvestable commercial surplus of summer chum salmon available, allowing one 12-hour commercial fishing period in Subdistrict 4-A is now warranted.
3-S-UY-16-97	July 9	Opened the lower 12 miles of the Anvik River and established the fifth and sixth commercial fishing periods. Period five will be from 6:00 p.m. Wednesday, July 9, until 6:00 a.m. Thursday, July 10, 1997, a 12-hour period. Period six will be from 6:00 p.m. Friday, July 11, until 6:00 a.m. Saturday, July 12, 1997, a 12-hour period.	The biological escapement goal for the Anvik River is a minimum of 500,000 summer chum salmon. The sonar project at Anvik River mile-40 estimated the passage of 409,000 summer chum salmon through July 7, 1997. Based on average run timing it is projected that the summer chum salmon escapement to Anvik River will exceed the minimum objective of 500,000 fish. Poor summer chum salmon flesh markets limited the chum salmon harvest from the Lower Yukon Area. Buyer and commercial fishing effort is expected to be low due to poor market conditions. Projecting that a harvestable surplus of summer chum salmon will be available, it is warranted to open the lower portion of the Anvik River for two 12-hour commercial fishing periods.
3-S-UY-17-97	July 11	Opened the Yukon Area District 6 commercial salmon fishing season effective 6:00 p.m. Friday, July 11, 1997.	Based on department test net and preliminary commercial catch statistics in the lower portions of the Yukon River, the Yukon River chinook salmon run strength appears to be above average. The first chinook salmon was caught by a Tanana River subsistence fisherman

E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
			on June 20, 1997. With initial subsistence chinook salmon needs being fulfilled, the early portion of the chinook salmon migration having passed through the fishery and allotted for escapement, and a harvestable surplus of chinook salmon available, a chinook salmon directed commercial fishery is now warranted in District 6.
3-S-UY-18-97	July 11	Established a 42-hour commercial fishing period and allowed the taking of salmon for commercial purposes in Yukon Area Subdistricts 6-A, 6-B and 6-C from 6:00 p.m. Friday July 11, until 12 noon Sunday, July 13, 1997.	Based on department test net and preliminary commercial catch statistics in the lower portions of the Yukon River, the Yukon River chinook salmon run strength appears to be above average. The first chinook salmon was caught by a Tanana River subsistence fisherman on June 20, 1997. With initial subsistence chinook salmon needs being fulfilled, the early portion of the chinook salmon migration having passed through the fishery and allotted for escapement, and a harvestable surplus of chinook salmon available, a 42-hour commercial fishing period, is warranted in District 6.
3-S-UY-19-97	July 11	Opened the Yukon Area Subdistrict 5-D commercial salmon fishing season effective 6:00 p.m. Saturday, July 12, 1997.	Based on department test net catches at the mouth of the Yukon River, Pilot Station sonar passage estimates, subsistence catch reports, commercial catch statistics in Districts 1 and 2, and preliminary escapement monitoring project information, the Yukon River chinook salmon run strength appears to be above average. With initial subsistence salmon needs being fulfilled and a harvestable commercial surplus of chinook salmon available, a commercial fishery in Subdistrict 5-D is now warranted.
3-S-UY-20-97	July 11	Established a 36-hour commercial fishing period and allowed the taking of salmon for commercial purposes in Yukon Area Subdistrict 5-D from 6:00 p.m. Saturday, July 12, until 6:00 a.m. Monday, July 14, 1997.	At this time the department is targeting the mid-point to upper end of the chinook salmon Subdistrict 5-D guideline harvest range of 300 to 500 fish. Chinook salmon have been present in Subdistrict 5-D since at least June 12 and should be well distributed throughout the area at this time. With initial subsistence salmon needs being fulfilled and a harvestable commercial surplus of chinook salmon available, a 36-hour commercial fishing period in Subdistrict 5-D is now warranted.
3-S-UY-21-97	July 13	Established three 12-hour fishing periods and allowed the taking of salmon for commercial purposes in Yukon Area Subdistrict 4-A from	Based on the Pilot Station sonar passage to date and the estimated escapement of 462,000 summer chum salmon at Anvik River sonar through July 10, it is projected that the summer chum salmon escapement to Anvik River will exceed the minimum objective of

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E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
		6:00 p.m. Sunday, July 13, until 6:00 a.m. Monday, July 14, from 6:00 p.m. Tuesday, July 15, until 6:00 a.m. Wednesday, July 16, and from 6:00 p.m. Thursday, July 17, until 6:00 a.m. Friday, July 18, 1997.	500,000 fish. The estimated commercial harvest is 34,000 pounds of summer chum salmon roe in Subdistrict 4-A through July 11. Buyer and commercial fishing effort is expected to be low due to poor market conditions. With subsistence salmon needs being fulfilled and a harvestable commercial surplus of summer chum salmon available, allowing three 12-hour commercial fishing periods in Subdistrict 4-A is now warranted.
3-S-UY-22-97	July 13	Opened the lower 12 miles of the Anvik River and established the seventh, eighth, and ninth commercial fishing periods. Period seven will be from 6:00 p.m. Sunday, July 13, until 6:00 a.m. Monday, July 14, 1997, a 12-hour period. Period eight will be from 6:00 p.m. Tuesday, July 15, until 6:00 a.m. Wednesday, July 16, 1997, a 12-hour period. Period nine will be from 6:00 p.m. Thursday, July 17, until 6:00 a.m. Friday, July 18, 1997, a 12-hour period.	The sonar project at Anvik River mile-40 estimated the passage of 462,000 summer chum salmon through July 10, 1997. Based on average run timing it is projected that the summer chum salmon escapement to Anvik River will exceed the minimum objective of 500,000 fish. Projecting that a harvestable surplus of summer chum salmon will be available, it is warranted to open the lower portion of the Anvik River for three 12-hour commercial fishing periods.
3-S-UY-23-97	July 14	Established a 42-hour commercial fishing period and allowed the taking of salmon for commercial purposes in Yukon Area Subdistricts 6-A, 6-B and 6-C from 6:00 p.m. Monday, July 14, until 12 noon Wednesday, July 16, 1997.	The chinook salmon guideline harvest range is 600 to 800 fish for District 6. An estimated 1,400 chinook and 650 summer chum salmon were harvested during the first commercial fishing period in District 6. Nenana test fish wheel catches and tower counts for the Chena and Salcha Rivers indicate above average abundance of chinook salmon in the Tanana River. Approximately 4,300 and 7,500 chinook salmon have passed the Chena and Salcha River towers respectively through July 13. These escapement estimates are very good compared to other years at this date. Summer chum salmon are present in low numbers at this time as the migration is just beginning. With initial subsistence chinook salmon needs being fulfilled, and a harvestable surplus of chinook salmon available, a 42-hour commercial fishing is warranted in District 6.
3-S-UY-24-97	July 16	Established a 36-hour commercial fishing period and allowed the taking of salmon for commercial purposes in Yukon Area	At this time the department is targeting the mid-point to upper end of the chinook salmon Subdistrict 5-D guideline harvest range of 300 to 500 fish. The estimated harvest from the first commercial fishing

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E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
		Subdistrict 5-D from 6:00 p.m. Wednesday, July 16, until 6:00 a.m. Friday, July 18, 1997.	period is 200 chinook salmon. Chinook salmon have been present in Subdistrict 5-D since at least June 12 and should be well distributed throughout the area at this time. With initial subsistence salmon needs being fulfilled and a harvestable commercial surplus of chinook salmon available, a 36-hour commercial fishing period in Subdistrict 5-D is now warranted.
3-S-UY-25-97	July 19	Established two 12-hour fishing periods and allowed the taking of salmon for commercial purposes in Yukon Area Subdistrict 4-A from 6:00 p.m. Saturday, July 19, until 6:00 a.m. Sunday, July 20, and from 6:00 p.m. Monday, July 21, until 6:00 a.m. Tuesday, July 22, 1997.	The estimated escapement of 536,000 summer chum salmon at Anvik River sonar through July 17, now exceeds the minimum objective of 500,000 fish. The estimated commercial harvest is 49,600 pounds of summer chum salmon roe in Subdistrict 4-A through July 18. With subsistence salmon needs being fulfilled and a harvestable commercial surplus of summer chum salmon available, allowing two 12-hour commercial fishing periods in Subdistrict 4-A is now warranted.
3-S-UY-26-97	July 18	Established additional subsistence fishing opportunity and allowed the taking of salmon for subsistence purposes in Yukon Area Subdistrict 4-A from 12:00 midnight Friday, July 18, until 12:00 midnight Saturday, July 19, and from 12:00 midnight Sunday, July 20, until 6:00 a.m. Monday, July 21, 1997.	The estimated commercial harvest is 49,600 pounds of summer chum salmon roe in Subdistrict 4-A through July 18. Emergency order 3-UY-25-97 established two 12-hour commercial fishing periods in Subdistrict 4-A. By regulation, subsistence fishing is closed 18 hours immediately before, during, and 12 hours after each weekly fishing period of the commercial salmon fishing season in Subdistrict 4-A. Under this regulation there may be inadequate subsistence fishing opportunity because of the frequency of commercial fishing periods. In order to provide additional subsistence salmon fishing opportunity, it is warranted to allow additional subsistence fishing time in Subdistrict 4-A at this time.
3-S-UY-27-97	July 19	Opened the lower 12 miles of the Anvik River and established the tenth and eleventh commercial fishing periods. Period ten will be from 6:00 p.m. Saturday, July 19, until 6:00 a.m. Sunday, July 20, 1997, a 12-hour period. Period eleven will be from 6:00 p.m. Monday, July 21, until 6:00 a.m. Tuesday, July 22, 1997, a 12-hour period. During these periods, fishermen are not limited to the amount of fish or pounds of roe	The biological escapement goal for the Anvik River is a minimum of 500,000 summer chum salmon. The sonar project at Anvik River mile-40 estimated the passage of 536,000 summer chum salmon through July 17, 1997, which exceeds the minimum objective of 500,000 fish. Buyer and commercial fishing effort is expected to be low due to poor market conditions. Poor summer chum salmon flesh markets limited the chum salmon harvest from the Lower Yukon Area. Projecting that a harvestable surplus of summer chum salmon will be available, it is warranted to open the lower portion of the Anvik River for two 12-hour

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E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
		they may sell.	commercial fishing periods.
3-S-UY-28-97	July 21	Established a 24-hour commercial fishing period and allowed the taking of salmon for commercial purposes in Yukon Area Subdistrict 5-D from 6:00 p.m. Monday, July 21, until 6:00 p.m. Tuesday, July 22, 1997.	At this time the department is targeting the mid-point to upper end of the chinook salmon Subdistrict 5-D guideline harvest range of 300 to 500 fish. The estimated harvest from the second commercial fishing period is 100 chinook salmon. The estimated cumulative commercial harvest is 420 chinook salmon. With initial subsistence salmon needs being fulfilled and a harvestable commercial surplus of chinook salmon available, a 24-hour commercial fishing period in Subdistrict 5-D is now warranted.
3-S-UY-29-97	July 25	Established a 42-hour commercial fishing period and allowed the taking of salmon for commercial purposes in Yukon Area Subdistricts 6-A, 6-B and 6-C from 6:00 p.m. Friday, July 25, until 12 noon Sunday, July 27, 1997.	Nenana test fish wheel catches and tower counts for the Chena and Salcha Rivers indicate below average abundance of summer chum salmon in the Tanana River. The summer chum salmon guideline harvest range is 13,000 to 38,000 fish for District 6. The estimated commercial harvest to date is and 3,700 summer chum salmon. Approximately 2,800 summer chum salmon have passed the Chena River tower through July 23 and 4,100 summer chum salmon have passed the Salcha River tower through July 20. Daily escapement estimates for summer chum salmon began increasing between July 18 and July 20. However, poor water visibility has prevented counting in the Salcha River since July 20.
3-S-UY-30-97	July 29	Terminated the two 48-hour commercial salmon fishing periods per week schedule in Yukon Area Subdistricts 4-B and 4-C effective 6:00 p.m. Friday July 25, 1997 until further notice.	Escapement monitoring projects indicate the summer chum salmon run is coming to an end. The District 4 guideline harvest range is 2,250 to 2,850 chinook and the Subdistricts 4-B and 4-C guideline harvest range is 16,000 to 47,000 summer chum salmon. The preliminary Subdistrict 4-B and 4-C commercial harvest through July 22 is 1,400 chinook salmon, 1,600 summer chum salmon in the round and 4,500 pounds of summer chum roe. The total estimated summer chum commercial harvest is 9,600 fish. Buying and commercial fishing effort have been limited this season because of poor market conditions. Based on the below average abundance of summer chum salmon and that fall chum salmon are beginning to show up in District 4, it is now warranted to terminate the commercial fishing schedule of two 48-hour periods per week in Subdistricts 4-B and 4-C. Beginning

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E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
			Sunday, July 27, subsistence fishing will follow the regular five days per week schedule until further notice, when salmon may be taken from 6:00 p.m. Sunday until 6:00 p.m. Friday.
3-S-UY-31-97	July 28	Established a 42-hour commercial fishing period and allowed the taking of salmon for commercial purposes in Yukon Area Subdistricts 6-A, 6-B and 6-C from 6:00 p.m. Monday, July 28, until 12 noon Wednesday, July 30, 1997.	The summer chum salmon guideline harvest range is 13,000 to 38,000 fish for District 6. The estimated commercial harvest to date is and 7,400 summer chum salmon. Approximately 4,200 summer chum salmon have passed the Chena River tower and 11,300 summer chum salmon have passed the Salcha River tower through July 26. Commercial fishing was not allowed from July 17 through July 24 to allow additional escapement from the first half of the summer chum salmon run.
3-S-UY-32-97	August 1	Established a 42-hour commercial fishing period and allowed the taking of salmon for commercial purposes in Yukon Area Subdistricts 6-A, 6-B and 6-C from 6:00 p.m. Friday, August 1, until 12 noon Sunday, August 3, 1997.	An estimated 5,200 summer chum salmon were harvested during the fourth commercial fishing period from July 28 to July 30. The estimated commercial harvest to date is 12,600 summer chum salmon. Approximately 7,300 summer chum salmon have passed the Chena River tower and 21,400 summer chum salmon have passed the Salcha River tower through July 30. Nenana test fish wheel catches and escapement estimates for summer chum salmon have shown an increasing trend since July 28.
3-S-UY-33-97	August 4	Established a 42-hour commercial fishing period and allowed the taking of salmon for commercial purposes in Yukon Area Subdistricts 6-A, 6-B and 6-C from 6:00 p.m. Monday, August 4, until 12 noon Wednesday, August 6, 1997.	An estimated 5,000 summer chum salmon were harvested during the fifth commercial fishing period from August 1 to August 3. The estimated commercial harvest to date is 17,500 summer chum salmon. Approximately 8,800 summer chum salmon have passed the Chena River tower and 27,800 summer chum salmon have passed the Salcha River tower through August 2. Nenana test fish wheel catches and escapement estimates for summer chum salmon have shown a decreasing trend since July 31. There has been an increase in the percentage of female summer chum salmon in the commercial harvest.
3-S-UY-34-97	August 8	Established a 42-hour commercial fishing period and allowed the taking of salmon for commercial purposes in Yukon Area Subdistricts 6-A, 6-B and 6-C from 6:00 p.m.	An estimated 4,500 summer chum salmon were harvested during the sixth commercial fishing period from August 1 to August 3. The estimated commercial harvest to date is 23,600 summer chum salmon.

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E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
		Friday, August 8, until 12 noon Sunday, August 10, 1997.	Approximately 9,400 summer chum salmon have passed the Chena River tower and 34,900 summer chum salmon have passed the Salcha River tower through August 3 and August 6, respectively. Escapement estimates for summer chum salmon have remained steady for the last week but are lower than during the peak of the run. There has been an increase in the percentage of female summer chum salmon in the commercial harvest.

Appendix A.26. List of emergency orders pertaining to the Yukon Area fall season salmon fishery, 1997.

E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
3-S-YF-01-97	August 5	This emergency order provides for additional subsistence salmon fishing opportunities by reducing the number of hours subsistence fishing is closed prior to the commercial salmon season and prior to commercial salmon fishing periods.	During the fall chum and coho salmon migration, the regulatory 24-hour subsistence salmon fishing closure prior to opening of the commercial salmon fishing season and the regulatory 18-hour subsistence salmon fishing closure prior to each commercial salmon fishing period is in excess of what is necessary to separate subsistence and commercial salmon fishing periods. Reducing the subsistence fishing closure to 12-hours prior to the commercial salmon season opening and 12-hours prior to commercial periods will allow for additional subsistence salmon fishing opportunities.
3-S-YF-02-97	August 6	Effective 9:00 a.m. Wednesday, August 6, the District 1 fall chum and coho salmon commercial fishing season, commonly referred to as the fall season, is opened.	Based primarily on the parent-year escapement, the 1997 preseason projection is for a below average return. However, when the preseason projection is applied to the Yukon River Drainage Fall Chum Salmon Management Plan, the 1997 preseason projection would still provide for limited commercial fishing activities in all districts. Inseason assessment tools available to managers of the fall chum salmon return in the lower Yukon River include the Lower Yukon test net fishery, Mountain Village drift net test fishery, Pilot Station sonar, and subsistence catch reports. Based on the assessment tools available, it is determined that a limited commercial fishery could take place in District 1 and still meet upriver escapement, rebuilding, subsistence, and commercial needs.
3-S-YF-03-97	August 6	This emergency order establishes a six-hour District 1 commercial salmon fishing period in both the "Set Gillnet Only Area" as described in 5 AAC 05.330 (a) and in the remainder of District 1, referred to as the "Drift Gillnet Area." In District 1, salmon may be taken by commercial fishermen from 9:00 a.m. Wednesday, August 6, until 3:00 p.m. Wednesday, August 6.	Inseason assessment tools available to managers of the fall chum salmon return in the lower Yukon River include the Lower Yukon River set gillnet test fishery, Mountain Village drift gillnet test fishery, Pilot Station sonar passage estimates and subsistence catch reports and age composition information. Based on the inseason assessment tools, it appears that the 1997 fall chum salmon return can provide for a limited fall chum salmon commercial fishery in District 1.
3-S-YF-04-97	August 8	Effective 9:00 a.m. Friday, August 8, 1997, the District 2 fall chum and coho salmon commercial fishing season, commonly referred to as the fall season, is opened.	Based primarily on the parent-year escapement, the 1997 preseason projection was for a below average return. However, when the preseason projection is applied to the Yukon River Drainage Fall Chum Salmon Management Plan, 1997 preseason projection would still provide for limited commercial fishing activities in all districts. Inseason assessment tools available to managers of the fall chum salmon return in the lower Yukon River include the Lower Yukon test net fishery, Mountain Village drift net

E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
3-S-YF-04-97 - continued -			test fishery, Pilot Station sonar, and subsistence catch reports. Based on the assessment tools available, it is determined that a limited commercial fishery could take place in District 2 and still meet upriver escapement, rebuilding, subsistence, and commercial needs.
3-S-YF-05-97	August 8	This emergency order establishes a six-hour District 2 commercial salmon fishing period. In District 2, salmon may be taken from 9:00 a.m. Friday, August 8, until 3:00 p.m. Friday, August 8.	Inseason assessment tools available to managers of the fall chum salmon return in the lower Yukon River include the Lower Yukon River set gillnet test fishery, Mountain Village drift gillnet test fishery, Pilot Station sonar passage estimates and subsistence catch reports and age composition information. Based on the inseason assessment tools, it appears that the 1997 fall chum salmon return can provide for a limited fall chum salmon commercial fishery in District 2.
3-S-YF-06-97	August 11	This emergency order establishes a nine-hour District 1 commercial salmon fishing period in the "Set Gillnet Only Area" as described in 5 AAC 05.330 (a). In the "Set Gillnet Only Area," salmon may be taken from 6:00 a.m. Monday, August 11, until 3:00 p.m. Monday, August 11. In the remainder of District 1, referred to as the "Drift Gillnet Area," this emergency order establishes a six-hour commercial fishing period from 9:00 a.m. Monday, August 11, until 3:00 p.m. Monday, August 11. In District 2, this emergency order establishes a six-hour commercial fishing period from 12:00 noon Monday, August 11, until 6:00 p.m. Monday, August 11.	<p>Using the preseason projection, the lower Yukon River set gillnet test fishery, Mountain Village drift gillnet test fishery, Pilot Station sonar passage estimates, subsistence catch reports, and age composition information, it appears that the 1997 fall chum salmon return is above the 650,000 fall chum salmon level needed to provide for a commercial fishery. It also appears at this time that the 1997 fall chum salmon return can provide for a fall chum salmon commercial harvest toward the lower end of each district's guideline harvest range. The guideline harvest range for the entire Yukon Area is 72,750 to 320,000 fall chum salmon. The Yukon Area guideline harvest range is subdivided, by regulation, into district(s) or subdistrict(s) ranges. The guideline harvest range for the Lower Yukon Area, Districts 1, 2, and 3, is 60,000 to 220,000 fall chum salmon.</p> <p>Based on the assessment tools available, an estimated 60,000 fall chum salmon could be taken in Districts 1, 2, and 3 and still meet upriver escapement, rebuilding, subsistence, and commercial needs. Based on processor verbal reports to date, approximately 8,200 fall chum and 3,000 coho salmon have been sold in Districts 1 and 2. No commercial salmon fishing has occurred in District 3 due to the absence of a buyer. At this time a commercial salmon-fishing period in Districts 1 and 2 is warranted.</p>
3-S-YF-07-97	August 13	This emergency order establishes a nine-hour District 1 commercial salmon fishing period in the "Set Gillnet Only Area" as described in 5 AAC 05.330 (a). In the "Set Gillnet Only Area," salmon	Based on the assessment tools available, an estimated 60,000 fall chum salmon could be taken in Districts 1, 2, and 3 and still meet upriver escapement, rebuilding, subsistence, and commercial needs. Based on processor verbal reports to date, approximately 14,000 fall chum and 7,300

E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
3-S-YF-07-97 - continued -		may be taken from 9:00 a.m. Wednesday, August 13, until 6:00 p.m. Wednesday, August 13. In the remainder of District 1, referred to as the "Drift Gillnet Area," this emergency order establishes a six-hour commercial fishing period from 12:00 noon Wednesday, August 13, until 6:00 p.m. Wednesday, August 13. In District 2, this emergency order establishes a six-hour commercial fishing period from 12:00 noon Wednesday, August 13, until 6:00 p.m. Wednesday, August 13.	coho salmon have been sold in Districts 1 and 2. No commercial salmon fishing has occurred in District 3 due to the absence of a buyer. At this time, a commercial salmon-fishing period in Districts 1 and 2 is warranted. In District 1, more time is given to set gillnet fishermen fishing in the "Set Gillnet Only Area" than is given to set gillnet and drift gillnet fishermen fishing in the remainder of the district. Tides have a greater effect on the coastal set gillnet fishermen. The increased time given to "Set Gillnet Only Area" fishermen is an attempt to compensate for differences in efficiency between the two commercial fishing locations.
3-S-YF-08-97	August 16	This emergency order establishes a nine-hour District 1 commercial salmon fishing period in the "Set Gillnet Only Area" as described in 5 AAC 05.330 (a). In the "Set Gillnet Only Area," salmon may be taken from 9:00 a.m. Saturday, August 16, until 6:00 p.m. Saturday, August 16. In the remainder of District 1, referred to as the "Drift Gillnet Area," this emergency order establishes a six-hour commercial fishing period from 12:00 noon Saturday, August 16, until 6:00 p.m. Saturday, August 16.	Based on the assessment tools available, an estimated 60,000 fall chum salmon could be taken in Districts 1, 2, and 3 and still meet upriver escapement, rebuilding, subsistence, and commercial needs. Based on processor verbal reports to date, approximately 28,000 fall chum and 16,000 coho salmon have been sold in Districts 1 and 2. No commercial salmon fishing has occurred in District 3 due to the absence of a buyer. At this time a commercial salmon-fishing period in District 1 is warranted.
3-S-YF-09-97	August 18	This emergency order establishes a nine-hour District 1 commercial salmon fishing period in the "Set Gillnet Only Area" as described in 5 AAC 05.330 (a). In the "Set Gillnet Only Area," salmon may be taken from 9:00 a.m. Monday, August 18, until 6:00 p.m. Monday, August 18. In the remainder of District 1, referred to as the "Drift Gillnet Area," this emergency order establishes a six-hour commercial fishing period from 12:00 noon Monday, August 18, until 6:00 p.m. Monday, August 18. In District 2, this emergency order establishes a six-hour commercial fishing period from 12:00 noon Monday, August 18, until 6:00 p.m. Monday, August 18.	Based on the assessment tools available, an estimated 60,000 fall chum salmon could be taken in Districts 1, 2, and 3 and still meet upriver escapement, rebuilding, subsistence, and commercial needs. Based on processor verbal reports to date, approximately 37,000 fall chum and 23,000 coho salmon have been sold in Districts 1 and 2. No commercial salmon fishing has occurred in District 3 due to the absence of a buyer. At this time a commercial salmon-fishing period in Districts 1 and 2 is warranted.
3-S-YF-10-97	August 20	This emergency order establishes a schedule of two 48-hour commercial salmon fishing periods per	The department uses the lower Yukon River set gillnet test fishery, the Mountain Village drift gillnet test fishery, Pilot Station sonar passage

E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
3-S-YF-10-97 - continued -		week in Subdistricts 4-B and 4-C of the Yukon Area. Effective Wednesday, August 20, 1997, salmon may be taken in Subdistricts 4-B and 4-C of the Yukon Area from 6:00 p.m. Wednesdays until 6:00 p.m. Fridays and from 6:00 p.m. Sundays until 6:00 p.m. Tuesdays until further notice.	<p>estimates, subsistence catch reports, commercial catch statistics in Districts 1 and 2, and age composition information to assess the fall chum salmon return. The projected Yukon River fall chum salmon return is currently above the 650,000 fall chum salmon level that is needed to provide for a commercial fishery. Based on the preseason projection and the current evaluation of the run, it appears that the 1997 fall chum salmon return can provide for a fall chum salmon commercial harvest toward the lower end of each district's guideline harvest range. The guideline harvest range for Subdistricts 4-B and 4-C is 5,000 to 40,000 fall chum salmon.</p> <p>Based on the assessment tools available, it is estimated that commercial harvests of 5,000 fall chum salmon could be taken in Subdistricts 4-B and 4-C and still meet upriver escapement, rebuilding, subsistence needs, and commercial activities. Fall chum salmon are well distributed throughout the area at this time, and with initial subsistence salmon needs being fulfilled and a harvestable commercial surplus of fall chum salmon available, establishing a commercial fishing schedule in Subdistricts 4-B and 4-C is now warranted.</p>
3-S-YF-11-97	August 24	This emergency order removes the previously established schedule of two 48-hour commercial salmon fishing periods per week in Subdistricts 4-B and 4-C of the Yukon Area. The department needs additional time to assess the fall chum salmon return to determine if there is a commercially harvestable surplus of salmon still available.	As of August 23, 1997, Pilot Station sonar has an estimated passage of approximately 573,000 fall chum salmon. Approximately 600,000 fall chum salmon are needed to meet the escapement and subsistence needs throughout the drainage. The department needs additional time to assess the fall chum salmon return to determine if there are additional salmon available for the commercial fisheries. This emergency order removes the previously established schedule for the commercial fishery in Subdistricts 4-B and 4-C until further assessments are completed.
3-S-YF-12-97	August 31	This emergency order establishes a 48-hour commercial salmon fishing period in Subdistricts 4-B and 4-C of the Yukon Area. Effective Sunday, August 31, 1997, salmon may be taken in Subdistricts 4-B and 4-C of the Yukon Area from 6:00 p.m. Sunday, August 31, until 6:00 p.m. Tuesday, September 2, 1997.	The projected Yukon River fall chum salmon return is currently above the 650,000 fall chum salmon level that is needed to provide for a commercial fishery. Based on the preseason projection and current evaluation of the run, it appears that the 1997 fall chum salmon return can provide for a fall chum salmon commercial harvest toward the lower end of each district's guideline harvest range. The guideline harvest range for Subdistricts 4-B and 4-C is 5,000 to 40,000 fall chum salmon. Based on verbal processor reports, during the first commercial period, approximately 880 fall chum salmon were harvested. With a harvestable commercial surplus of fall chum salmon available in Subdistricts 4-B and 4-C, establishing a commercial fishing period is now warranted.

E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
3-S-YF-18-97 - continued -		until 12:00 noon Thursday, September 18, 1997.	guideline harvest range for Subdistrict 5-D is 1,000 to 4,000 fall chum salmon. Based on verbal processor reports during the first commercial period, approximately 420 fall chum salmon have been harvested. With initial subsistence salmon needs being fulfilled and a harvestable commercial surplus of fall chum salmon available, establishing a second fall season commercial fishing period in Subdistrict 5-D is warranted.
3-S-YF-19-97	September 19	This emergency order closes the commercial salmon fishing season in Subdistricts 4-B, 4-C, 5-B, and 5-C of the Yukon Area at 6:00 p.m. Friday, September 19, 1997. This emergency order also continues the commercial salmon fishing season in Subdistrict 5-A.	<p>This emergency order closes the commercial salmon fishing season in Subdistricts 4-B, 4-C, 5-B, and 5-C of the Yukon River. Based on processor verbal reports, approximately 2,460 fall chum salmon and 810 coho salmon have been harvested in Subdistricts 4-B and 4-C. The guideline harvest range for Subdistricts 4-B and 4-C is 5,000 to 40,000 fall chum salmon. Based on processor verbal reports, approximately 3,170 fall chum salmon have been harvested in Subdistricts 5-A, 5-B, and 5-C. The guideline harvest range for Subdistricts 5-A, 5-B, and 5-C is 4,000 to 36,000 fall chum salmon.</p> <p>Since the majority of the fall chum salmon bound for the upper Yukon River spawning grounds (above the confluence of the Tanana River drainage) have migrated through Subdistricts 4-B, 4-C, 5-B, and 5-C, no additional commercial periods are anticipated at this time. Fishermen in these areas have requested additional subsistence time. By regulation, closing the commercial salmon season in Subdistricts 4-B, 4-C, 5-B, and 5-C provides additional subsistence opportunities by increasing the subsistence fishing time from five days a week to seven days a week.</p> <p>The Tanana River bound fall chum salmon have a later run timing. At this time, the stocks bound for the Tanana River are passing through Subdistrict 5-A. This emergency order continues the Subdistrict 5-A commercial season to provide for the possibility of commercial fishing in the event the Tanana River component of the return is assessed to be sufficient to provide for additional commercial harvest in Subdistrict 5-A.</p>

APPENDIX B

LOWER YUKON AREA SALMON

Appendix B.1. Commercial catches of chinook and summer chum salmon by mesh size, Districts 1 and 2, Lower Yukon Area, 1961-1997. ^a

Year	Unrestricted Mesh Size ^b			6 inch Max. Mesh Size ^c		
	Chinook		Summer Chum	Chinook	Summer Chum	
	District 1	District 2	Districts 1 and 2	Districts 1 and 2	Districts 1 and 2	Districts 1 and 2
1961	84,466	29,026	113,492	-	-	-
1962	67,099	22,224	89,323	-	-	-
1963	85,004	24,221	109,225	-	-	-
1964	67,555	20,246	87,801	-	-	-
1965	89,268	23,763	113,031	-	-	-
1966	70,788	16,927	87,715	-	-	-
1967	104,350	20,239	124,589	10,919	-	-
1968	79,465	21,392	100,857	14,402	-	-
1969	70,588	14,756	85,344	41,418	97	15,437
1970	56,469	17,141	73,610	104,705	57	16,623
1971	84,397	19,226	103,623	42,189	1,176	57,851
1972	68,059	17,317	85,376	78,698	1,991	37,881
1973 ^d	52,790	12,479	65,269	89,841	5,168	196,540
1974	69,457	17,464	86,921	349,758	1,631	227,507
1975	41,550	9,064	50,614	148,919	4,162	345,472
1976	56,392	15,296	71,688	267,075	7,631	128,431
1977	65,745	15,328	81,073	157,909	4,720	205,634
1978	53,198	28,872	82,070	275,512	7,737	354,603
1979	61,790	33,347	95,137	136,973	22,136	434,188
1980	78,157	42,755	120,912	95,876	19,474	605,679
1981	88,038	37,660	125,698	163,979	18,648	758,767
1982	70,743	35,656	106,399	225,106	6,887	217,563
1983	76,280	30,798	107,078	121,927	31,002	590,329
1984	65,101	29,355	94,456	242,076	16,394	287,531
1985 ^e	76,106	38,194	114,300	170,345	22,445	265,240
1986	42,922	36,603	79,525	231,372	15,307	438,182
1987	62,147	40,127	102,274	128,017	21,827	269,757
1988	32,792	20,009	52,801	225,049	39,469	848,321
1989 ^f	32,180	21,494	53,674	126,360	38,548	765,233
1990 ^f	42,092	24,000	66,092	99,588	18,147	281,418
1991 ^f	52,074	36,290	88,364	108,986	4,145	205,610
1992 ^f	54,569	28,679	83,248	81,458	27,678	242,878
1993	47,084	37,293	84,377	47,488	2,202	45,503
1994	61,633	41,692	103,325	39,832	608	15,369
1995	74,827	39,607	114,434	113,860	3,098	112,223
1996	56,642	30,209	86,851	123,233	0	0
1997	63,062	39,052	102,114	49,953	3,611	28,204
<hr/>						
10 Yr. Ave. (1977-1986)	67,808	32,857	100,665	182,108	16,475	415,772
<hr/>						
10 Yr. Ave. (1987-1996)	51,604	31,940	83,544	109,387	15,572	278,631

^a ADF&G test fishery sales included, 1961-1990. ADF&G test fishery sales not included, 1991-1993.

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

^c Catch through July 15-20, relatively few chinook and summer chum salmon taken after these dates.

^d Six inch maximum mesh size regulation beginning late June to early July became effective in 1973.

^e Six inch maximum mesh size regulation by emergency order during commercial fishing season became effective in 1985.

^f Only includes information from fish ticket database; does not include salmon purchased illegally.

^h 8 inch or greater mesh size restriction was in effect until June 27 and fishers were requested to take chum salmon home for subsistence use until June 22 in order to reduce the harvest of chums.

Appendix B.2. Chinook salmon commercial harvest data by period, chinook salmon season (unrestricted mesh size), District 1, Lower Yukon Area, 1974-1997.

Date	Period and Cumulative Harvest ^{a,b}										
	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
06/01											
06/02											
06/03											
06/04											
06/05	3.5 (3.5)					6.1 (6.1)					
06/06											
06/07								11.1 (11.1)			
06/08	7.5 (11.0)					4.9 (11.0)					
06/09					2.5 (2.5)			15.6 (26.7)			
06/10										22.3 (22.3)	
06/11		0.2 (0.2)					6.8 (6.8)				
06/12	14.7 (25.7)					19.5 (30.5)		14.5 (41.2)			
06/13					5.8 (8.3)						
06/14		0.4 (0.6)		0.04 (0.04)			26.1 (32.9)			12.7 (35.9)	
06/15	11.1 (36.8)								5.6 (5.6)		
06/16			0.1 (0.1)			9.3 (39.8)		18.3 (59.5)			
06/17					17.6 (25.9)		14.6 (47.5)			28.6 (63.6)	
06/18		1.1 (1.7)		2.6 (2.6)					12.4 (18.0)		
06/19	18.8 (55.6)		3.2 (3.3)			16.7 (56.5)		28.5 (88.0)			13.7 (13.7)
06/20					7.5 (33.4)						
06/21		5.7 (7.4)		10.4 (13.0)			26.2 (73.7)			12.7 (76.3)	
06/22	2.9 (58.5)					5.3 (61.8)			20.0 (38.0)		19.8 (32.5)
06/23			9.6 (12.9)				4.5 (78.2)				
06/24					14.4 (47.8)						
06/25		17.1 (24.5)		26.3 (39.3)					7.1 (45.1)		
06/26	7.2 (65.7)		15.4 (28.3)								18.1 (48.6)
06/27		9.8 (34.3)			5.4 (53.2)						
06/28				17.7 (57.0)							
06/29	3.8 (69.5)								18.1 (63.2)		16.5 (65.1)
06/30			13.8 (42.1)								
07/01		7.3 (41.6)		8.7 (65.7)							
07/02			14.3 (56.4)						7.5 (70.7)		
07/03											
07/04											
07/05											
07/06											
07/07											
07/08											

- Continued -

Date	Period and Cumulative Harvest a,b												
	1985	1986	1987	1988	1989 ^c	1990 ^d	1991 ^e	1992 ^f	1993	1994	1995	1996	1997
06/01													
06/02													
06/03													
06/04													
06/05													
06/06													
06/07													
06/08													
06/09													
06/10												14.0 (14.0)	
06/11													11.4 (11.4)
06/12											18 (18.4)		
06/13										14 (13.5)		6.8 (20.8)	
06/14				5.9 (5.9)			17 (17.1)						
06/15						19.0 (19.0)			9 (9.1)		18 (35.9)		
06/16			13.0 (13.0)		18.9 (18.9)					23 (36.5)			11.2 (22.5)
06/17				16.0 (21.9)								6.7 (27.5)	
06/18							15 (32.2)		23 (32.1)				
06/19			22.5 (35.5)								7 (42.4)		20.1 (42.7)
06/20		21.7 (21.7)			10.8 (29.7)			12 (11.5)				11.3 (38.8)	
06/21				10.9 (32.8)			4.7 (36.9)		10 (42.5)				
06/22					2.5 (32.2)	15.0 (34.0)		22 (33.6)		14 (50.3)	2 (44.5)		
06/23			15.0 (50.5)										7.4 (50.1)
06/24		10.2 (31.9)										10.9 (49.7)	
06/25	23.6 (23.6)						9 (48.2)						
06/26			11.6 (62.1)					10 (43.6)			1 (45.6)		13.0 (63.1)
06/27										11 (61.5)		6.9 (56.6)	
06/28	33.7 (57.3)								3 (45.4)				
06/29						6.5 (40.4)							
06/30		5.6 (37.5)											
07/01									2 (47.0)				
07/02	18.8 (76.1)						6 (52.1)	11 (54.6)					
07/03						1.7 (42.1)							
07/04		5.4 (42.9)											
07/05													
07/06													
07/07													
07/08													

^a Catch by period in thousands of fish.

^b Cumulative catch during unrestricted mesh size fishing periods in thousands of fish.

^c Does not include 3,211 chinook salmon sold illegally.

^d Does not include 1,101 chinook salmon sold illegally.

^e Does not include 2,711 chinook salmon sold illegally.

^f Does not include 1,218 chinook salmon sold illegally.

Appendix B.3. Chinook salmon commercial harvest data by period, chinook salmon season (unrestricted mesh size), District 2, Lower Yukon 1978-1997.

Period and Cumulative Harvest ^{a,b}										
Date	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
06/01										
06/02										
06/03										
06/04		2 (1.6)								
06/05										
06/06										
06/07		1 (3.0)								
06/08				8 (7.6)						
06/09	5 (4.8)		4 (3.9)							
06/10										
06/11		5 (8.1)		11 (19.0)						
06/12	3 (8.0)		8 (11.7)							
06/13						6 (6.0)				
06/14										
06/15		14 (22.3)		11 (29.5)						
06/16	4 (12.3)		11 (22.6)			7 (13.3)				
06/17					4 (4.0)					
06/18		4 (26.2)		8 (37.7)						10 (9.5)
06/19	8 (20.1)									
06/20			8 (30.7)			11 (23.9)				
06/21		7 (33.4)			8 (11.8)		6 (5.6)			
06/22										12 (21.7)
06/23	4 (24.2)		12 (42.7)			7 (30.8)			15 (14.5)	
06/24					12 (23.7)					
06/25							14 (20.0)			11 (32.5)
06/26	5 (28.9)									
06/27								7 (7.0)	12 (26.8)	
06/28					3 (27.1)		9 (29.4)			
06/29										8 (41.1)
06/30										
07/01					9 (35.7)			18 (25.3)		
07/02									7 (34.2)	
07/03										
07/04								13 (38.2)		
07/05										
07/06										
07/07									2 (36.6)	
07/08										

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Appendix B.3. (page 2 of 2).

Date	Period and Cumulative Harvest a,b									
	1988	1989	1990	1991 ^d	1992 ^c	1993	1994	1995	1996	1997
06/01										
06/02										
06/03										
06/04										
06/05										
06/06										
06/07										
06/08										
06/09									7.5 (7.5)	
06/10										
06/11								1 (1.2)		
06/12									10.0 (17.5)	
06/13										
06/14								9 (10.4)		
06/15							8 (8.2)			7.3 (7.3)
06/16	3 (2.7)								4.9 (22.4)	
06/17				12 (11.5)		11 (10.6)				
06/18			10 (10.3)					10 (20.2)		9.6 (16.8)
06/19		11 (11.0)							3.3 (25.7)	
06/20	9 (11.7)			10 (21.1)			18 (26.4)			
06/21						14 (24.7)		8 (28.6)		
06/22		8 (18.5)			6 (5.5)					15.2 (32.1)
06/23	8 (20.0)								3.3 (29.0)	
06/24			8 (18.0)	7 (27.8)	13 (18.5)					
06/25		3 (21.5)				7 (31.5)	11 (37.6)			7.0 (39.1)
06/26				4 (31.9)						
06/27						3 (33.7)				
06/28					7 (25.9)					
06/29										
06/30						3 (36.0)				
07/01									1.2 (30.2)	
07/02			5 (22.4)							
07/03							4 (41.7)			
07/04				4 (36.3)						
07/05			2 (24.0)							
07/06										
07/07										
07/08					3 (28.7)					

^a Catch by period in thousands of fish.

^b Cumulative catch during unrestricted mesh size fishing periods in thousands of fish.

^c Does not include 207 chinook salmon caught illegally.

^d Does not include 284 chinook salmon caught illegally.

Appendix B.4. Commercial chinook salmon harvest by statistical area, Lower Yukon Area, 1974-1997.

