Yukon River Inseason Salmon Harvest Interviews, 2003

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Abstract

Standardized collection and reporting of subsistence salmon harvest information during the fishing season is an important management tool for Yukon River fishery managers. The 2003 salmon fishing season marked the second season of an organized effort to collect qualitative inseason subsistence harvest information. Information gauging progress towards subsistence salmon harvest goals, subsistence fishing characteristics, and quality of subsistence catch were collected. Progress towards meeting subsistence harvest goals was evaluated by using local village interviewers contacting a subsample of fishermen each week. Residents of Emmonak, Holy Cross, Nulato, Huslia, Galena, and Circle were interviewed weekly between June 1 and August 31, 2003. Sixty-three households were interviewed regarding Chinook salmon harvests and seventeen households were interviewed regarding chum salmon harvest progression. Information was reported on fourteen weekly public teleconferences and used in nine Federal inseason management summaries. In general, inseason interview data indicated that most interviewed households met or