Year	District 1								Total
	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	
1974	2,935	30,174	6,984	3,987	12,721	2,048	6,826	6,165	71,840
1975	6,396	15,844	8,763	314	1,720	606	6,879	4,063	44,585
1976	8,333	27,937	7,507	851	5,101	1,415	6,164	5,102	62,410
1977	11,278	16,787	8,866	1,216	15,214	1,550	7,109	7,895	69,915
1978	886	12,237	4,135	4,388	22,019	3,738	7,533	4,070	59,006
1979	1,017	13,152	4,149	5,782	12,839	10,960	18,976	8,202	75,077
1980	464	12,832	3,235	9,224	30,737	12,333	13,654	7,903	90,382
1981	6,639	12,875	2,975	8,976	19,730	15,158	22,251	10,902	99,506
1982	3,439	11,268	2,842	9,038	9,331	7,295	18,185	13,052	74,450
1983	7,919	23,523	8,161	14,961	9,416	5,297	19,172	7,008	95,457
1984	14,385	15,320	2,598	6,297	11,123	1,434	19,089	4,425	74,671
1985	4,233	22,696	12,160	2,492	12,806	3,955	25,144	6,525	90,011
1986	4,187	7,954	3,494	5,430	10,258	1,422	15,948	4,342	53,035
1987	14,656	12,056	8,703	3,533	6,780	3,250	18,573	9,092	76,643
1988	6,780	11,154	6,023	4,274	14,123	618	8,703	5,434	57,109
1989 ^a	2,213	5,703	4,794	3,999	12,682	7,303	18,037	4,422	59,153
1990 ^b	1,473	7,315	4,478	4,257	12,486	2,794	14,619	3,739	51,161
1991 ^c	1,689	4,244	1,624	3,451	12,664	6,251	18,243	5,455	53,621
1992 ^d	11,302	12,601	9,001	6,313	5,880	2,285	18,233	7,379	72,994
1993	3,642	7,368	4,342	3,324	11,407	2,346	9,380	7,477	49,286
1994	4,176	6,723	5,037	3,888	14,580	1,686	17,575	8,576	62,241
1995	3,719	6,939	6,181	5,430	22,357	3,790	18,980	8,710	76,106
1996	6,079	6,858	3,791	3,297	8,850	4,478	16,789	6,500	56,642
1997	4,570	5,865	2,844	6,648	12,460	4,703	21,443	7,851	66,384

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Year	District 2					Total	District 3		
	334-21	334-22	334-23	334-24	334-25		334-31	334-32	Total
1974	6,344	5,611	2,624	3,369	-	17,948	1,423	2,057	3,480
1975	3,282	3,045	2,785	2,203	-	11,315	2,791	1,386	4,177
1976	5,083	4,490	3,031	3,952	-	16,556	1,827	2,321	4,148
1977	6,577	4,584	2,110	3,451	-	16,722	1,617	2,348	3,965
1978	9,004	7,953	5,248	8,499	2,220	32,924	746	2,170	2,916
1979	10,698	11,214	6,733	7,573	5,280	41,498	2,195	2,823	5,018
1980	11,544	12,903	8,259	9,591	7,707	50,004	2,039	3,201	5,240
1981	12,341	13,275	7,024	9,950	7,191	45,781	1,241	2,782	4,023
1982	10,567	9,236	5,262	8,932	5,135	39,132	896	1,713	2,609
1983	12,433	10,424	7,779	6,260	6,333	43,229	1,335	2,771	4,106
1984	9,179	11,573	4,668	5,752	5,525	36,697	900	2,139	3,039
1985	11,843	18,584	4,877	4,613	8,448	48,365	854	1,734	2,588
1986	11,138	15,326	3,450	4,336	7,599	41,849	606	295	901
1987	14,195	9,672	5,663	6,376	11,552	47,458	1,698	341	2,039
1988	6,191	11,605	4,721	6,784	5,887	35,188	1,387	380	1,767
1989	5,257	12,380	4,647	4,411	6,530	33,225	1,623	22	1,645
1990	5,592	10,675	3,741	8,514	4,691	33,213	2,128	213	2,341
1991 ^e	9,330	10,423	5,332	6,552	7,339	38,976	1,214	1,130	2,344
1992 ^f	9,014	11,647	4,135	11,311	1,825	37,932	1,160	659	1,819
1993	8,641	9,223	6,118	6,085	7,226	37,293	1,478	23	1,501
1994	9,223	14,350	4,514	8,734	4,871	41,692	1,114	0	1,114
1995	7,832	14,041	4,841	5,887	8,857	41,458	0	0	0
1996	8,265	9,134	2,749	3,626	6,435	30,209	0	0	0
1997	13,939	13,344	2,280	6,104	3,696	39,363	0	0	0

^a Does not include 3,211 chinook and 150 summer chum salmon sold illegally.

^b Does not include 1,101 chinook salmon sold illegally.

^c Does not include 2,711 chinook and 1,023 summer chum salmon sold illegally.

^d Does not include 1,218 chinook and 31 summer chum salmon sold illegally.

^e Does not include 284 chinook salmon sold illegally.

^f Does not include 207 chinook and 91 summer chum salmon sold illegally.

Appendix B.5. Commercial summer chum salmon harvest and effort data, Districts 1 and 2, Lower Yukon Area, 1967-1997. ^a

Year	District 1					District 2				
	Duration	Days Fished	Boat Hours	Catch	(Catch/Boat Hour)	Duration	Days Fished	Boat Hours	Catch	(Catch/Boat Hour)
1967	6/08-6/27	11.0	77,208	9,494	0.12	-	-	-	-	-
1968	6/06-7/03	14.0	91,380	12,995	0.14	6/13-7/02	10.5	27,600	1,407	0.05
1969	6/02-6/28	12.5	84,864	8,840	0.10	6/15-7/01	8.0	16,620	5,024	0.30
1970	6/11-7/03	10.5	58,056	87,169	1.50	6/14-7/03	9.0	15,756	17,536	1.11
1971	6/14-7/03	10.5	73,032	36,077	0.49	6/20-7/05	8.5	17,832	6,112	0.34
1972	6/08-7/01	12.5	79,236	69,658	0.88	6/15-7/01	8.5	19,296	9,040	0.47
1973 ^b	6/07-7/11	14.5	100,284	191,840	1.91	6/10-7/14	14.5	36,000	56,481	1.57
1974	6/03-7/13	16.5	114,624	461,025	4.02	6/05-7/16	15.5	35,316	72,281	2.05
1975	6/09-7/16	15.0	86,304	394,447	4.57	6/11-7/18	10.5	21,024	99,139	4.72
1976	6/14-7/14	12.0	90,658	272,493	3.01	6/20-7/16	11.0	32,624	99,190	3.04
1977	6/13-7/12	12.0	63,036	232,427	3.69	6/19-7/15	10.0	27,048	102,759	3.80
1978	6/08-7/15	13.5	100,008	393,785	3.94	6/08-7/14	13.5	44,376	218,196	4.92
1979	6/04-7/14	13.5	106,680	369,934	3.47	6/03-7/13	13.5	44,748	172,838	3.86
1980	6/09-7/15	12.8	89,412	391,252	4.38	6/08-7/17	12.5	48,060	308,704	6.42
1981	6/06-7/14	12.0	94,656	507,158	5.36	6/07-7/16	12.0	46,560	351,458	7.55
1982	6/14-7/13	9.5	81,240	248,950	3.06	6/16-7/16	10.0	37,920	180,321	4.76
1983	6/09-7/15	11.0	94,920	451,164	4.75	6/12-7/18	11.0	44,712	248,092	5.55
1984	6/18-7/13	8.0	67,776	292,676	4.32	6/20-7/16	8.0	32,208	234,677	7.29
1985 ^c	6/24-7/15	6.3	52,116	247,486	4.75	6/26-7/18	7.3	27,834	188,099	6.76
1986	6/14-7/15	8.5	66,768	381,127	5.71	6/15-7/14	7.5	33,954	288,427	8.49
1987	6/15-7/10	6.0	53,736	222,898	4.15	6/17-7/09	5.0	26,124	174,876	6.69
1988	6/09-7/15	6.8	55,692	648,198	11.64	6/12-7/14	6.8	33,456	425,172	12.71
1989	6/13-7/14	5.3	65,280	547,781 ^d	8.39	6/15-7/13	4.5	22,314	343,962	15.41
1990	6/14-7/03	2.3	21,267	148,911	7.00	6/18-7/05	2.4	12,333	132,507	10.74
1991	6/13-7/05	3.0	28,224	140,470 ^f	4.98	6/16-7/07	3.0	15,126	175,149	11.58
1992	6/20-7/09	2.9	25,925	177,329 ^g	6.84	6/22-7/08	2.3	11,705	147,129 ^h	12.57
1993	6/14-7/01	2.0	19,176	73,659	3.84	6/16-6/30	1.8	9,264	19,332	2.09
1994	6/13-7/05	1.6	14,073	42,332	3.01	6/15-7/03	1.3	6,807	12,869	1.89
1995	6/12-7/07	2.6	21,619	142,266	6.58	6/11-6/22	1.6	8,436	83,817	9.94
1996	6/10-6/28	2.5	28,812	92,506	3.21	6/09-7/01	2.4	9,339	30,727	3.29
1997	6/11-6/30	2.7	23,505	59,915	2.55	6/15-6/26	1.9	7,394	18,242	2.47

^a Summer chum salmon caught after the specified dates are not included. Includes ADF&G test fish sales through 1990.

^b Six inch maximum mesh size regulation during late June to early July became effective in 1973.

^c Six inch maximum mesh size regulation by emergency order during commercial fishing season became effective in 1985.

^d Includes 150 summer chum salmon sold illegally.

^f Includes 1,023 summer chum salmon sold illegally.

^g Includes 31 summer chum salmon sold illegally.

^h Includes 91 summer chum salmon sold illegally.

Appendix B.6. Commercial summer chum salmon harvest by statistical area, Lower Yukon Area, 1983-1997.

Year	District 1								Total
	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	
1983	42,165	112,074	37,976	64,556	29,841	22,918	96,512	45,122	451,164
1984	42,264	81,295	14,888	38,285	22,485	5,838	64,320	23,301	292,676
1985	13,696	53,540	26,127	10,047	33,133	10,381	73,948	26,614	247,486
1986	39,468	102,887	35,315	52,980	26,732	6,807	65,798	31,140	381,127
1987	34,852	51,350	22,794	15,109	21,646	7,786	45,911	23,450	222,898
1988	72,408	148,578	79,248	60,956	61,752	13,239	129,938	82,070	648,189
1989 ^a	29,129	89,794	40,036	71,576	118,908	20,468	136,869	41,051	547,631
1990 ^f	23,453	35,542	15,326	12,369	10,931	1,513	39,575	10,202	148,911
1991 ^b	13,767	32,621	5,223	11,133	11,560	23,213	34,775	7,155	139,447
1992 ^c	24,094	39,225	22,293	16,717	12,000	2,500	40,353	20,116	177,298
1993	13,123	17,969	9,745	8,672	2,820	661	9,196	11,473	73,659
1994	11,208	6,340	5,165	2,389	3,602	290	8,693	4,645	42,332
1995	32,084	23,420	15,834	19,154	15,919	3,150	24,349	8,356	142,266
1996	19,432	17,769	6,837	5,611	13,111	2,831	17,864	9,051	92,506
1997	10,764	9,519	6,190	10,374	5,429	1,650	10,719	5,270	59,915

Year	District 2					Total
	334-21	334-22	334-23	334-24	334-25	
1983	57,740	71,821	56,499	31,027	31,005	248,092
1984	46,261	91,790	43,116	36,076	19,888	236,931
1985	32,911	87,667	24,983	18,911	23,607	188,099
1986	44,393	129,569	36,304	47,179	30,982	288,427
1987	48,734	54,459	19,157	22,988	29,538	174,676
1988	74,252	140,291	56,302	86,393	65,934	425,172
1989	46,224	140,571	48,986	54,542	53,639	343,962
1990 ^f	15,414	37,585	25,132	34,980	19,396	132,507
1991	46,378	70,188	32,584	14,915	11,084	175,149
1992 ^d	31,399	59,401	22,107	31,065	3,046	147,038
1993	5,444	3,711	4,445	2,920	2,812	19,332
1994	4,100	5,314	1,435	1,395	625	12,869
1995	23,794	38,808	11,541	7,257	2,417	83,817
1996	9,177	13,056	4,965	2,479	1,050	30,727
1997	7,126	7,938	673	1,667	838	18,242

Year	District 3						Total		
	334-31			334-32			Number	Roe	Harvest ^g
	Number	Roe	Harvest ^g	Number	Roe	Harvest ^g			
1983	3,106		3,106	11,494		11,494	14,600	14,600	
1984	447		447	640		640	1,087	1,087	
1985	872		872	920		920	1,792	1,792	
1986	442		442	0		0	442	442	
1987	3,418		3,418	83		83	3,501	3,501	
1988	11,463		11,463	2,502		2,502	13,965	13,965	
1989	7,548		7,548	30		30	7,578	7,578	
1990	562		562	61		61	643	643	
1991	3,347		3,347	5,565		5,565	8,912	8,912	
1992	63		63	2		2	65	65	
1993	460		460	3		3	463	463	
1994	35		35	0		0	35	35	
1995	0		0	0		0	0	0	
1996	0	162	465	0	773	1,069	0	935	1,534
1997	0	0	0	0	0	0	0	0	0

^a Does not include 150 summer chum salmon sold illegally.^b Does not include 1,023 summer chum salmon sold illegally.^c Does not include 31 summer chum salmon sold illegally.^d Does not include 91 summer chum salmon sold illegally.^f Includes ADF&G test fish sales through 1990.^g Estimated harvest includes reported harvest of both males and females harvested to produce roe sold.

Appendix B.7. Commercial fall chum and coho salmon harvest and effort data, District 1, Lower Yukon Area, 1961-1997. ^a

Year	Duration	Days Fished ^b	Boat Hours	Fall Chum		Coho	
				Catch	(Catch/Boat Hour)	Catch	(Catch/Boat Hour)
1961	8/01-8/31	16	14,772	42,461	2.87	2,855	0.19
1962	8/01-9/03	21	46,950	53,116	1.13	22,926	0.49
1963	8/09-9/06	18	2,100	no purchases		5,572	2.65
1964	8/03-8/27	17	8,346	8,347	1.00	2,446	0.29
1965	8/02-8/04	^c	^c	22,936	^c	350	^c
1966	7/25-9/10	28	41,994	69,836	1.66	19,254	0.46
1967	7/24-8/27	21	19,272	36,451	1.89	9,925	0.51
1968	7/22-8/28	22	47,232	49,857	1.06	13,153	0.28
1969	7/21-8/23	20	39,408	128,866	3.27	13,989	0.35
1970	7/20-8/26	22	56,160	200,306	3.57	12,632	0.22
1971	7/22-8/28	22	85,344	178,744	2.09	12,165	0.14
1972	7/20-8/26	22	81,726	134,752	1.65	21,705	0.27
1973	7/19-8/25	22	107,136	173,783	1.62	34,860	0.33
1974	7/18-8/14	12	41,868	137,235	3.28	13,713	0.33
1975	7/21-8/16	12	52,128	158,183	3.03	2,288	0.04
1976	7/19-8/13	11	55,026	91,091	1.66	4,064	0.07
1977	7/18-8/23	11	50,568	129,486	2.56	31,720	0.63
1978	7/17-8/29	13	56,184	127,947	2.28	16,460	0.29
1979	7/19-8/14	8	47,352	101,400	2.14	11,369	0.24
1980	7/17-8/19	7	24,216	106,829	4.41	4,819	0.20
1981	7/16-8/17	7	35,520	167,834	4.73	13,129	0.37
1982	7/19-8/13	8	40,944	91,271	2.23	15,114	0.37
1983 ^d	7/18-8/12	6	25,848	124,371	4.81	4,560	0.18
1984 ^d	7/16-8/17	6	21,240	78,751	3.71	29,472	1.39
1985 ^d	7/18-8/13	5	20,592	124,801	6.06	27,674	1.34
1986 ^f	8/04-8/22	4	13,662	59,352	4.34	24,824	1.82
1987	No Openings	0					
1988 ^g	8/08-8/30	3	9,408	45,529	4.84	36,435	3.87
1989 ^h	7/27-8/25	5	20,161	77,876	3.86	24,672	1.22
1990 ^g	7/23-8/20	3	7,392	27,337	3.70	13,354	1.81
1991 ^h	7/29-8/27	3	19,500	59,724	3.07	54,095	3.32
1992	No Openings	0					
1993	No Openings	0					
1994	No Openings	0					
1995 ^k	7/31-8/21	3	5,436	79,345	14.60	21,625	3.98
1996	8/06-8/26	4	7,715	33,629	4.36	27,705	3.59
1997	8/06-8/18	3	7,395	27,483	3.72	21,450	2.90

^a Prior to 1986, some fall chum and coho salmon may have been caught prior to specified dates. Includes ADF&G test fish sales through 1990.

^b One day is equivalent to 24 hours during open fishing period.

^c Information unavailable.

^d District was divided into a Set Net Only (24 hour) area and a Gill Net (12 hour) area.

^e District was divided into a Set Net Only (24 or 12 hour) area and a Gill Net (12 or 6 hour) area.

^g District was divided into a Set Net Only (12 hour) area and a Gill Net (6 hour) area.

^h District was divided into a Set Net Only (16 or 12 hour) area and a Gill Net (9 or 6 hour) area.

ⁱ Includes ADF&G test fish sales through 1990.

^k District was divided into a Set Net Only (12, 9, 6, 4 or 3 hour) area and a Gill Net (9, 6, 4, or 3 hour) area.

Appendix B.8. Fall chum and coho salmon commercial harvest and effort in the Setnet Only and Gillnet areas.
District 1, Lower Yukon Area, 1983-1997. ^a

Year	Setnet Area			Gillnet Area			Total		
	No. of Fishermen	Catch	Average Catch per Fisherman	No. of Fishermen	Catch	Average Catch per Fisherman	No. of Fishermen	Catch	Average Catch per Fisherman
Fall Chum Salmon									
1983	137	46,583	340	175	61,649	352	312	108,232	347
1984	137	34,817	254	164	24,307	148	301	59,124	198
1985	159	64,838	408	153	53,694	351	312	118,532	380
1986	122	28,449	233	160	30,903	193	282	59,352	210
1987 ^b									
1988	120	21,971	183	208	23,558	113	328	45,529	139
1989	103	26,865	261	219	51,011	233	322	77,876	242
1990	83	7,553	91	218	19,784	91	301	27,337	91
1991	67	19,769	295	252	39,955	159	319	59,724	187
1992 ^b									
1993 ^b									
1994 ^b									
1995	40	13,320	333	149	66,025	443	189	79,345	420
1996 ^c									
1997	15	2,500	167	161	24,983	155	176	27,483	156
Coho Salmon									
1983	137	1,021	7	175	3,536	20	312	4,557	15
1984	137	15,077	110	164	14,390	88	301	29,467	98
1985	159	12,841	81	153	14,832	97	312	27,673	89
1986	122	9,334	77	160	15,490	97	282	24,824	88
1987 ^b									
1988	120	13,408	112	208	23,027	111	328	36,435	111
1989	103	6,443	63	219	18,227	83	322	24,670	77
1990	83	2,033	24	218	11,321	52	301	13,354	44
1991	67	19,497	291	252	34,598	137	319	54,095	170
1992 ^b									
1993 ^b									
1994 ^b									
1995	40	2,843	71	149	18,782	126	189	21,625	114
1996 ^c									
1997	15	2,061	137	161	19,389	120	176	21,450	122
Combined Fall Chum and Coho Salmon									
1983	137	47,604	347	175	65,185	372	312	112,789	362
1984	137	49,894	364	164	38,697	236	301	88,591	294
1985	159	77,679	489	153	68,526	448	312	146,205	469
1986	122	37,783	310	160	46,393	290	282	84,176	298
1987 ^b									
1988	120	35,379	295	208	46,585	224	328	81,964	250
1989	103	33,308	323	219	69,238	316	322	102,546	318
1990	83	9,586	115	218	31,105	143	301	40,691	135
1991	67	39,266	586	252	74,553	296	319	113,819	357
1992 ^b									
1993 ^b									
1994 ^b									
1995	40	16,163	404	149	84,807	569	189	100,970	534
1996 ^c									
1997	15	4,561	304	161	44,372	276	176	48,933	278

^a Prior to 1986, some harvests of fall chum and coho salmon occurred before setnet only area designation went into effect. Includes ADF&G test fish sales through 1990.

^b Season closed.

^c Data not available.

Appendix B.9. Fall chum salmon commercial harvest by period, District 1, Lower Yukon Area, 1978-1997.

Period and Cumulative harvest ^a										
Date	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
07/18	6.3 (6.3)		4.2 (4.2)					6.3 (6.3)		
07/19										
07/20		6.0 (6.0)			4.3 (4.3)	16.1 (16.1)				
07/21	5.1 (11.4)			6.0 (6.0)						
07/22			6.6 (10.8)							
07/23					27.8 (32.1)					
07/24		7.2 (13.2)		1.3 (7.3)						
07/25	52.6 (64.2)		10.4 (21.2)							
07/26										
07/27		14.8 (28.0)			4.0 (36.1)					
07/28	2.8 (67.0)			57.3 (64.6)						
07/29			15.3 (36.5)			3.0 (19.1)				
07/30					11.7 (47.8)					
07/31		9.7 (37.7)	1.4 (37.9)	23.2 (67.8)			16.3 (18.3)			
08/01	14.4 (81.4)									
08/02						18.5 (37.6)		2.2 (8.5)		
08/03		17.5 (55.2)					17.1 (35.4)			
08/04	0.4 (81.8)				7.9 (55.7)					
08/05			6.2 (44.1)			23.7 (61.3)			11.4 (11.4)	
08/06					1.2 (56.9)			15.2 (23.7)		
08/07		37.8 (93.0)	13.5 (57.6)				1.8 (37.2)			
08/08	1.4 (83.2)								7.5 (18.9)	
08/09						44.0 (105.3)		35.8 (59.5)		
08/10		1.3 (94.3)			13.7 (70.6)					
08/11	1.6 (84.8)		5.2 (62.8)							
08/12					20.7 (91.3)	19.1 (124.4)			10.5 (29.4)	
08/13				43.8 (131.6)				65.3 (124.8)		
08/14		7.1 (101.4)	1.6 (64.6)				11.8 (49.0)			
08/15	1.4 (86.2)								16.2 (45.6)	
08/16										
08/17							10.1 (59.1)			
08/18	10.2 (96.4)			3.9 (135.5)						
08/19			42.2 (106.8)						5.8 (51.4)	
08/20										
08/21										
08/22	21.9 (118.3)								8.0 (59.4)	
08/23										
08/24										
08/25	4.4 (122.7)									
08/26										
08/27										
08/28										
08/29	5.2 (127.9)									
08/30										

-Continued-

Period and Cumulative harvest ^a										
Date	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
07/18										
07/19										
07/20										
07/21										
07/22										
07/23										
07/24			1.0 (1.0)							
07/25										
07/26										
07/27			1.8 (2.8)							
07/28		4.4 (4.4)								
07/29										
07/30				15.3 (15.3)						
07/31			1.7 (4.5)					0.7 (0.7)		
08/01		0.2 (4.5)								
08/02				3.0 (18.3)				0.4 (1.1)		
08/03			11.2 (15.7)							
08/04		48.8 (53.3)								
08/05								12.7 (13.8)		
08/06				7.4 (25.7)					1.6 (1.8)	2.0 (2.0)
08/07			7.5 (23.2)					10.4 (24.2)		
08/08		3.8 (57.2)								
08/09	32.5 (32.5)				9.2 (34.9)			8.1 (32.3)	4.3 (6.1)	
08/10										
08/11		2.5 (59.7)						4.5 (36.8)		3.9 (5.9)
08/12									6.2 (12.3)	
08/13				1.4 (36.3)				10.4 (47.2)		6.7 (12.6)
08/14										
08/15		14.9 (74.7)						14.8 (62.0)	15.1 (27.4)	
08/16				4.1 (40.4)						9.4 (22.0)
08/17										
08/18								16.7 (78.7)		5.5 (27.5)
08/19	0.5 (33.0)									
08/20			4.1 (27.3)	2.8 (43.2)					1.3 (28.8)	
08/21								0.7 (79.4)		
08/22		2.9 (77.6)							1.3 (30.1)	
08/23	6.9 (39.9)			14.7 (57.9)						
08/24										
08/25		0.3 (77.9)								
08/26	4.1 (44.0)								3.5 (33.6)	
08/27				1.8 (59.7)						
08/28										
08/29										
08/30	1.5 (45.5)									

^a Period and cumulative catches in thousands of fish. Fall chum salmon run usually well underway in the lower Yukon River by July 18. Some harvests of fall chum salmon occurred before 7/18.

Season closures occurred in the following years:

1981: Season closed 8/01-8/12.

1983: Season closed 7/20-7/27.

1984: Season closed 7/18-8/01 and 8/06-8/12.

1985: Season closed 7/20-7/31.

1986: Season closed 7/15-8/03.

1987: Season closed.

1988: Season closed 7/15-8/07.

1989: Season closed 7/15-7/26.

1990: Season closed 7/04-7/22 and 8/08-8/19.

1991: Season closed 7/15-7/26.

1992: Season closed.

1993: Season closed.

1994: Season closed.

Appendix B.10. Commercial fall chum salmon harvest by statistical area, Lower Yukon Area, 1983-1997. a

District 1									
Year	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	Total
1983	135	10,300	2,224	10,460	35,824	19,985	24,816	20,627	124,371
1984	315	24,914	2,488	16,234	13,536	6,873	9,390	5,001	78,751
1985	594	34,332	6,035	36,885	43,022	1,485	5,898	1,697	129,948
1986	376	9,891	3,032	2,683	21,058	4,091	12,004	6,217	59,352
1987	0	0	0	0	0	0	0	0	0
1988	10,217	6,953	2,625	206	6,692	3,905	9,526	5,405	45,529
1989	0	2,929	1,420	5,577	26,611	17,477	15,526	8,336	77,876
1990	255	3,690	501	1,167	7,927	5,618	4,695	3,484	27,337
1991	75	11,976	3,036	5,586	9,968	8,040	11,880	9,163	59,724
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	1,674	6,766	6,892	11,909	16,450	1,696	23,722	10,236	79,345
1996	0	2,686	2,333	1,243	4,561	9,976	8,504	4,326	33,629
1997	0	2,870	3,452	3,768	3,943	1,596	6,747	5,107	27,483

Year	District 2						District 3		
	334-21	334-22	334-23	334-24	334-25	Total	334-31	334-32	Total
1983	17,245	4,673	24,132	22,072	17,523	85,645	4,607	5,411	10,018
1984	10,951	22,942	7,622	19,183	10,105	70,803	6,429	0	6,429
1985	9,131	10,607	3,530	5,859	11,363	40,490	4,173	991	5,164
1986	6,472	16,377	5,212	11,352	11,894	51,307	2,793	0	2,793
1987	0	0	0	0	0	0	0	0	0
1988	5,077	13,215	5,385	4,283	3,901	31,861	1,748	342	2,090
1989	12,005	34,268	15,001	19,029	17,603	97,906	15,153	179	15,332
1990	6,311	8,298	5,403	10,147	7,014	37,173	1,863	1,852	3,715
1991	10,584	23,195	14,291	28,306	26,252	102,628	7,209	2,004	9,213
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	147	54,231	20,018	16,435	0	90,831	0	0	0
1996	1,960	14,349	4,184	7,634	1,524	29,651	0	0	0
1997	5,040	9,827	2,316	5,972	1,171	24,326	0	0	0

^a Includes ADF&G test fish sales through 1990.

Appendix B.11. Commercial coho salmon harvest by statistical area, Lower Yukon Area, 1983-1997. a

District 1									
Year	334-11	334-12	334-13	334-14	334-15	334-16	334-17	334-18	Total
1983	16	567	86	463	1,123	56	1,532	752	4,595
1984	151	6,743	1,233	3,101	5,925	4,151	4,389	3,779	29,472
1985	585	6,187	1,673	8,320	5,304	936	2,153	2,517	27,675
1986	83	1,974	805	383	7,056	6,525	5,722	2,276	24,824
1987	0	0	0	0	0	0	0	0	0
1988	1,652	5,831	1,866	392	9,166	9,848	4,831	2,849	36,435
1989	0	1,822	306	1,115	5,830	4,696	7,680	3,223	24,672
1990	4	736	301	1,684	2,108	2,530	2,429	3,562	13,354
1991	30	4,302	1,072	4,432	8,130	19,630	7,980	8,519	54,095
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	883	2,472	1,833	2,439	2,454	1,006	8,953	1,585	21,625
1996	0	1,555	1,564	854	3,995	9,634	8,068	2,035	27,705
1997	0	1,355	2,322	2,414	2,742	4,153	5,180	3,284	21,450

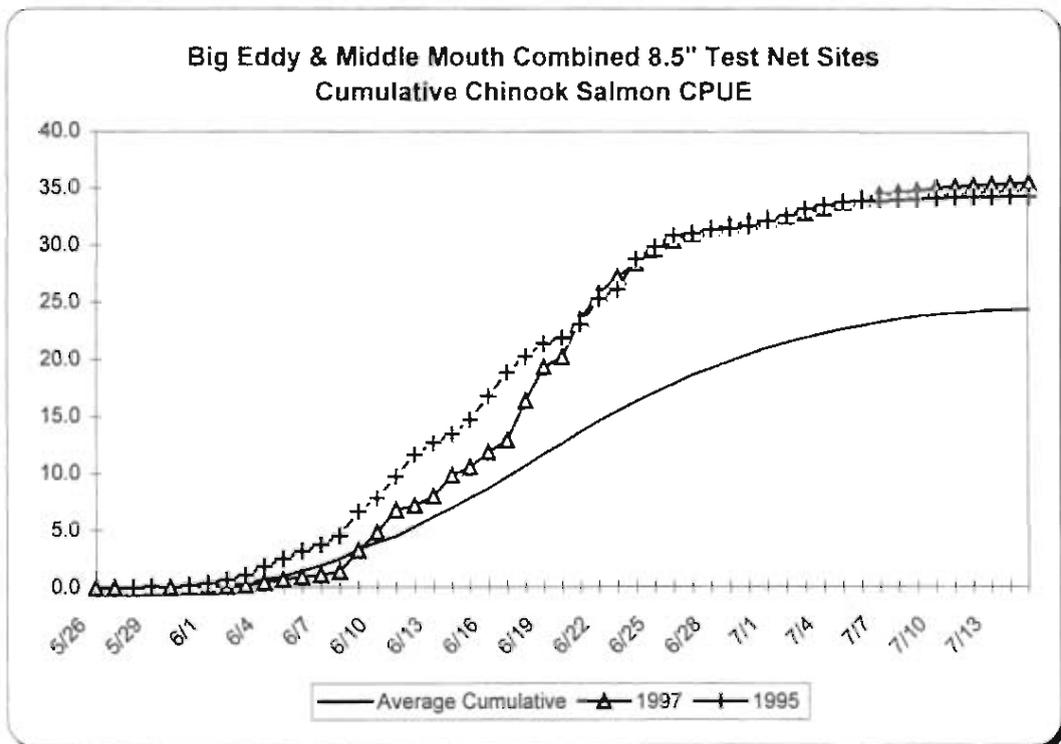
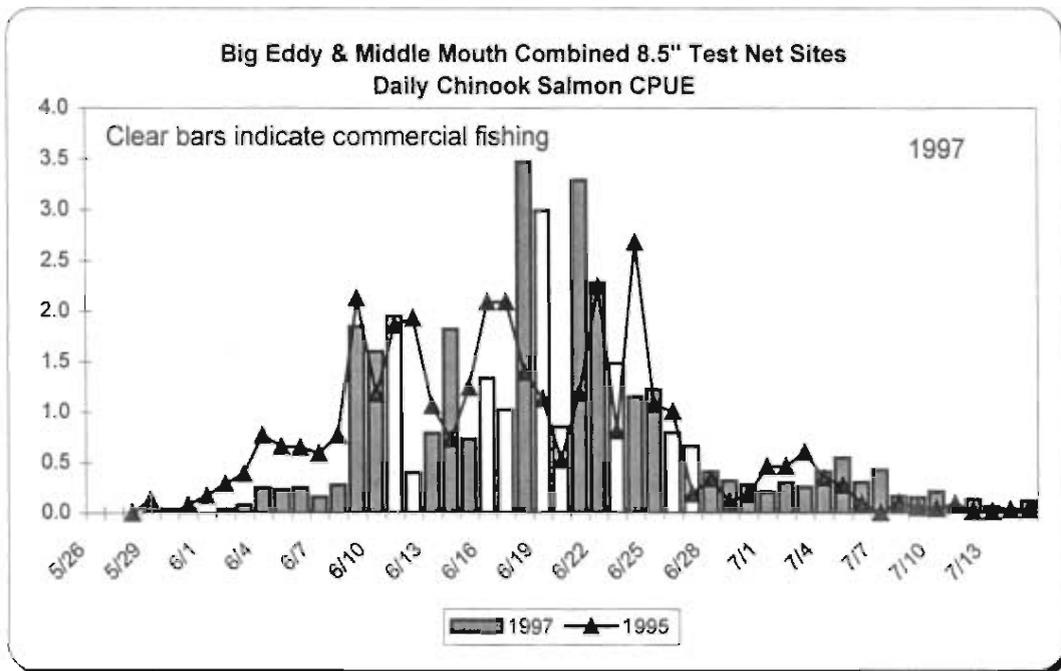
District 2							District 3		
Year	334-21	334-22	334-23	334-24	334-25	Total	334-31	334-32	Total
1983	1,549	140	715	114	39	2,557	0	0	0
1984	4,736	26,506	5,514	4,556	1,752	43,064	621	0	621
1985	3,369	5,052	4,394	1,077	3,233	17,125	171	0	171
1986	3,074	9,317	2,250	4,117	2,439	21,197	793	0	793
1987	0	0	0	0	0	0	0	0	0
1988	3,644	12,503	4,891	7,141	6,397	34,776	1,291	128	1,419
1989	6,199	18,427	3,668	4,262	5,966	38,522	3,978	10	3,988
1990	1,226	11,364	962	2,032	851	16,435	752	166	918
1991	8,746	17,939	3,587	6,094	4,532	40,898	1,427	478	1,905
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	115	12,154	2,951	3,268	0	18,488	0	0	0
1996	761	12,155	2,755	4,409	894	20,974	0	0	0
1997	2,197	6,449	1,238	3,025	147	13,056	0	0	0

^a District 1 and 2 harvest may include ADF&G test fish sales through 1990.

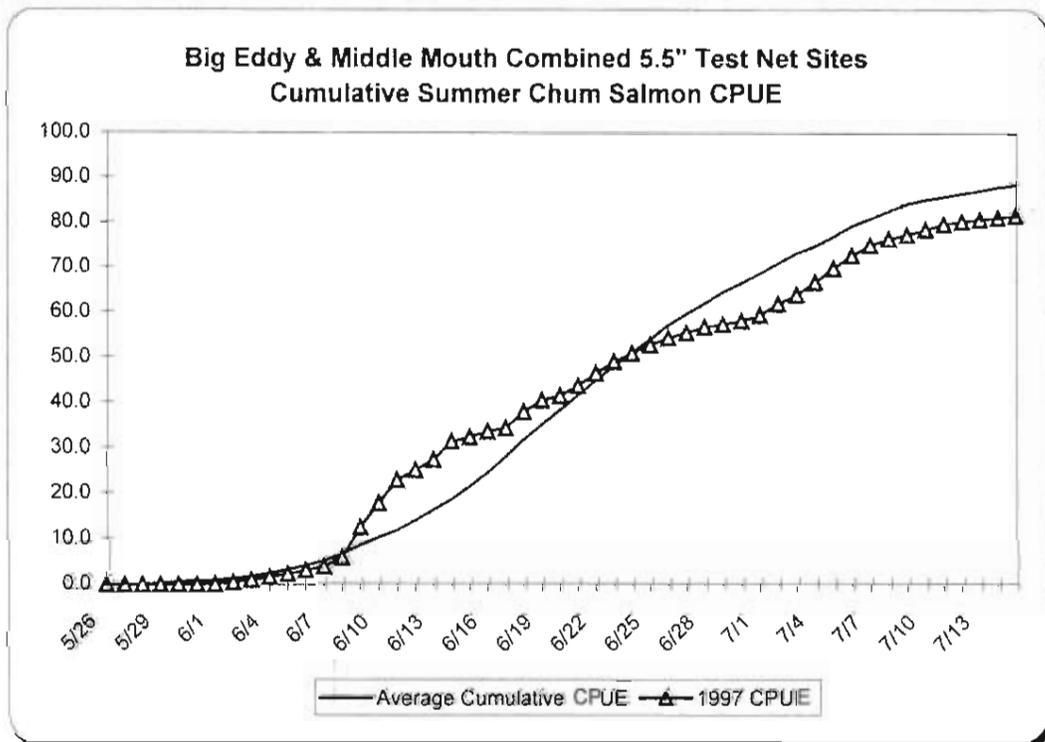
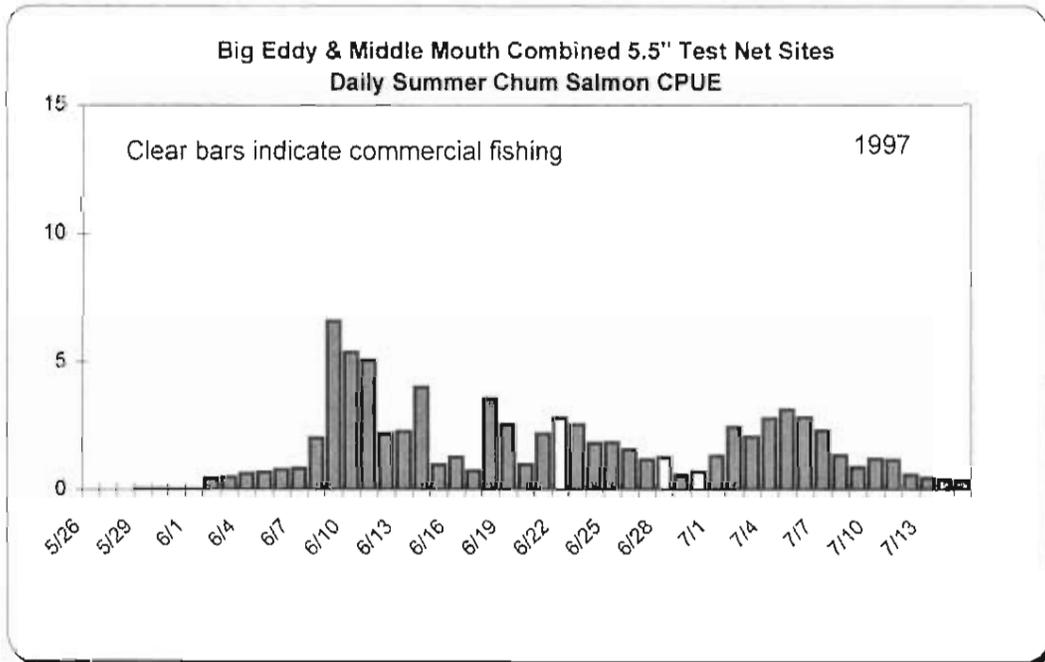
Appendix B.12. Lower Yukon River chinook and summer chum salmon set gillnet test fishing data by day, Big Eddy and Middle Mouth projects, 1997.

Chinook Salmon						Summer Chum Salmon						
Date	Average 1980-1996		1997			Date	Average 1980-1996		1997			
	Prop.	Cumulative CPUE	Daily Catch	Daily CPUE	Cumulative CPUE		Comm/period Hrs Fished District 1	Prop.	Cumulative CPUE	Daily Catch	Daily CPUE	Cumulative CPUE
26-May	0.00	0.00				26-May	0.00	0.00				
27-May	0.00	0.00				27-May	0.00	0.01				
28-May	0.00	0.01				28-May	0.00	0.10				
29-May	0.00	0.04	1	0.02	0.02	29-May	0.00	0.27	1	0.04	0.04	
30-May	0.00	0.09	2	0.04	0.06	30-May	0.01	0.73	2	0.04	0.08	
31-May	0.01	0.13	2	0.04	0.10	31-May	0.01	0.86	1	0.02	0.10	
1-Jun	0.01	0.16	0	0.00	0.10	1-Jun	0.01	1.01	1	0.02	0.12	
2-Jun	0.01	0.27	2	0.04	0.14	2-Jun	0.01	1.39	22	0.46	0.58	
3-Jun	0.02	0.43	7	0.08	0.22	3-Jun	0.02	1.92	43	0.51	1.09	
4-Jun	0.03	0.73	24	0.25	0.47	4-Jun	0.02	2.59	61	0.64	1.73	
5-Jun	0.05	1.01	22	0.23	0.70	5-Jun	0.03	3.40	66	0.69	2.42	
6-Jun	0.06	1.47	24	0.25	0.95	6-Jun	0.04	4.31	76	0.79	3.21	
7-Jun	0.08	1.93	15	0.16	1.11	7-Jun	0.05	5.38	82	0.85	4.06	
8-Jun	0.11	2.50	27	0.28	1.39	8-Jun	0.06	6.85	195	2.03	6.09	
9-Jun	0.14	3.34	178	1.85	3.24	9-Jun	0.08	8.85	631	6.57	12.66	
10-Jun	0.16	3.95	154	1.60	4.84	10-Jun	0.10	10.58	515	5.36	18.02	
11-Jun	0.18	4.49	187	1.95	6.79	11-Jun	0.12	12.08	486	5.06	23.08	
12-Jun	0.21	5.32	38	0.40	7.19	12-Jun	0.14	14.28	212	2.21	25.29	
13-Jun	0.24	6.18	76	0.79	7.98	13-Jun	0.17	16.62	219	2.28	27.57	
14-Jun	0.28	6.96	175	1.82	9.80	14-Jun	0.20	18.87	384	4.00	31.57	
15-Jun	0.31	7.84	70	0.73	10.53	15-Jun	0.23	21.77	94	0.98	32.55	
16-Jun	0.35	8.67	128	1.33	11.86	16-Jun	0.27	24.73	124	1.29	33.84	
17-Jun	0.39	9.66	98	1.02	12.88	17-Jun	0.31	28.31	71	0.74	34.58	
18-Jun	0.43	10.67	333	3.47	16.35	18-Jun	0.36	32.09	343	3.57	38.15	
19-Jun	0.47	11.71	287	2.99	19.34	19-Jun	0.39	35.33	246	2.56	40.71	
20-Jun	0.51	12.60	82	0.85	20.19	20-Jun	0.43	38.54	96	1.00	41.71	
21-Jun	0.55	13.63	316	3.29	23.48	21-Jun	0.47	41.83	210	2.19	43.90	
22-Jun	0.59	14.61	219	2.28	25.76	22-Jun	0.50	45.13	270	2.81	46.71	3
23-Jun	0.62	15.44	142	1.48	27.24	23-Jun	0.54	48.30	245	2.55	49.26	
24-Jun	0.66	16.31	110	1.15	28.39	24-Jun	0.57	51.18	175	1.82	51.08	
25-Jun	0.69	17.10	117	1.22	29.61	25-Jun	0.60	54.15	178	1.85	52.93	
26-Jun	0.72	17.84	76	0.79	30.40	26-Jun	0.64	57.36	151	1.57	54.50	
27-Jun	0.76	18.65	63	0.66	31.06	27-Jun	0.67	59.89	114	1.19	55.69	
28-Jun	0.78	19.25	39	0.41	31.47	28-Jun	0.70	62.25	122	1.27	56.96	4
29-Jun	0.81	19.83	31	0.32	31.79	29-Jun	0.73	64.71	57	0.59	57.55	
30-Jun	0.83	20.44	27	0.28	32.07	30-Jun	0.75	66.76	69	0.72	58.27	6
1-Jul	0.86	21.00	20	0.21	32.28	1-Jul	0.78	68.90	129	1.34	59.61	
2-Jul	0.88	21.47	29	0.30	32.58	2-Jul	0.80	71.24	236	2.46	62.07	
3-Jul	0.90	21.89	25	0.26	32.84	3-Jul	0.82	73.44	200	2.08	64.15	
4-Jul	0.91	22.29	39	0.41	33.25	4-Jul	0.84	74.98	269	2.80	66.95	
5-Jul	0.93	22.66	53	0.55	33.80	5-Jul	0.86	77.10	300	3.13	70.08	
6-Jul	0.94	22.95	30	0.31	34.11	6-Jul	0.89	79.47	272	2.83	72.91	
7-Jul	0.95	23.26	41	0.43	34.54	7-Jul	0.91	81.13	223	2.32	75.23	
8-Jul	0.96	23.56	16	0.17	34.71	8-Jul	0.93	82.80	131	1.36	76.59	
9-Jul	0.97	23.79	15	0.16	34.87	9-Jul	0.95	84.44	85	0.89	77.48	
10-Jul	0.98	23.93	21	0.22	35.09	10-Jul	0.96	85.36	117	1.22	78.70	
11-Jul	0.99	24.04	8	0.08	35.17	11-Jul	0.97	86.06	114	1.19	79.89	
12-Jul	0.99	24.14	13	0.14	35.31	12-Jul	0.97	86.74	58	0.60	80.49	
13-Jul	1.00	24.25	7	0.07	35.38	13-Jul	0.98	87.41	46	0.48	80.97	
14-Jul	1.00	24.33	5	0.05	35.43	14-Jul	0.99	88.18	43	0.45	81.42	
15-Jul	1.00	24.38	12	0.13	35.56	15-Jul	1.00	88.67	38	0.40	81.82	
		24.38	3,406		35.56			88.67	7,823		61.62	

Appendix B. 13 . Daily test fish CPUE for chinook salmon test fish sites (above). Cumulative test fish CPUE for chinook salmon test fish sites (below) compared to the 1980-1996 average CPUE.



Appendix B.14. Daily test fish CPUE for summer chum salmon test fish sites (above).
 Cumulative test fish CPUE for summer chum salmon test fish sites (below)
 compared to the 1980-1996 average CPUE.



Appendix B.15. Historical daily and CPUE for fall chum and coho salmon, Lower Yukon River set net test fishery, 1988 to 1996 average, compared to 1997.

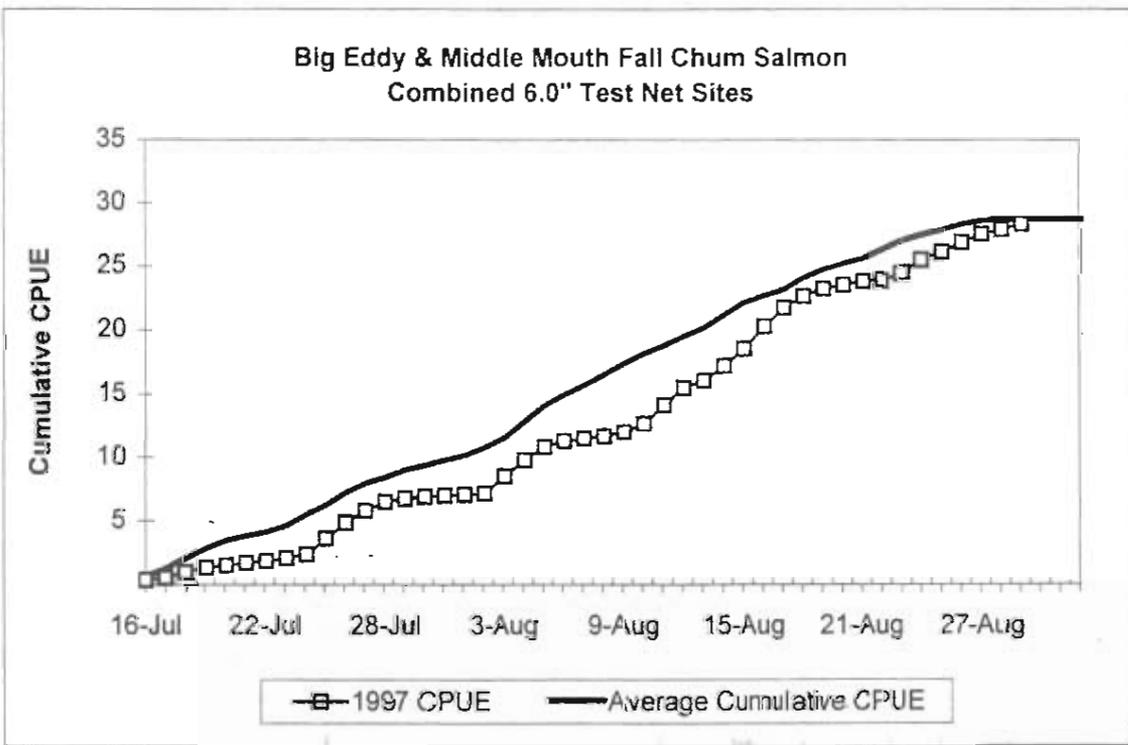
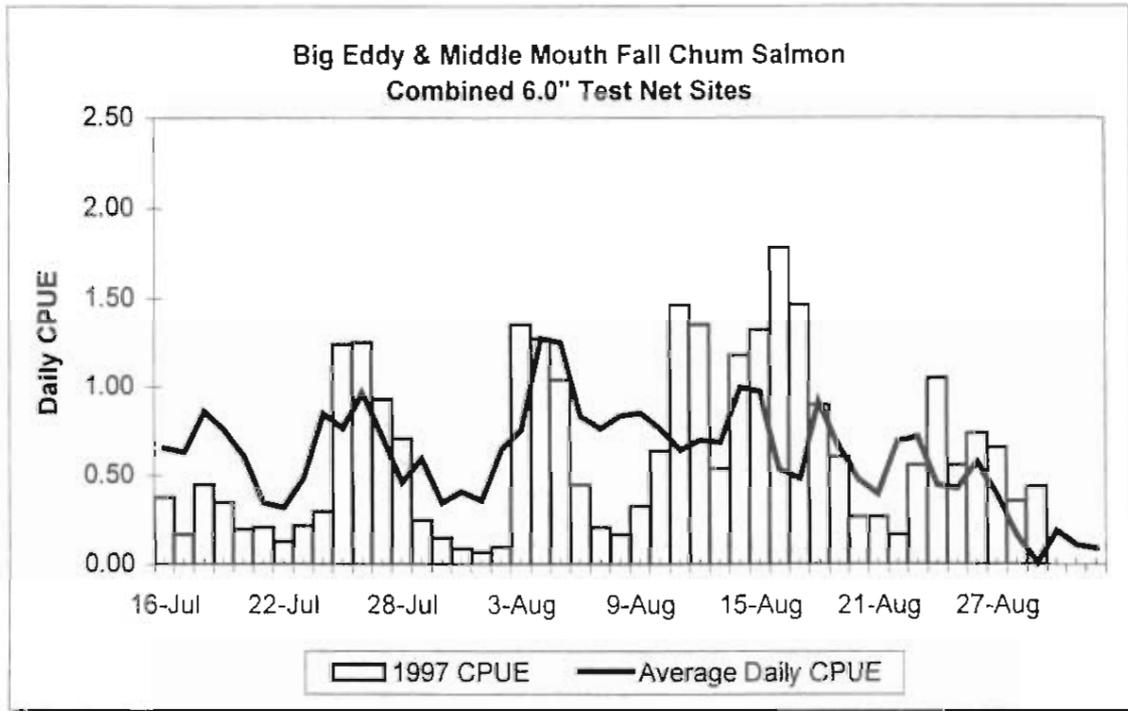
Fall Chum Salmon							Coho Salmon						
1988 to 1996			1997				1988 to 1996			1997			
Average a							Average a						
Date	Daily CPUE	Percent	Cumulative CPUE b	Daily CPUE	Percent	Cumulative CPUE	Date	Daily CPUE	Percent	Cumulative CPUE b	Daily CPUE	Percent	Cumulative CPUE
16-Jul	0.66	0.02	0.66	0.38	0.01	0.38	16-Jul	0.00	0.00	0.00	0.00	0.00	0.00
17-Jul	0.63	0.05	1.29	0.17	0.02	0.55	17-Jul	0.00	0.00	0.00	0.00	0.00	0.00
18-Jul	0.86	0.08	2.15	0.45	0.04	1.00	18-Jul	0.00	0.00	0.00	0.00	0.00	0.00
19-Jul	0.76	0.10	2.91	0.35	0.05	1.35	19-Jul	0.00	0.00	0.00	0.00	0.00	0.00
20-Jul	0.61	0.13	3.53	0.20	0.05	1.55	20-Jul	0.00	0.00	0.00	0.00	0.00	0.00
21-Jul	0.35	0.14	3.88	0.21	0.06	1.76	21-Jul	0.00	0.00	0.01	0.00	0.00	0.00
22-Jul	0.32	0.15	4.20	0.13	0.07	1.89	22-Jul	0.00	0.00	0.01	0.00	0.00	0.00
23-Jul	0.49	0.17	4.68	0.22	0.07	2.11	23-Jul	0.00	0.00	0.01	0.00	0.00	0.00
24-Jul	0.85	0.20	5.53	0.30	0.09	2.41	24-Jul	0.03	0.00	0.04	0.00	0.00	0.00
25-Jul	0.77	0.22	6.30	1.24	0.13	3.65	25-Jul	0.03	0.00	0.06	0.00	0.00	0.00
26-Jul	0.97	0.26	7.27	1.25	0.17	4.90	26-Jul	0.05	0.00	0.11	0.01	0.00	0.01
27-Jul	0.72	0.28	7.99	0.93	0.21	5.83	27-Jul	0.04	0.01	0.14	0.01	0.00	0.02
28-Jul	0.46	0.29	8.45	0.71	0.23	6.54	28-Jul	0.02	0.01	0.17	0.03	0.00	0.05
29-Jul	0.60	0.31	9.05	0.25	0.24	6.79	29-Jul	0.05	0.01	0.21	0.05	0.01	0.10
30-Jul	0.35	0.32	9.39	0.15	0.24	6.94	30-Jul	0.06	0.01	0.27	0.02	0.01	0.12
31-Jul	0.41	0.33	9.81	0.09	0.25	7.03	31-Jul	0.05	0.01	0.33	0.00	0.01	0.12
1-Aug	0.36	0.35	10.17	0.07	0.25	7.10	1-Aug	0.08	0.02	0.41	0.05	0.01	0.17
2-Aug	0.65	0.37	10.82	0.10	0.25	7.20	2-Aug	0.17	0.02	0.57	0.03	0.01	0.20
3-Aug	0.76	0.39	11.58	1.35	0.30	8.55	3-Aug	0.21	0.03	0.78	0.32	0.04	0.52
4-Aug	1.27	0.44	12.85	1.27	0.35	9.82	4-Aug	0.18	0.04	0.97	0.40	0.07	0.92
5-Aug	1.25	0.48	14.10	1.04	0.38	10.86	5-Aug	0.23	0.05	1.20	0.27	0.09	1.19
6-Aug	0.84	0.51	14.93	0.45	0.40	11.31	6-Aug	0.18	0.06	1.38	0.19	0.10	1.38
7-Aug	0.77	0.54	15.70	0.21	0.41	11.52	7-Aug	0.27	0.07	1.65	0.15	0.11	1.53
8-Aug	0.84	0.57	16.54	0.17	0.41	11.69	8-Aug	0.36	0.09	2.01	0.15	0.12	1.68
9-Aug	0.86	0.60	17.39	0.33	0.42	12.02	9-Aug	0.43	0.11	2.44	0.35	0.15	2.03
10-Aug	0.77	0.63	18.16	0.64	0.45	12.66	10-Aug	0.49	0.14	2.93	0.59	0.19	2.62
11-Aug	0.65	0.65	18.80	1.46	0.50	14.12	11-Aug	0.75	0.17	3.68	0.78	0.24	3.40
12-Aug	0.70	0.67	19.51	1.35	0.55	15.47	12-Aug	0.79	0.22	4.47	1.22	0.33	4.62
13-Aug	0.69	0.70	20.20	0.54	0.56	16.01	13-Aug	0.68	0.25	5.15	0.53	0.37	5.15
14-Aug	1.00	0.74	21.19	1.18	0.61	17.19	14-Aug	1.22	0.33	6.36	0.81	0.43	5.96
15-Aug	0.97	0.77	22.17	1.32	0.65	18.51	15-Aug	1.25	0.40	7.62	0.66	0.47	6.62
16-Aug	0.54	0.79	22.70	1.78	0.72	20.29	16-Aug	0.73	0.44	8.34	0.92	0.54	7.54
17-Aug	0.49	0.81	23.19	1.46	0.77	21.75	17-Aug	0.85	0.48	9.19	0.88	0.60	8.42
18-Aug	0.92	0.84	24.11	0.90	0.80	22.65	18-Aug	1.52	0.55	10.71	0.58	0.65	9.00
19-Aug	0.66	0.86	24.77	0.61	0.82	23.26	19-Aug	1.15	0.61	11.86	0.39	0.67	9.39
20-Aug	0.48	0.88	25.25	0.27	0.83	23.53	20-Aug	0.77	0.66	12.64	0.40	0.70	9.79
21-Aug	0.40	0.90	25.65	0.27	0.84	23.80	21-Aug	0.86	0.70	13.49	0.45	0.73	10.24
22-Aug	0.70	0.92	26.34	0.17	0.85	23.97	22-Aug	0.99	0.75	14.48	0.34	0.76	10.58
23-Aug	0.72	0.94	27.07	0.56	0.87	24.53	23-Aug	1.28	0.81	15.76	0.38	0.79	10.96
24-Aug	0.45	0.95	27.52	1.05	0.90	25.58	24-Aug	1.13	0.86	16.89	0.67	0.83	11.63
25-Aug	0.43	0.97	27.89	0.56	0.92	26.14	25-Aug	0.71	0.90	17.51	0.45	0.87	12.08
26-Aug	0.58	0.98	28.33	0.74	0.95	26.88	26-Aug	1.13	0.94	18.36	0.44	0.90	12.52
27-Aug	0.39	0.99	28.61	0.66	0.97	27.54	27-Aug	0.98	0.98	19.09	0.56	0.94	13.08
28-Aug	0.17	0.99	28.69	0.36	0.98	27.90	28-Aug	0.51	0.99	19.35	0.58	0.98	13.66
29-Aug	0.01	1.00	28.69	0.44	1.00	28.34	29-Aug	0.09	0.99	19.36	0.29	1.00	13.95
30-Aug	0.19	1.00	28.72				30-Aug	0.28	0.99	19.39			
31-Aug	0.11	1.00	28.73				31-Aug	0.32	1.00	19.43			
1-Sep	0.09	1.00	28.74				1-Sep	0.16	1.00	19.45			

a Does not include 1994. Differences in the termination dates of the project confounds computation of the historical daily cumulative percent and average.

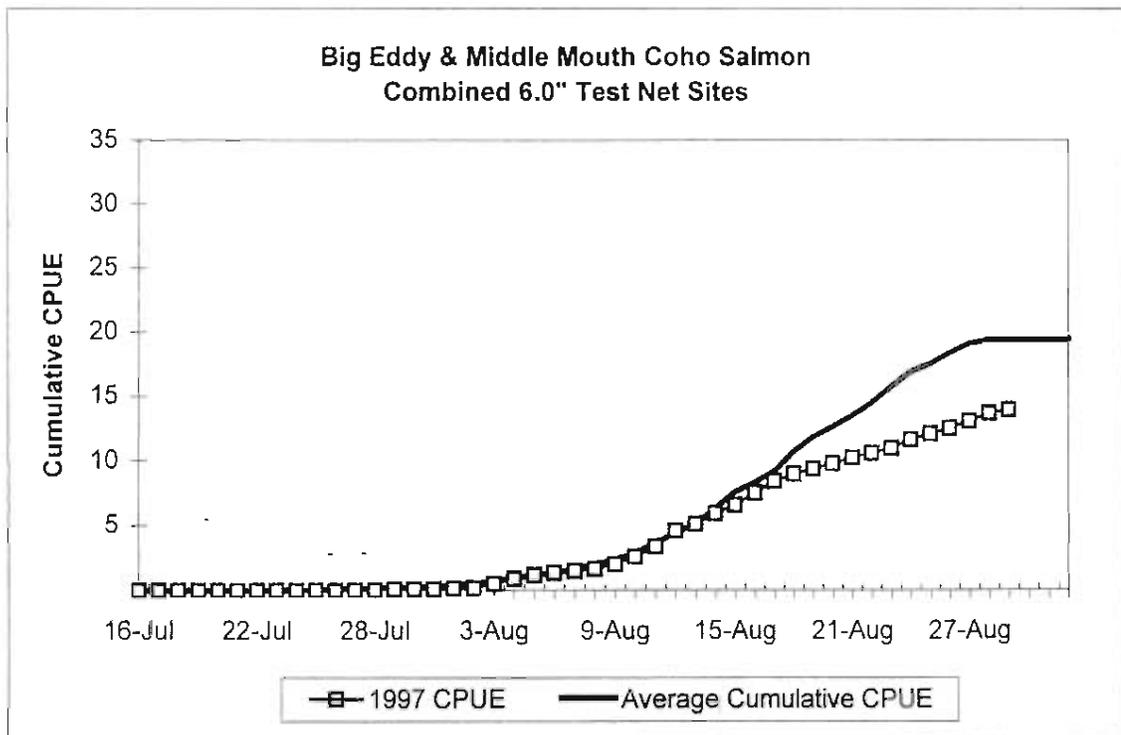
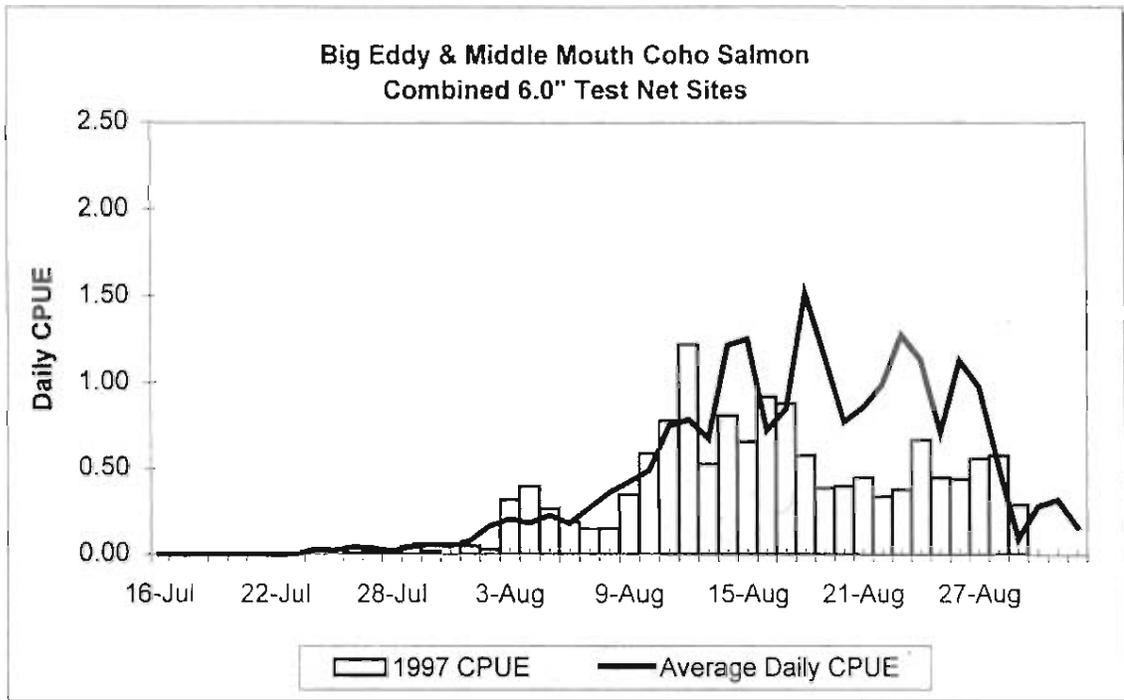
As a convenience the historical daily cumulative percent and average was computed by assuming that 100 percent of the run was completed on the date of project termination.

b The box indicates the first to the third quartile of the cumulative catch-per-unit-effort (CPUE). The center box indicates the median date of the cumulative CPUE.

Appendix B.16. Lower Yukon River test fish 1997 daily and cumulative fall chum salmon setnet (6.0 inch mesh) CPUE, compared to the 1988 to 1996 average daily and cumulative.



Appendix B.17. Lower Yukon River test fish 1997 daily and cumulative coho salmon setnet (6.0 inch mesh) CPUE, compared to the 1988 to 1996 average daily and cumulative.



APPENDIX C

UPPER YUKON AREA SALMON

Appendix C.1. Commercial salmon sales and estimated harvest by statistical area, all gears combined, Upper Yukon Area, 1997. a

BEACH SEINE, PURSE SEINE, SET GILLNET AND FISH WHEEL COMBINED

Statistical Area	Number of Fishermen b	Chinook			Summer Chum			Fall Chum			Coho		
		Number	Roe	Estimated	Number	Roe	Estimated	Number	Roe	Estimated	Number	Roe	Estimated
334-42	9	326	14	333	1,942	4,786	10,484 c	463	0	463	19	0	19
334-43	4	1,124	0	1,124	120	77	250 c	1,995	0	1,995	795	0	795
334-44	6	0	0	0	0	14,188	26,023 c	0	0	0	0	0	0
334-45	2	0	0	0	0	526	912 c	0	0	0	0	0	0
334-46	16	0	0	0	0	41,587	73,454 c	0	0	0	0	0	0
334-47 d	9	0	0	0	0	13,067	13,548	0	0	0	0	0	0
<i>Subtotal District 4</i>	<i>39</i>	<i>1,450</i>	<i>14</i>	<i>1,457</i>	<i>2,062</i>	<i>74,231</i>	<i>124,671</i>	<i>2,458</i>	<i>0</i>	<i>2,458</i>	<i>814</i>	<i>0</i>	<i>814</i>
334-51	0	0	0	0	0	0	0	0	0	0	0	0	0
334-52	12	1,314	0	1,314	0	0	0	1,595	1,194	3,069	0	0	0
334-53	15	1,757	0	1,757	125	0	125	0	0	0	0	0	0
334-54	1	262	0	262	12	0	12	40	0	40	0	0	0
334-55	3	345	0	345	0	0	0	811	0	811	0	0	0
<i>Subtotal District 5</i>	<i>31</i>	<i>3,678</i>	<i>0</i>	<i>3,678</i>	<i>137</i>	<i>0</i>	<i>137</i>	<i>2,446</i>	<i>1,194</i>	<i>3,920</i>	<i>0</i>	<i>0</i>	<i>0</i>
334-61	1	38	0	38	3,162	0	3,162	0	0	0	0	0	0
334-62	11	1,662	2,816	2,334	9,168	6,525	16,709	0	0	0	0	0	0
334-63	3	266	395	356	2,556	2,511	5,416	0	0	0	0	0	0
<i>Subtotal District 6</i>	<i>15</i>	<i>1,966</i>	<i>3,211</i>	<i>2,728</i>	<i>14,886</i>	<i>9,036</i>	<i>25,287</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Total Upper Yukon Area	85	7,094	3,225	7,863	17,085	83,267	150,095	4,904	1,194	6,378	814	0	814

a Harvest reported in numbers of fish sold in the round and pounds of salmon roe sold. Unless otherwise noted, the estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold.

b Number of unique permits fished by statistical area, district or area. Totals may not add up due to transfers between statistical areas.

c The estimated harvest of summer chum salmon for District 4, except Statistical Area 334-47 (Anvik River), is the estimated number of males and females harvested to produce the roe sold.

d Statistical Area 334-47 (Anvik River) is the only location beach seines and purse seine gear is allowed.

Appendix C.2. Commercial set gillnet salmon sales and estimated harvest by statistical area, Upper Yukon Area, 1997. a

SET GILLNET

Statistical Area	Number of Fishermen b	Chinook			Summer Chum			Fall Chum			Coho		
		Number	Roe	Estimated	Number	Roe	Estimated	Number	Roe	Estimated	Number	Roe	Estimated
334-42	1	50	0	50	12	0	12 c	0	0	0	0	0	0
334-43	1	495	0	495	0	0	0	0	0	0	0	0	0
334-44	2	0	0	0	0	3,089	5,481 c	0	0	0	0	0	0
334-45	0	0	0	0	0	0	0	0	0	0	0	0	0
334-46	0	0	0	0	0	0	0	0	0	0	0	0	0
334-47 d	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Subtotal District 4</i>	<i>4</i>	<i>545</i>	<i>0</i>	<i>545</i>	<i>12</i>	<i>3,089</i>	<i>5,493</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
334-51	0	0	0	0	0	0	0	0	0	0	0	0	0
334-52	4	297	0	297	0	0	0	0	0	0	0	0	0
334-53	11	1,273	0	1,273	42	0	42	0	0	0	0	0	0
334-54	0	0	0	0	0	0	0	0	0	0	0	0	0
334-55	1	82	0	82	0	0	0	0	0	0	0	0	0
<i>Subtotal District 5</i>	<i>16</i>	<i>1,652</i>	<i>0</i>	<i>1,652</i>	<i>42</i>	<i>0</i>	<i>42</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
334-61	0	0	0	0	0	0	0	0	0	0	0	0	0
334-62	0	0	0	0	0	0	0	0	0	0	0	0	0
334-63	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Subtotal District 6</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Total Upper Yukon Area	20	2,197	0	2,197	54	3,339	5,535	0	0	0	0	0	0

- a. Harvest reported in numbers of fish sold in the round and pounds of salmon roe sold. Unless otherwise noted, the estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold.
- b. Number of unique permits fished by statistical area, district or area. Totals may not add up due to transfers between statistical areas.
- c. The estimated harvest of summer chum salmon for District 4, except Statistical Area 334-47 (Anvik River), is the estimated number of males and females harvested to produce the roe sold.
- d. Does not include 8 beach seine and 1 purse seine fishermen that harvested 13,067 pounds of chum salmon roe with an estimated harvest of 13,548 female chum salmon.

Appendix C.3. Commercial fish wheel salmon sales and estimated harvest by statistical area, Upper Yukon Area, 1997. a

FISH WHEEL

Statistical Area	Number of Fishermen b	Chinook			Summer Chum			Fall Chum			Coho		
		Number	Roe	Estimated	Number	Roe	Estimated	Number	Roe	Estimated	Number	Roe	Estimated
334-42	8	276	14	283	1,930	4,786	10,472 c	463	0	463	19	0	19
334-43	3	629	0	629	120	77	250 c	1,995	0	1,995	795	0	795
334-44	4	0	0	0	0	11,099	20,542 c	0	0	0	0	0	0
334-45	2	0	0	0	0	526	912 c	0	0	0	0	0	0
334-46	16	0	0	0	0	41,587	73,454 c	0	0	0	0	0	0
334-47 d	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Subtotal District 4</i>	32	905	14	912	2,050	58,075	105,630	2,458	0	2,458	814	0	814
334-51	0	0	0	0	0	0	0	0	0	0	0	0	0
334-52	8	1,017	0	1,017	0	0	0	1,595	1,194	3,069	0	0	0
334-53	4	484	0	484	83	0	83	0	0	0	0	0	0
334-54	1	262	0	262	12	0	12	40	0	40	0	0	0
334-55	2	263	0	263	0	0	0	811	0	811	0	0	0
<i>Subtotal District 5</i>	15	2,026	0	2,026	95	0	95	2,446	1,194	3,920	0	0	0
334-61	1	38	0	38	3,162	0	3,162	0	0	0	0	0	0
334-62	11	1,662	2,816	2,334	9,168	6,525	16,709	0	0	0	0	0	0
334-63	3	266	395	356	2,556	2,511	5,416	0	0	0	0	0	0
<i>Subtotal District 6</i>	15	1,966	3,211	2,728	14,886	9,036	25,287	0	0	0	0	0	0
Total Upper Yukon Area	63	4,897	3,225	5,666	17,031	67,111	131,012	4,904	1,194	6,378	814	0	814

a Harvest reported in numbers of fish sold in the round and pounds of salmon roe sold. Unless otherwise noted, the estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold.

b Number of unique permits fished by statistical area, district or area. Totals may not add up due to transfers between statistical areas.

c The estimated harvest of summer chum salmon for District 4, except Statistical Area 334-47 (Anvik River), is the estimated number of males and females harvested to produce the roe sold.

d Does not include 8 beach seine and 1 purse seine fishermen that harvested 13,067 pounds of chum salmon roe with an estimated harvest of 13,548 female chum salmon.

Appendix C.4. Commercial chinook salmon sales and estimated harvest by statistical area, Subdistrict 4-A, Upper Yukon Area, 1974 - 1997.

Year	334-41			334-44			334-45			334-46			Total		
	Number a	Roe b	Estimated c	Number a	Roe b	Estimated c	Number a	Roe b	Estimated c	Number a	Roe b	Estimated c	Number a	Roe b	Estimated c
1974	0	-	0	-	-	-	-	-	-	-	-	-	0	-	0
1975	15	-	15	-	-	-	-	-	-	-	-	-	15	-	15
1976	44	-	44	-	-	-	-	-	-	-	-	-	44	-	44
1977	317	-	317	-	-	-	-	-	-	-	-	-	317	-	317
1978	183	-	183	-	-	-	-	-	-	-	-	-	183	-	183
1979	785	-	785	-	-	-	-	-	-	-	-	-	785	-	785
1980	352	-	352	-	-	-	-	-	-	-	-	-	352	-	352
1981	106	-	106	-	-	-	-	-	-	-	-	-	106	-	106
1982	78	-	78	-	-	-	-	-	-	-	-	-	78	-	78
1983	0	-	0	-	-	-	-	-	-	-	-	-	0	-	0
1984	2	-	2	-	-	-	-	-	-	-	-	-	2	-	2
1985	0	-	0	-	-	-	-	-	-	-	-	-	0	-	0
1986	11	-	11	-	-	-	-	-	-	-	-	-	11	-	11
1987	91	-	91	-	-	-	-	-	-	-	-	-	91	-	91
1988	19	-	19	-	-	-	-	-	-	-	-	-	19	-	19
1989	59	-	59	-	-	-	-	-	-	-	-	-	59	-	59
1990	d	-	-	0	8	2	0	0	0	52	0	52	52	8	54
1991	-	-	-	0	67	35	0	7	4	69	88	114	69	162	153
1992	-	-	-	0	0	0	0	15	9	0	71	41	0	86	50
1993	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
1994	-	-	-	0	0	0	0	0	0	0	14	7	0	14	7
1995	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
1996	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
1997	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0
5 Year Ave. 1992-1996	-	-	-	0	0	0	0	3	2	0	17	10	0	20	11

^a Harvest reported in numbers of fish sold in the round.

^b Pounds of salmon roe sold. Since 1990, efforts were made to separate chinook salmon roe from the summer chum salmon roe sold.

^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 4 sampling program that estimated average roe weight per female by statistical area, by period and gear type.

^d In 1990, Subdistrict 4-A (Statistical Area 334-41) was subdivided into Statistical Areas 334-44, 334-45 and 334-46.

Appendix C.5. Commercial chinook salmon sales and estimated harvest by statistical area, Subdistricts 4-B and 4-C, Upper Yukon Area, 1974 - 1997.

Year	334-42			334-43			Total		
	Number a	Roe b	Estimated c	Number a	Roe b	Estimated c	Number a	Roe b	Estimated c
1974	685	-	685	-	-	-	685	-	685
1975	374	-	374	-	-	-	374	-	374
1976	365	-	365	-	-	-	365	-	365
1977	668	-	668	-	-	-	668	-	668
1978	425	-	425	-	-	-	425	-	425
1979 d	370	-	370	834	-	834	1,204	-	1,204
1980	549	-	549	620	-	620	1,169	-	1,169
1981	867	-	867	374	-	374	1,241	-	1,241
1982	497	-	497	512	-	512	1,009	-	1,009
1983	382	-	382	219	-	219	601	-	601
1984	272	-	272	687	-	687	959	-	959
1985	318	-	318	346	-	346	664	-	664
1986	100	-	100	391	-	391	491	-	491
1987	999	-	999	434	-	434	1,433	-	1,433
1988	1,599	-	1,599	1,541	-	1,541	3,140	-	3,140
1989	696	-	696	2,035	-	2,035	2,731	-	2,731
1990	784	0	784	2,700	0	2,700	3,484	0	3,484
1991	916	386	1,113	1,461	1,674	2,316	2,377	2,060	3,429
1992	623	482	818	1,028	1,705	1,526	1,651	2,187	2,344
1993	190	279	269	1,159	422	1,308	1,349	701	1,577
1994	389	374	539	1,627	176	1,897	2,216	550	2,436
1995	262	30	262	0	596	237	262	626	499
1996	11	202	103	34	0	34	45	202	137
1997	326	14	333	1,124	0	1,124	1,450	14	1,457
5 Year Ave.									
1992-1996	295	273	398	810	580	1,000	1,105	853	1,399

a Harvest reported in numbers of fish sold in the round.

b Pounds of salmon roe sold. Since 1990, efforts were made to separate chinook salmon roe from the summer chum salmon roe sold

c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 4 sampling program that estimated average roe weight per female by statistical area, by period and gear type.

d In 1979, Statistical Area 334-42 was subdivided into Statistical Areas 334-42 and 334-43.

Appendix C.6. Commercial chinook salmon sales and estimated harvest by statistical area, Subdistricts 5-A, 5-B and 5-C, Upper Yukon Area, 1974 - 1997.

Year	334-51			334-52			334-53			Total		
	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c
1974	2,284	-	2,284	379	-	379	-	-	-	2,663	-	2,663
1975	2,602	-	2,602	270	-	270	-	-	-	2,872	-	2,872
1976	2,843	-	2,843	308	-	308	-	-	-	3,151	-	3,151
1977	4,013	-	4,013	149	-	149	-	-	-	4,162	-	4,162
1978	2,838	-	2,838	241	-	241	-	-	-	3,079	-	3,079
1979	3,389	-	3,389	0	-	0	-	-	-	3,389	-	3,389
1980	4,554	-	4,554	337	-	337	-	-	-	4,891	-	4,891
1981 ^d	97	-	97	3,051	-	3,051	2,477	-	2,477	5,625	-	5,625
1982	61	-	61	2,352	-	2,352	2,277	-	2,277	4,690	-	4,690
1983	0	-	0	632	-	632	2,738	-	2,738	3,370	-	3,370
1984	128	-	128	1,589	-	1,589	1,568	-	1,568	3,285	-	3,285
1985	0	-	0	1,142	-	1,142	1,842	-	1,842	2,984	-	2,984
1986	0	-	0	1,552	-	1,552	875	-	875	2,427	-	2,427
1987	0	-	0	1,183	-	1,183	1,356	-	1,356	2,539	-	2,539
1988	0	-	0	1,498	-	1,498	1,477	-	1,477	2,975	-	2,975
1989	31	-	31	1,411	-	1,411	1,459	-	1,459	2,901	-	2,901
1990	0	0	0	1,630	47	1,642	1,180	0	1,180	2,810	47	2,822
1991	56	0	56	1,724	62	1,740	1,476	0	1,476	3,256	62	3,272
1992	0	0	0	1,276	7	1,279	2,119	0	2,119	3,395	7	3,398
1993	0	0	0	1,124	0	1,124	1,484	0	1,484	2,608	0	2,608
1994	0	0	0	1,648	10	1,653	1,641	0	1,641	3,289	10	3,294
1995	0	0	0	1,519	0	1,519	1,234	0	1,234	2,753	0	2,753
1996	0	0	0	898	455	1,216	1,151	63	1,183	2,049	518	2,399
1997	0	0	0	1,314	0	1,314	1,757	0	1,757	3,071	0	3,071
5 Year Ave.												
1992-1996	0	0	0	1,293	94	1,358	1,528	13	1,532	2,819	107	2,890

^a Harvest reported in numbers of fish sold in the round. Does not include estimates of illegal sales in 1987 of 653 chinook salmon.

^b Pounds of salmon roe sold. Since 1990, efforts were made to separate chinook salmon roe from the summer chum salmon roe sold.

^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

^d In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (Statistical Area 334-52) were subdivided to include two additional subdistricts, Subdistrict 5-C (Statistical Area 334-53) and Subdistrict 5-D (Statistical Area 334-54).

Appendix C.7. Commercial chinook salmon sales and estimated harvest by statistical area, Subdistrict 5-D, Upper Yukon Area, 1974 - 1997.

Year	334-54			334-55			Total		
	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c
1974	-	-	-	-	-	-	-	-	-
1975	-	-	-	-	-	-	-	-	-
1976	-	-	-	-	-	-	-	-	-
1977	-	-	-	-	-	-	-	-	-
1978	-	-	-	-	-	-	-	-	-
1979	-	-	-	-	-	-	-	-	-
1980	-	-	-	-	-	-	-	-	-
1981 ^d	749	-	749	-	-	-	749	-	749
1982	695	-	695	-	-	-	695	-	695
1983	236	-	236	-	-	-	236	-	236
1984	384	-	384	-	-	-	384	-	384
1985	434	-	434	-	-	-	434	-	434
1986	306	-	306	-	-	-	306	-	306
1987	566	-	566	-	-	-	566	-	566
1988	461	-	461	-	-	-	461	-	461
1989	385	-	385	-	-	-	385	-	385
1990 ^e	194	0	194	349	0	349	543	0	543
1991	192	0	192	362	0	362	554	0	554
1992	0	0	0	457	0	457	457	0	457
1993	0	0	0	400	0	400	400	0	400
1994	0	0	0	450	0	450	450	0	450
1995	0	0	0	489	0	489	489	0	489
1996	58	0	58	390	0	390	448	0	448
1997	262	0	262	345	0	345	607	0	607
5 Year Ave. 1992-1996	12	0	12	437	0	437	449	0	449

^a Harvest reported in numbers of fish sold in the round.

^b Pounds of salmon roe sold. Since 1990, efforts were made to separate chinook salmon roe from the summer chum salmon roe sold.

^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

^d In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (Statistical Area 334-52) was subdivided to include two additional subdistricts, Subdistrict 5-C (statistical Area 334-53) and Subdistrict 5-D (Statistical Area 334-54).

^e In 1990, Subdistrict 5-D (Statistical Area 334-54) was subdivided into two statistical areas, (Statistical Areas 334-54 and 334-55).

Appendix C.8. Commercial chinook salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1974 - 1997.

Year	334-61			334-62			334-63			Total		
	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c
1974	111	-	111	1,102	-	1,102	260	-	260	1,473	-	1,473
1975	77	-	77	153	-	153	270	-	270	500	-	500
1976	490	-	490	320	-	320	292	-	292	1,102	-	1,102
1977	405	-	405	365	-	365	238	-	238	1,008	-	1,008
1978	34	-	34	58	-	58	543	-	543	635	-	635
1979	102	-	102	336	-	336	334	-	334	772	-	772
1980	92	-	92	1,588	-	1,588	267	-	267	1,947	-	1,947
1981	438	-	438	366	-	366	183	-	183	987	-	987
1982	414	-	414	309	-	309	258	-	258	981	-	981
1983	249	-	249	364	-	364	298	-	298	911	-	911
1984	0	-	0	375	-	375	492	-	492	867	-	867
1985	15	-	15	560	-	560	567	-	567	1,142	-	1,142
1986	0	-	0	597	-	597	353	-	353	950	-	950
1987	0	-	0	600	-	600	602	-	602	1,202	-	1,202
1988	305	-	305	253	-	253	204	-	204	762	-	762
1989	809	-	809	614	-	614	318	-	318	1,741	-	1,741
1990	326	0	326	1,243	1,354	1,565	188	322	265	1,757	1,676	2,156
1991	117	0	117	450	1,365	791	119	180	164	686	1,545	1,072
1992	39	0	39	371	679	510	162	205	204	572	884	753
1993	57	0	57	810	1,213	1,116	246	100	272	1,113	1,313	1,445
1994	0	0	0	1,941	1,513	2,333	194	307	273	2,135	1,820	2,606
1995	0	110	26	1,418	3,783	2,287	242	838	434	1,660	4,731	2,747
1996	0	0	0	110	645	255	168	105	192	278	750	447
1997	38	0	38	1,662	2,816	2,334	266	395	356	1,966	3,211	2,728
<hr/>												
5 Year Ave. 1992-1996	19	22	24	930	1,567	1,300	202	311	275	1,152	1,900	1,600

a Harvest reported in numbers of fish sold in the round. Does not include estimates of illegal sales in 1987 of 2,136 chinook salmon.

b Pounds of salmon roe sold. Since 1990, efforts were made to separate chinook salmon roe from the summer chum salmon roe sold.

c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Since 1990, the estimated number of females that produce the roe sold is based on a District 6 sampling program that estimated average roe weight per female by period.

Appendix C.9. Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistrict 4-A, Upper Yukon Area, 1974 - 1997.

Year	334-41					334-44					334-45				
	Roe Expansion				Estimated Harvest e	Roe Expansion				Estimated Harvest e	Roe Expansion				Estimated Harvest e
	Number a	Roe b	Males c	Females d		Number a	Roe b	Males c	Females d		Number a	Roe b	Males c	Females d	
1974	f	0	0	0	f	-	-	-	-	-	-	-	-	-	
1975	f	0	0	0	f	-	-	-	-	-	-	-	-	-	
1976	f	0	0	0	f	-	-	-	-	-	-	-	-	-	
1977	f	0	0	0	f	-	-	-	-	-	-	-	-	-	
1978	f	16,920	0	16,920	f	-	-	-	-	-	-	-	-	-	
1979	f	35,117	0	35,117	f	-	-	-	-	-	-	-	-	-	
1980	f	119,957	0	119,957	f	-	-	-	-	-	-	-	-	-	
1981	f	160,757	123,266 g	160,757	f	-	-	-	-	-	-	-	-	-	
1982	1,032	137,611	95,788	137,611	234,431	-	-	-	-	-	-	-	-	-	
1983	3,407	130,013	90,740	130,013	224,160	-	-	-	-	-	-	-	-	-	
1984	51	148,519	98,962	148,519	247,532	-	-	-	-	-	-	-	-	-	
1985	5,130	222,149	157,062	222,149	384,341	-	-	-	-	-	-	-	-	-	
1986	0	236,856	172,222	236,856	409,078	-	-	-	-	-	-	-	-	-	
1987	29,314	110,977	51,379	110,977	191,670	-	-	-	-	-	-	-	-	-	
1988	19,070	230,276	167,594	256,718 h	443,382	-	-	-	-	-	-	-	-	-	
1989	14,397	270,039	170,322	301,383 i	486,102	-	-	-	-	-	-	-	-	-	
1990 j	-	-	-	-	-	0	27,628	24,484	31,409	55,893	427	28,181	24,153	32,166	56,746
1991	-	-	-	-	-	88	39,281	37,164	47,574	84,826	79	43,087	42,445	53,401	95,925
1992	-	-	-	-	-	0	20,444	13,192	22,383	35,575	0	35,312	26,463	40,142	66,605
1993	-	-	-	-	-	0	6,234	4,308	7,334	11,642	0	6,081	4,246	7,230	11,476
1994 k	-	-	-	-	-	0	18,095	12,937	22,606	35,543	0	15,091	11,031	19,276	30,307
1995	-	-	-	-	-	0	37,595	37,575	46,084	83,659	0	49,577	49,149	56,667	105,816
1996	-	-	-	-	-	0	31,186	26,210	34,592	60,802	0	40,692	30,785	45,483	76,268
1997	-	-	-	-	-	0	14,188	10,905	15,118	26,023	0	526	342	570	912
5 Year Ave. 1992-1996	-	-	-	-	-	0	22,711	18,844	26,600	45,444	0	29,351	24,335	33,759	58,094

- Continued -

Year	334-46					Subtotal 334-41, 44, 45 and 46					334-47 (Anvik River)				Total (Subdistrict 4-A and Anvik)				
	Roe Expansion				Estimated Harvest e	Roe Expansion				Estimated Harvest e	Roe Expansion			Estimated Harvest e	Roe Expansion				Estimated Harvest e
Number a	Roe b	Males c	Females d	Number a		Roe b	Males c	Females d	Number a		Roe b	Females d	Number a		Roe b	Males c	Females d		
1974	-	-	-	-	-	0	0	0	0	-	-	-	-	f	0	0	0	f	
1975	-	-	-	-	-	0	0	0	0	-	-	-	-	f	0	0	0	f	
1976	-	-	-	-	-	0	0	0	0	-	-	-	-	f	0	0	0	f	
1977	-	-	-	-	-	0	0	0	0	-	-	-	-	f	0	0	0	f	
1978	-	-	-	-	-	0	16,920	0	16,920	-	-	-	-	f	16,920	0	16,920	f	
1979	-	-	-	-	-	0	35,117	0	35,117	-	-	-	-	f	35,117	0	35,117	f	
1980	-	-	-	-	-	0	119,957	0	119,957	-	-	-	-	f	119,957	0	119,957	f	
1981	-	-	-	-	-	0	160,757	123,266	160,757	-	-	-	-	f	160,757	123,266	160,757	f	
1982	-	-	-	-	-	1,032	137,611	95,788	137,611	234,431	-	-	-	-	1,032	137,611	95,788	137,611	234,431
1983	-	-	-	-	-	3,407	130,013	90,740	130,013	224,160	-	-	-	-	3,407	130,013	90,740	130,013	224,160
1984	-	-	-	-	-	51	148,519	98,962	148,519	247,532	-	-	-	-	51	148,519	98,962	148,519	247,532
1985	-	-	-	-	-	5,130	222,149	157,062	222,149	384,341	-	-	-	-	5,130	222,149	157,062	222,149	384,341
1986	-	-	-	-	-	0	238,656	172,222	238,656	409,078	-	-	-	-	0	238,656	172,222	238,656	409,078
1987	-	-	-	-	-	29,314	110,977	51,379	110,977	191,670	-	-	-	-	29,314	110,977	51,379	110,977	191,670
1988	-	-	-	-	-	19,070	230,276	167,594	230,276	443,382	-	-	-	-	19,070	230,276	167,594	230,276	443,382
1989	-	-	-	-	-	14,397	270,039	170,322	270,039	486,102	-	-	-	-	14,397	270,039	170,322	270,039	486,102
1990	10,750	39,732	29,490	44,742	84,982	11,177	95,541	78,127	108,317	197,621	-	-	-	-	11,177	95,541	78,127	108,317	197,621
1991	5,122	45,863	47,563	56,819	109,504	5,289	128,231	127,172	157,794	290,255	-	-	-	-	5,289	128,231	127,172	157,794	290,255
1992	0	43,945	32,502	49,489	81,991	0	99,701	72,158	112,013	184,171	-	-	-	-	0	99,701	72,158	112,013	184,171
1993	0	8,170	5,579	9,499	15,078	0	20,485	14,133	24,063	38,196	-	-	-	-	0	20,485	14,133	24,063	38,196
1994	0	29,815	28,625	37,119	85,944	0	62,801	52,794	79,000	131,794	0	19,532	22,574	22,574	0	82,333	52,794	101,574	154,368
1995	0	102,080	105,663	124,550	230,213	0	189,252	192,387	227,301	419,688	0	48,477	54,744	54,744	0	237,729	192,387	282,045	474,432
1996	0	109,172	98,926	120,942	219,868	0	181,050	155,921	201,017	356,938	0	76,318	84,663	84,663	0	257,368	155,921	285,680	441,601
1997	0	41,587	29,207	44,247	73,454	0	56,301	40,454	59,935	100,389	0	13,067	13,548	13,548	0	69,368	40,454	73,483	113,937
5 Year Ave.																			
1992-1996	0	58,596	54,299	68,320	122,619	0	110,658	97,478	128,679	226,157	-	-	-	-	0	139,523	97,478	161,075	258,554

a. Harvest reported in numbers of fish sold in the round.
b. Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of chinook salmon roe. Since 1990, efforts were made to separate chinook salmon roe from the summer chum salmon roe sold.
c. The estimated number of unsold males that were caught and not sold while harvesting the females that produced the roe sold. Prior to 1981, it was assumed that all males were sold in the round. Since 1981, all fish sold in the round are assumed to be males. For the years 1981 through 1985, the estimated percentage of males in the harvest was based on percentage of males observed in the department Stink Creek test fish wheel catches (1981 - 434, 1982 - 412, 1983 - 420, 1984 - 400, and 1985 - 422). For the years 1986 through 1988, the estimated number of males in the harvest was based on the average percentage of males observed in the Stink Creek test fishery for the years 1981 through 1985 (average of 421). For the year 1989, the estimated percentage of males in the harvest was 38. Since 1990, the estimated number of unsold males that produce the roe sold is based on a District 4 sampling program that estimated average percent males in the harvest by statistical area, by period and gear type.
d. The estimated number of females to produce the roe sold. Unless otherwise noted, prior to 1991, the roe expansion assumes 1.0 pound of roe per female. Since 1991, the estimated number of females that produce the roe sold is based on a District 4 sampling program that estimated average roe weight per female by statistical area, by period and gear type.
e. Estimated harvest is the number of fish sold in the round plus the estimated number of females and the estimated number of unsold males harvested to produce the roe sold.
f. Information not available.
g. Assumes no males were sold in the round.
h. Roe expansion assumes .897 pound of roe per female.
i. Roe expansion assumes .896 pound of roe per female.
j. In 1990, Subdistrict 4-A (Statistical Area 334-41) was subdivided into Statistical Areas 334-44, 334-45 and 334-46.
k. In 1994, Statistical Area 334-47 was included in Subdistrict 4-A and it represents the Anvik River Management Area.

Appendix C.10. Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistricts 4-B and 4-C, Upper Yukon Area, 1974-1997.

Year	334-42				334-43				Total				
	Number a	Roe Expansion		Estimated Harvest e	Number a	Roe Expansion		Estimated Harvest e	Number a	Roe Expansion			Estimated Harvest e
		Roe b	Females c			Roe b	Females c			Roe b	Females c	Males d	
1974	g	0	0	g	-	-	-	-	g	0	0	0	g
1975	g	0	0	g	-	-	-	-	g	0	0	0	g
1976	g	0	0	g	-	-	-	-	g	0	0	0	g
1977	g	0	0	g	-	-	-	-	g	0	0	0	g
1978	g	0	0	g	-	-	-	-	g	0	0	0	g
1979 h	g	200	200	g	g	0	0	g	g	200	200	g	g
1980	g	14,385	14,385	g	g	1,482	1,482	g	g	15,867	15,867	g	g
1981	g	23,677	23,677	g	g	2,598	2,598	g	g	26,275	26,275	g	g
1982	1,059	12,550	12,550	13,609	1,556	1,120	1,120	2,676	2,615	13,670	13,670	7,003	23,288
1983	3,265	17,549	17,549	20,814	0	563	563	563	3,265	18,112	18,112	9,651	31,228
1984	659	15,184	15,184	15,843	299	3,139	3,139	3,438	958	18,323	18,323	11,257	30,538
1985	1,785	19,306	19,306	21,091	5,092	5,630	5,630	10,722	6,877	24,936	24,936	11,329	43,142
1986	241	29,169	29,169	29,410	59	3,520	3,520	3,579	300	32,689	32,689	23,468	56,457
1987	593	9,956	9,956	10,549	84	541	541	625	677	10,497	10,497	6,956	18,130
1988	4,592	21,766	24,265 i	26,358	389	2,484	2,769 i	3,158	4,981	24,250	27,034 i	14,677	46,692
1989	2,940	9,915	11,066 k	12,855	1,217	3,351	3,740 k	4,957	4,157	13,266	14,806 k	5,179	24,142
1990	1,091	6,600	7,799	8,890	96	3,582	4,434	4,530	1,187	10,182	12,233	11,509	24,929
1991	1,092	8,282	8,996	10,088	0	719	781	781	1,092	9,001	9,777	8,520	19,389
1992	1,363	9,010	9,616	10,979	1,296	2,098	2,902	4,198	2,659	11,108	12,518	12,048	27,225
1993	0	1,851	2,134	4,445	27	111	140	316	27	1,962	2,274	2,460	4,761
1994	2,844	6,455	g	14,803	767	929	g	2,436	3,611	7,384	g	g	17,239
1995	8,873	39,699	g	73,570	0	3,646	g	6,585	8,873	43,345	g	g	80,155
1996	0	36,927	39,156	67,012	0	895	939	1,627	0	37,822	40,095	28,544	68,639
1997	1,942	4,786	5,199	10,484	120	77	81	250	2,062	4,863	5,280	5,454	10,734

5 Year Ave.

1992-1996	2,616	18,788	10,181	34,162	418	1,536	796	3,032	3,034	20,324	10,977	8,610	39,604
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a Harvest reported in numbers of fish sold in the round.

b Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of chinook salmon roe. Since 1990, efforts were made to separate chinook salmon roe from the summer chum salmon sold.

c The estimated number of females to produce the roe sold. Unless otherwise noted, prior to 1991, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of female that produced the roe sold is based on a District 4 sampling program that estimated average roe weight per female by statistical area, by period and gear type.

d Estimated number of males caught but not sold. Total males caught but not sold calculated the same as for District 4-A (using sex ratio and sales in the round assumed to be male chum salmon).

e The total estimated harvest is the fish sold in the round plus estimated number of females harvested to produce roe sold plus the estimated number of males caught but not sold.

g Information not available by statistical area.

h In 1979, Statistical Area 334-42 was subdivided into Statistical Areas 334-42 and 334-43.

i Roe expansion assumes .897 pound of roe per female.

k Roe expansion assumes .696 pound of roe per female.

Appendix C.11. Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistricts 5-A, 5-B and 5-C, Upper Yukon Area, 1974 - 1997.

Year	334-51			334-52			334-53			Total		
	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c
1974	d	0	d	d	0	d	-	-	-	6,831	0	6,831
1975	d	0	d	d	0	d	-	-	-	12,997	0	12,997
1976	d	0	d	d	0	d	-	-	-	774	0	774
1977	d	0	d	d	0	d	-	-	-	1,274	0	1,274
1978	d	605	d	d	0	d	-	-	-	4,892	605	5,497
1979	d	1,009	d	d	0	d	-	-	-	8,608	1,009	9,617
1980	d	0	d	d	0	d	-	-	-	456	0	456
1981	d	0	d	d	49	d	d	0	d	1,236	49	1,285
1982	d	21	d	d	0	d	d	0	d	213	21	234
1983	0	242	242	37	269	306	5	1,345	1,350	42	1,856	1,898
1984	50	0	50	578	47	625	12	0	12	640	47	687
1985	0	0	0	700	0	700	0	0	0	700	0	700
1986	0	0	0	682	0	682	8	0	8	690	0	690
1987	0	0	0	362	44	406	0	0	0	362	44	406
1988	0	0	0	717	337	1,054	5	26	31	722	363	1,085
1989	0	0	0	112	204	316	1	169	170	113	373	486
1990	0	0	0	0	225	250	5	350	394	5	575	644
1991	0	0	0	0	28	31	4	0	4	4	28	35
1992	0	0	0	30	295	358	72	0	72	102	295	430
1993	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	133	212	368	96	0	96	229	212	464
1995	0	0	0	0	188	209	107	0	107	107	188	316
1996	0	0	0	0	0	0	0	188	209	0	188	209
1997	0	0	0	0	0	0	125	0	125	125	0	125
5 Year Ave												
1992-1996	0	0	0	33	139	167	55	38	97	88	177	284

^a Harvest reported in numbers of fish sold in the round.

^b Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of chinook roe. Since 1990, efforts were made to separate chinook roe from the summer chum salmon roe sold.

^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of females that produced the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

^d Information not available.

^e In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (statistical Area 334-52) were subdivided to include two additional subdistricts, Subdistrict 5-C (Statistical Area 334-53) and Subdistrict 5-D (Statistical Area 334-54). In 1990, Subdistrict 5-D (Statistical Area 334-54) was further subdivided into Statistical Areas 334-54 and 334-55.

Appendix C.12. Commercial summer chum salmon sales and estimated harvest by statistical area, Subdistrict 5-D, Upper Yukon Area, 1974 - 1

Year	334-54			334-55			Total		
	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c
1974	-	-	-	-	-	-	-	-	-
1975	-	-	-	-	-	-	-	-	-
1976	-	-	-	-	-	-	-	-	-
1977	-	-	-	-	-	-	-	-	-
1978	-	-	-	-	-	-	-	-	-
1979	-	-	-	-	-	-	-	-	-
1980	-	-	-	-	-	-	-	-	-
1981 ^d	0	0	0	-	-	-	0	0	0
1982	0	0	0	-	-	-	0	0	0
1983	0	0	0	-	-	-	0	0	0
1984	5	0	5	-	-	-	5	0	5
1985	0	0	0	-	-	-	0	0	0
1986	0	0	0	-	-	-	0	0	0
1987	0	0	0	-	-	-	0	0	0
1988	0	0	0	-	-	-	0	0	0
1989	41	0	41	-	-	-	41	0	41
1990 ^f	6	19	27	0	0	0	6	19	27
1991	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	114	127	0	0	0	0	114	127
1997	12	0	12	0	0	0	12	0	12
5 Year Ave.									
1992-1997	0	23	25	0	0	0	0	23	25

^a Harvest reported in numbers of fish sold in the round.

^b Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of chinook salmon roe. Since 1990, efforts were made to separate chinook salmon roe from the summer chum salmon roe sold.

^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

^d In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (Statistical Area 334-52) were subdivided to include two additional subdistricts, Subdistrict 5-C (Statistical Area 334-53) and Subdistrict 5-D (Statistical Area 334-54).

^e Information not available.

^f In 1990, Subdistrict 5-D (Statistical Area 334-54) was subdivided into two statistical areas, (Statistical Areas 334-54 and 334-55).

Appendix C.13. Commercial summer chum salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1974 - 1997.

Year	334-61			334-62			334-63			Total		
	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c
1974	d	0	d	d	0	d	d	0	d	13,318	0	13,318
1975	d	0	d	d	0	d	d	0	d	14,782	0	14,782
1976	d	0	d	d	0	d	d	0	d	8,617	0	8,617
1977	d	0	d	d	0	d	d	0	d	4,317	0	4,317
1978	d	1,468	d	d	6,116	d	d	652	d	34,814	8,236	43,050
1979	d	d	d	d	d	d	d	d	d	18,491	3,891	22,382
1980	d	0	d	d	2,272	d	d	1,010	d	35,855	3,282	39,137
1981	d	0	d	d	925	d	d	1,062	d	32,477	1,987	34,464
1982	d	0	d	d	1,027	d	d	490	d	21,597	1,517	23,114
1983	1,923	0	1,923	21,646	18	21,664	740	0	740	24,309	18	24,327
1984	3,769	0	3,769	42,231	152	42,383	10,249	183	10,432	56,249	335	56,584
1985	809	0	809	51,132	142	51,274	14,972	1,398	16,370	66,913	1,540	68,453
1986	4,697	0	4,697	31,647	1,711	33,358	14,139	435	14,574	50,483	2,146	52,629
1987	2,167	0	2,167	6,882	349	7,231	1,561	101	1,662	10,610	450	11,060
1988	7,978	71	8,049	24,911	1,165	26,076	7,240	410	7,650	40,129	1,646	41,775
1989	16,483	61	16,544	18,960	4,277	23,237	6,672	533	7,205	42,115	4,871	46,986
1990	2,862	12	2,877	6,028	1,837	8,011	2,237 ^a	1,410	3,945	11,127 ^b	3,059	14,833
1991	4,742	0	4,742	10,100	2,653	13,304	3,355	2,063	5,846	18,197	4,716	23,892
1992	1,327	0	1,327	3,446	1,684	5,409	256	208	492	5,029	1,892	7,228
1993	1,156	0	1,156	1,603	315	2,009	282	200	540	3,041	515	3,705
1994	5,114	0	5,114	13,805	5,643	21,182	2,289	2,185	5,138	21,208	7,828	31,434
1995	5,894	0	5,894	16,020	6,731	25,112	2,797	2,744	6,422	24,711	9,475	37,428
1996	3,194	0	3,194	12,632	13,139	30,208	6,534	5,193	13,490	22,360	18,332	46,890
1997	3,162	0	3,162	9,168	6,525	16,709	2,556	2,511	5,416	14,886	9,036	25,287
5 Year Ave.												
1992-1996	3,337	0	3,337	9,501	5,502	16,784	2,432	2,106	5,216	15,270	7,608	25,337

^a Harvest reported in numbers of fish sold in the round.

^b Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of chinook salmon roe. Since 1990, efforts were made to separate chinook salmon roe from the summer chum salmon roe sold.

^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 6 sampling program that estimated average roe weight per female by period.

^d Information not available.

^e Does not include 1,233 female summer chum salmon sold with roe extracted and roe sold separately. Females are accounted for in the roe expansion.

Appendix C.14. Commercial fall chum salmon sales and estimated harvest by statistical area, District 4, Upper Yukon Area, 1974 - 1997.

Year	334-41			334-42			334-43			Total		
	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c
1974	0	0	0	9,213	0	9,213	-	-	-	9,213	0	9,213
1975	^d	0	^d	^d	0	^c	-	-	-	13,666	0	13,666
1976	462	0	462	1,280	0	1,280	-	-	-	1,742	0	1,742
1977	^d	0	^d	^d	0	^d	-	-	-	13,980	0	13,980
1978	-	-	-	^d	1,721	^d	-	-	-	10,988	1,721	12,709
1979	-	-	-	^d	3,199	^d	^d	0	^d	48,899	3,199	52,098
1980	-	-	-	^d	1,789	^d	^d	2,558	^d	27,978	4,347	32,325
1981	-	-	-	^d	1,311	^d	^d	0	^d	12,082	1,311	13,393
1982	-	-	-	958	20	978	2,936	147	3,083	3,894	167	4,061
1983	-	-	-	3,681	1,591	5,272	801	372	1,173	4,482	1,963	6,445
1984	-	-	-	2,961	1,222	4,183	4,664	993	5,657	7,625	2,215	9,840
1985	-	-	-	14,468	891	15,359	9,984	1,634	11,618	24,452	2,525	26,977
1986	-	-	-	2,045	0	2,045	0	0	0	2,045	0	2,045
1987	-	-	-	0	0	0	0	0	0	0	0	0
1988	-	-	-	10,157	703	10,860	5,505	718	6,223	15,662	1,421	17,083
1989	-	-	-	9,819	2,023	11,842	1,957	1,384	3,341	11,776	3,407	15,183
1990	-	-	-	3,406	1,680	5,086	1,583	671	2,254	4,989	2,351	7,340
1991	-	-	-	2,996	490	3,486	739	1,126	2,373	3,737	1,616	5,353
1992	-	-	-	0	0	0	0	0	0	0	0	0
1993	-	-	-	0	0	0	0	0	0	0	0	0
1994	-	-	-	0	0	0	0	0	0	0	0	0
1995	-	-	-	2,924	225	3,149	0	3,901	5,482	2,924	4,126	7,050
1996	-	-	-	2,918	0	2,918	0	0	0	2,918	0	2,918
1997	-	-	-	463	0	463	1,995	0	1,995	2,458	0	2,458
5 Year Ave. 1992-1996	-	-	-	1,168	45	1,233	0	780	1,096	1,168	825	2,330

^a Harvest reported in numbers of fish sold in the round.

^b Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of coho salmon roe. Since 1990, efforts were made to separate coho salmon roe from the fall chum salmon roe sold.

^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 4 sampling program that estimated average roe weight per female by period, by statistical area and gear type.

^d Information not available.

^e In 1977, was the last year Subdistrict 4-A (Statistical Area 334-41), by regulation, was allowed a late season.

^f In 1979, Statistical Area 334-42 was subdivided into Statistical Areas 334-42 and 334-43.

Appendix C.15. Commercial fall chum salmon sales and estimated harvest by statistical area, Subdistricts 5-A, 5-B and 5-C, Upper Yukon area, 1974-1997.

Year	334-51			334-52			334-53			Unapportioned Number ^{k,l}	Total		
	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c		Number ^a	Roe ^b	Estimated ^c
1974	23,551	0	23,551	0	0	0	-	-	-	0	23,551	0	23,551
1975	^d	0	^d	^d	0	^d	-	-	-	27,212	27,212	0	27,212
1976	5,319	0	5,319	68	0	68	-	-	-	0	5,387	0	5,387
1977	^d	0	^d	^d	0	^d	-	-	-	25,730	25,730	0	25,730
1978	^d	3,946	^d	^d	1,274	^d	-	-	-	21,016	21,016	5,220	26,236
1979	^d	8,097	^d	^d	0	^d	-	-	-	47,459	47,459	8,097	55,556
1980	^d	605	^d	^d	0	^d	-	-	-	41,771	41,771	605	42,376
1981 ^e	^d	178	^d	^d	6,760	^d	^d	17	^d	86,620	86,620	6,955	93,575
1982	^d	0	^d	^d	23	^d	^d	19	^d	13,593	13,593	42	13,593
1983	3,143	0	3,143	19,771	0	19,771	17,987	0	17,987	0	40,901	0	40,901
1984	1,415	0	1,415	10,329	0	10,329	9,403	0	9,403	0	21,147	0	21,147
1985	565	0	565	9,263	0	9,263	13,332	0	13,332	0	23,160	0	23,160
1986	1,332	0	1,332	11,907	395	12,302	7,471	0	7,471	0	20,710	395	21,105
1987	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	9,684	0	9,684	4,533	0	4,533	0	14,217	0	14,217
1989	372	60	432	9,937	3,327	13,264	4,987	209	5,196	0	15,296	3,596	18,892
1990	0	0	0	5,169	945	6,243	0	0	0	0	5,169	945	6,243
1991	0	0	0	14,968	3,625	19,727	9,173	0	9,173	0	24,141	3,625	28,900
1992	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	2,513	3,159	1,785	13,091	18,397	4,014	389	4,498	0	5,799	15,993	26,054
1996	0	181	208	5,898	8,317	15,670	1,583	0	1,583	0	7,481	8,498	17,461
1997	0	0	0	1,595	1,194	3,069	0	0	0	0	1,595	1,194	3,069
5 Year Ave. 1992-1996	0	539	673	1,537	4,282	6,813	1,119	78	1,216	0	2,656	4,898	8,703

^a Harvest reported in numbers of fish sold in the round.

^b Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of coho salmon roe. Since 1990, efforts were made to separate coho salmon roe from the fall chum salmon roe sold.

^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.

^d Information not available by statistical area.

^e In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (statistical Area 334-52) was subdivided to include two additional subdistricts, Subdistrict 5-C (Statistical Area 334-53) and Subdistrict 5-D (Statistical Area 334-54) and Subdistrict 5-D (Statistical Area 334-54) was further subdivided into Statistical Areas 334-54 and 334-55.

^f Includes harvest in Subdistrict 5-D from 1978 through 1982.

Appendix C.16. Commercial fall chum salmon sales and estimated harvest by statistical area, Subdistricts 5-D, Upper Yukon Area, 1974 - 1997.

Year	334-54			334-55			Total		
	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c
1974	-	-	-	-	-	-	-	-	-
1975	-	-	-	-	-	-	-	-	-
1976	-	-	-	-	-	-	-	-	-
1977	-	-	-	-	-	-	-	-	-
1978	-	-	-	-	-	-	-	-	-
1979	-	-	-	-	-	-	-	-	-
1980	-	-	-	-	-	-	-	-	-
1981 ^d	-	0	-	-	-	-	-	0	-
1982	-	0	-	-	-	-	-	0	-
1983	3,092	0	3,092	-	-	-	3,092	0	3,092
1984	2,913	57	2,970	-	-	-	2,913	57	2,970
1985	2,178	0	2,178	-	-	-	2,178	0	2,178
1986	1,343	0	1,343	-	-	-	1,343	0	1,343
1987	0	0	0	-	-	-	0	0	0
1988	2,772	0	2,772	-	-	-	2,772	0	2,772
1989	2,919	393	3,312	-	-	-	2,919	393	3,312
1990 ^e	1,758	113	1,882	851	0	851	2,609	113	2,733
1991	1,846	0	1,846	1,368	0	1,368	3,214	0	3,214
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	3,630	0	3,630	3,630	0	3,630
1995	0	0	0	3,979	2,823 ^h	3,979	3,979	2,823	3,979
1996	890	0	890	3,507	0	3,507	4,397	0	4,397
1997	40	0	40	811	0	811	851	0	851
5 Year Ave. 1992-1996	178	0	178	2,223	565	2,223	2,401	565	2,401

^a Harvest reported in numbers of fish sold in the round.
^b Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of coho salmon roe. Since 1990, efforts were made to separate coho salmon roe from fall chum salmon roe.
^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pounds of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 5 sampling program that estimated average roe weight per female by period.
^d In 1981, Subdistrict 5-A (Statistical Area 334-51) and Subdistrict 5-B (Statistical Area 334-52) was subdivided to include two additional subdistricts, Subdistrict 5-C (Statistical Area 334-53) and Subdistrict 5-D (Statistical Area 334-54).
^e Information not available.
^f In 1990, Subdistrict 5-D (Statistical Area 334-54) was subdivided into two statistical areas, (Statistical Areas 334-54 and 334-55).
^h Estimated harvest equals fish sold in round. The roe came from fish sold in the round, therefore, not included in estimated harvest to avoid duplicate counting.

Appendix C.17. Commercial fall chum salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1974-1997.

Year	334-61			334-62			334-63			Total		
	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c
1974	d	d	d	d	d	d	d	d	d	26,884	0	26,884
1975	d	0	d	d	0	d	d	0	d	18,692	0	18,692
1976	d	0	d	d	0	d	d	0	d	17,948	0	17,948
1977	d	0	d	d	0	d	d	0	d	18,673	0	18,673
1978	4,704	1,826	6,530	8,036	1,680	9,716	519	181	700	13,259	3,687	16,946
1979	d	d	d	d	d	d	d	d	d	34,185	7,170	41,355
1980	d	0	d	d	53	d	d	15	d	19,452	68	19,520
1981	d	0	d	d	2,784	d	d	235	d	25,989	3,019	29,008
1982	706	0	706	4,586	596	5,182	1,528	0	1,528	6,820	596	7,416
1983	3,528	0	3,528	23,096	3,009	26,105	7,467	92	7,559	34,089	3,101	37,190
1984	5,617	0	5,617	11,809	0	11,809	3,138	56	3,194	20,564	56	20,620
1985	1,462	0	1,462	34,663	0	34,663	6,227	0	6,227	42,352	0	42,352
1986	176	0	176	1,345	182	1,527	371	0	371	1,892	182	2,074
1987	0	0	0	0	0	0	0	0	0	0	0	0
1988	4,500	0	4,500	13,617	1,035	14,652	3,727	771	4,498	21,844	1,806	23,650
1989	14,870	173	15,043	25,650	7,050	32,700	8,570	130	8,700	49,090	7,353	56,443
1990	9,254	0	9,254	28,932	6,617	35,776	4,996 ^e	918	5,945	43,182 ^e	7,535	50,975
1991	3,278	0	3,278	21,834	12,253	35,904	3,083	1,901	5,266	28,195	14,154	44,448
1992	0	0	0	13,713	1,816	15,852	2,008	990	3,170	15,721	2,806	19,022
1993	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	3,239	4,319	1	37	50	1	3,276	4,369
1995	6,170	0	6,170	60,466	8,164	65,051	1,219	1,396	2,896	67,855	9,560	74,117
1996	663	236	934	8,491	4,906	14,332	1,112	1,031	2,308	10,266	6,173	17,574
1997	0	0	0	0	0	0	0	0	0	0	0	0
5 Year Ave.												
1992-1996	1,367	47	1,421	16,534	3,625	19,911	868	691	1,685	18,769	4,363	23,016

^a Harvest reported in numbers of fish sold in the round.^b Pounds of salmon roe sold. Prior to 1990, roe production may include small amounts of coho salmon roe. Since 1990, efforts were made to separate coho salmon roe from the fall chum salmon roe sold.^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pounds of roe per female. Since 1990, the estimated number of females that produce the for sold is based on a District 6 sampling program that estimated average roe weight per female by period.^d Information not available.^e Does not include 884 female fall chum salmon sold with roe extracted and roe sold separately. Females are accounted for in the roe expansion.

Appendix C.18. Commercial coho salmon sales and estimated harvest by statistical area, District 4, Upper Yukon Area, 1974 - 1997.

Year	334-41			334-42			334-43			Total		
	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c
1974	0	-	0	0	-	0	-	-	-	0	-	0
1975	0	-	0	0	-	0	-	-	-	0	-	0
1976	0	-	0	0	-	0	-	-	-	0	-	0
1977 ^d	0	-	0	0	-	0	-	-	-	0	-	0
1978	-	-	-	32	-	32	-	-	-	32	-	32
1979 ^e	-	-	-	155	-	155	0	-	0	155	-	155
1980	-	-	-	-	-	-	-	-	-	30	-	30
1981	-	-	-	0	-	0	0	-	0	0	-	0
1982	-	-	-	0	-	0	15	-	15	15	-	15
1983	-	-	-	0	-	0	0	-	0	0	-	0
1984	-	-	-	412	-	412	683	-	683	1,095	-	1,095
1985	-	-	-	153	-	153	785	-	785	938	-	938
1986	-	-	-	0	-	0	0	-	0	0	-	0
1987	-	-	-	0	-	0	0	-	0	0	-	0
1988	-	-	-	2	-	2	0	-	0	2	-	2
1989	-	-	-	0	-	0	3	-	3	3	-	3
1990	-	-	-	0	0	0	0	0	0	0	0	0
1991	-	-	-	11	0	11	3	0	3	14	0	14
1992	-	-	-	0	0	0	0	0	0	0	0	0
1993	-	-	-	0	0	0	0	0	0	0	0	0
1994	-	-	-	0	0	0	0	0	0	0	0	0
1995	-	-	-	0	0	0	0	0	0	0	0	0
1996	-	-	-	161	0	161	0	0	0	161	0	161
1997	-	-	-	19	0	19	795	0	795	814	0	814
5 Year Ave. 1992-1996	-	-	-	32	0	32	0	0	0	32	0	32

^a Harvest reports in numbers of fish sold in the round.

^b Pounds of salmon roe sold. Since 1990, efforts were made to separate coho salmon roe from the fall chum salmon roe sold.

^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pounds of roe per female. Since 1990, the estimated number of females that produce the for sold is based on a District 4 sampling program that estimated average roe weight per female by period.

^d 1977 was the last year Subdistrict 4-A (Statistical Area 334-41), by regulation, was allowed a late season.

^e In 1979, Statistical Area 334-42 was subdivided into Statistical Areas 334-42 and 334-43.

Appendix C.19. Commercial coho salmon sales and estimated harvest by statistical area, District 6, Upper Yukon Area, 1974 - 1997.

Year	334-61			334-62			334-63			Total		
	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c	Number ^a	Roe ^b	Estimated ^c
1974	d	-	d	d	-	d	d	-	d	1,479	-	1,479
1975	0	-	0	0	-	0	53	-	53	53	-	53
1976	d	-	d	d	-	d	d	-	d	1,103	-	1,103
1977	252	-	252	766	-	766	266	-	266	1,284	-	1,284
1978	521	-	521	2,450	-	2,450	95	-	95	3,066	-	3,066
1979	465	-	465	2,059	-	2,059	267	-	267	2,791	-	2,791
1980	423	-	423	632	-	632	171	-	171	1,226	-	1,226
1981	535	-	535	1,335	-	1,335	414	-	414	2,284	-	2,284
1982	1,004	-	1,004	6,449	-	6,449	327	-	327	7,780	-	7,780
1983	745	-	745	5,048	-	5,048	375	-	375	6,168	-	6,168
1984	1,608	-	1,608	5,360	-	5,360	720	-	720	7,688	-	7,688
1985	432	-	432	9,628	-	9,628	1,702	-	1,702	11,762	-	11,762
1986	30	-	30	370	-	370	41	-	41	441	-	441
1987	0	-	0	0	-	0	0	-	0	0	-	0
1988	1,240	-	1,240	10,372	-	10,372	2,360	-	2,360	13,972	-	13,972
1989	2,818	-	2,818	10,181	-	10,181	3,085	-	3,085	16,084	-	16,084
1990	3,173	0	3,173	7,096	3,559	9,951	1,280 ^e	483	1,680	11,549	4,042	14,804
1991	0	0	0	4,572	3,737	7,620	1,696	562	2,154	6,268	4,299	9,774
1992	0	0	0	5,731	1,267	6,800	825	413	1,179	6,556	1,680	7,979
1993	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	5,398	4,164	120	190	267	120	5,588	4,451
1995	1,475	0	1,475	4,209	2,072	5,156	142	157	269	5,826	2,229	6,900
1996	182	0	182	3,403	4,571	6,557	218	258	403	3,803	4,829	7,142
1997	0	0	0	0	0	0	0	0	0	0	0	0
5 Year Ave. 1992-1996	331	0	331	2,569	2,662	4,539	261	204	424	3,261	2,865	5,294

^a Harvest reports in numbers of fish sold in the round.

^b Pounds of salmon roe sold. Since 1990, efforts were made to separate coho salmon roe from the fall chum salmon roe sold.

^c The estimated harvest is the fish sold in the round plus the estimated number of females to produce the roe sold. Prior to 1990, the roe expansion assumed 1.0 pound of roe per female. Since 1990, the estimated number of females that produce the roe sold is based on a District 6 sampling program that estimated average roe weight per female by period.

^d Information not available.

^e Does not include 438 female coho salmon sold with roe extracted and roe sold separately. Females are accounted for in the roe expansion calculation.

Appendix C.20. Summary of test fish wheel projects conducted in the Upper Yukon Area, 1997. a

TEST FISH WHEEL PROJECTS	CONTRACTOR/ Operator	River Mile b	Start Date	End Date	Total Days of Operation	Estimated Total Salmon Captured c				Historical Data / Comments
						Chinook	Summer Chum	Fall Chum	Coho	
YUKON RIVER										
Tanana Village Test Fish Wheels	BSFA/									
-North Bank	L. Erhart	695	31-Jul	15-Sep	47	—	—	2,265	18	Fifth year of project.
-South Bank	B. Flint	690	16-Aug	29-Sep	45	—	—	6,857	1,583	Sixth year of project. Also operated as Toklat
Yukon River (Rapids) Tag Deployment Fish Wheels	USFWS/									
-North Bank	S. Zuray	731	21-Jul	20-Sep	62	—	—	—	—	Second year of the project.
-South Bank	S. Zuray	731	21-Jul	20-Sep	62	—	—	—	—	Second year of the project.
-Combined								18,671 d	0 e	
Yukon River (Rampart) Tag Recovery Fish Wheels	USFWS/									
-North Bank	P. Evans	763	21-Jul	28-Sep	70	—	—	29,479	0	Second year of the project.
-South Bank	P. Evans	763	21-Jul	28-Sep	70	—	—	10,929	0	Second year of the project.
TANANA RIVER										
Lower Tanana Tag Deployment Fish Wheel	ADF&G/									
-North Bank	C. Boulding	793	16-Aug	30-Oct	46	—	—	1,439	230	Third year of operation as the fall chum salmon tag deployment fish wheel (1995 and 1997).
Nenana Test and Recovery Fish Wheels	ADF&G/									
-North Bank (Test / Recovery)	T. Duyck	859	3-Jul	3-Oct	95	2,413	1,748 f	1,619 g	1,401	Tenth year of project. Also operated as a fall chum salmon tag recovery fish wheel (1995 and 1997).
-South Bank (Recovery)	BSFA/ T. Duyck	860	16-Aug	3-Oct	49	—	—	2,600	778	Third year of operation as the fall chum salmon tag recovery fish wheel (1995 and 1997).

a Seven fish wheels were operated by the Alaska Department of Fish and Game (ADF&G), BSFA (Bering Sea Fishermen Association), or CATG (Council of Athabascan Tribal Governments).

b Four fish wheels (two tagging and two recovery fish wheels) were operated by the United States Fish and Wildlife Service (USFWS).

c Estimated river miles from the mouth of the Yukon River.

d Unless otherwise noted, fish wheel catch are adjusted to estimate total catch (i.e., less than or greater than 24 hour catches adjusted to reflect a 24 hour catch).

e Actual fall chum and coho salmon catch totals (not adjusted for hours not operated).

f Estimated summer chum salmon totals include all chum salmon caught prior to August 15.

g Estimated fall chum salmon totals include all chum salmon caught after August 15.

APPENDIX D

YUKON RIVER SALMON SUBSISTENCE AND PERSONAL USE

Appendix D.1. Estimated Yukon River chinook salmon subsistence harvest in numbers of fish by village, 1984-1997. a

Village	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1987-91 Average	1982-96 Average
Sheldon Pt.	802	143	592	1,173	302	165	756	445	368	561	606	459	450	970	568	483
Alakanuk	1,028	517	1,027	1,180	738	620	871	1,044	623	2,562	1,045	1,191	662	2,058	931	1,217
Emmonak	2,099	1,382	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
Kotlik	695	1,029	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
Retained From Commercial										16	114					26
<i>Mouth to Anuk River</i>																
<i>Subtotal</i>	4,624	3,071	5,275	7,278	3,938	4,585	6,619	5,925	5,141	10,423	6,654	5,960	3,646	7,550	5,665	6,365
Mt. Village	1,217	672	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./SL Marys	2,663	778	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	1,116	896	1,452	2,593	674	1,498	3,786	2,681	1,818	2,681	1,977	1,614	1,811	2,373	2,246	1,976
Marshall	2,176	1,122	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
Retained From Commercial										3	78					16
<i>Anuk River to Owl Slough</i>																
<i>Subtotal</i>	7,172	3,468	6,483	9,866	3,823	7,147	9,546	7,617	7,074	11,516	9,034	9,037	7,760	9,350	7,600	8,888
Russian Mission	1,938	974	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	2,456	2,368	2,505	2,825	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-Innoko River			53	47	104	32	62	189	218	128	291	161	121	1,380	87	184
Retained From Commercial										10	25					
<i>Owl Slough to Bonasila R.</i>																
<i>Subtotal</i>	4,394	3,342	4,305	4,706	4,547	4,778	4,093	3,187	4,991	6,602	6,149	5,419	6,783	6,311	4,263	5,989
Lower Yukon Total	16,190	9,881	16,063	21,852	12,308	16,490	20,258	16,729	17,206	28,541	21,837	20,416	18,209	23,211	17,527	21,242
Anvik	576	405	959	428	211	418	481	619	389	663	424	450	768	951	431	538
Grayling	879	903	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
Kaltag	487	689	1,080	1,117	1,168	1,306	2,244	1,868	1,084	1,260	1,653	1,890	994	1,036	1,540	1,378
Nulato	968	1,063	1,835	1,573	1,986	2,079	2,788	2,500	1,596	1,660	1,735	1,533	1,461	1,576	2,185	1,597
Koyukuk	1,009	194	569	609	711	1,003	876	885	510	853	589	146	402	651	817	500
Galena	1,226	1,329	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/Kokrines	1,107	1,657	1,263	927	1,402	1,016	811	971	498	3,263	1,539	1,435	557	2,260	1,025	1,458
Retained From Commercial										978	203					236
<i>Bonasila R. to Illinois Cr.</i>																
<i>Subtotal</i>	6,250	6,220	8,589	7,248	9,031	8,278	10,478	10,289	0	7,021	11,454	8,130	7,988	11,415	9,064	8,883
Huslia	169	144	82	182	89	177	198	198	751	232	239	932	67	57	169	444
Hughes	856	778	296	177	29	181	90	146	29	88	107	77	54	34	125	71
Allakaket/Aiatna b	375	283	563	309	366	438	356	451	437	139	364	331	84	461	384	271
Bettles						0	0	16	53	1	0	4	0	39	3	12
<i>Koyukuk River</i>																
<i>Subtotal</i>	1,400	1,205	941	668	484	796	844	811	1,270	460	710	1,344	205	591	681	798
<i>District 4 Subtotal</i>	7,650	7,425	9,530	7,914	9,515	9,074	11,122	11,100	8,291	11,914	10,530	8,474	8,193	12,006	9,745	9,680

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Village	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1987-91 Average	1992-96 Average
Tanana	2,682	1,248	1,672	4,021	3,537	3,008	2,284	2,483	2,477	3,362	2,999	2,398	2,741	3,596	3,067	2,795
Rampart	876	1,302	1,700	2,615	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) d e	2,499	1,885	1,762	813	0	200	420	982	1,384	1,514	1,920	1,447	1,166	955	443	1,488
Stevens Village	2,177	2,783	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	1,982
Birch Creek	0	0	0	0	0	0	196	44	0	119	83	0	373	39	51	
Beaver	853	506	708	466	940	1,694	721	713	1,564	1,557	850	1,021	886	1,859	907	1,176
Ft. Yukon	3,608	2,900	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) e	545	2,259	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) e	4,998	2,247	1,915	1,988	2,333	2,385	1,742	1,193	1,040	753	1,234	1,886	1,092	1,534	1,828	1,201
Other (permits) e, f							615	374	571	437	602	1,004	377	763	198	598
Retained From Commercial										746	866					323
<i>Illinois Cr. to U.S. Can. Border</i>																
Subtotal	14,938	15,090	15,912	17,543	17,078	20,248	14,560	16,420	17,653	19,395	19,104	16,432	15,563	17,735	17,170	17,629
Venetie	51		32	13	121	88	29	9	35	2,716	524	434	134	314	52	769
Chalkyitsik			0	0	0	0	0	0	3	0	0	0	30	0	0	7
<i>Chandalar/Black Rivers</i>																
Subtotal	51		32	13	121	88	29	9	38	2,716	524	434	164	314	52	775
District 5 Subtotal	14,989	15,090	15,944	17,556	17,200	20,336	14,589	16,429	17,691	22,111	19,628	16,866	15,727	18,049	17,222	18,405
Manley g	282	744	621	40	572	962	1169	401	551	238	480	335	134	242	635	348
Minto g	440	1,386	350	374	466	366	100	134	142	468	316	535	523	1208	268	397
Nenana g	2,556	4,919	2,093	3,151	3,846	1,188	1,265	1,599	1,267	693	759	607	423	1,082	2,210	750
Fairbanks (permits) e, h	321	326	637	531	0	0	84	378	402	273	775	285	97	176	189	366
Other g, i					0	0	0	3	76	0	40	17	0	4	1	27
Retained From Commercial										1,037	198					247
<i>Tanana River</i>																
Subtotal	3,599	7,375	3,701	4,096	4,884	2,546	2,618	2,515	2,438	2,709	2,568	1,779	1,177	2,712	3,332	2,134
Upper Yukon Total	26,238	29,890	29,175	29,566	31,699	31,956	28,329 k	30,044 k	28,420 k	36,734 k	32,726 k	28,119 k	25,097 k	32,767 k	30,299	30,219
Alaska Total	42,428	39,771	45,238	51,416	43,907	48,446	48,587	46,773	45,626	65,275	54,563	46,535	43,306	55,978	47,826	51,461

a 1961-1981 data available from 1981 Yukon Area Annual Management Report. Beginning in 1988 subsistence salmon harvest estimates have been generated from a stratified random sample of village households.

b Alutna combined with Allakaket.

c Due to flooding in 1994, Hughes, Allakaket and Alutna were not surveyed. The chinook harvest was estimated using the 5-year average for 1989 - 1993.

d Catches by Fairbanks subsistence permit holders that fished in District 5 near the Yukon River bridge crossing.

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

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

g Permits required beginning in 1988 for Subdistricts 5-A and 5-B. In 1988 and 1989, permit and household interview data were expanded. In 1990, reported harvest is from returned permits only.

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

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

k Estimated chinook salmon carcasses available for subsistence use as a by product of commercial roe sales are documented in total utilization tables.

Appendix D.2. Estimated Yukon River summer chum salmon subsistence harvest in numbers of fish by village, 1984-1997. a

Village	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1987-1997 Average	1992-1996 Average
Sheldon Pt	2,701	1,717	4,755	2,460	2,589	4,314	1,458	2,226	1,415	2,362	1,941	2,979	2,834	2,603	2,608	2,268
Alakanuk	10,095	7,702	11,280	9,913	6,992	12,108	7,265	8,058	9,951	8,935	5,947	10,538	6,171	7,443	8,867	8,308
Emmonak	10,053	8,742	12,616	11,177	10,528	22,985	15,215	8,401	12,296	15,568	13,060	11,896	6,097	12,399	13,661	11,743
Kotlik	5,610	6,188	10,201	7,210	8,825	13,437	13,061	9,105	9,577	7,121	11,197	9,777	12,387	4,803	10,328	10,012
Retained From Commercial										299	12,608					
<i>Mouth to Anuk River</i> Subtotal	28,459	24,349	38,854	30,760	28,934	62,844	36,969	27,790	33,239	34,285	44,763	34,990	27,289	27,248	36,466	32,330
Mt. Village	8,665	6,745	11,468	12,456	9,248	15,869	9,950	4,743	7,864	10,505	3,938	10,594	9,285	11,310	10,453	8,429
Fitkas Pt/St. Marys	11,019	7,556	14,986	12,402	10,501	13,124	9,515	9,284	8,555	7,406	11,231	7,615	8,355	9,621	10,965	8,632
Pilot Station	3,236	3,133	7,870	4,279	4,242	6,783	6,698	4,634	6,236	5,641	5,450	4,427	6,355	4,532	5,327	5,622
Marshall	4,076	2,361	7,172	3,997	4,796	3,927	2,290	2,042	2,076	1,745	2,288	4,594	4,431	1,508	3,410	3,027
Retained From Commercial											120	5,745			0	1,173
<i>Anuk River to Owl Slough</i> Subtotal	26,996	19,795	41,496	33,134	28,787	39,703	28,453	20,703	24,731	25,417	26,652	27,190	26,426	26,971	30,156	26,883
Russian Mission	2,227	1,817	3,136	2,283	2,794	2,229	2,146	837	3,331	1,838	801	3,653	3,554	565	2,058	2,635
Holy Cross	5,124	1,870	2,392	1,878	3,036	1,753	857	1,028	1,001	1,517	1,479	948	1,700	487	1,710	1,329
Shageluk-Innoko River			6,710	8,015	8,779	8,842	8,518	3,680	5,267	4,183	6,212	7,542	6,114	9,244	7,167	5,864
Retained From Commercial										21	59					
<i>Owl Slough to Bonasila R.</i> Subtotal	7,351	3,687	12,238	12,176	14,609	12,824	9,521	5,545	9,599	7,559	8,551	12,143	11,368	10,316	10,935	9,828
Lower Yukon Total	62,806	47,831	92,588	76,070	72,330	105,371	74,973	54,038	67,569	67,291	81,906	74,323	67,083	64,535	76,556	69,041
Anvik	22,433	24,950	41,581	28,887	12,607	410	2,032	876	1,142	1,735	907	9	185	6,306	8,962	796
Grayling	28,060	23,937	35,284	21,264	22,634	14,670	1,430	8,094	3,605	1,137	1,418	3,385	587	2,446	13,598	2,026
Kaitag	1,800	26,965	24,667	28,550	3,592	632	6,956	2,287	1,204	1,116	3,683	139	31	73	8,403	1,235
Nulato	232	16,315	10,349	16,299	10,201	200	502	159	889	16	975	228	1,003	115	5,472	622
Koyukuk	5,215	9,666	6,250	9,718	294	381	283	2,326	1,130	230	2,039	316	41	739	2,598	751
Galena	19,480	16,212	6,618	11,776	7,413	6,216	1,760	3,493	3,232	2,477	1,198	1,904	3,902	4,575	6,132	2,553
Ruby/Kokrines	4,282	13,556	7,883	8,786	4,010	1,844	351	1,352	2,420	1,459	4,586	4,445	2,016	3,266	3,269	2,985
Retained From Commercial																
<i>Bonasila R. to Illinois Cr.</i> Subtotal	91,502	131,601	132,632	125,280	60,741	24,253	13,314	18,587	13,622	8,169	14,806	10,475	7,765	17,540	48,435	10,967
Huslia	12,550	13,430	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	7,057
Hughes	14,744	12,788	7,280	4,369	2,445	3,687	609	1,257	1,626	827	1,581 c	2,448	1,411	1,579	2,453	1,578
Allakaket/Ajatna b	4,169	7,564	8,934	8,700	8,524	2,915	5,319	7,413	6,858	2,703	5,042 c	6,536	4,877	4,061	6,574	5,203
Bettles						75	24	155	37	34	45	740	0	210	51	171
<i>Koyukuk River</i> Subtotal	31,463	33,782	26,730	24,111	25,664	16,662	13,220	16,662	22,190	11,907	12,682	14,609	8,660	6,690	12,312	14,010
District 4 Subtotal	112,965	165,383	159,362	149,391	86,605	40,935	26,534	35,269	35,812	20,076	27,488	26,084	16,425	24,230	67,747	24,977

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Village	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1987-1991 Average	1992-1996 Average
Tanana	10,620	11,148	11,646	10,876	13,972	7,756	5,905	2,779	4,563	4,245	7,022	3,660	5,190	2,526	8,258	4,934
Rampart	7,650	5,133	1,450	2,434	3,383	28	58	20	4,494	1,489	559	1,168	1,188	738	1,185	1,780
Fairbanks (permits) d, e	4,065	2,027	1,382	1,493	0	0	25	1,068	706	485	360	722	2,958	424	517	1,042
Stevens Village	5,952	3,046	3,116	1,446	865	2,375	1,671	1,385	480	653	459	158	530	191	1,548	452
Beaver	167	263	0	657	214	124	108	2,355	12	134	855	36	572	2	692	282
Ft. Yukon	3,032	4,410	3,264	1,187	7,717	1,760	145	11,974	1,700	3,830	2,043	998	28	134	4,557	1,719
Circle/Central (permits) e	0	930	459	2,078	871	361	1,267	51	396	89	108	72	324	282	326	189
Eagle (permits) e	49	39	516	417	1,273	547	361	607	23	32	38	57	105	17	641	51
Other (permits) e, f							187	32	291	24	21	232	616	130	44	237
Retained From Commercial										159	676					
Illinois Cr. to U.S. Can. Border Subtotal	31,535	26,996	21,833	20,588	28,295	12,951	9,727	20,271	12,595	11,116	11,939	7,103	11,509	4,444	18,366	10,685
Venetie	0		0	0	701	30	0	3,393	0	129	567	562	0	76	825	260
Chalkytak			0	0	327	0	90	500	17	0	0	0	0	0	183	3
Chandalar/Black Rivers Subtotal	0	0	0	1,028	30	90	3,893	17	129	567	562	0	76	1,008	263	
District 5 Subtotal	31,535	26,996	21,833	20,588	29,323	12,981	9,817	24,164	12,612	11,245	12,506	7,665	11,509	4,520	19,375	10,938
Manley g	1,260	856	604	267	3,731	2,457	2,250	1,718	850	1,310	1,405	1,657	1,219	576	2,084	1,288
Minto g	5,042	5,291	1,587	1,383	947	1,425	500	748	625	367	509	1,320	1,421	1,056	1,001	848
Nenana g	13,962	15,825	10,827	21,214	5,654	3,986	1,383	1,499	6,372	5,019	1,352	5,043	4,411	1,899	6,747	4,439
Fairbanks e, h	3,177	2,648	4,024	1,461	0	0	152	1,096	1,342	97	3,693	3,528	392	271	542	1,810
Other g, i					0	0	0	10	315	0	67	113	43	22	2	108
Retained From Commercial										5	3,518					
Tanana River Subtotal	23,441	24,618	17,042	24,325	10,332	7,868	4,285	5,069	9,504	6,798	10,544	11,661	7,486	3,824	10,376	8,494
Upper Yukon Total j	167,941	216,997	198,237	194,304	126,260	61,784	40,636	64,502	57,928	38,119	50,538	44,400	35,420	32,574	97,497	44,409
Alaska Total	230,747	264,828	290,825	270,374	198,590	167,155	115,609	118,540	125,497	105,380	132,494	118,723	102,503	97,109	174,054	113,450

a 1961-1981 chum salmon data available from 1981 Yukon Annual Management Report. Beginning in 1988 subsistence salmon harvest estimates have been generated from a stratified random sample of village households. District 4 summer chum salmon subsistence harvest estimates prior to 1988 and Districts 5 and 6 prior to 1989 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.

b Alutna combined with Allakaket.

c Due to flooding in 1994, Hughes, Allakaket, and Alutna were not surveyed. The summer chum harvest was estimated using the 5-year average for 1989 - 1993.

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

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

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

g 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.

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

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

j Estimated summer chum salmon carcasses available for subsistence use as a by product of commercial roe sale are documented in total utilization tables.

Appendix D 3. Estimated Yukon River fall chum salmon subsistence harvest in numbers of fish by village, 1984-1997. a

Village	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1987-1997 Average	1982-1996 Average
Sheldon Pt	555	713	259	862	289	586	102	84	490	158	25	256	21	337	389	190
Alakanuk	1,219	2,603	2,030	3,748	1,194	430	267	193	401	182	73	631	100	900	1,166	277
Emmonak	3,329	4,539	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	3,762	5,420	3,965	5,677	2,200	3,058	2,613	1,631	2,697	5,923	1,348	2,197	2,525	668	3,036	2,938
<i>Mouth to Anuk River</i>																
<i>Subtotal</i>	8,865	13,275	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	3,497	3,591	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
Pitkas Pt/St. Marys	3,927	3,315	5,401	3,968	2,533	1,970	956	2,202	77	708	1,356	641	1,261	488	2,325	809
Pilot Station	832	1,957	1,663	583	1,372	1,672	1,941	1,062	3,526	1,017	1,527	575	448	1,108	1,388	1,419
Marshall	3,138	2,681	3,472	4,008	2,815	1,532	1,724	891	2,727	256	471	754	2,212	388	2,194	1,284
<i>Anuk River to Owl Slough</i>																
<i>Subtotal</i>	11,394	11,544	13,483	13,454	6,600	10,015	6,187	5,628	7,382	3,094	4,151	3,317	5,287	4,680	8,777	4,646
Russian Mission	860	1,266	637	1,255	1,151	308	878	425	648	172	11	885	587	0	603	457
Holy Cross	1,373	1,024	1,148	1,598	596	711	1,178	190	845	1,066	665	681	1,814	420	855	1,014
Shageluk-Innoko River			370	434	0	4	0	0	865	211	166	126	305	367	68	339
<i>Owl Slough to Bonasila R.</i>																
<i>Subtotal</i>	2,233	2,290	2,155	3,267	1,747	1,023	2,056	615	2,358	1,449	862	1,672	2,706	787	1,746	1,809
Lower Yukon Total	22,512	27,109	24,638	35,208	15,822	15,952	13,578	10,176	14,956	12,313	9,900	9,687	12,140	8,599	18,148	11,799
Anvik	720	2,125	913	394	136	168	583	452	894	420	155	289	457	514	347	439
Graling	1,950	3,108	4,204	4,750	1,760	830	1,405	3,616	2,993	2,083	611	1,155	1,759	1,531	2,472	1,760
Kaitag	1,330	1,570	2,024	7,474	2,293	1,654	2,327	2,834	2,522	704	630	644	1,049	1,142	3,316	1,110
Nulato	1,675	4,240	1,762	2,200	1,673	2,436	3,546	1,657	1,910	571	1,109	1,137	2,299	697	2,298	1,405
Koyukuk	1,580	798	2,195	2,492	567	2,480	860	2,761	2,817	2,052	1,049	814	2,458	1,954	1,832	1,636
Galena	7,270	4,476	4,819	10,509	4,308	6,436	3,202	5,525	2,393	3,255	3,963	3,202	6,820	3,370	5,996	3,867
Ruby/Kokrines	8,505	6,717	7,101	11,000	5,171	6,599	3,352	2,856	4,499	1,065	5,553	4,695	561	2,195	5,796	3,279
<i>Bonasila R. to Illinois Cr.</i>																
<i>Subtotal</i>	23,010	23,032	23,016	38,819	15,928	20,583	15,275	19,681	18,026	10,170	13,270	11,916	15,203	11,403	22,057	13,717
Huslia	6,306	278	608	585	1,697	1,728	846	411	1,266	258	55	1,035	298	10	1,053	566
Hughes	1,280	1,280	1,422	588	311	290	70	270	325	169	0 c	263	274	51	299	206
Allakaket/Alatna b	556	707	878	1,477	443	1,969	3,050	513	1,579	235	0 c	260	961	270	1,490	607
Bettles						0	0	0	14	0	0	583	50	0	0	129
<i>Koyukuk River</i>																
<i>Subtotal</i>	8,142	2,243	3,108	2,648	2,451	3,957	3,966	1,194	3,204	562	55	2,141	1,583	331	2,843	1,529
<i>District 4 Subtotal</i>	31,152	25,275	26,126	41,467	18,379	24,540	19,241	20,875	21,232	19,832	13,325	14,057	16,786	11,734	24,900	15,246

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Village	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1987-1991 Average	1992-1999 Average
Tanana	42,690	28,113	32,049	41,825	55,998	40,845	41,145	40,868	19,385	23,103	34,681	14,409	21,420	25,058	44,139	22,596
Rampart	4,395	19,619	3,950	5,092	3,600	2,472	10,818	5,801	5,701	3,272	1,007	1,403	898	648	5,557	2,458
Fairbanks (permits) d, e	12,920	13,674	11,708	5,264		7	82	2,022	2,491	930	2,870	2,184	2,727	491	1,475	2,240
Stevens Village	4,932	11,679	4,150	7,538	1,451	6,633	3,857	2,481	150	862	45	3,194	991	1,585	4,392	1,048
Beaver	0	1,761	3,321	5,750	96	7,242	757	7	361	692	2,069	1,231	9	243	2,770	872
Ft. Yukon	7,525	12,719	8,543	15,200	2,788	27,790	11,627	7,467	2,284	2,380	6,827	9,198	8,144	6,119	12,970	5,768
Circle/Central (permits) e	3,107	4,098	3,650	7,691	4,398	4,478	6,804	6,413	6,379	349	4,581	5,102	5,440	3,707	5,958	4,370
Eagle (permits) e	18,519	25,264	18,027	19,678	14,800	11,557	8,027	7,985	5,850	2,070	8,283	13,115	14,918	14,488	12,408	8,799
Other (permits) e, f							529	100	0	1,750	0	830	906	421	126	817
<i>Illinois Cr. to U.S. Can. Border Subtotal</i>	94,088	117,125	83,398	108,038	83,107	101,024	83,646	73,144	42,361	35,408	60,343	50,664	55,048	52,758	89,792	48,765
Venetie	4,345		3,193	2,774	34	7,977	5,377	758	3,068	7,881	4,302	6,065	7,195	1,564	3,384	5,706
Chalkyitsik			1,533	2,686	1,068	3,000	1,490	100	274	475	1,751	845	1,230	936	1,689	915
<i>Chandalar/Black Rivers Subtotal</i>	4,345		4,726	5,460	1,102	10,977	6,867	858	3,340	8,356	6,053	6,930	8,425	2,500	5,053	6,621
<i>District 5 Subtotal</i>	98,433	117,125	88,124	113,498	84,209	112,001	90,513	74,002	45,701	43,764	66,396	57,594	63,473	55,258	94,845	56,386
Manley g	2,196	6,560	5,905	4,267	6,899	21,067	25,860	13,243	7,010	3,215	13,722	20,272	10,662	5,887	14,271	10,976
Mirto g	4,025	4,842	545	5,419	2,615	2,005	3,852	5,278	3,017	301	1,419	4,782	4,381	2,381	3,793	2,780
Nenana g	13,520	22,901	15,902	26,909	28,889	25,340	12,484	17,932	13,253	5,929	11,201	15,500	14,207	3,799	21,907	12,018
Fairbanks (permits) e, h	2,985	2,860	2,803	0	0	0	309	1,671	1,394	56	5,006	6,384	5,738	4,031	396	3,715
Other g, i						10,222	2,283	2,347	1,039	352	2,249	2,230	1,481	3,472	3,970	1,470
<i>Tanana River Subtotal</i>	22,726	38,983	25,155	36,595	36,403	58,654	44,568	40,469	25,713	9,853	33,597	40,168	38,467	19,550	43,338	30,960
<i>Upper Yukon Total j</i>	152,311	179,363	139,405	191,560	138,991	195,195	154,322	135,346	92,646	64,449	113,318	120,819	118,728	86,542	163,083	101,592
Alaska Total	174,823	206,472	164,043	226,768	154,813	211,147	167,900	145,524	107,602	76,762	129,218	130,506	128,866	88,141	181,230	113,391

a 1961-1981 chum salmon data available from 1981 Yukon Annual Management Report. Beginning in 1988 subsistence salmon harvest estimates have been generated from a stratified random sample of village households. Includes commercial related harvest to produce roe sold, 1982-1988.

b Alaina combined with Allakaket.

c Due to flooding in 1994, Hughes, Allakaket, and Alaina were not surveyed and the estimated harvest of fall chum salmon was zero.

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

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

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

g 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.

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

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

j Estimated fall chum salmon carcasses available for subsistence use as a by product of commercial roe sales are documented in total utilization tables.

Appendix D.4. Estimated Yukon River coho salmon subsistence harvest in numbers of fish by village, 1984-1997. a

Village	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1987-1991 Average	1992-1996 Average
Sheldon Pt.	245	49	237	308	169	487	78	35	441	78	52	419	138	51	215	226
Alakanuk	776	894	1,518	1,116	834	334	156	391	966	138	94	658	103	682	526	392
Emmonak	3,658	1,552	732	3,497	1,576	1,259	1,283	801	668	198	959	485	594	358	1,684	580
Kotlik	1,415	751	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>Mouth to Anuk River</i> Subtotal	8,095	3,246	2,725	6,396	4,389	5,077	3,301	1,608	5,426	2,343	3,272	2,251	2,445	1,623	4,194	3,147
Mt. Village	982	1,527	828	2,481	1,314	2,385	1,754	868	1,971	447	968	921	276	1,089	1,760	917
Pitkas Pt./St. Marys	2,024	1,113	4,832	1,740	3,147	971	515	1,617	2,771	451	978	708	983	756	1,586	1,178
Pilot Station	1,114	710	1,514	300	876	379	1,988	553	300	477	811	241	1,258	323	815	617
Marshall	2,946	1,484	1,988	2,373	1,767	1,304	2,107	259	1,545	320	1,124	272	958	256	1,562	844
<i>Anuk River to Owl Slough</i> Subtotal	7,066	4,834	9,140	6,894	7,104	5,039	6,344	3,297	6,587	1,695	3,881	2,142	3,475	2,424	5,736	3,556
Russian Mission	740	276	679	423	604	20	688	396	1,148	152	55	891	255	10	426	500
Holy Cross	0	100	102	259	935	517	338	944	105	88	171	0	0	20	599	73
Shageluk-Innokko River			173	72	126	0	0	0	296	39	137	0	189	736	40	132
<i>Owl Slough to Bonasila R.</i> Subtotal	740	376	954	754	1,667	537	1,026	1,340	1,549	279	363	891	444	766	1,065	705
Lower Yukon Total	13,901	8,456	12,619	14,044	13,160	10,853	10,671	6,445	13,562	4,317	7,516	5,284	6,364	5,013	10,995	7,409
Anvik	40	272	296	405	97	40	236	347	202	115	95	10	44	24	225	93
Grayling	97	0	980	598	692	969	10	1,363	659	164	38	97	238	1,055	727	278
Kaitag	0	0	229	0	0	792	501	1,260	2,105	334	245	428	298	60	511	682
Nulato	0	510	69	85	234	276	845	75	435	37	27	25	149	444	303	135
Koyukuk	200	120	154	894	10	110	162	307	1,877	70	305	33	478	345	297	552
Galena	452	1,072	465	1,348	1,029	415	572	422	1,398	124	803	275	780	1,002	757	676
Ruby/Kokrines	1,631	1,719	339	0	2,189	1,089	874	410	1,299	308	1,957	607	376	474	924	608
<i>Bonasila R. to Illinois Cr.</i> Subtotal	2,420	3,693	2,412	3,332	4,231	3,671	3,300	4,184	6,175	1,152	3,488	1,473	2,359	3,404	3,744	3,325
Huslia	12	0	31	124	201	150	235	150	233	9	47	307	18	50	172	123
Hughes	400	138	0	0	104	91	43	9	21	3	0 c	153	51	250	49	48
Allakaket/Alatna b	35	118	15	23	176	118	36	108	0	3	0 c	0	39	50	93	8
Bettles						0	0	0	0	0	0	1	0	0	0	0
<i>Koyukuk River</i> Subtotal	447	256	48	147	483	359	314	267	254	15	47	461	108	350	314	177
District 4 Subtotal	2,867	3,949	2,458	3,479	4,714	4,030	3,614	4,451	6,429	1,167	3,515	1,934	2,467	3,754	4,058	3,502

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Village	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1987-1991 Average	1992-1996 Average
Tanana	16,898	7,384	4,691	6,680	16,922	5,518	8,580	4,448	11,408	5,576	2,587	2,154	6,110	3,045	6,430	5,567
Rampart	120	513	110	81	842	87	591	58	75	38	86	0	5	34	332	43
Fairbanks (permits) d, e	254	13	709	8	0	0	5	8	34	0	25	18	42	26	4	24
Stevens Village	145	182	67	0	604	208	479	0	20	0	0	1	2	1	258	5
Beaver	0	1	124	0	164	774	172	1	398	135	10	20	7	0	322	114
Ft. Yukon	33	3	118	41	370	406	727	360	341	5	663	4	157	251	385	294
Circle/Central (permits) e	0	0	37	0	41	1	208	5	54	10	30	0	0	210	51	19
Eagle (permits) e	17	2	6	0	11	0	0	0	3	65	0	1	1	2	2	18
Other (permits) e, f					0	165	450	12	0	0	0	7	0	0	125	1
<i>Illinois Cr. to U.S. Can. Border</i> Subtotal	17,467	8,098	5,662	6,808	18,954	7,159	11,210	4,912	12,331	5,849	3,714	2,205	6,324	3,589	9,809	6,085
Venetie	0	0	0	17	0	2	348	12	45	135	4	0	264	7	76	80
Chalkyitsik			8	2	801	26	4	7	0	0	458	0	0	7	168	61
<i>Chandalar/Black River</i> Subtotal	0		8	19	801	28	352	19	45	135	460	0	264	14	244	181
<i>District 5 Subtotal</i>	17,467	8,098	5,670	6,827	19,755	7,187	11,562	4,931	12,376	5,984	4,174	2,205	6,588	3,583	10,052	6,265
Manley g	1,588	1,928	538	1,487	2,103	5,310	7,574	6,381	4,725	1,535	10,410	7,395	2,482	3,238	4,583	5,305
Minto g	800	1,144	1,058	671	2,729	1,179	618	528	614	300	2,618	338	1,223	364	1,185	1,018
Nenana g	10,270	7,614	10,090	19,592	25,369	7,593	7,381	10,171	8,895	1,514	9,387	7,142	7,883	5,147	14,021	6,924
Fairbanks (permits) e, h	2,149	1,077	1,635	0	0	0	66	2,501	2,281	0	2,103	3,076	2,314	1,230	513	1,655
Other g, i						4,759	1,774	2,002	1,039	1,155	1,973	851	1,011	1,618	1,707	1,206
Retained from commercial											2,900					
<i>Tanana River</i> Subtotal	14,785	11,761	13,321	21,730	30,201	18,841	17,813	21,581	17,554	4,304	29,389	18,602	14,893	11,595	21,989	16,408
Upper Yukon Total	35,119	23,808	21,849	32,036	54,670	30,058	32,789	30,943	38,359	11,455	37,078	22,941	23,948	18,932	36,099	28,176
Alaska Total	49,020	32,264	34,468	46,060	67,830	40,711	43,480	37,388	51,921	15,772	44,594	28,225	30,312	23,945	47,084	33,585

a 1991-1991 coho salmon data available from 1981 Yukon Annual Management Report. Beginning in 1988 subsistence salmon harvest estimates have been generated from a stratified random sample of village households.

b Alutna combined with Afalakaket.

c Due to flooding in 1994, Hughes, Afalakaket, and Alutna were not surveyed and the estimated harvest of coho salmon was zero.

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

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

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

g Permits required beginning in 1988 for Subdistricts 5-A and 5-B. In 1988 and 1989, permits and household interview data were expanded. Beginning in 1990, reported harvest is from returned permits only.

h Catches by Fairbanks subsistence use permit holders that fished in the Tanana River. Permits required beginning in 1984 for the Tanana River upstream of Wood River.

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

j Estimated coho salmon carcasses available for subsistence use as a by product of commercial roe sales are documented in total utilization tables.

Appendix D.5. Estimated subsistence salmon harvest in numbers of fish for Scammon Bay and Hooper Bay, 1987-1997. a

Year	Scammon Bay				Hooper Bay				Total			
	Chinook	Summer Chum	Fall Chum	Coho	Chinook	Summer Chum	Fall Chum	Coho	Chinook	Summer Chum	Fall Chum	Coho
1987	838	6,200	117	64	2,738	23,468	105	69	3,576	29,668	222	133
1988	489	8,171	551	326	1,099	23,059	1,711	1,523	1,588	31,230	2,262	1,849
1989	-	-	-	-	-	-	-	-	-	-	-	-
1990	-	-	-	-	-	-	-	-	-	-	-	-
1991	-	-	-	-	-	-	-	-	-	-	-	-
1992	948	3,795	79	31	503	12,900	127	28	1,451	16,695	206	59
1993	1,199	4,692	7	40	230	16,106	113	0	1,429	20,798	120	40
1994	668	4,347	63	80	157	10,556	284	1	825	14,903	347	81
1995	585	3,986	147	104	1,500	13,374	207	48	2,085	17,360	354	152
1996	1,238	6,365	0	0	1,127	15,870	392	92	2,365	22,235	392	92
1997	526	3,401	0	0	613	12,310	0	0	1,139	15,711	0	0

Appendix D.6. Subsistence salmon harvest taken under authority of a permit in District 5, Upper Yukon Area, 1974-1997. a

Upper Yukon River (Hess Creek to Dall River) Subsistence Salmon Fishery b

Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches c	Chinook	Summer Chum d	Fall Chum d	Coho
1974	29	e	e	591		1,857	1,271
1975	19	e	e	727		778	70
1976	28	e	18	531		974	e
1977	38	e	e	467		2,567	e
1978	57	e	e	1,333		9,735	e
1979	55	e	41	2,194		12,374	e
1980	70	e	67	1,350		6,488	36
1981	57	e	24	1,095		12,034	e
1982	64	e	44	1,935		11,328	20
1983	68	e	46	2,672		15,059	e
1984	67	e	54	4,676		27,869	399
1985	55	e	42	2,618		21,832	33
1986	76	e	58	3,827		18,690	759
1987 f	16	e	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 g	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

Upper Yukon River (22 Mi Slough to U.S./Canada Border) Subsistence Salmon Fishery

Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches c	Chinook	Summer Chum d	Fall Chum d	Coho
1979	75	e	5	4,063		30,475	114
1980	48	e	39	3,649		18,477	6
1981	71	e	51	4,510		38,333	e
1982	60	e	61	3,833		15,432	e
1983	53	e	52	2,831		23,708	e
1984	58	e	54	2,543		21,675	17
1985	59	e	36	2,419		19,059	2
1986	40	e	52	4,148		20,701	43
1987 f	51	51	58	3,602	2,495	27,369	0
1988	58	57	50	2,783	2,134	9,078	101
1989	59	56	42	1,186	68	7,515	1
1990 g	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	3,148	393	18,616	212

- a Salmon harvest expanded for permits not returned (1974-1987). Beginning in 1988, reported harvest from returned permits only.
- b Includes harvest from permits in Stevens Village and Rampart.
- c Some fishermen reporting harvest did not have permits.
- d Summer chum and fall chum salmon undifferentiated from 1974-1986.
- e Information not available.
- f Personal use fishery established only for fall chum salmon in 1987.
- g Some fishermen may have had personal use harvest due to changes in the subsistence law. No personal use permits have been issued since 1990.

Appendix D.7. Subsistence salmon catches taken under authority of a permit in Tanana river drainage, Upper Yukon Area, 1973-1997. a

Tanana River (Subdistrict 6-A) Subsistence Salmon Fishery b, c							
Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches	Chinook	Summer Chum	Fall Chum	Coho
1988	28	24	18	845	1,389	9,165	3,455
1989 d	29	28	24 e	651	1,918	25,266	5,292
1990 d	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 d	42	41	22	331	784	2,617	1,317
1994	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

Tanana River (Subdistrict 6-B) Subsistence Salmon Fishery c							
Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches	Chinook	Summer Chum	Fall Chum	Coho
1988	75	66	52	3,721	3,167	18,902	18,906
1989 f	60	51	37 e	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	8,729 o	7,892

Subdistrict 6-C Subsistence Salmon Fishery							
Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches	Chinook	Summer Chum	Fall Chum	Coho
1973	22	g	4	26	771	886	h
1974	70	g	g	38	1,373	1,580	h
1975	36	g	g	32	751	864	h
1976	110	g	g	31	1,314	1,512	h
1977	89	g	33	81	118	607	h
1978	160	g	126	126	2,729	1,188	h
1979	246	g	199	264	2,384	4,459	h
1980	315	g	254	282	3,729	4,059	h
1981	346	g	228	440	3,239	5,770	h
1982	330	g	209	451	2,708	4,521	h
1983	259	g	147	475	2,276	3,830	h
1984	308	g	212	321	3,177	5,134	h
1985	291	g	155	326	2,646	3,937	h
1986	323	g	211	637	4,031	4,437	h
1987 i	217	g	123	531	2,739	0	0
1988	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0
1990 j	19	18	6	15	89	279	50
1991	149	142	98	299	980	1,080	1,089
1992	149	146	90	343	1,234	896	1,116
1993 k	0	0	0	0	0	0	0
1994 m	145	142	107	457	1,198	1,600	1,545
1995 n	-	-	-	-	-	-	-

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Upper Tanana River Drainage Subsistence Salmon Fishery

Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches	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

- a Salmon harvest expanded for permits not returned (1973-1987). Beginning in 1988, reported harvest from returned permits only. Note, for some years, some households fished in more than one area and some were issued permits for two areas.
- b Includes Kantishna River catches.
- c Permit requirement for Subdistricts 6-A and 6-B went into effect in 1988; however, very few permits were issued in 1988, and not all fishermen obtained permits in 1989.
- d Includes salmon given away as part of the Departments test fishing projects in Manley.
- e Some fishermen reporting harvest did not have permits.
- f Includes salmon given away as part of the Departments test fishing projects in Nenana.
- g Information not available.
- h Fall chum and coho salmon were not reported separately from 1973-1987.
- i Personal use fishery established for nonrural residents beginning in July of 1987.
- j Some fishermen had both personal use and subsistence permits since the McDowell Decision which became effective July 1990 stated that all Alaskan residents were eligible subsistence participants.
- k Personal use fishery established for those fishing for salmon in this area.
- m No personal use permits were issued in 1994 for this area.
- n in 1995, subsistence regulations were repealed within the Fairbanks Nonsubsistence Area.
- o Includes 6 fall chum salmon taken under Tolovana River pike permits.

Appendix D.8. Personal use salmon catches taken under authority of a permit in the Lower Yukon Area, and in District 5, Upper Yukon Area, 1987-1991. a

Lower Yukon Personal Use Salmon Fishery							
Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches	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

Upper Yukon River (Hess Creek to Dall River) Personal Use Salmon Fishery							
Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches c	Chinook	Summer Chum	Fall Chum	Coho
1987	42	d	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 e	41	36	26	1,529	641	3,723	18
1991 b	0	0	0	0	0	0	0

Upper Yukon River (22 Mi Slough to U.S./Canada Border) Personal Use Salmon Fishery							
Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches c	Chinook	Summer Chum	Fall Chum	Coho
1987	2	2	2	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. 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.

b After 1991, regulations did not provide for a personal use fishery.

c Some fishermen reporting catches did not have permits.

d Information not available.

e Includes personal use catches of two chinook salmon taken by one permittee from a non-permit area below Rampart.

Appendix D.9. Personal use salmon catches taken under authority of a permit in the Tanana River drainage, 1987-1997. a

Subdistrict 6-A Personal Use Fishery							
Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches	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 Fishery							
Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches	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
1990	4	4	3	9	12	40	35
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 Fishery							
Year	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches	Chinook	Summer Chum	Fall Chum	Coho
1987	132 ^b	^c	60 ^d			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	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0
1993	137	135	81	426	674	163	0
1994	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	284	350

a Personal use fishery during 1987 applied to nonrural residents harvesting only fall chum. 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, this designated fishermen residing in the area as personal use. In 1994, a Superior Court decision invalidated the Nonsubsistence Area and subsistence regulations applied. In 1995 the Board amended the Fairbanks Nonsubsistence Area to apply personal use regulations to all fishermen fishing in the area.

b Represents 60 former subsistence fishermen who were reissued permits to fish fall chum salmon for personal use.

c Information not available.

d Some fishing families used both subsistence and personal-use permits.

Appendix D.10. 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	No. of Permits Issued	No. of Permits Returned	Number Reporting Catches	Fall Chum Carcasses
1973	16	a	8	1,561
1974	21	a	a	1,974
1975	26	a	a	2,573
1976	36	a	a	3,441
1977	46	a	29	5,816
1978	70	a	43	2,517
1979	32	a	25	4,582
1980	57	a	36	4,915
1981	43	a	27	5,030
1982	37	a	13	1,690
1983	45	a	29	5,357
1984	31	a	14	2,353
1985	30	a	14	2,111
1986	27	a	19	2,276
1987 b	20	17	13	1,931
1988 b	22	20	15	2,100
1989 b	12	12	10	1,785
1990 b	7	7	3	750
1991	8	4	3	741
1992	10	10	9	1,897
1993 b,c	0	0	0	0
1994	4	4	4	250
1995 d				

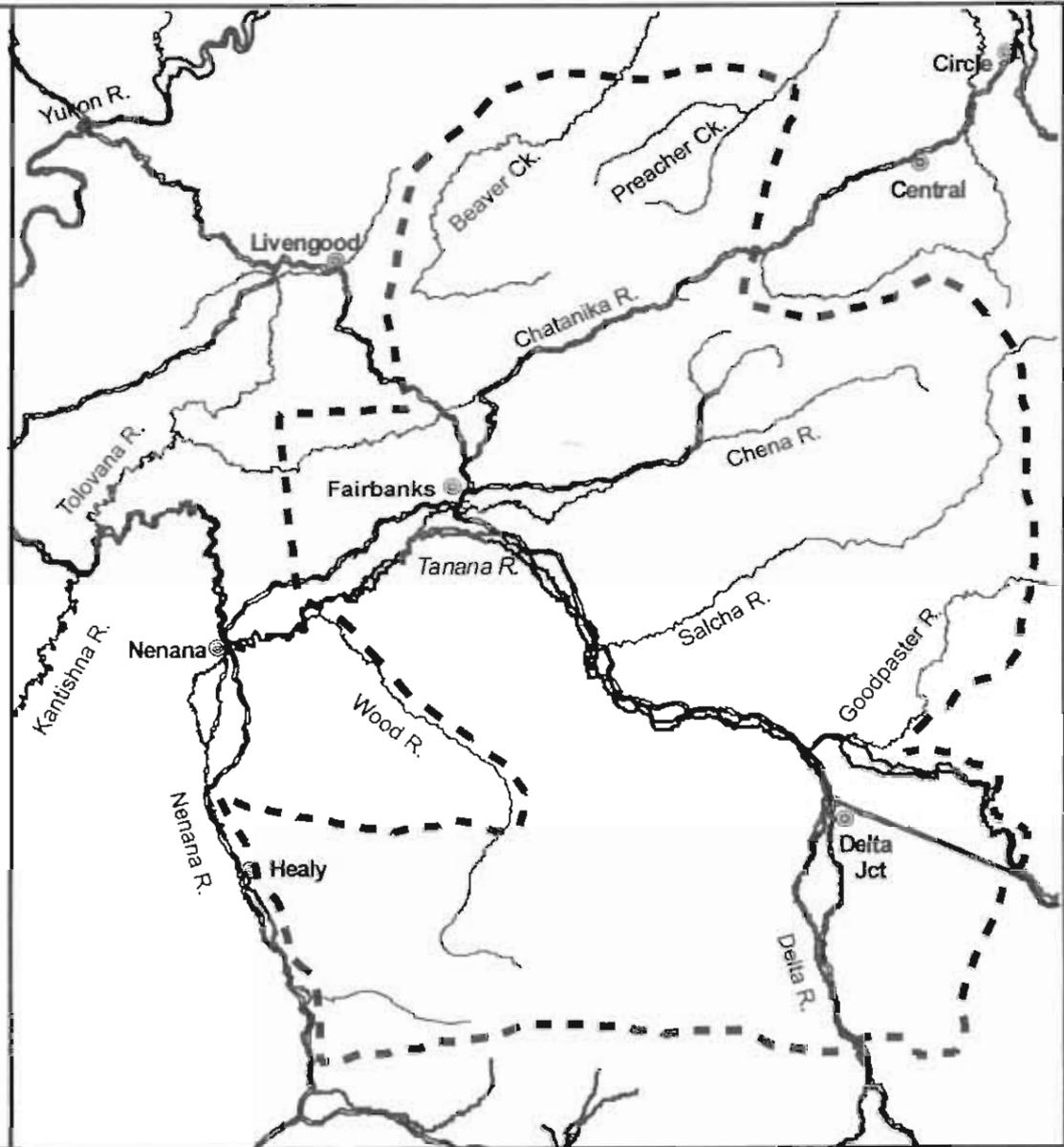
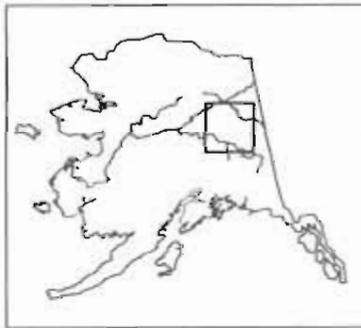
a Information not available.

b Personal use permits 1987-1990 and 1993, all other years subsistence permits.

c The department did not issue Delta River carcass permits to reduce spawning habitat disturbances.

d In 1995 all commercial, sport, personal use, and subsistence fishing was closed in the portion of the Delta River from the mouth to a department marker two miles upstream, as adopted by the Alaska Board of Fisheries.

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.



Appendix D.11. Map of the Fairbanks Nonsubsistence Area.

APPENDIX E

YUKON RIVER SALMON ESCAPEMENT

Appendix E.1. Yukon River drainage salmon spawning escapement goals for selected species and streams, 1997.

Stream	Escapement Goals ^a			
	Chinook	Summer Chum	Fall Chum	Coho
Andreafsky River				
East Fork	> 1,500	> 109,000		
West Fork	> 1,400	> 116,000		
Anvik River				
Aerial				
Mainstem (entire drainage)	> 1,300			
Yellow River to McDonald Creek	> 500			
Sonar		> 500,000 ^b		
Nulato River				
North Fork	> 800	> 53,000		
South Fork	> 500			
Hogatza River				
Clear Creek		> 8,000		
Caribou Creek		> 9,000		
Gisasa River	> 600			
Chena River				
Mainstem from Flood Control Dam to Middle Fork	> 1,700			
Salcha River				
TAPS to Caribou Creek	> 2,500	> 3,500		
Sheenjek River			> 64,000 ^c	
Fishing Branch River (Y.T., Canada)			50,000-120,000 ^d	
Toklat River			> 33,000 ^c	
Delta River Index Areas			> 11,000 ^c	>9,000 ^f
Mainstem Yukon River in Y.T., Canada ^b	33,000-43,000 ^g		> 80,000 ^{g,h}	

^a Index streams have been designated because of their importance as spawning areas and/or by their geographic location with respect to other unsurveyable salmon spawning streams in the general area. Escapement goals represent the approximate number of desired spawners considered necessary to maintain the historical yield from the stocks and are based upon historical performance, i.e., they are predicated upon some measure of historic average. Unless otherwise indicated, escapement goals are based upon aerial survey index estimates which do not represent total escapement but do reflect annual spawner abundance when using standard survey methods under acceptable survey conditions. These survey goals represent the latest review and revision by ADF&G (March 1992), unless otherwise noted.

^b Escapement goals of total spawning abundance based upon sonar, weir, mark-and-recapture, or expansions from inseason point estimates.

^c Escapement goals developed by ADF&G for November 1990 U.S./Canada JTC meeting.

^d Escapement goals developed by JTC in October 1987. (see page 42 of the October 6-8, 1987 JTC report).

^e Escapement goals developed by JTC in March 1987. Additionally, a rebuilding step escapement goal for years 1996-2001 of 28,000 chinook salmon has been agreed to by the U.S. and Canada.

^f Estimated total spawning escapement excluding the Porcupine River (estimated mainstem Yukon River border passage minus Canadian harvests).

^g Escapement goals developed by JTC in November 1990.

^h Escapement goals established by ADG&G in March 1993.

Appendix E.2. Salmon spawning escapement estimates for the Yukon River drainage, 1997. *

Stream (drainage)	Date	Survey Rating	Chinook	Summer Chums	Fall Chums	Coho
Andreafsky River						
East Fork (weir count) †	6/16-9/13		3,186	51,139	--	9,472
East Fork (aerial)	7/24	Good	(1,140)	--	--	--
West Fork (aerial)	7/24	Good	1,510	(1,000-2,000)	--	--
Andreafsky Subtotal			4,696	51,139	--	9,472
Yukon River (Pilot Station)						
Main River (Biosonics Sonar)	6/6-8/31		(224,000)	(1,411,000)	(623,000)	(154,000)
Innoko River						
Illinois Creek †, ‡	10/9	Good	--	--	0	42
Anvik River						
Mainstem						
Goblet Cr. to sonar site	7/23	Good	10	--	--	--
Sonar site to Yellow R.	7/23	Good	694	--	--	--
Yellow R. to McDonald Cr. (Index Area)	7/23	Good	2,690	--	--	--
Above McDonald Cr.	7/23	Good	10	--	--	--
Canyon Creek (lower 2 miles)	7/23	Good	20	--	--	--
Otter Creek	7/23	Good	90	--	--	--
Swift River	7/23	Good	130	--	--	--
Beaver Creek	7/23	Good	335	--	--	--
Bendix Sonar Estimate	6/27-8/2		--	609,118	--	--
Anvik Subtotal			3,979	609,118	--	--
Rodo River						
	7/24	Poor	130	2,775	--	--
Kaltag River, counting tower †						
	6/19-7/24		194	48,018	--	--
Nulato River						
Tower count (both forks total) †	8/20-7/21		4,766	157,975	--	--
Total Lower Yukon River (downstream of Koyukuk River)			13,766	869,025	0	9,514
Koyukuk River Drainage						
Gisasa River						
Gisasa River (weir count) †	6/14-7/27		3,764	31,802	--	--
Gisasa River (aerial survey)	7/23	Poor-incomp.	(144)	(686)	--	--
Gisasa Subtotal			3,764	31,802	--	--
Kateel River						
Kateel River	7/23	Poor-incomp.	0	121	--	--
Arvesta Creek	7/23	Poor-incomp.	31	78	--	--
Kateel Subtotal			31	199	--	--
Dakli River						
Dakli River	7/23	Good	25	3,669	--	--
Wheeler Creek	7/23	Good	0	5,443	--	--
Dakli Subtotal			25	9,112	--	--
Hogatza River drainage						
Caribou Creek	7/23	Poor-Incomp.	0	(1,821)	--	--
Clear Creek (Tower) †	6/24-7/20		8	76,454 †	--	--
Hogatza Subtotal			8	76,454	--	--
Henshaw Creek						
	7/29	Fair	593	1,800	--	--
Alatna River						
Malermute Fork	7/29	Good	141	161	--	--
Iniakuk River	7/29	Good	47	140	--	--
Alatna Subtotal			188	301	--	--
Hammond River						
	7/29	Poor-incomp.	8	0	--	--
South Fork Koyukuk River						
Weir †	7/6-8/27		1,643	13,922	--	0
Aerial	7/29	Fair	(569)	(430)	--	--
Jim River (aerial Index area)	7/29	Fair	(432)	(210)	--	--
SF Koyukuk Subtotal			1,643	13,922	--	0
Total Koyukuk River			6,280	133,590	0	0

-Continued-

Stream (drainage)	Date	Survey Rating	Chinook	Summer Chums	Fall Chums	Coho
Tozitna River	7/24	Poor	185	428	--	--
Melozzi Hot Springs Creek	7/24	Poor	16	1,789	--	--
Nowitna River ^{#1}	July, August		1	--	12 ?	--
Total Yukon River (downstream of Tanana River)			20,227	1,004,812	12	9,514
Tanana River Drainage						
Kantishna River Drainage						
Barton Creek	7/30	Good-incomp.	376	6	--	--
East Fork (Toklat)	9/30	Good	--	--	0	0
Clearwater Fork (Toklat)	9/30	Good	--	--	0	0
Crooked Creek	9/30	Good	--	--	0	0
Wigand Creek	9/30	Good	--	--	0	0
Toklat Springs						
Floodplain Sloughs ³	10/15-19	Good	--	--	(5,723)	22
Geiger Creek ³	10/19	Good	--	--	(1,517)	274
Sushana River ³	10/15	Good	--	--	(2,134)	4
Population Estimate ¹			--	--	14,511	--
Toklat Subtotal			376	6	14,511	300
Bearpaw Drainage						
Bearpaw River (Mouth-Rock Creek)	7/30	Good	148	0	--	--
Moose Creek	7/30	Good	20	0	--	--
Moose Creek	9/30	Good	--	--	440	0
Bearpaw Subtotal			168	0	440	0
McKinley River						
Lower Slippery Creek	9/30	Good	--	--	0	15
Birch Creek						
Hull Creek	9/30	Good	--	--	40	30
McKinley Subtotal			--	--	40	45
Total Kantishna River			544	6	14,991	345
Tanana River Tagging (upstr Kantishna River) ²			--	--	(71,661) ^{2b}	--
Chatanika River (aerial)						
Chatanika River (aerial)	7/17	Good (early)	51	4	--	--
Nenana River Drainage						
Tributary of Teklanika R	7/30	Fair	196	4	--	--
Nenana mainstem immediately upstr Teklanika R.	10/3		--	--	0	1,446
Seventeen Mile Slough	7/22-10/31	Fair	97	0	56	--
Seventeen Mile Slough ³	10/3		--	--	0	1,996
Lost Slough (western floodplain) ³	9/24,10/3		--	--	144	1,524
Julius Creek	7/26	Poor	0	1	--	--
Julius Creek (aerial) ³	10/3		--	--	12	24
Wood Creek ³	10/3		--	--	0	0
Clear Creek (aerial)	7/26	Fair	68	0	--	--
Clear Creek (combo boat, aerial) ³	10/3		--	--	10	(1,697)
Clear Creek (aerial) ³	10/3		--	--	0	2,200
Glacier Creek (aerial)	7/26	Fair	62	0	--	--
Glacier Creek (aerial) ³	10/3		--	--	0	1,464
Juna Creek ^{3a}			--	--	--	--
Lignite Spring (weir) ³	8/29-10/15		--	8	0	93
Nenana Subtotal			425	13	222	8,747
McDonald Creek						
McDonald Creek	7/27	Fair/Good-incomp	65	--	--	--
Clear Creek (aerial)						
Clear Creek (aerial)	7/26	Poor-Fair	71	0	--	--
Chena River						
MCD to Middle Fk (aerial/index area)	7/18-8/11	Good-Poor	(3,495)	(594)	--	--
Counting Tower Estimate ^{2d}	7/1-8/3		13,390 ^{2b}	9,439 ^{2b}	--	--
Hodgins Slough Weir ³	7/23-9/5		0	(500)	--	--
Chena Subtotal			13,390	9,439	--	--

-Continued-

Stream (drainage)	Date	Survey Rating	Chinook	Summer Chums	Fall Chums	Coho
Salcha River						
Mainstem River (aerial)	8/1	Poor	(1)	(0)	--	--
TAPS to Caribou Cr (aerial/index area)	8/1	Poor	(3,458)	(3,968)	--	--
Counting Tower Estimate ^{h1}	7/1-8/7		18,396 ^{h2}	35,741 ^{h2}	--	--
Salcha Subtotal			18,396	35,741	--	--
Goodpaster River (aerial)	7/27	Poor-incomp.	31	0	--	--
Delta River						
Foot Survey (peak count)	11/14	Good	--	--	(5,859)	143
Population Estimate ¹	9/26-12/1		--	--	7,705	--
Bluff Cabin Slough (BCS) ^{h, k}	10/31	Fair	--	--	3,145	12
Clearwater Lake Outlet ^{h, k}	10/24	Good	--	--	50	2,775
Clearwater Lake Inlet (aerial) ²	10/22	Good	--	--	0	325
Delta Clearwater River ^{h, k}	10/24	Good	--	--	300	11,525
Tributaries (aerial) ³	10/22	Good	--	--	0	2,375
Total Tanana River			32,429	45,197	11,422	25,902
Beaver Creek weir ¹	6/14-8/11		315	34	--	--
Chandalar River splitbeam sonar ²	8/8-9/22		--	--	199,874 ^{h2}	--
Charlie River	8/5	Poor-Fair	54	12	--	--
Kandik River	8/5	Poor-Fair	13	65	--	--
Nation River	8/5	Fair	27	0	--	--
Tatonduk River	8/5	Poor	1	0	--	--
Seventymile River	8/5	Fair	7	0	--	--
Porcupine River Drainage						
Sheenjek River						
Bendix Sonar Estimate	8/8-9/23		--	--	80,423 ^{h2}	--
Fishing Branch River						
Weir Passage ^h	8/28-10/15		--	--	26,959 ^{h2}	--
Total Porcupine River			--	--	107,382	--
Total Alaskan Portion of Drainage			53,073	1,050,120	291,731 ^h	35,416
Yukon Territory Streams ^h						
White River						
Kluane River	10/17	Good	--	--	3,350	--
Tincup Creek	8/22	Good	193	--	--	--
White Subtotal			193	--	3,350	--
Tatchun Creek ²	8/19	Poor	266	--	--	--
Little Salmon River	8/17	Good	1,025	--	--	--
Big Salmon River						
Big Salmon Lake to vicinity Souch Cr.	8/21	Good	1,345	--	--	--
Teslin River Drainage						
Mainstem (index area)	10/28	Good	--	--	207	--
Upper Teslin (Teslin Lk. to Hutsigola Lk.)	8/23	Good	22	--	--	--
Morley River (Teslin Lk. to Morley Lk.)	8/23	Good	230	--	--	--
Teslin Subtotal			252	--	207	--
Nisutlin River						
Mainstem (Sidney Cr. to 100mile Cr.)	8/21	Good	277	--	--	--
Wolf River (Wolf Lk. to Fish Lk. outlet)	8/21	Good	322	--	--	--
Nisutlin Subtotal			599	--	--	--
Whitehorse Fishway	?		2,084	--	--	--

-Continued-

Stream (drainage)	Date	Survey Rating	Chinook	Summer Chums	Fall Chums	Coho
Canadian Mainstem Yukon River						
Tatchun Creek to Ft. Selkirk	10/18	Fair	-	-	2,189	-
Border Passage Estimate ^{6*}			(53,400) ^{7**}	-	(94,725) ^{7**}	-
Total Yukon Territory (observed)			5,764	0	32,705 ⁸	0
Total Yukon Territory (estimated from tagging) ⁷			(37,796) ^{7**}	-	(85,635) ^{7**}	-
Yukon River Drainage Totals			58,837	1,050,120	324,436	35,416

* Estimates are from aerial surveys (peak count) unless otherwise indicated; carcass counts included. Data in parentheses not included in totals or subtotals. Latest revision 16 April 1998.

² Foot survey.

³ Cooperative program with BSFA and 4-H Youth.

⁴ Combination foot and aerial survey.

⁵ Population estimate based upon timing of ground surveys of the Toklat Springs area and salmon streamlife data.

⁶ Sport Fish Division estimate.

⁷ Boat survey.

⁸ Population estimate based upon expanded counting tower observations.

⁹ Cooperative program with BSFA and Nulato Tribal Council.

¹⁰ Population estimate based upon replicate foot surveys and salmon streamlife data.

¹¹ Canadian Department of Fisheries and Oceans (DFO) estimate.

¹² Total for Alaskan portion of drainage does not include Fishing Branch River. Total for Yukon Territory includes Fishing Branch River.

¹³ Population estimate based upon mark and recapture.

¹⁴ Preliminary data.

¹⁵ USFWS estimate.

¹⁶ BLM estimate.

¹⁷ Canadian border passage estimate for Yukon Territory streams excluding the Fishing Branch River. Canadian harvest has not been removed; these are "border" passage estimates.

¹⁸ Canadian estimated spawning escapement for Yukon Territory streams excluding the Fishing Branch River, from DFO tagging study (border passage estimate minus Canadian harvest).

¹⁹ Estimate made by Tanana Chief Conference (TCC).

²⁰ Habitat Division estimate.

²¹ USFWS, Division of Realty estimate.

²² USBS, Biological Resources Division.

²³ Weir operated by Tri-Valley School, Healy Alaska. The weir was located in the upper reaches of the index area, resulting in approximately only 20% of the index area being counted. A foot survey was conducted by the school upstream of the weir upon completion. It was assumed these were late summer chums.

²⁴ Chinook captured in mid July in hoop net; chums captured in late August in gillnets.

Appendix E.3. Estimates of salmon passage on the mainstem Yukon River using 120 kHz sonar equipment at Pilot Station, 1993-1997.

Year	Dates of Operation	Chinook			Summer Chum	Fall Chum	Coho ^a	Other Fish ^b
		Large	Small	Total				
1993 ^c	6/04-8/31	71,000	64,000	135,000	947,000	292,000	42,000	351,000 ^d
1994 ^c	6/04-9/08	90,000	52,000	142,000	1,997,000	-	-	271,000 ^d
1995 ^f	6/07-9/03	203,000	37,000	240,000	3,638,000	1,247,000	155,000	620,000
1996 ^g								
1997 ^f	6/06-8/31	134,000	90,000	224,000	1,411,000	623,000	154,000	273,000

^a Passage estimates for coho salmon are incomplete. The sonar project is terminated prior to the end of the coho salmon run.

^b Other fish may include pink salmon (which are substantially more abundant in even-numbered years), whitefish, sheefish, northern pike, and other species. These estimates are not total passage estimates but are merely expanded estimates of the number of fish in the acoustical beam.

^c Chart recording traces of fish or debris judged to be travelling downstream, and an associated portion of traces with no discernible direction of travel, were not included in passage estimate calculations.

^d Does not include fish passing near shore on the left (south) bank.

^f All chart recording traces of fish were assumed to be travelling upstream, and included in passage estimate calculations.

^g Operated only for training purposes in 1996.

Appendix E.4. Chinook salmon escapement counts for selected spawning areas in the Alaskan portion of the Yukon River drainage, 1961-1997. *

Year	Andreafsky River		Anvik River		Nulato River			Gisasa River		Chena River			Salcha River		
	East Fork	West Fork	River	Index Area	North Fork	South Fork	Mainstem	Aerial	Weir	River	Index Area	River	Index Area		
	Aerial	Tower or Weir	Aerial	Aerial	Aerial	Aerial	Tower			Population Estimate	Aerial	Aerial	Population Estimate	Aerial	Aerial
1961	1,003														
1962	675		762		1,226			376	167	266				2,878	
1963											61			937	
1964	867										137				
1965			705											450	
1966	361		344	650										408	
1967			303	638										800	
1968	380		276	336											
1969	274		383	310										739	
1970	665		231	296										461	
1971	1,904		574	368							6			1,882	
1972	798		1,682								193			158	
1973	825		582	1,198							138			1,193	
1974			788	613							21			391	
1975	993		285	471		55	23		161		1,016	959		1,857	
1976	818		301	730		123	81		385		316	262		1,055	
1977	2,008		643	1,053		471	177		332		531	496		1,641	
1978	2,487		1,499	1,371		286	201		255		563			1,202	
1979	1,180		1,062	1,324		498	422		45		1,726			3,499	
1980	958		1,134	1,484		1,093	414		484		1,159			4,789	
1981	2,146		1,500	1,330	1,192	954	369		951		2,541			6,757	
1982	1,274		231	807	577		791				600			1,237	
1983			851						421		2,073			2,534	
1984	1,573			653	376	526	480		572		2,553	2,336		1,961	
1985	1,617		1,993	641	574						501	494		1,031	
1986	1,954	1,530	2,248	1,051	720	1,600	1,180		735		2,553	2,262		2,035	
1987	1,608	2,011	3,158	1,118	918	1,452	1,522		1,346	9,065	2,031	1,935		3,368	
1988	1,020	1,339	3,281	1,174	879	1,145	493		731	6,404	1,312	1,209	4,771	1,898	
1989	1,399		1,448	1,805	1,449	1,061	714		797	3,346	1,966	1,760	4,562	2,761	
1990	2,503		1,089	442	212					2,666	1,280	1,185	3,294	2,333	
1991	1,938		1,545	2,347	1,595	568	430		884	5,603	1,436	1,402	10,728	3,744	
1992	1,030		2,544	875	625	767	1,253		1,690	3,025	1,277	1,277	5,608	2,212	
1993	5,855		2,002	1,536	931	348	231		910	5,230	825	799	7,862	1,484	
1994	300	7,801	2,765	1,720	1,526	1,844	1,181		1,573	12,241	2,943	2,660	10,007	3,636	
1995	1,635	5,841	213	913	843	952		1,795	2,775	2,888	11,877	1,570	18,399	11,823	
1996		2,955	1,108	1,996	1,147	968	681	1,412	410	4,023	9,680	3,575	3,039	13,643	
1997	1,140	3,186	624	839	709	100		756		1,952	6,833	2,233	2,112	7,958	
E.O.	>1,500		1,510	3,979	2,690			4,766	144	3,764	13,390	3,495	3,303	18,396	
		>1,400				>500	>800	>500							>2,500

continued

- ^a Aerial survey counts are peak counts only. Survey rating was fair or good unless otherwise noted.
- ^b From 1961-1970, river count data are from aerial surveys of various segments of the mainstem Anvik River. From 1972-1979, counting tower operated; mainstem aerial survey counts below the tower were added to tower counts. From 1980-present, aerial survey counts for the river are best available minimal estimates for the entire Anvik River drainage. Index area counts are from the mainstem Anvik River between the Yellow River and McDonald Creek.
- ^c Includes mainstem counts below the confluence of the North and South Forks, unless otherwise noted.
- ^d Chena River index area for assessing the escapement objective is from Moose Creek Dam to Middle Fork River.
- ^e Salcha River index area for assessing the escapement objective is from the TAPS crossing to Caribou Creek.
- ^f Incomplete and/or poor survey conditions resulting in minimal or inaccurate counts.
- ^g Boat survey.
- ^h Data unavailable for index area. Calculated from historic (1972-91) average ration of index area counts to total river counts (0.90:1.0).
- ⁱ Tower counts.
- ^j Mark-recapture population estimate.
- ^k Mainstem counts below the confluence of the North and South Forks Nulato River included in the South Fork counts.
- ^l Weir counts.
- ^m Incomplete count because of late installation and/or early removal of project.
- ⁿ Data are preliminary.
- ^o Interim escapement goals. Established March, 1992.
- ^p Interim escapement goal for the entire Anvik River drainage is 1,300 salmon. Interim escapement objective for mainstem Anvik River between the Yellow River and McDonald Creek is 500 salmon.

Appendix E.5. Chinook salmon escapement counts for selected spawning areas in the Canadian portion of the Yukon River drainage, 1991-1997.

Year	Tincup Creek	Tatchun Creek	Little Salmon River	Big Salmon River	Nisutlin River	Ross River	Wolf River	Whitehorse Fishway		Canadian Mainstem			
								Count	Percent Hatchery Contribution	Border Passage Estimate	Harvest	Spawning Escapement Estimate	
1961								1,068	0				
1962								1,500	0				
1963								483	0				
1964								595	0				
1965								903	0				
1966		7						563	0				
1967								533	0				
1968			173	857	407		104	414	0				
1969			120	286	105			334	0				
1970		100		670	615			71	625	0			
1971		130		275	275			750	856	0			
1972		80		126	415			13	391	0			
1973		99		27	75				36	224	0		
1974		192			70				48	273	0		
1975		175			153				40	313	0		
1976		52			86					121	0		
1977		150		408	316					277	0		
1978		200		330	524					375	0		
1979		150		489	632				183	1,184	0		
1980		222		286	1,436				377	1,383	0		
1981		133		670	2,411			949	395	1,555	0		
1982		73		403	758			155	104	473	0	36,598	
1983	100	264		101	540			43	95	905	0	47,741	
1984	150	153		434	1,044			151	124	1,042	0	43,911	
1985	210	190		255	801			23	110	508	0	29,881	
1986	228	155		54	745			72	109	557	0	36,479	
1987	100	159		468	891			180	35	327	0	30,823	
1988	204	152		368	765			242	66	405	16	44,445	
1989	88	100		862	1,662			433	146	549	19	42,620	
1990	83	643		665	1,806			457	188	1,407	24	56,679	
1991				326	1,040			250	201	1,266	51	41,187	
1992	73	106		494	617			423	110	758	84	43,185	
1993		183		184	572			400	168	668	73	45,027	
1994	101	477		726	1,764			506	393	1,577	54	46,680	
1995	121	397		781	1,314			253	229	2,103	57	52,353	
1996	150	423		1,150	2,565			102	705	2,958	35	47,955	
1997	193	266		1,025	1,345				322	2,084	24	53,400	
E.O.													33,000-43,000

continued

- * Data obtained by aerial survey unless otherwise noted. Only peak counts are listed. Survey rating is fair to good, unless otherwise noted.
- † All foot surveys except 1978 (boat survey) and 1986 (aerial survey).
- < For 1968, 1970, and 1971 counts are from mainstem Big Salmon River. For all other years counts are from the mainstem Big Salmon River between Big Salmon Lake and the vicinity of Souch Creek.
- d One Hundred Mile Creek to Sidney Creek.
- f Big Timber Creek to Lewis Lake.
- g Wolf Lake to Red River.
- h Counts and estimated percentages may be slightly exaggerated. In some or all of these years a number of adipose-clipped fish ascended the fishway, and were counted, more than once. These fish would have been released into the fishway as fry between 1989 and 1994, inclusive.
- i Estimated total spawning escapement excluding Porcupine River (estimated border escapement minus the Canadian catch).
- k Incomplete and/or poor survey conditions resulting in minimal or inaccurate counts.
- m Estimate derived by dividing the annual 5-area (Whitehorse Fishway, Big Salmon, Nisutlin, Wolf, Tatchun) count by the average proportion of the annual 5-area index count to the estimated spawning escapement from the DFO tagging study for years 1983, and 1985-1989.
- n Information on area surveyed is unavailable.
- p Counts are for Big Timber Creek to Sheldon Lake.
- q Interim escapement objective. Stabilization escapement objective for years 1990-1995 is 18,000 salmon. Rebuilding step escapement objective for years 1996-2001 is 28,000 salmon.
- r Counts are for Wolf Lake to Fish Lake outlet.
- s Data are preliminary.

Appendix E.6. Summer chum salmon escapement counts for selected spawning areas in the Alaskan portion of the Yukon River drainage, 1973-1997. *

Year	Andreasfky River		Anvik River		Rodo River	Kaltag Creek	Nulato River			Gisasa River		Hogatza River		Toutina River	Chena River		Salcha River			
	East Fork	West Fork	Tower & Aerial ^b	Sonar	Aerial	Tower	South Fork	North Fork	Mainstem	Aerial	Weir	Clear & Caribou Cr.	Clear Creek	Aerial	Aerial	Tower	Aerial	Tower		
	Aerial	Sonar, Tower, or Weir Counts					Aerial	Aerial	Aerial		Aerial	Aerial	Aerial						Aerial	Aerial
1973	10,149 ^d		51,835		249,015												79 ^d		290	
1974	3,215 ^d		33,578		411,133		16,137		29,016	29,334		22,022			1,823	4,349			3,510	
1975	223,485		235,954		900,967		25,335		51,215	87,280		56,904		22,355	3,512	1,670			7,573	
1976	105,347		118,420		511,475		38,258		9,230 ^d	30,771		21,342		20,744	725 ^d	685			6,484	
1977	112,722		63,120		358,771		16,118		11,385	58,275		2,204 ^d		10,734	761 ^d	610			677 ^d	
1978	127,050		57,321		307,270		17,845		12,821	41,659		9,280 ^d		5,102	2,262	1,609			5,405	
1979	66,471		43,391		280,537				1,506	35,598		10,962		14,221		1,025 ^d			3,060	
1980	36,823 ^d		114,759		492,676				3,702 ^d	11,244 ^d		10,388		19,786		338			4,140	
1981	81,555	147,312 ^f			1,486,182				14,348										8,500	
1982	7,501 ^d	181,352 ^f	7,267 ^d		444,381							334 ^d		4,984 ^d	874	1,509			3,756	
1983		110,608 ^f			362,912				1,263 ^d	19,749		2,356 ^d		28,141	1,604	1,097			716 ^d	
1984	95,200 ^d	70,125 ^f	238,565		891,028									184 ^d		1,861			9,810	
1985	66,146		52,750		1,080,243	24,576			10,494	19,344		13,232		22,566	1,030	1,005			3,178	
1986	83,931	167,614 ^g	99,373		1,189,602				16,848	47,417		12,114			1,778	1,509			8,028	
1987	6,687 ^d	45,221 ^g	35,535		455,876				4,094	7,163		2,123		5,669 ^d		333			3,657	
1988	43,056	68,937 ^g	45,432		1,125,449	13,872			15,132	26,951		9,284		6,890	2,983	432			2,889 ^d	
1989	21,460 ^d				636,906											714 ^d			1,574 ^d	
1990	11,519 ^d		20,426 ^d		403,627	1,941 ^d			3,196 ^{d,h}	1,419 ^d		450 ^d		2,177 ^d	36	245 ^d			450 ^d	
1991	31,886		46,657		847,772	3,977			13,150	12,491		7,003		9,947	93	115 ^d			154 ^d	
1992	11,308 ^d		37,808 ^d		775,626	4,465			5,322	12,358		9,300		2,986	794	848 ^d			3,222	
1993	10,935 ^d		9,111 ^d		517,409	7,867			5,486	7,698		1,581			970	168	5,400	212	5,809	
1994		200,981 ^{i,k}			1,124,689		47,295				148,762 ^k	6,827	51,116 ^k	8,247 ^m		1,137	9,984	4,916	39,450	
1995		172,148 ⁱ			1,339,418	12,849	77,193		10,875	29,949	236,890	6,458	136,886	116,735	4,985	185 ^d	3,519 ^k	934 ^d	30,784	
1996		108,450 ⁱ			933,240	4,380	51,269		8,496 ^{d,k}		129,694		157,589	27,090 ^m	100,912	2,310	2,061	12,810 ^k	9,722	74,827 ^k
1997 ^h		51,139 ⁱ			609,118	2,775 ^d	48,018				157,975	686 ^d	31,800	1,821 ^d	76,454	428 ^d	594 ^d	9,439 ^k	3,968 ^d	35,741 ^k
E.O. ⁿ	>109,000		>116,000		>300,000					>53,000 ^o				>17,000 ^p					>3,500	

continued

- ^a Aerial survey counts are peak counts only, survey rating is fair or good unless otherwise noted.
- ^b From 1972-1979 counting tower operated; escapement estimate listed is the tower counts plus expanded aerial survey counts below the tower (see Buklis 1982).
- ^c Includes mainstem counts below the confluence of the North and South Forks, unless otherwise noted.
- ^d Incomplete survey and/or poor survey timing or conditions resulted in minimal or inaccurate count.
- ^e Sonar count.
- ^f Tower count.
- ^g Mainstem counts below the confluence of the North and South Forks of the Nulato River included in the South Fork counts.
- ^h Weir count.
- ⁱ Incomplete count due to late installation and/or early removal of project or high water events.
- ^m BLM helicopter survey.
- ⁿ Interim escapement objective.
- ^o Interim escapement objective for North Fork Nulato River only.
- ^p Consists of Clear and Caribou Creeks interim escapement objectives of 9,000 and 8,000, respectively.
- ^q Data are preliminary.

Appendix E.7. Fall chum salmon escapement counts for selected spawning areas in Alaskan and Canadian portions of the Yukon River drainage, 1971-1997.

Year	Alaska				Canada						
	Toklat River ^b	Delta River ^c	Chandalar River ^d	Sheenjek River ^d	Fishing Branch River ^g	Mainstem Yukon River Index ^h	Koidern River ⁱ	Kluane River ^h	Teslin River ^h	Canadian Mainstem	
										Border Passage Estimate	Spawning Escapement Estimate
1971					312,800						
1972		5,384			35,125 ⁿ			198 ^{r,r}			
1973		10,469			15,989 ^s	383		2,500			
1974	41,798	5,915		89,966 ^l	32,525 ^s			400			
1975	92,265	3,734 ^v		173,371 ^l	353,282 ^s	7,671		362 ^t			
1976	52,891	6,312 ^v		26,354 ^l	36,584			20			
1977	34,887	16,876 ^v		45,544 ^l	88,400			3,555			
1978	37,001	11,136		32,449 ^l	40,800			0 ^t			
1979	158,336	8,355		91,372 ^l	119,898			4,640 ^r			
1980 ^{ah}	26,346	5,137		28,933 ^l	55,268			3,150		39,130	16,218
1981	15,623	23,508		74,560	57,386 ^v			25,806		66,347	19,281
1982	3,624	4,235		31,421	15,901	1,020 ^s		5,378		47,049	15,091
1983	21,869	7,705		49,392	27,200	7,560		8,578 ^r		118,365	27,490
1984	16,758	12,411		27,130	15,150	2,800 ^r	1,300	7,200	200	81,900	25,267
1985	22,750	17,276 ^v		152,768	56,016 ^s	10,760	1,195	7,538	356	99,775	37,765
1986	17,976	6,703 ^v	59,313	84,207 ^{aa}	31,723 ^s	825	14	16,686	213	101,826	13,886
1987	22,117	21,180	52,416	153,267 ^{aa}	48,956 ^s	6,115	50	12,000		125,121	44,345
1988	13,436	18,024	33,619	45,206 ^{aa}	23,597 ^s	1,550	0	6,950	140	69,280	32,494
1989	30,421	21,342 ^v	69,161	99,116 ^{aa}	43,834 ^s	5,320	40	3,050	210 ^p	55,861	20,111
1990	34,739	8,992 ^v	78,631	77,750 ^{aa}	35,000 ^{ab}	3,651	1	4,683	739	82,947	31,212
1991	13,347	32,905 ^v		86,496 ^{ac}	37,733 ^s	2,426	53	11,675	468	112,303	33,842
1992	14,070	8,893 ^v		78,808 ^{ac}	22,517 ^s	4,438	4	3,339	450	67,962	18,880
1993	27,838	19,857		42,922 ^{ac}	28,707 ^s	2,620	0	4,610	555	42,165	12,422
1994	76,057	23,777 ^v		153,000 ^{ac,ad}	65,247 ^s	1,429 ^p	20 ^r	10,734	209 ^p	133,712	35,354
1995	54,513 ^{ah}	20,587	280,999	235,000 ^{ac,ad}	51,971 ^{aa}	4,701	0	16,456	633	198,203	40,111
1996	18,264	19,758	208,170	247,965 ^{ac,ad}	77,278 ^s	4,977		14,431	315	143,758	21,329
1997 ^{ad}	14,511	8,000	199,874	80,423	26,959	2,189		3,350	207	94,725	9,286
E.O. ^{af}	>33,000	>11,000		>64,000	50,000-120,000						

continued

- ^a Latest table revision November 3, 1997.
- ^b Expanded total abundance estimates for upper Toklat River index area using stream life curve (SLC) developed with 1987-1993 data. Index area includes Geiger Creek, Sushana River, and mainstem floodplain sloughs from approximately 0.25 mile upstream of roadhouse to approximately 1.25 miles downstream of roadhouse.
- ^c Estimates are a total spawner abundance, generally from using spawner abundance curves and streamlife data.
- ^d Side-scan sonar estimate for Sheenjek beginning in 1981 and for Chandalar in 1986-1990. Split beam sonar estimate for Chandalar beginning in 1995.
- ^e Located within the Canadian portion of the Porcupine River drainage. Total escapement estimated using weir to aerial survey expansion factor of 2.72, unless otherwise indicated.
- ^g Aerial survey count unless otherwise indicated.
- ^h Tatchun Creek to Fort Selkirk.
- ⁱ Duke River to end of spawning sloughs below Swede Johnston Creek.
- ^k Boswell Creek area (5 km below to 5 km above confluence).
- ^m Excludes Fishing Branch River escapement (estimated border passage minus Canadian removal).
- ⁿ Weir installed on September 22. Estimate consists of a weir count of 17,190 after September 22, and a tagging passage estimate of 17,935 prior to weir installation.
- ^p Incomplete and/or poor survey conditions resulting in minimal or inaccurate counts.
- ^r Foot survey.
- ^s Weir count.
- ^t Total escapement estimate using sonar to aerial survey expansion factor of 2.22.
- ^v Population estimate from replicate foot surveys and stream life data.
- ^w Initial aerial survey count was doubled before applying the weir/aerial expansion factor of 2.72 since only half of the spawning area was surveyed.
- ^x Boat survey.
- ^y Total index area not surveyed. Survey included the mainstem Yukon River between Yukon Crossing to 30 km below Fort Selkirk.
- ^z Escapement estimate based on mark-recapture program unavailable. Estimate based on assumed average exploitation rate.
- ^{aa} Expanded estimates for period approximating second week August through middle fourth week September, using Chandalar River run timing data.
- ^{ab} Weir was not operated. Although only 7,541 chum salmon were counted on a single survey flown October 26, a population estimate of approximately 27,000 fish was made through date of survey, based upon historic average aerial-to-weir expansion of 28%. Actual population of spawners was reported by DFO as between 30,000-40,000 fish considering aerial survey timing.
- ^{ac} Total abundance estimate are for the period approximating second week August through middle fourth week of September. Comparative escapement estimates prior to 1986 are considered more conservative; approximating the period of end of August through middle week of September.
- ^{ad} Data are preliminary.
- ^{af} Interim escapement objective.
- ^{ag} Based on escapement estimates for years 1974-1990.
- ^{ah} Minimal estimate because of late timing of ground surveys with respect to peak of spawning.
- ^{ai} Incomplete count due to late installation and/or early removal of project or high water events.

Appendix E.8. Yukon River fall chum salmon estimated brood year production and return per spawner estimates.

Year	(P)			Estimated Brood Year Return								(R)	(R/P)
	Estimated Annual Totals			Number of Salmon ^a				Percent				Total Brood Year Return ^a	Return/Spawner
	Escapement ^b	Catch	Return	Age 3	Age 4	Age 5	Age 6	Age 3	Age 4	Age 5	Age 6		
1974	340,408	395,198	735,606	69,059	384,993	67,468	0	0.132	0.738	0.129	0.000	521,520	1.53
1975	1,245,304	382,200	1,627,504	116,367	1,203,589	58,797	0	0.084	0.873	0.043	0.000	1,378,754	1.11
1976	244,282	233,917	478,199	100,242	562,568	113,155	3,820	0.129	0.721	0.145	0.005	779,785	3.19
1977	371,414	353,236	724,650	98,307	887,805	153,523	3,539	0.086	0.777	0.134	0.003	1,143,175	3.08
1978	242,772	340,816	583,588	18,349	290,316	76,537	0	0.048	0.754	0.199	0.000	385,202	1.59
1979	755,922	615,377	1,371,299	35,927	650,193	223,198	3,343	0.039	0.712	0.245	0.004	912,662	1.21
1980	231,368	488,305	719,673	7,079	294,711	179,420	2,037	0.015	0.610	0.371	0.004	483,247	2.09
1981	342,154	677,257	1,019,411	37,311	820,612	240,238	8,615	0.034	0.741	0.217	0.008	1,106,775	3.23
1982	110,362	373,175	483,537	9,726	345,465	141,431	1,384	0.020	0.694	0.284	0.003	498,007	4.51
1983	212,332	525,016	737,348	10,846	742,423	182,300	1,954	0.012	0.792	0.194	0.002	937,524	4.42
1984	142,898	412,322	555,220	6,013	332,870	154,201	7,957	0.012	0.664	0.308	0.016	501,040	3.51
1985	497,620	515,481	1,013,101	38,044	774,355	248,980	2,731	0.036	0.728	0.234	0.003	1,064,110	2.14
1986	281,218	318,028	599,246	0	394,853	279,127	4,093	0.000	0.582	0.412	0.006	678,074	2.41
1987	491,040	406,365	897,405	11,405	467,735	244,256	5,868	0.016	0.641	0.335	0.008	729,263	1.49
1988	200,526	353,242	553,768	31,057	147,205	113,206	9,343 ^c	0.103	0.489	0.376	0.031	300,812	1.50
1989	389,426	541,177	930,603	2,305	210,193	295,980 ^c	16,238	0.004	0.401	0.564	0.031	524,716	1.35
1990	312,962	350,100	663,062	527	496,924 ^c	337,333	28,342	0.001	0.576	0.391	0.033	863,126	2.76
1991	341,242	439,096	780,338	3,141 ^c	826,146	327,781	12,367	0.003	0.706	0.280	0.011	1,169,435	3.43
1992	248,576	148,846	397,422	5,452	606,842	203,551		0.007	0.744	0.250		815,645 ^d	> 3.28
1993	238,648	91,015	329,663	7,765	455,489							463,254 ^g	> 1.94
1994	636,162	169,225	805,387	4,393									
1995	724,142	461,147	1,185,289										
1996	726,600	244,027	970,627										
1997	465,533	211,167	676,700										
Average	408,038	376,906	784,944										
	375,181	All Brood Years (1974-91)		33,095	546,275	190,941	6,202	0.043	0.678	0.270	0.009	776,513	2.47
	234,088	Even Brood Years (1974-91)		26,895	361,101	162,431	6,331	0.051	0.648	0.291	0.011	556,757	2.57
	516,273	Odd Brood Years (1974-91)		39,295	731,450	219,450	6,073	0.035	0.708	0.250	0.008	996,268	2.38

^a The estimated number of salmon which returned are based upon annual age composition observed in lower Yukon test nets each year, weighted by test fish CPUE.

^b Estimated annual escapement is the sum of fall chum salmon escapements observed in the Tokdal, Delta, Sheenjak, and Fishing Branch Rivers doubled, except for 1997 which is based on reconstructed run using Pilot Station sonar passage estimate.

^c Based upon expanded test fish age composition estimates in 1994, the year in which the test fishery terminated early.

^d Brood year return includes only 3, 4, and 5 year fish, indicating that production (R/P) from brood year 1992 was at least 3.20.

^g Brood year return includes only 3 and 4 year fish, indicating that production (R/P) from brood year 1993 was at least 1.74.

Appendix E.9. Coho salmon escapement counts for selected spawning areas in the Alaskan portion of the Yukon River drainage, 1972-1997. ^a

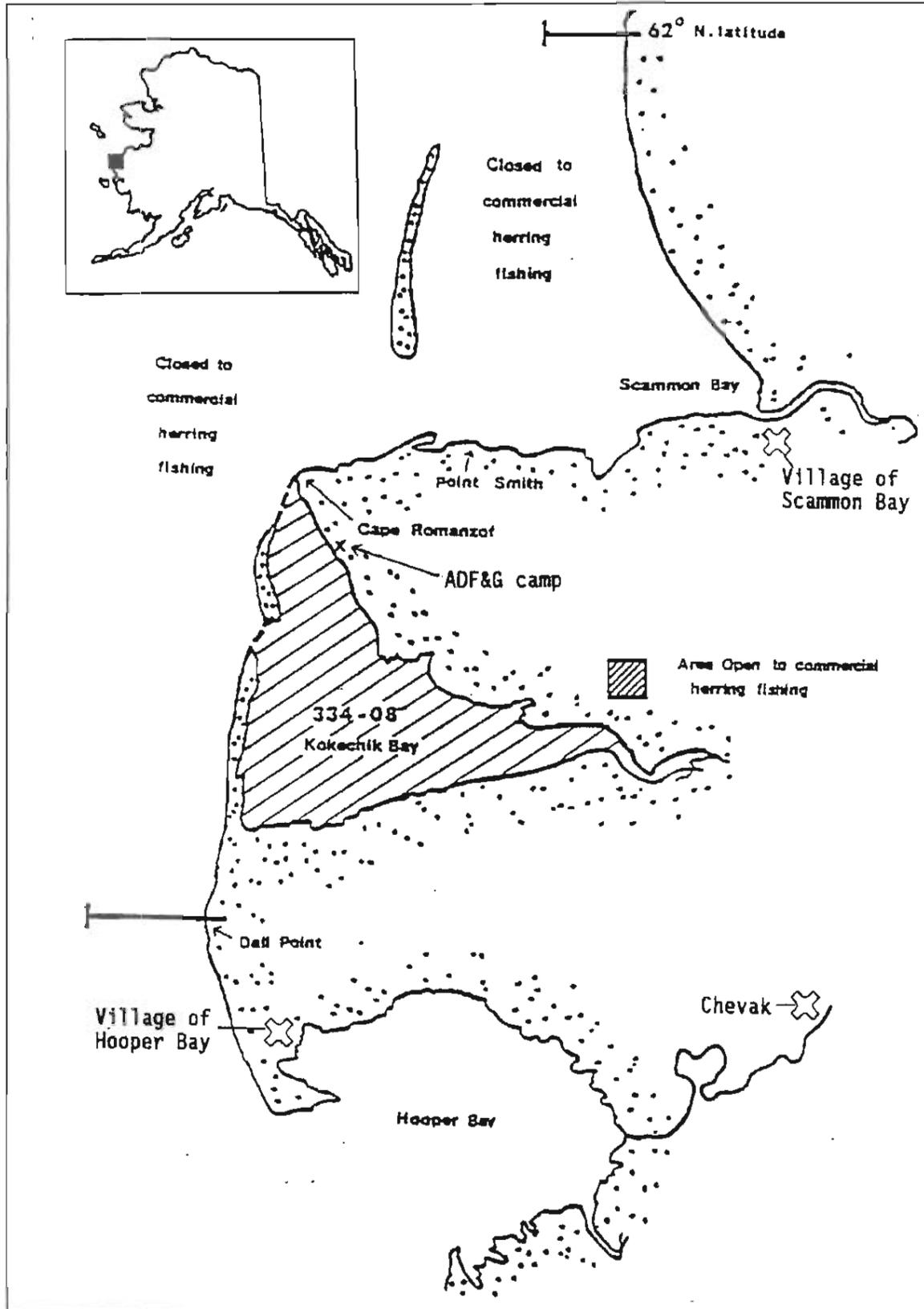
Year	Andreafsky River			Kantishna River		Nenana River				Delta Clearwater River ^{4c}	Clearwater Lake and Outlet	Richardson Clearwater River
	East Fork	West Fork	Anvik River	Geiger Creek ^b	Barton Creek	Lost Slough	Nenana Mainstem ^c	Wood Creek ^d	Seventeen Slough			
1972										630	417	454 ^k
1973										3,322	551 ⁱ	375 ⁱ
1974						1,388			27	3,954 ⁱ	560	652 ⁱ
1975						943			956	5,100	1,575 ^{l, k}	4 ^k
1976			467 ^k	25 ^j		118			281	1,920	1,500 ^{l, k}	80 ^k
1977			81 ^k	60		524 ^k		310 ^m	1,167	4,793	730 ^{l, k}	327
1978						350		300 ^m	466	4,798	570 ^{l, k}	
1979						227			1,987	8,970	1,015 ^{l, k}	372
1980				3 ^j		499 ^k		1,603 ^m	592	3,946	1,545 ^{l, k}	611
1981	1,657 ^k					274		849 ^{n, a}	1,005	8,563 ^p	459 ^k	550
1982				81				1,436 ^{n, a}		8,365 ^p		
1983				42		766		1,042 ⁿ	103	8,019 ^p	253	88
1984				20 ^j		2,677		8,826 ⁿ		11,061	1,368	428
1985				42 ^j		1,584		4,470 ⁿ	2,081	5,358	750	
1986				5	496	794		1,664 ⁿ	218 ^{d, h}	10,857	3,577	146 ^k
1987				1,175		2,511		2,387 ⁿ	3,802	22,300	4,225 ^{l, k}	
1988	1,913	830	1,203	159	437	348		2,046 ⁿ		21,600	825 ^{l, k}	
1989				155	12 ^k			412 ⁿ	824 ^k	11,000	1,600 ^{l, k}	483
1990				211		688	1,308		15 ^k	8,325	2,375 ^{l, k}	
1991				427	467 ^k	564	447		52	23,900	3,150 ^{l, k}	
1992				77	55 ^k	372			490	3,963	229 ^{l, k}	500 ^f
1993				138	141	484	419	666 ^{n, a}	581	10,875	3,525 ^{l, k}	
1994				410	2,000 ^{n, a}	944	1,648	1,317 ^{n, a}	2,909	62,675 ⁿ	3,425 ^{l, k}	5,800 ^f
1995	10,901 ⁿ			142	192 ^{n, a, a, a}	4,169	2,218	500 ⁿ	2,972 ^k	20,100	3,625 ^{l, k}	
1996	8,037 ⁿ			233	0 ⁿ	2,040	2,171	2,416 ⁱ	3,668 ^{d, h}	14,075 ^s	1,125 ^{l, k}	
1997	9,462 ⁿ			274		1,524 ^{a, b}	1,446	1,464 ^{i, n}	1,996 ^{d, h}	11,525 ^r	2,775 ^{l, k}	
E.O.										>9,000 ⁿ		

continued

- ^a Aerial surveys unless otherwise noted. Only peak counts presented. Survey rating is fair to good, unless otherwise noted.
- ^b Foot survey, unless otherwise indicated.
- ^c Mainstem Nenana River between confluences of Lost Slough and Teklanika River.
- ^d Surveyed by F.R.E.D.
- ^e Surveyed by Sport Fish division.
- ^f Boat survey counts in the lower 17.5 river miles, unless otherwise indicated.
- ^g Boat survey.
- ^h Aerial survey.
- ⁱ Poor survey.
- ^m Foot survey.
- ⁿ Weir count.
- ^p Expanded estimate based on partial survey counts and historic distribution of spawners from 1977-1980.
- ^q Coho weir was operated at the mouth of Clear Creek (Shores Landing).
- ^r Incomplete count because of late installation and/or early removal of project.
- ^s Data are preliminary.
- ^t Interim escapement objective established March, 1993, based on boat survey counts of coho salmon in the lower 17.5 river miles during the period October 21-27.
- ^u An additional 17,565 coho salmon were counted by helicopter in the Delta Clearwater outside of the normal mainstem index area.
- ^v An additional 3,300 coho salmon were counted by helicopter in the Delta Clearwater outside of the normal mainstem index area.
- ^w An additional 350 coho salmon were counted in Clearwater Lake Inlet.
- ^x An additional 2,375 coho salmon were counted by helicopter in the Delta Clearwater outside of the normal mainstem index area.
- ^{aa} An additional 1,000 coho salmon were estimated pooled downstream of weir on October 2, just prior to weir removal.
- ^{ab} Survey of western floodplain sloughs only.
- ^{ac} Beginning at confluence of Clear Creek, the survey includes counts of Glacier and Wood Creeks up to their headwaters.

APPENDIX F

CAPE ROMANZOF HERRING DISTRICT FISHERY



Appendix F.1. Map of Cape Romanzof Herring District.

Appendix F.2. Commercial herring harvest and effort data by fishing period, Cape Romanzof District, 1997.

Period	Date	Time of Fishery	Number				Harvest (st)			
			Hours Fished	Fishermen	Vessels	Landings	Bait	Sac Roe	Total	Roe %
1	21-May	0100-0200	2.5	7	7	11	0.0	18.1	18.1	11.78
2	21-May	1430-1730	3.0	16	16	20	0.0	30.1	30.1	9.40
3	22-May	0200-0600	4.5	59	59	136	0.0	260.0	260.0	10.71
4	23-May	1530-1800	4.5	61	61	65	0.0	57.1	57.1	10.22
5	23-May	0400-0700	2.0	52	52	52	0.0	35.4	35.4	9.95
6	24-May	0500-0800	5.0	47	47	89	0.0	125.2	125.2	10.00
7	24-May	1500-1900	3.0	58	58	83	0.0	132.1	132.1	10.10
8	25-May	0430-0800	4.0	61	61	128	0.0	207.0	207.0	9.84
9	25-May	1500-2100	1.0	16	16	16	0.0	14.2	14.2	9.00
Total			29.5	65	65	600	0.0	879.2	879.2	10.20

Appendix F.3. List of Lower Yukon Area emergency orders pertaining to the Cape Romanzof Herring District, 1997.

E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
3-LY-H-01-97	May 21, 1997	Established a 2.5-hour commercial herring fishing period beginning 12:30 a.m. Wednesday, May 21, 1997 until 3:00 a.m. Wednesday, May 21, 1997. Also restricted gear to no more than 50 fathoms and one gillnet per vessel.	Test fishing crew began catching herring on May 15. The first spawn was documented on May 12. Test samples taken on May 20 indicated a majority of herring were ripe. Estimated roe recovery ranged from 10.8% to 13.6% and averaged 12.0% for 3 inch mesh gillnet samples. The pre-season harvest projection was 900 short tons. Due to the efficiency of the fishing fleet, small size of vessels and short fishing time, it was warranted to restrict gear to no more than 50 fathoms and one gillnet per vessel.
3-LY-H-02-97	May 21, 1997	Established a 3-hour commercial herring fishing period beginning 12:00 p.m. Wednesday, May 21 until 3:00 p.m. Wednesday, May 21. Also restricted gear to no more than 50 fathoms and one gillnet per vessel.	Fishing period based on herring samples obtained by commercial fishermen on May 20 and a harvest of 16.4 tons of sac roe herring with 11.9% roe recovery the first commercial fishing period on May 21.
3-LY-H-03-97	May 22, 1997	Established a 4.5-hour commercial herring fishing period beginning 12:00 a.m. Thursday, May 22 until 4:30 a.m. Thursday, May 22. Also restricted gear to no more than 50 fathoms and one gillnet per vessel.	Herring samples obtained by commercial fishermen indicated a majority of the fish were ripe with roe recovery ranging from 7.6% to 14.5% and averaged 12.3% for 3 inch mesh gillnet samples. Approximately 32 tons of herring with an average of 9.7% roe was harvested during the last commercial fishing period. The cumulative harvest was 48.4 tons of sac roe herring with 10.4% roe recovery.
3-LY-H-04-97	May 23, 1997	Established a 4.5-hour commercial herring fishing period beginning 12:00 a.m. Friday, May 23 until 4:30 a.m. Friday, May 23. Also restricted gear to no more than 50 fathoms and one gillnet per vessel.	Herring samples obtained by commercial fishermen indicated a majority of the fish were ripe with roe recovery ranging from 9.2% to 14.6% and averaged 13.0% for 3 inch mesh gillnet samples. Approximately 258.8 tons of herring with an average of 10.7% roe was harvested during the last commercial fishing period. The cumulative harvest was 307.2 tons of herring with 10.7 % roe recovery.

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E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
3-LY-H-05-97	May 23, 1997	Established a 2-hour commercial herring fishing period beginning 2:30 p.m. Friday, May 23 until 4:30 p.m. Friday, May 23. Also restricted gear to no more than 50 fathoms and one gillnet per vessel.	Herring samples obtained by commercial fishermen indicated a majority of the fish were ripe with roe recovery ranging from 10.4% to 11.0% and averaged 10.7% for 3 inch mesh gillnet samples. Approximately 50.7 tons of herring with an average of 10.2% roe was harvested during the last commercial fishing period. The cumulative harvest was 364.2 tons of herring with 10.6 % roe recovery.
3-LY-H-06-97	May 24, 1997	Established a 5-hour commercial herring fishing period beginning 12:30 a.m. Saturday, May 24 until 5:30 a.m. Saturday, May 24. Also restricted gear to no more than 50 fathoms and one gillnet per vessel.	Herring samples obtained by commercial fishermen indicated a majority of the fish were ripe with roe recovery ranging from 6.8% to 16.2% and averaged 10.1% for 3 inch mesh gillnet samples. Approximately 36.1 tons of herring with an average of 10.0% roe was harvested during the last commercial fishing period. The cumulative harvest was 400.4 tons of herring with 10.5 % roe recovery.
3-LY-H-07-97	May 24, 1997	Established a 3-hour commercial herring fishing period beginning 2:30 p.m. Saturday, May 24 until 5:30 p.m. Saturday, May 24. Also restricted gear to no more than 50 fathoms and one gillnet per vessel.	Fishing period based on harvest of approximately 108.8 tons of herring with an average of 10.1% roe during the last commercial fishing period. The cumulative harvest was 509.2 tons of herring with 10.4 % roe recovery.
3-LY-H-08-97	May 25, 1997	Established a 4-hour commercial herring fishing period beginning 3:00 a.m. Sunday, May 25 until 7:00 a.m. Sunday, May 25. Also restricted gear to no more than 50 fathoms and one gillnet per vessel.	Herring samples obtained by commercial fishermen indicated a majority of the fish were ripe with roe recovery ranging from 10.2% to 15.3% and averaged 11.9% for 3 inch mesh gillnet samples. Approximately 148.7 tons of herring with an average of 10.2% roe was harvested during the last commercial fishing period. The cumulative harvest was 657.9 tons of herring with 10.4 % roe recovery.

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E.O. NUMBER	EFFECTIVE DATE	ACTION TAKEN	COMMENTS
3-LY-H-09-97	May 25, 1997	Established a 1-hour commercial herring fishing period beginning 4:00 p.m. Sunday, May 25, 1997 until 5:00 p.m. Sunday, May 25, 1997. Also restricted gear to no more than 50 fathoms and one gillnet per vessel.	Fishing period based on harvest of approximately 205.7 tons of herring with an average of 9.8% roe during the last commercial fishing period. The cumulative harvest was 863.6 tons with the preseason harvest projection 900 short tons.

Appendix F.4. Commercial herring fishery data, Cape Romanzof District, 1980-1997.

	1980	1981	1982	1983 ^a	1984	1985	1986	1987 ^b	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	5 Yr. Avg 1992-96
Catch (st)	611	720	657	816	1,185	1,299	1,865	1,342	1,119	926	329	526	530	371	456	541	752	879	530
Hours Fished	326	120	180	144	90	60	42	8	11	13	3	5	6	13	7	15	34	29.5	15
Percent Roe Recovery	9.8	8	9.3	9	8.8	8.3	9.2	8.9	9.1	9.33	8.4	8.8	8	9.6	9.2	10.1	10.6	10.2	9.5
Average Weight of Fish (Grams) ^f			209	226	240	240	253	297	309	310	304	343	354	373	382	365	360	359	367
Estimated Value (\$ millions)	0.13	0.21	0.22	0.37	0.31	0.55	1.14	1	1.02	0.49	0.15	0.21	0.16	0.11	0.12	0.33	0.64	0.19	0.27
Number of Buyers	2	4	2	3	3	2	5	9	6	6	4	2	2	2	2	2	3	3	2
Number of Fishermen	69	111	75	63	66	73	97	157	113	115	95	80	73	41	55	49	63	65	56
Number of Boats	54	82	50	57	59	69	90	157	108	110	90	79	73	41	54	49	63	65	56
Number of Boats with Shakers ^c	12	11	10	2	1	2	12	22	-	-	-	-	-	-	-	-	-	-	-
% Effort by Local Fishermen ^d	70	81	85	91	99	91	84	53	63	87	76	96	97	95	95	98	95	95	96
% Harvest by Local Fishermen ^d	40	60	84	88	100	94	70	33	60	82	77	97	96	91	92	99	96	95	95
Biomass Estimate ^e	3,000	4,900	4,900	5,500	6,100	7,000	7,500	7,200	6,600	4,400	4,500	4,500	4,500	4,000	5,000	5,000	6,000	5,000	4,900
Exploitation Rate	20.4	14.7	13.4	14.8	19.4	18.6	24.9	18.6	17.0	21.0	7.3	11.7	11.8	9.3	9.1	10.8	12.5	17.6	10.7

^a Exclusive Use Regulation into effect.

^b Last year hydraulic shakers were allowed.

^c Numbers of boats using shakers were estimated.

^d Local fishermen described as residents of Chevak, Scammon Bay, and Hooper Bay.

^e Biomass estimate is a qualitative estimate of herring abundance, except for aerial survey biomass estimate in 1987.

^f Estimated by department from commercial harvest samples.

Appendix F.5. CFEC herring gear permits issued
by residence, Cape Romanzof
District, 1997. a

Residence	GillNet Permits (G34Y)
Hocper Bay	47
Scammon Bay	23
Chevak	16
Bethel	1
Kotlik	1
Kwethluk	1
Mountain Village	1
	90

^a Counts are for initial issues only and do not include transfers. Counts include interim use permits.

Appendix F.6. Pacific herring processors and associated data, Cape Romanzof District, 1997.

Commerical Operation (Processing location/ buying station)	Representative	Product	Processing/Tendering Vessels
Icicle Seafoods P.O. Box 79003 Seattle, WA 98119	Dave McIntyre	Sac Roe Herring (Frozen)	M/V Rebel M/V Chichagof
NorQuest Fisheries 4225 23rd Ave. W. Seattle, WA 98119	Marty Jacques	Sac Roe Herring (Frozen)	P/V Aleutian Falcon M/V Tracy-D M/V Afognak M/V Zingaro M/V Mr. Shypoke M/V Lady Jessie M/V Sound Pacer
Woodbine Alaska Fish Co. P.O. Box 757 Rio Vista, CA 94571-0757	Steve Goshtigin	Sac Roe Herring (Frozen)	M/V Erin Lynn M/V Providence

Appendix F.7. Test sample data collected by commercial fishermen, Cape Romanzof District, 1997.

Capture Date/Time	Mesh Size (inches)	Sample Size		% Female	Female % Gonad Maturity			% Roe	Capture Location	
		Wt (kg)	N		Green	Ripe	Spent			
15-May 1045	3	5.6	16	50	0	100	0	14.5	onshore 1/2 mile north of ADF&G camp (North Point)	
	2.5	11.0	33	67	0	100	0	13.9	onshore 1/2 mile north of ADF&G camp (North Point)	
	2	2.5	10	50	20	80	0	8.4	onshore 1/2 mile north of ADF&G camp (North Point)	
	Total	19.1	59	59		3	97	0	12.3	
20-May 2300	3	10.0	31	61	5	74	21	11.5	offshore ADF&G camp	
	3	10.0	28	54	0	100	0	13.6	onshore 1 mile north of ADF&G camp (Tim's camp)	
	3	10.0	27	52	14	86	0	10.8	onshore 1 mile north of ADF&G camp (Tim's camp)	
	3	10.0	27	48	0	100	0	10.8	onshore 1/2 mile south of ADF&G camp (South Point)	
	3	2.8	10	67	0	100	0	13.1	onshore 1/2 mile south of ADF&G camp (South Point)	
	Subtotal	42.8	123	53		5	89	6	12.0	
	2.5	10.0	33	39	0	92	8	7.8	onshore 1/2 mile south of ADF&G camp (South Point)	
	2.5	10.0	37	43	0	100	0	8.8	onshore 1/2 mile south of ADF&G camp (South Point)	
	2.5	8.5	29	59	0	100	0	12.3	onshore 1/2 mile south of ADF&G camp (South Point)	
	Subtotal	28.5	99	46		0	98	2	9.6	
Total	71.3	222	50		3	93	4	11.1		
21-May 2200	3	10.0	25	60	0	100	0	14.5	onshore 2 miles north of ADF&G camp	
	3	10.0	28	50	0	100	0	12.4	onshore 2 miles north of ADF&G camp	
	3	10.0	28	50	0	86	14	11.3	offshore ADF&G camp	
	3	5.0	13	54	0	100	0	12.2	offshore ADF&G camp	
	3	10.0	27	56	0	100	0	12.5	offshore ADF&G camp	
	3	10.0	27	33	0	89	11	7.6	offshore ADF&G camp	
	3	9.2	26	65	0	94	6	14.2	offshore ADF&G camp	
	3	5.0	14	57	0	100	0	13.4	onshore 1/2 mile south of ADF&G camp (South Point)	
	Total	69.2	188	53		0	96	4	12.3	

-Continued-

Capture Date/Time	Mesh Size (inches)	Sample Size		% Female	Female % Gonad Maturity			% Roe	Capture Location
		Wt.(kg)	N		Green	Ripe	Spent		
22-May 2300	3.5	10.0	27	63	6	94	0	14.1	onshore 1/2 mile north of ADF&G camp (North Point)
	3.5	10.0	27	67	6	94	0	14.6	1 mile north of ADF&G camp
	3.5	10.0	29	66	0	100	0	16.7	1/2 mile south of ADF&G camp (South Point)
	3.5	8.6	21	62	0	92	8	12.2	1/2 mile south of ADF&G camp (South Point)
	Subtotal	38.6	104	64	3	96	1	14.4	
	3	10.0	24	54	0	100	0	12.2	onshore 1 mile north of ADF&G camp (Tim's camp)
	3	10.0	23	65	0	100	0	14.0	onshore 1 mile north of ADF&G camp (Tim's camp)
	3	10.0	27	41	0	100	0	9.2	onshore 1 mile north of ADF&G camp (Tim's camp)
	3	10.0	27	56	0	87	13	11.2	onshore 1 mile north of ADF&G camp (Tim's camp)
	Subtotal	40.0	101	53	0	96	4	11.7	
Total	78.6	205	59	2	96	2	13.0		
23-May 1330	3	10.0	27	63	24	76	0	11.0	offshore ADF&G camp
	3	10.0	26	50	0	100	0	10.4	offshore ADF&G camp
	3	10.0	28	64	17	83	0	10.8	offshore ADF&G camp
	Total	30.0	81	59	15	85	0	10.7	
23-May 2300	3	10.0	28	39	0	100	0	6.8	onshore 1 1/2 miles north of ADF&G camp
	3	10.0	26	54	21	93	0	10.3	onshore 1 1/2 miles north of ADF&G camp
	3	10.0	27	44	0	93	0	9.9	onshore 1 1/2 miles north of ADF&G camp
	3	10.0	31	42	0	93	0	10.2	1 mile north of ADF&G camp (Tim's camp)
	3	10.0	29	48	0	93	0	10.4	1 mile north of ADF&G camp (Tim's camp)
	3	10.0	27	37	10	93	0	7.2	onshore 1/2 mile north of ADF&G camp (North Point)
	3	10.0	27	48	8	80	0	10.1	onshore 1/2 mile north of ADF&G camp (North Point)
	3	10.0	24	50	8	76	0	8.6	onshore 1/2 mile north of ADF&G camp (North Point)
	Subtotal	80.0	219	45	6	94	0	9.2	
	3.25	10.0	24	50	0	100	0	11.1	1 mile north of ADF&G camp (Tim's camp)
	3.25	10.0	23	70	0	100	0	16.2	1 mile north of ADF&G camp (Tim's camp)
Subtotal	20.0	47	60	0	100	0	13.7		
Total	100.0	266	48	5	95	0	10.1		

-Continued-

Appendix F.7. (page 3 of 3).

Capture Date/Time	Mesh Size (inches)	Sample Size		% Female	Female % Gonad Maturity			% Roe	Capture Location
		Wt.(kg)	N		Green	Ripe	Spent		
25-May 0001	3	10.0	27	48	8	100	0	10.5	1/2 mile south of ADF&G camp (South Point)
	3	10.0	28	54	7	93	0	10.8	1/2 mile south of ADF&G camp (South Point)
	3	10.0	27	56	13	80	0	10.2	1/2 mile south of ADF&G camp (South Point)
	3	10.0	26	50	8	76	0	10.9	1 mile north of ADF&G camp (Tim's camp)
	Subtotal	40.0	108	52	11	89	0	10.6	
	3.25	10.0	25	64	0	100	0	15.3	onshore 1/2 mile north of ADF&G camp (North Point)
	3.25	10.0	26	54	0	100	0	12.8	onshore 1/2 mile north of ADF&G camp (North Point)
	3.25	10.0	26	58	7	93	0	12.5	onshore 1/2 mile north of ADF&G camp (North Point)
	Subtotal	30.0	77	58	2	98	0	13.5	
	Total	70.0	185	55	6	94	0	11.9	

Appendix F.8. Subsistence herring harvest (st) and effort data by village, Cape Romanzof, 1975-1997.^a

Year	Scammon Bay		Chevak		Hooper Bay		Totals	
	Harvest(st)	Number of Fishermen						
1975	-	-	-	-	2.8	34	2.8	34
1976	0.7	4	0.7	9	3.0	28	4.4	41
1977	-	-	0.2	2	2.4	28	2.5	30
1978	0.7	1	-	-	3.9	29	4.5	30
1979	6.0	21	2.3	21	3.1	42	11.4	84
1980	3.1	18	3.6	20	3.7	23	10.4	61
1981	7.7	16	1.8	9	4.0	20	13.5	45
1982	3.9	15	1.9	10	4.7	18	10.5	43
1983	2.5	14	1.5	5	5.2	18	9.2	37
1984	4.3	16	2.6	7	4.2	24	11.1	47
1985	2.4	11	2.2	13	3.4	20	8.0	44
1986	2.8	17	0.7	4	2.5	19	6.0	40
1987	1.4	8	0.5	5	1.1	10	3.0	23
1988	2.0	7	1.5	6	3.6	19	7.2	32
1989	1.1	7	0.1	1	1.8	16	3.0	24
1990	1.7	5	0.6	3	5.6	24	7.9	32
1991	1.7	7	0.4	3	1.1	8	3.2	18
1992	1.2	10	0.4	4	2.5	16	4.1	30
1993	2.7	17	0.1	1	2.4	24	5.1	42
1994	1.4	9	2.0	16	3.1	23	6.5	48
1995	1.1	11	1.2	9	3.8	22	6.1	42
1996	1.0	10	0.5	4	1.7	15	3.1	29
1997	0.9	10	0.2	3	2.2	21	3.2	34

^a Subsistence survey results are believed to reflect harvest trends, however, reported catches reflect minimum figures since all fishermen cannot be contacted. Note: Data are updated annually as new information is obtained.

Appendix F.9. Subsistence harvest of roe-on-kelp by village, Cape Romanzof District, 1993-1997.

Year	Scammon Bay		Chevak		Hooper Bay		Totals	
	Number of Fishers	Pounds Roe-on-Kelp						
1993	9	300			10	213	19	513
1994	7	104	4	135	12	417	23	656
1995	12	298	1	25	13	383	26	706
1996	7	113	2	31	9	480	18	624
1997	6	130	1	25	13	400	20	555

Appendix F.10. Aerial survey biomass estimates of Pacific herring, Cape Romanzof District, 1997.

Date	Flight		Survey Rating ^b	Spawn		Biomass (st) Estimates by Index Area ^a			
	No.	Hrs.		No.	Length (miles)	KOK	SCB	HPB	Total
12-May	1	0.15	5	0	0.00	0.0	0.0		0.0
23-May	2	0.50	5	0	0.00	68.4	57.8		126.2
25-May	3	0.97	5	0	0.00	144.4	0.0		144.4
27-May	4	0.50	5	0	0.00	0.0	0.0		0.0
2-Jun	5	0.33	5	0	0.00	0.0	0.0		0.0
Total		2.45		0	0.00				

^a Index Areas: KOK-Kokechik Bay and offshore waters from Cape Romanzof to Hooper Bay
 SCB-Scammon Bay (Cape Romanzof to Kun River), HPB - Hooper Bay.

^b Survey Rating

1=Excellent (calm, no glare)

2=Good (light ripple, uneven lighting, easy to see schools)

3=Fair (light chop, some glare or shadows, relatively easy to see schools)

4=Poor (rough seas, strong glare, difficult to see schools)

5=Unsatisfactory

Appendix F.11. Percent age composition of herring sampled from commercial harvest, Cape Romanzof District, 1980-1997.^a

Year	Number Sampled ^b	Age in Years												Total ^c
		2	3	4	5	6	7	8	9	10	11	12	13+	
1980	374	0.0	2.4	20.1	5.1	38.0	9.9	23.0	0.5	0.3	0.5	0.3	0.0	100.1
1981	315	0.0	0.3	55.9	25.1	1.6	11.7	2.2	3.2	0.0	0.0	0.0	0.0	100.0
1982	604	0.0	0.2	13.7	66.4	13.2	1.2	3.3	1.0	1.0	0.0	0.0	0.0	100.0
1983	913	0.0	0.0	15.8	29.8	45.1	6.7	0.4	1.6	0.4	0.1	0.0	0.0	99.9
1984	543	0.0	0.0	0.6	17.3	35.2	41.3	2.9	1.7	0.6	0.4	0.2	0.0	100.2
1985	583	0.0	0.0	6.5	8.9	34.6	29.3	16.6	3.4	0.5	0.0	0.0	0.0	99.8
1986	570	0.0	0.0	0.0	3.3	3.5	30.2	29.6	29.3	3.2	0.5	0.4	0.0	100.0
1987	407	0.0	0.0	0.0	0.0	5.9	18.4	43.0	27.8	4.4	0.5	0.0	0.0	100.0
1988	414	0.0	0.0	0.0	2.2	7.5	18.4	16.2	24.6	19.1	10.9	1.2	0.0	100.1
1989	702	0.0	0.0	0.0	0.6	3.3	13.0	29.8	11.5	18.5	15.0	7.5	0.9	100.1
1990	287	0.0	0.0	0.0	0.7	9.1	10.8	21.6	23.7	9.8	13.2	7.7	3.5	100.1
1991	591	0.0	0.0	0.0	0.2	1.0	29.1	17.4	15.4	13.4	9.0	8.6	5.9	100.0
1992	401	0.0	0.0	0.0	0.0	1.0	1.0	27.7	17.5	17.5	16.7	7.5	11.1	100.0
1993	819	0.0	0.0	0.0	0.7	3.5	2.6	2.0	29.8	13.4	14.8	16.6	16.6	100.0
1994	452	0.0	0.0	0.0	0.0	4.4	6.6	4.0	6.6	29.0	16.6	14.4	18.4	100.0
1995	453	0.0	0.0	0.0	0.7	1.3	13.7	19.4	5.5	6.8	24.7	10.6	17.2	99.9
1996	588	0.0	0.0	0.0	0.0	2.9	1.0	27.4	20.6	8.3	8.3	15.6	15.9	100.0
1997	530	0.0	0.0	0.0	0.2	3.0	5.8	4.7	42.1	15.3	7.0	7.4	14.6	100.1

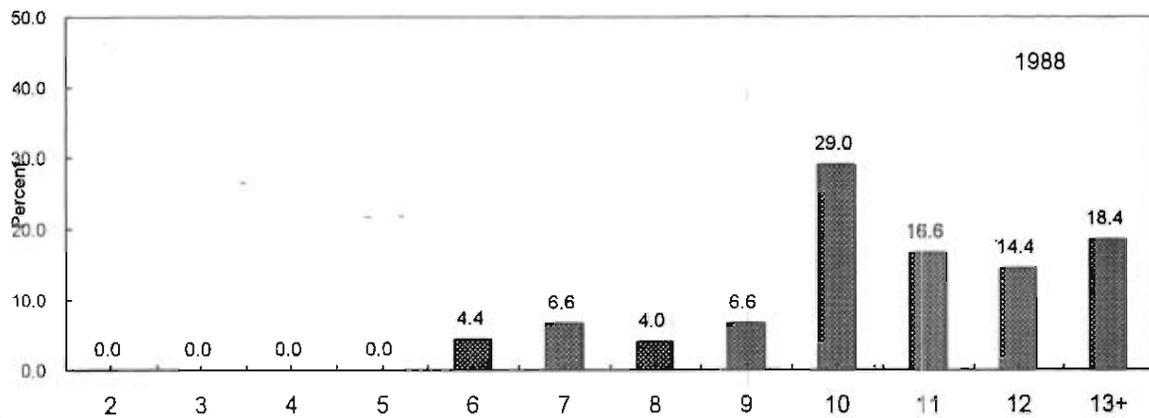
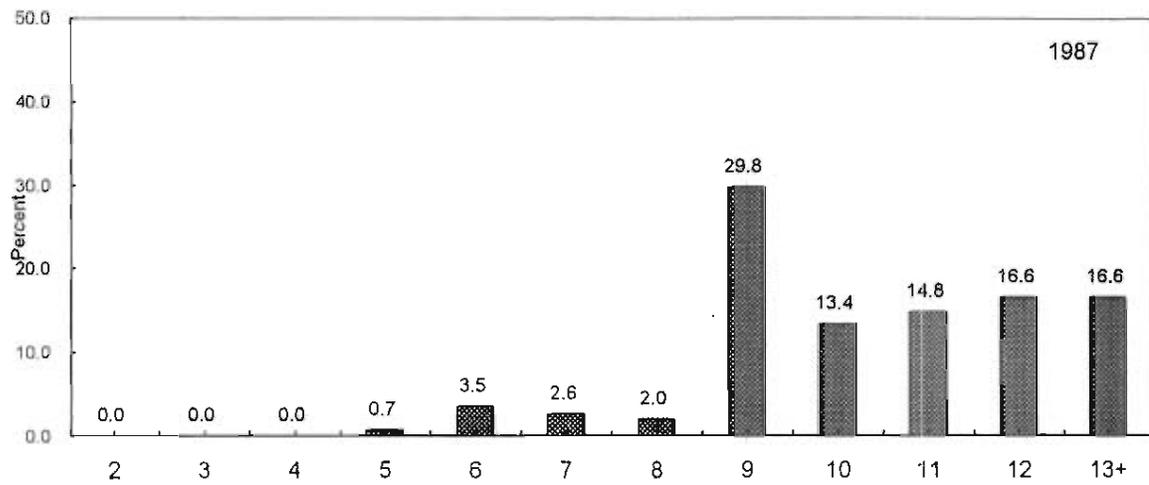
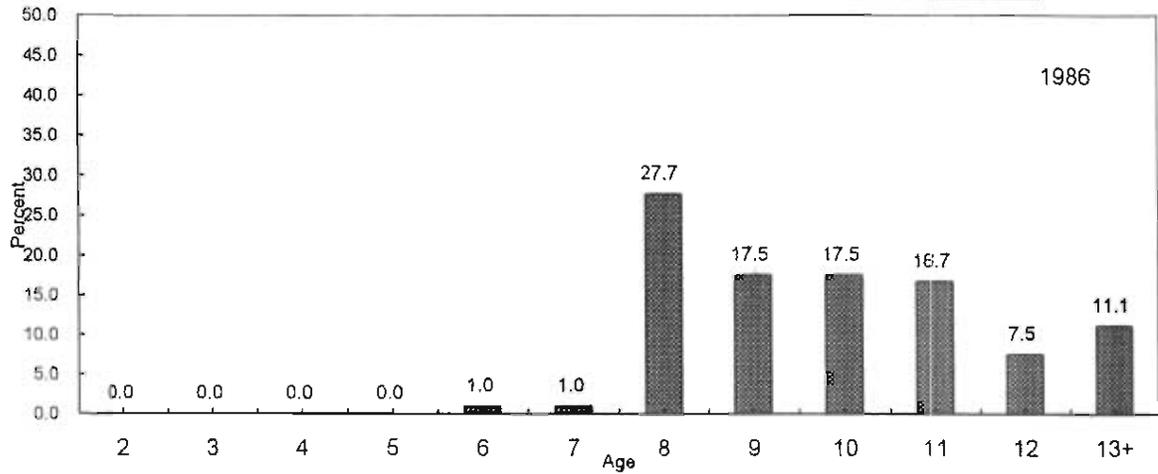
^a Data from annual Age, Size, and Sex Composition ADF&G Technical Data and RIR Reports.

^b Number sampled shown are number of fish which could be aged.

^c Totals may not equal 100% due to rounding errors.

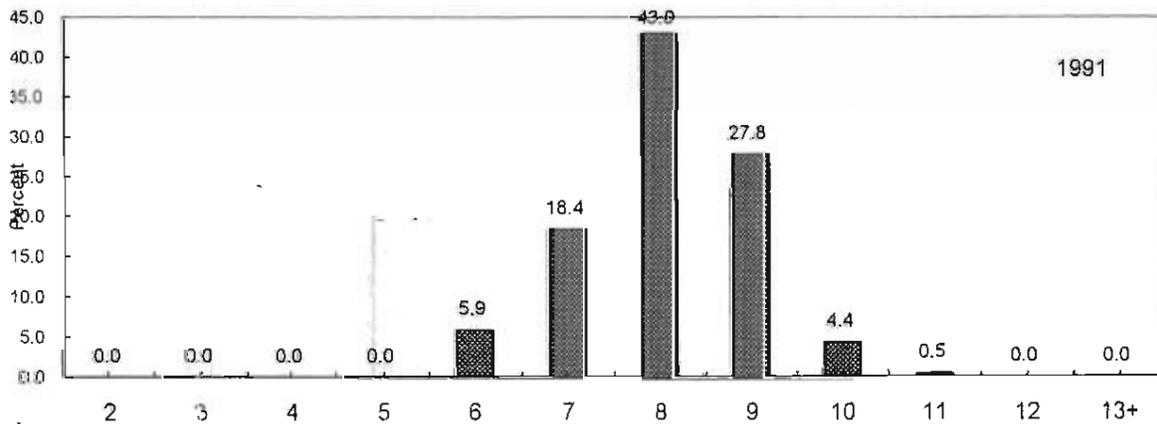
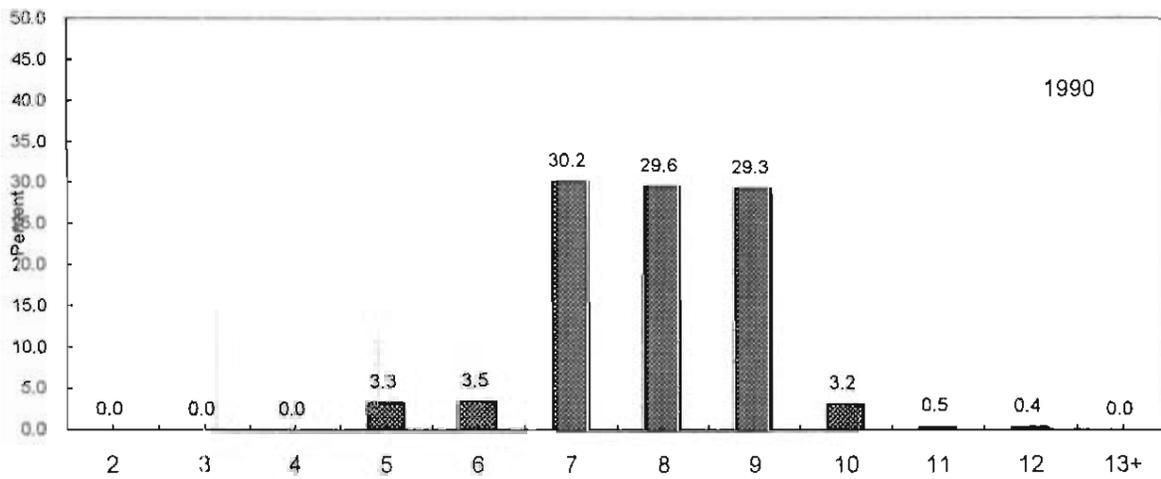
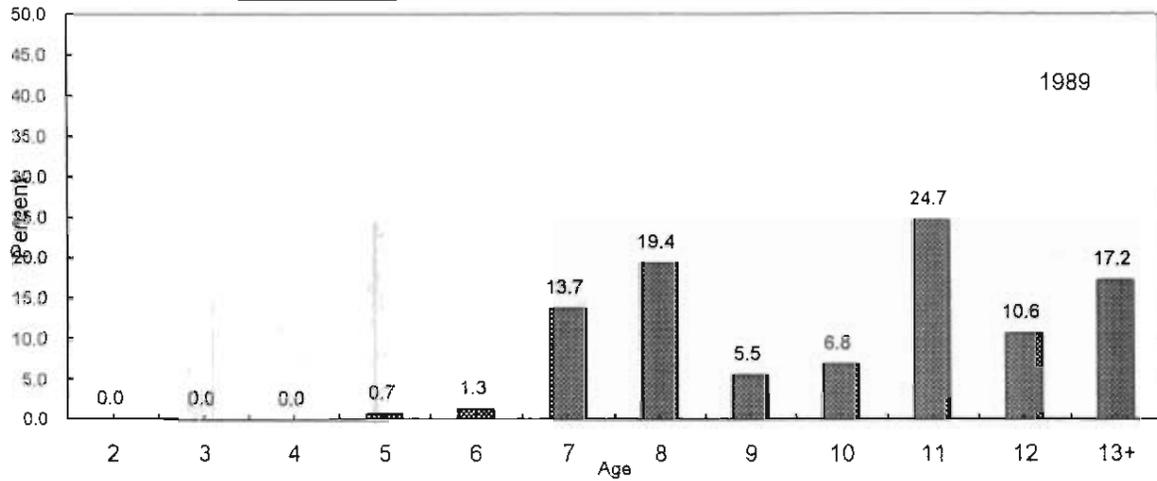
Appendix F.12. Age composition of Pacific herring sampled from the commercial harvest, Cape Romanzof District, 1986-1997.

Age Composition of Commercial Herring Harvest



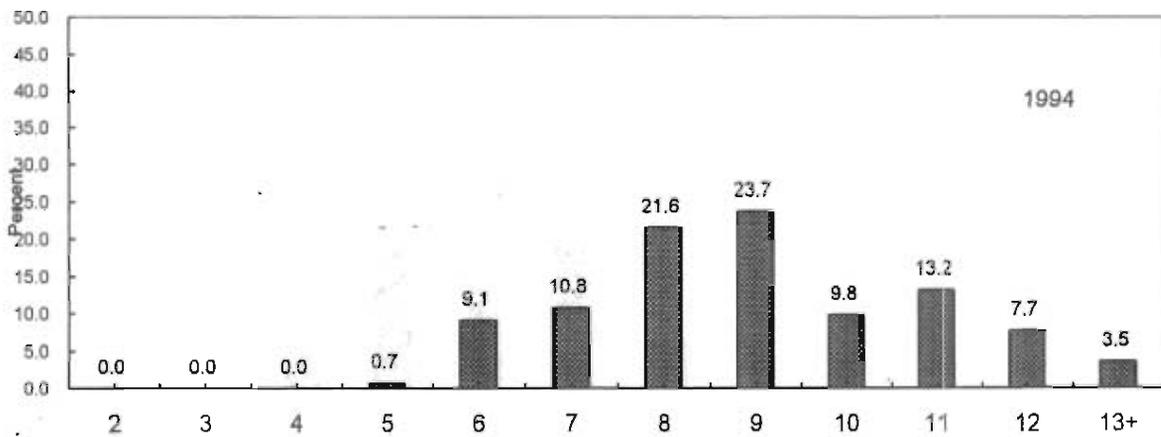
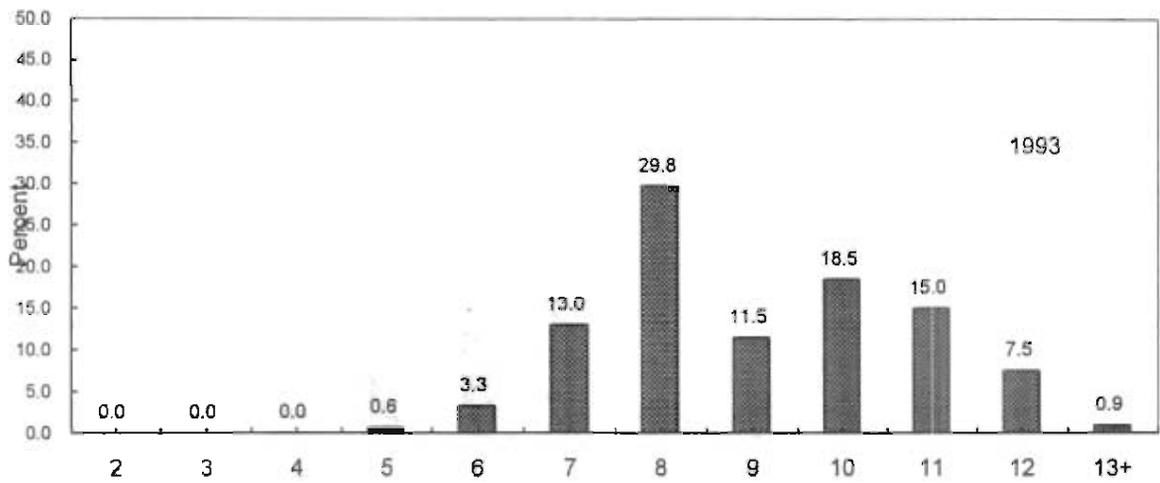
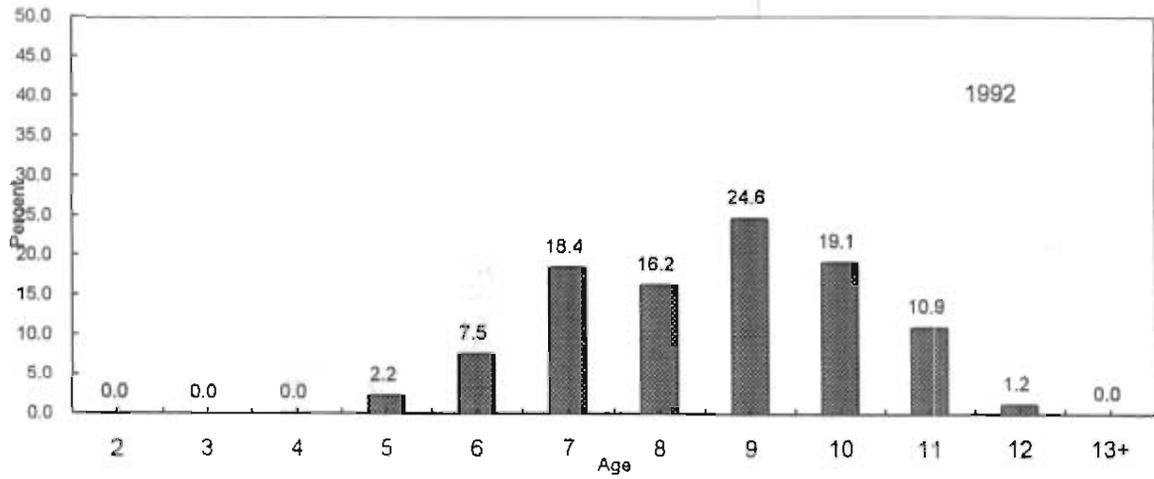
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Age Composition of Commercial Herring Harvest



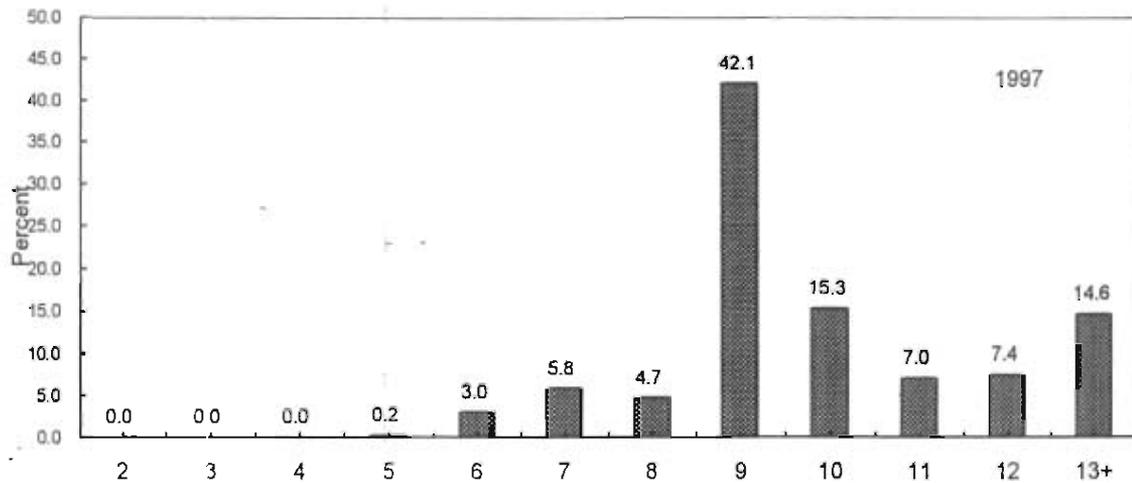
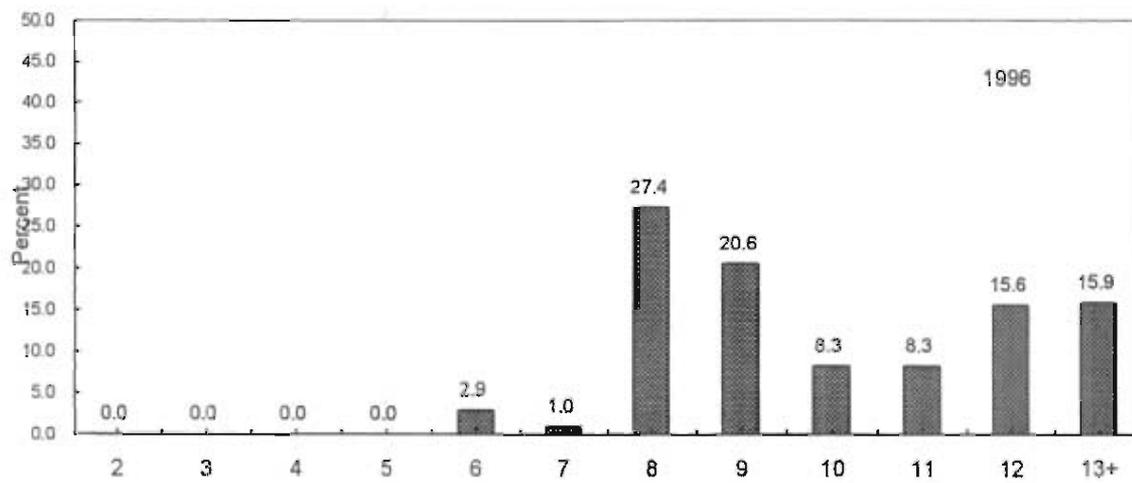
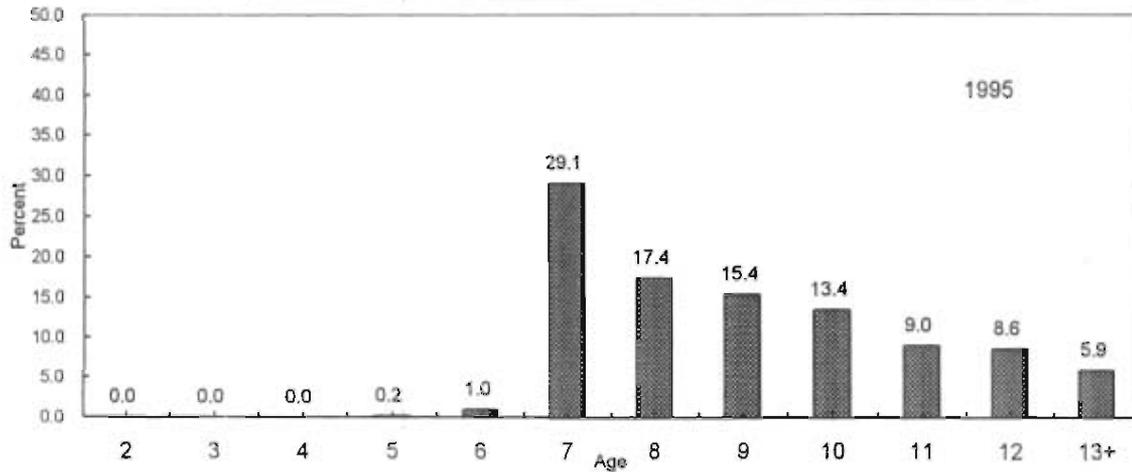
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Age Composition of Commercial Herring Harvest



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Age Composition of Commercial Herring Harvest



Appendix F.13. Percent age composition of herring sampled from variable mesh gillnet catches, Cape Romanzof District, 1980-1997. ^{a, b}

Year	Number Sampled ^c	Age in Years												Total ^d
		2	3	4	5	6	7	8	9	10	11	12	13+	
1980	447	0.4	19.2	17.0	2.0	27.3	6.9	25.3	0.4	0.4	0.4	0.4	0.0	99.7
1981	589	0.0	7.8	55.3	13.2	1.5	10.4	4.8	6.3	0.2	0.0	0.3	0.2	100.0
1982	611	0.7	7.5	20.3	39.3	9.5	1.8	7.4	7.2	5.6	0.7	0.0	0.2	100.2
1983	829	0.0	0.6	21.2	25.2	39.8	5.3	1.4	3.9	1.9	0.5	0.1	0.0	99.9
1984	735	0.0	1.5	5.7	26.9	19.3	36.1	4.8	3.5	1.6	0.3	0.3	0.0	100.0
1985	531	0.0	1.7	21.8	6.4	22.8	16.9	26.2	2.8	0.8	0.6	0.0	0.0	100.0
1986	511	0.0	0.0	4.9	18.2	7.0	25.4	20.7	20.4	2.5	0.6	0.2	0.0	99.9
1987	690	0.0	0.0	0.7	6.7	11.7	18.0	31.7	23.2	7.7	0.3	0.0	0.0	100.0
1988	608	0.0	0.3	3.9	7.9	13.8	19.7	11.7	19.2	14.8	7.4	0.7	0.5	99.9
1989	378	0.0	0.5	1.9	17.5	9.0	13.2	17.7	7.4	11.6	13.2	6.9	1.0	99.9
1990	1,011	0.0	1.0	4.7	3.6	24.6	11.2	12.7	17.5	7.7	9.4	5.3	2.3	100.0
1991	1,152	0.0	0.1	3.0	3.9	3.0	29.3	13.9	15.0	13.4	7.3	6.3	4.8	100.0
1992	994	0.0	0.0	6.4	4.6	4.7	2.0	19.4	12.7	20.6	12.9	7.7	8.8	99.8
1993	1,263	0.0	0.7	2.3	16.9	10.5	5.8	3.9	20.0	10.1	13.6	8.4	7.9	100.1
1994	1,246	0.0	0.0	3.1	2.9	23.8	13.6	5.1	4.7	17.1	9.1	9.3	11.2	99.9
1995	1,398	0.0	0.1	5.4	8.4	2.1	24.4	14.7	5.0	5.3	18.5	7.1	9.0	100.0
1996	1,083	0.0	1.1	1.6	11.6	14.9	3.5	30.9	15.0	5.4	4.0	8.0	4.1	100.1
1997	1,312	0.0	0.6	21.6	1.7	11.5	13.0	2.7	28.4	10.0	3.0	2.4	5.4	100.3

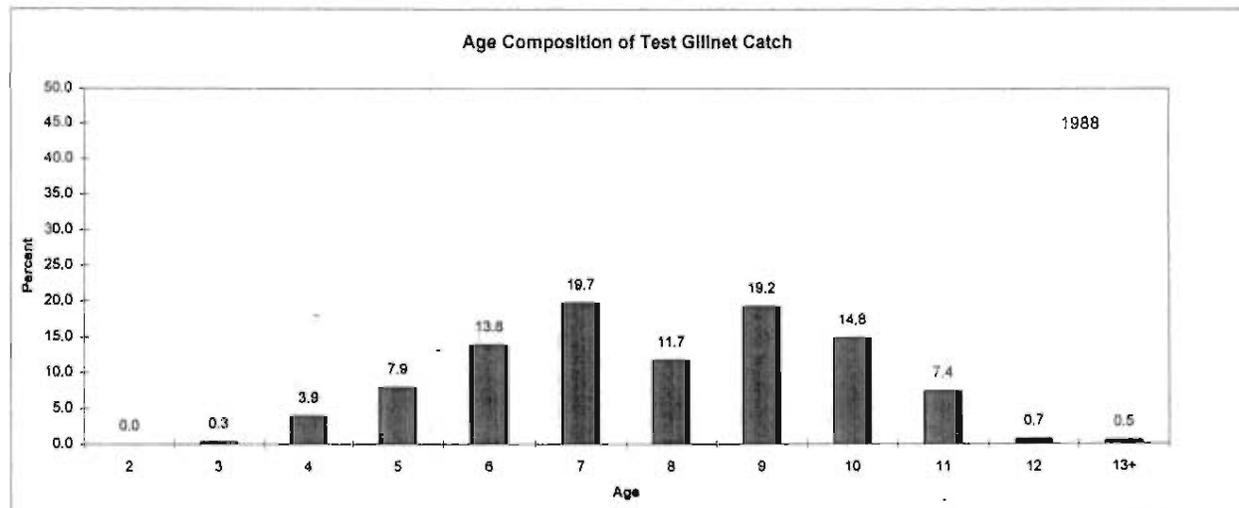
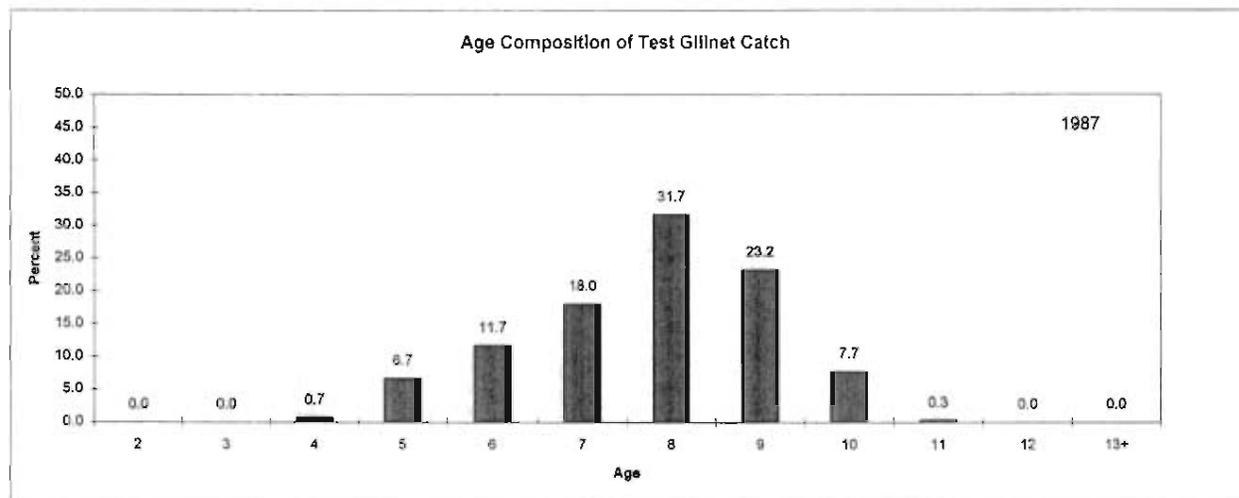
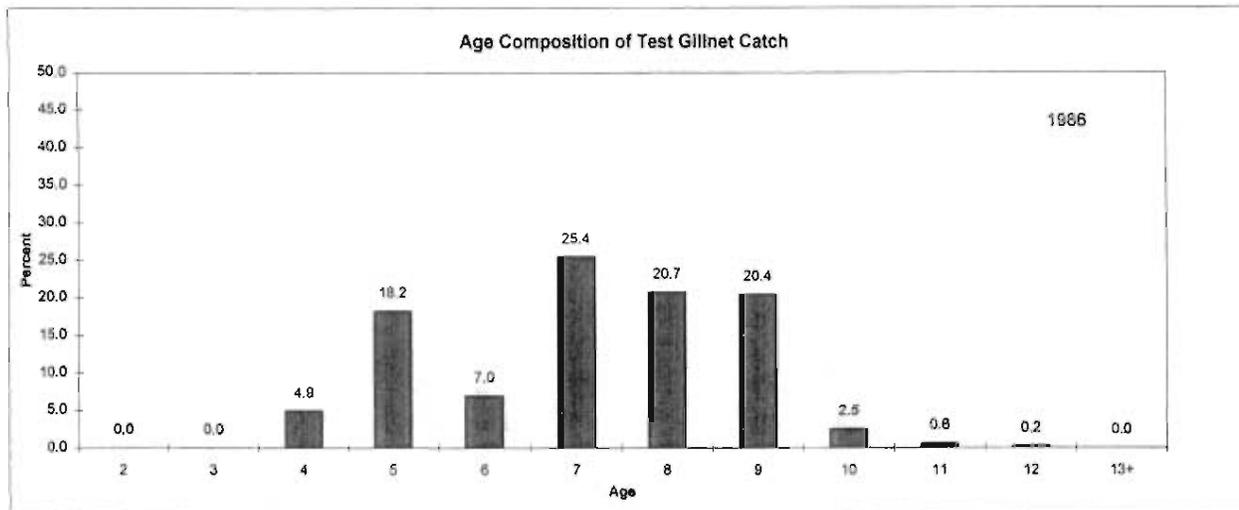
^a Data from annual Age, Size, and Sex Composition ADF&G Technical Data and RIR Reports.

^b Variable mesh test gill net samples include Kokechik Bay and Scammon Bay fish sampled combined.

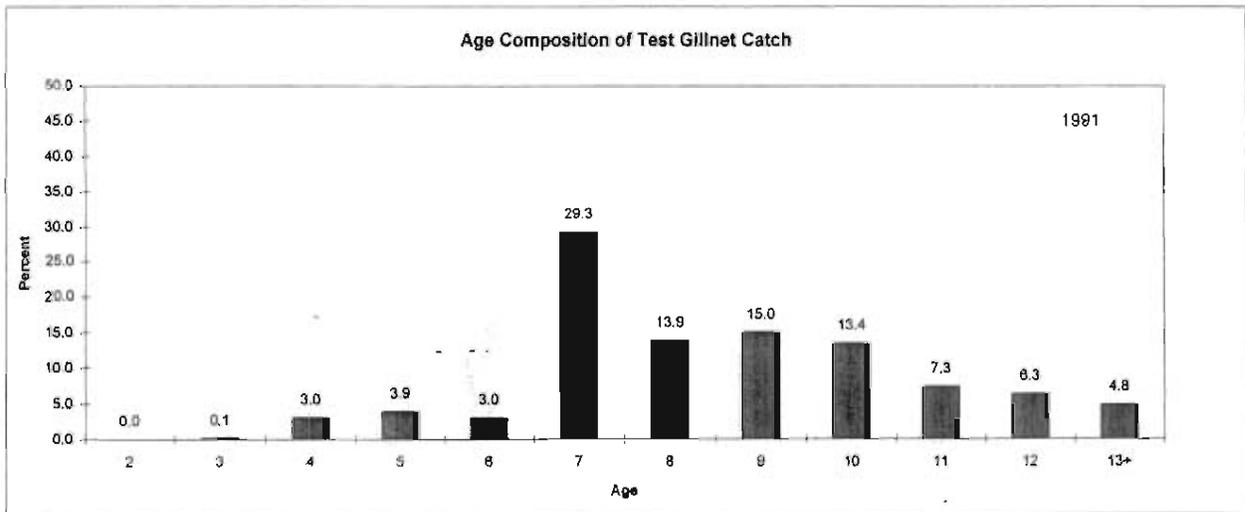
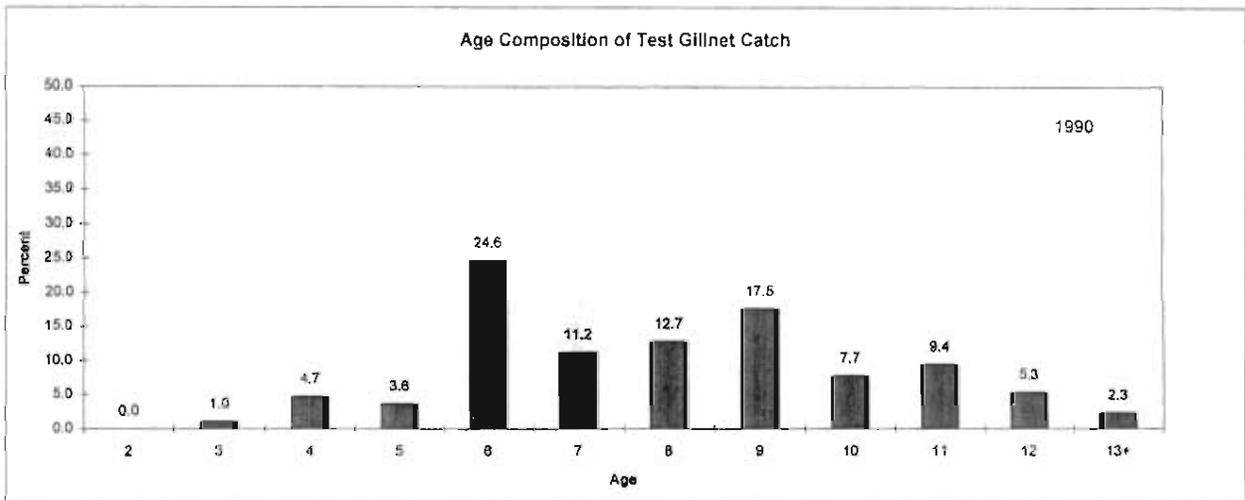
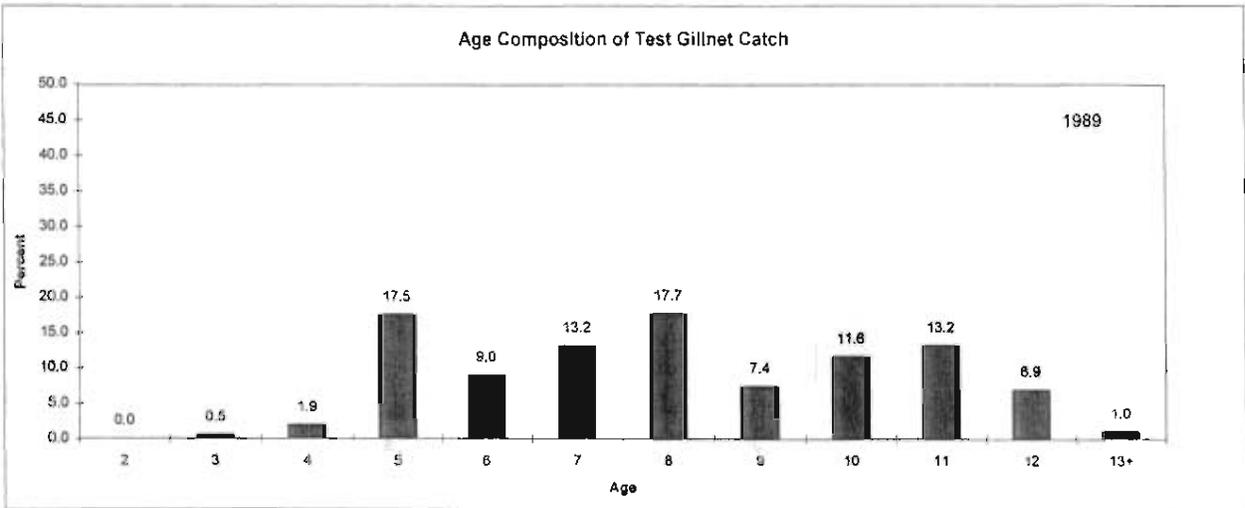
^c Number sampled shown are number of fish which could be aged.

^d Totals may not equal 100% due to rounding errors.

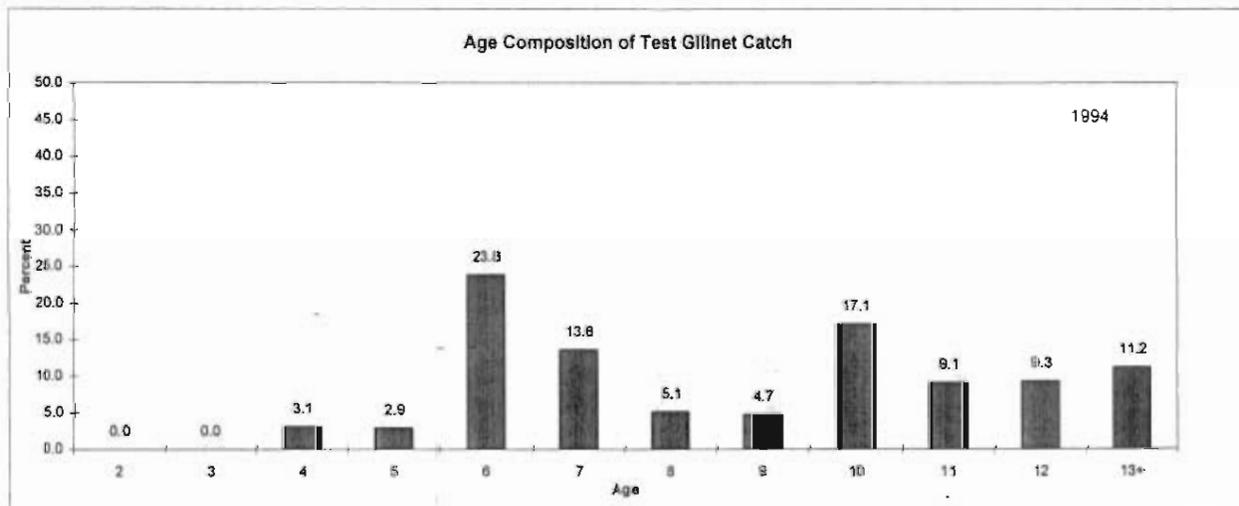
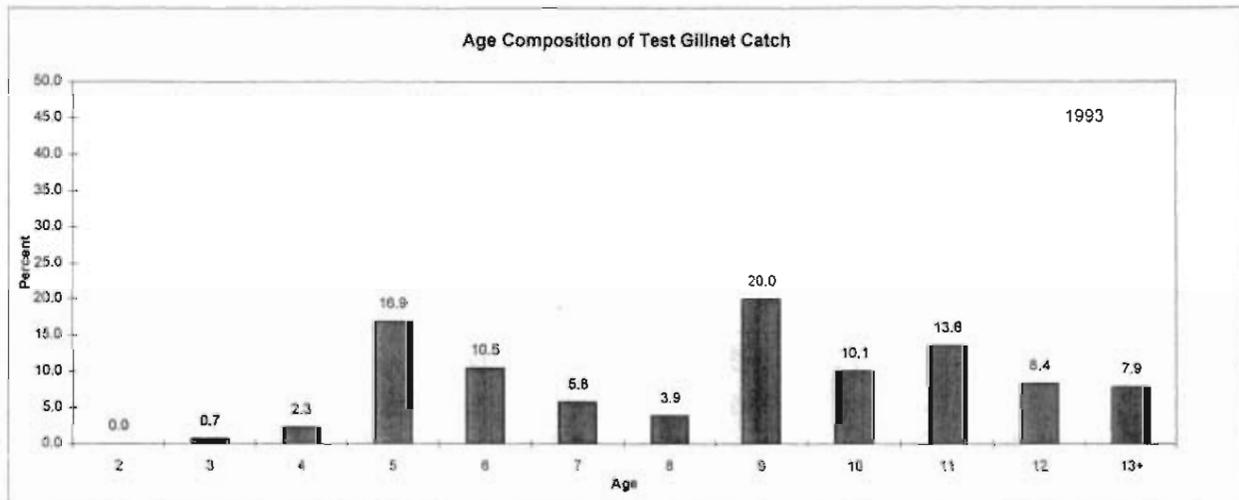
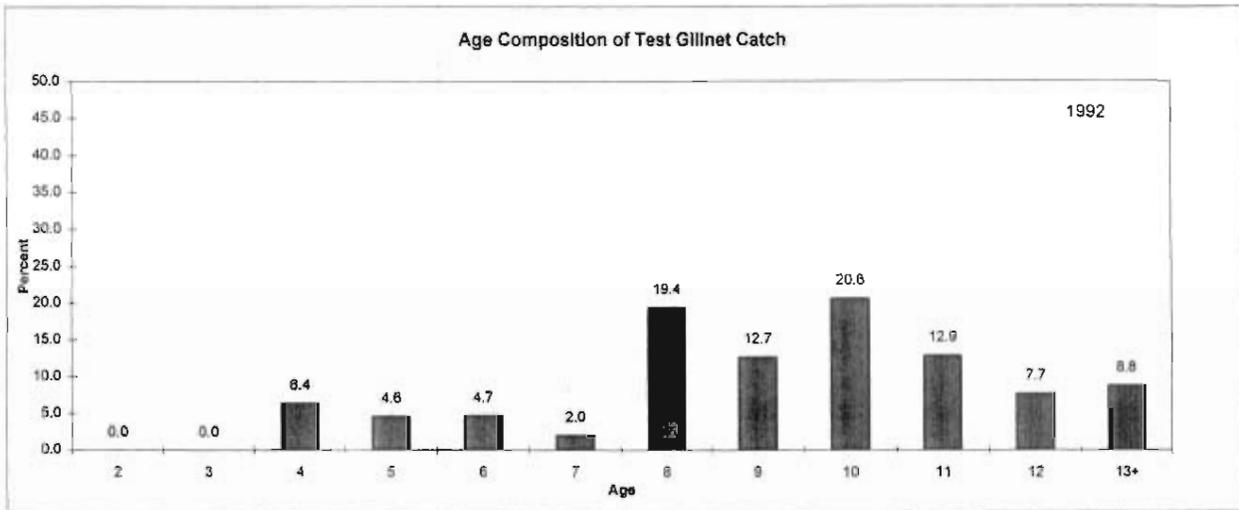
Appendix F.14. Age composition of Pacific herring sampled from the commercial harvest, Cape Romanzof District, 1986-1997.



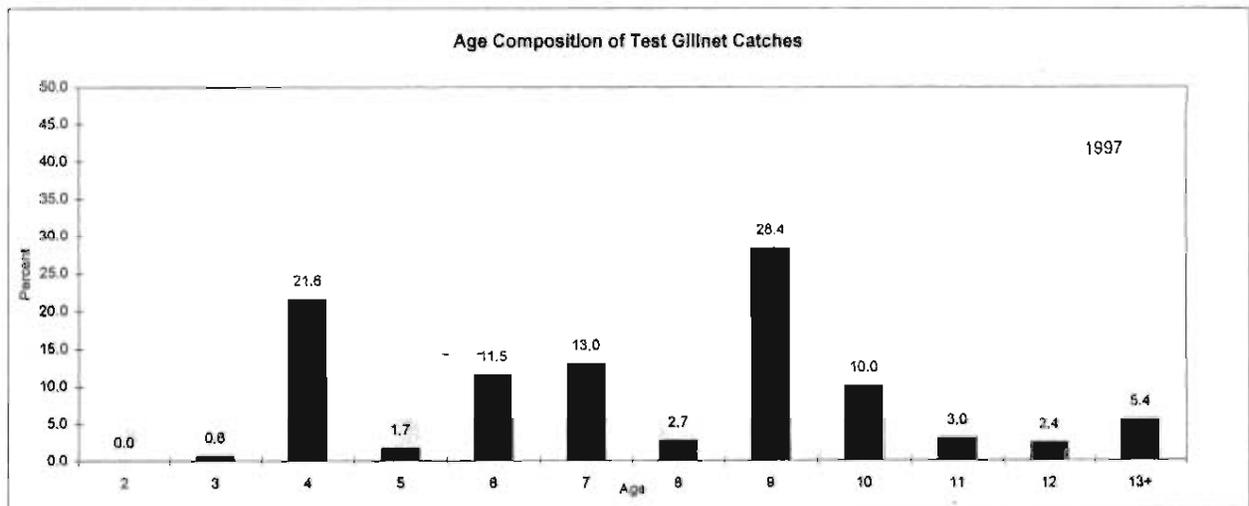
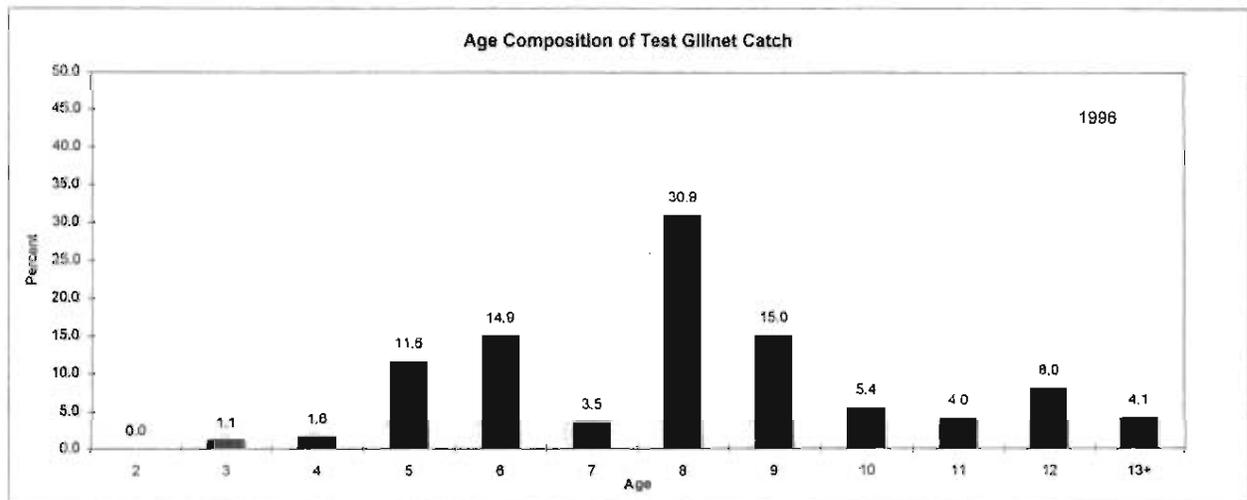
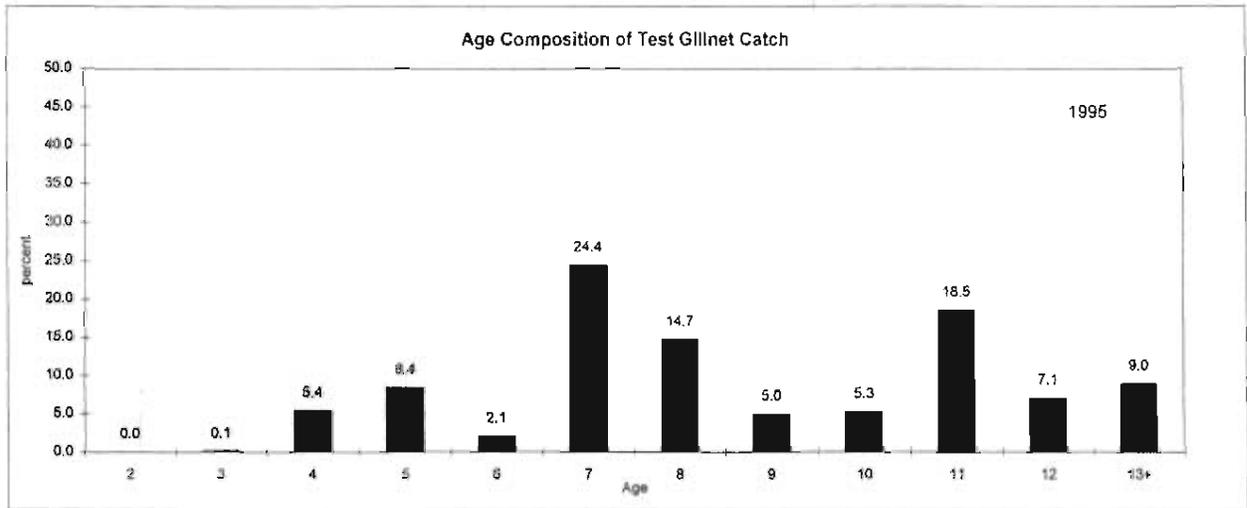
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Appendix F.15. Historical herring spawn deposition weight data from artificial substrate study, Cape Romanzof District, 1992-1997.

Herring Spawn Weight in Grams			
Year	Platforms 1-25	Platforms 26-40	Total
1992	1,782	688	2,470
1993	1,718	1,736	3,454
1994	2,799	1,257	4,056
1995	3,111	1,874	4,985
1996	3,933	1,666	5,599
1997	-	-	-
Average	2,669	1,444	4,113

APPENDIX G

YUKON AREA FRESHWATER FISHERIES

Appendix G.1. Estimated or reported subsistence harvest of selected miscellaneous fish species by surveyed villages, Yukon Area, 1997. a

Community	Catch Strata Combined		Estimated Subsistence Harvest with Corresponding Confidence Intervals (Expanded to Estimate Total Yukon Area Harvests)										Reported Numbers of Miscellaneous Fish Species, (Not Expanded)							
	Total Households	Households Contacted a	Pink Salmon		Large Whitefish b		Small Whitefish		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	285	286	578	248	7,707	3,308	928	783	7	6	38	0	3,031	0	0	0	0	34,295
Scammon Bay	76	17	0	0	246	411	1,826	1,437	1,353	1,005	76	123	45	0	1,180	0	0	0	0	42
Sheldon's Point	37	27	1	1	296	167	2,111	670	98	36	574	232	236	0	405	0	0	0	0	17,760
Alakanuk	125	33	33	34	1,084	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
Kotlik	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	414	157	69	34	3,059	1,711	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	3,856	2,432	2,200	1,789	3,788	1,508	1,098	484	1,863	642	200	107	0	0	0	34,780
Pitkas Point	31	27	101	24	1,368	294	189	67	299	84	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	6	0	12,244
Pilot Station	94	34	0	0	1,700	755	62	73	750	404	659	284	332	50	0	0	0	0	0	15,050
Marshall	62	20	0	0	1,103	596	0	0	704	408	135	83	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	3,092	690	3,818	1,271	200	137	0	6	0	87,014
Russian Mission	53	19	0	0	127	42	97	157	1,277	947	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	6,617	1,401	3,046	1,536	3,303	986	1,782	383	237	1,250	0	0	3	1	0	19
Anvik	38	37	0	0	318	1	16	6	42	2	48	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
Kaltag	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	607	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	2,850	548	79	70	266	156	137	0	0	0	45	0	140	0
Ruby	62	15	0	0	547	372	0	0	20	0	15	3	6	0	0	0	12	0	0	0
Huslia	70	17	0	0	807	747	149	0	662	509	51	0	11	0	0	90	13	0	0	0
Hughes	24	20	0	0	2,551	1,622	1,223	603	65	7	125	25	4	0	0	133	10	0	0	0
Allakaket	47	18	0	0	890	559	253	63	385	196	639	203	504	0	0	171	321	0	0	0
Alatna	10	7	0	0	59	39	18	13	2	2	166	19	0	0	0	62	0	0	0	0
Bettles	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
Birch Creek	14	11	0	0	329	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	98	46	95	0	0	64	202	2	0	0
Venable	54	16	0	0	16	19	0	0	19	19	0	0	0	0	0	55	0	0	0	0
Chaikytalik	29	26	0	0	550	0	0	0	312	5	20	0	41	0	0	20	0	0	0	0
District 6	487	213	0	0	6,397	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	5,658	29,540	16,410	19,538	3,765	6,381	2,533	6,088	1,600	667	131	275,469	

a Households contacted indicates the number of households with complete harvest information used in estimating the harvests.

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

Appendix G.2. Reported subsistence and personal use freshwater finfish harvest taken under authority of a permit, by permit area, Yukon Area, 1997. a

Permit Fishing Area	Type	Permit		Percent Returned	Number of Permits Returned that Fished	Reported Harvest						
		Issued	Returned			Whitefish	Sheefish	Burbot	Pike	Suckers	Grayling	
Subsistence Use												
Yukon River near Haul Road Bridge	SY	44	42	95%	28	92	6	4	11	0	0	
Yukon River near Circle and Eagle	SE	98	93	95%	60	1,292	49	28	31	43	55	
Tanana River Fishing Subdistrict 6A	SA	28	27	96%	16	351	30	31	106	175	1	
Tanana River Fishing Subdistrict 6B	SB	103	95	92%	55	1,507	40	38	391	89	0	
Tanana River Upstream of Subdistrict 6C	SU	61	58	95%	26	1,358	0	46	77	68	94	
Kantishna River Fishing Subdistrict 6A	SK	5	5	100%	5	39	0	6	16	26	1	
Tolovana River Pike	ST	88	75	85%	40	508	71	57	1,344	255	3	
<i>Subsistence Permit Subtotals</i>		427	395	93%	230	5,147	196	210	1,976	656	154	
Personal Use												
Tanana River Fishing Subdistrict 6C	PC	112	109	97%	61	13	2	5	2	1	0	
Tanana River Whitefish	PW	5	5	100%	1	3	0	0	0	201	0	
<i>Personal Use Permit Subtotals</i>		117	114	97%	62	16	2	5	2	202	0	
Permit Totals		544 b	509	94%	292 c	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.

Appendix G.3. Commercial freshwater fishery catches, Lower Yukon Area, 1978-1997.

Year	Sheefish		Whitefish		Burbot		Pike	Lamprey	Blackfish
	Number	Pounds	Number	Pounds	Number	Pounds	Pounds	Pounds	Pounds
1978	0	0	19	87	0	0	0	0	0
1979	5	39	23	55	0	0	0	0	0
1980	283	2,265	78	250	0	0	0	0	293
1981	299	2,812	779	2,875	0	0	9	0	0
1982	754	6,161	1,633	6,214	102	482	0	0	0
1983	395	2,692	163	648	0	0	0	0	0
1984	94	762	794	2,362	0	0	0	0	0
1985	358	3,081	1,514	4,586	0	0	0	0	0
1986	0	0	1,533	5,845	0	0	0	80	0
1987	0	0	2,144	7,564	0	0	0	0	0
1988	0	0	696	2,171	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0
1990	0	0	180	260	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0
1992	0	0	95	640	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	157	471	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0

Appendix G.4. Colville River commercial whitefish catches, Northern Area,
1964-1997. a

Year	Broad Whitefish	Humpback Whitefish	Arctic Cisco ("kaktok")	Least Cisco ("herring")
1964	2,951 b		16,000	9,000
1965	3,000 b		50,000	
1966	2,500 b		40,000	
1967 g				
1968	3,130		42,055	18,180
1969 g				
1970	2,080 b		19,602	25,930
1971	3,815	132	38,016	22,713
1972	3,850	1,497	37,333	13,283
1973	2,161		71,569	25,188
1974	3,117	2,316	35,601	13,813
1975	2,201	1,946	28,291	20,778
1976	2,172	1,815	31,659	34,620
1977	443	1,431	31,796	14,961
1978 c	20 d	1,102	17,292	21,589
1979	d	1,831	8,684	24,984
1980	d	4,231	14,657	31,459
1981	1,035	469	38,206	16,584
1982	1,662	201	15,067 e	25,746 e
1983	d	408 d	18,162	35,322
1984	789	179	27,686	13,076
1985	401	191	23,679	17,595
1986 f	0	18	29,895	9,444
1987 f	5	1,989	24,769	10,922
1988	429	6,733	10,287	23,910
1989	71	6,575	17,877	23,303
1990	0	5,694	19,374	21,003
1991	0	1,240	13,805	5,697
1992	126	5,209	20,939	6,962
1993	20	5,339	31,310	6,037
1994	0	6,056	8,958	10,176
1995	0 h	6,000 h	14,352 l	0
1996	0 h	4,127 h	9,076 l	0
1997	0 h	4,760 h	9,403 l	0

a Numbers reflect fish harvested with the intent of commercial sale.

b Includes small numbers of humpback whitefish.

c Also reported taken were 1 chinook, 2 sockeye, 9 chum, and 118 pink salmon.

d No fishing effort during June or July.

e No fishing effort during November or December.

f No fishing effort during July or December.

g No data available.

h Humpback and broad whitefish recorded only as whitefish on fish tickets.

l Includes undetermined numbers of least cisco.

Appendix G.5. Commercial freshwater fishery catches, Upper Yukon Area, 1971-1997. a

Year	Healy Lake		Lake Minichumina		Tanana River				Yukon River			
	Whitefish		Whitefish		Burbot		Whitefish		Burbot		Whitefish	
	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1971			3,277	9,831								
1972	2,605	3,950	718	2,154								
1973	2,187	3,915	1,697	5,037								
1974	1,885	3,390	854	2,562								
1975	1,357	2,375										
1976	1,440	2,625										
1977	-	-										
1978	-	-										
1979	1,336	2,306										
1980	data unavailable											
1981	no effort											
1982	no effort											
1983	no effort											
1984	no effort				-	76						
1985	no effort											
1986	no effort						72	-				
1987	no effort											
1988	no effort						837	-				
1989	no effort								1	-	-	2,070
1990	no effort		no effort		1	-	809	-	0	0	985	2,078
1991	no effort		no effort									
1992	no effort		0	0	0	0	0	0	0	0	0	0
1993	no effort											
1994	no effort		no effort		0	0	921	1,400	0	0	0	0
1995	no effort		no effort		0	0	0	0	0	0	0	0
1996	no effort		no effort		0	0	0	0	0	0	0	0
1997	no effort		no effort		0	0	908	1,160	0	0	0	0

a Numbers reflect fish harvested with the intent of commercial sale.

Appendix G.6. Freshwater finfish sales during the commercial salmon fishing season, by district and period, Lower Yukon Area, 1997.

District 1				
Period	Date	Number of Permits	Sheefish	Pounds
-	-	0	0	0
District 2				
Period	Date	Number of Permits	Sheefish	Pounds
-	-	0	0	0
District 3				
Period	Date	Number of Permits	Sheefish	Pounds
-	-	0	0	0
Lower Yukon Area				
Total		0	0	0

Appendix G.7. Freshwater finfish sales during the commercial salmon fishing season, by district and period, Upper Yukon Area, 1997.

District 4				
Period	Date	Number of Permits	Whitefish	Pounds
0	0	0	0	0
District 5				
Period	Date	Number of Permits	Whitefish	Pounds
Early Season				
1	7/4-7/6	2	104	126
2	7/8-7/9	1	166	175
Subtotal		2	270	301
District 6				
Period	Date	Number of Permits	Whitefish	Pounds
Early Season				
6	8/4-8/6	1	4	8
Subtotal		1	4	8
Upper Yukon Area				
Total		3	274	309

Appendix G.8. Freshwater finfish sales during the commercial salmon fishing season by district, Upper Yukon Area, 1988-1997.

Year	District 4		District 5				District 6	
	Whitefish		Whitefish		Sheefish		Whitefish	
	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
1988	170	977	1,432	1,497	94	689	205	208
1989								
1990								
1991								
1992	2,635	2,455	580	1,379 ^a	0	0	199	499
1993	0	0	59	48	0	0	140	300
1994	1	4	108	215	0	0	209	433
1995	0	0	95	95	0	0	183	387
1996	0	0	22	66	0	0	103	292
1997	0	0	270	301	0	0	4	8

^a Sales of 950 pounds of whitefish did not include number of fish.

Attachment 1. **Regulation** changes adopted by the Alaska Board of Fisheries in March, 1997.

There was one **Yukon** Area Agenda Change Request addressed by the Alaska Board of Fisheries during the March 1997 **meeting** in Anchorage. *The following summary is for informational purposes only, and is not intended to detail, reflect, or fully interpret the reasons for the board's actions.*

Agenda Change Request 16. An **agenda change** request to allow subsistence salmon fishing seven days per week in Subdistrict 4-A was reviewed by the Alaska Board of Fisheries in March 1997. The intent of the agenda change request was to increase subsistence fishing time for chinook salmon with drift gillnets. The board adopted a subsistence fishing regulation for Subdistrict 4-A allowing chinook salmon to be taken with drift gillnet gear only for two 48-hour periods per week during the commercial salmon fishing season up through July 14. The open subsistence fishing periods will be from 6:00 p.m. Sunday until 6:00 p.m. Tuesday and from 6:00 p.m. Wednesday until 6:00 p.m. Friday. In addition, an earlier opening date of June 10 was established for subsistence fishing for chinook salmon with drift gillnets in Subdistrict 4-A. These regulation changes will increase the subsistence chinook salmon fishing opportunities and will be beneficial to subsistence fishermen because fishing time with drift gillnets will not be dependent on the timing, frequency, and duration of commercial fishing periods. Subsistence regulations pertaining to setnet, fish wheel, and beach seine gear were not changed.

5 AAC 01.210. (g) In Districts 1, 2, 3, and Subdistrict 4-A, salmon may not be taken for subsistence

(1) during the 24 hours immediately before the opening of the commercial salmon fishing season; and

(2) 18 hours immediately before, during, and 12 hours after each weekly fishing period of the commercial salmon fishing season.

(h) Notwithstanding (g) of this section, in Subdistrict 4-A, king salmon may be taken during the commercial fishing season, with drift gillnet gear only, from 6:00 p.m. Sunday until 6:00 p.m. Tuesday and from 6:00 p.m. Wednesday until 6:00 p.m. Friday.

5 AAC 01.220. (e) In Districts 4, 5, and 6, salmon may not be taken for subsistence purposes by drift gillnets, except as follows:

(1) in Subdistrict 4-A upstream from the mouth of Stink Creek, king salmon may be taken by drift gillnets from June 24 10 through July 14, and chum salmon may be taken by drift gillnets after August 2;

(2) in Subdistrict 4-A downstream from the mouth of Stink Creek, king salmon may be taken by drift gillnets from June 15 10 through July 14;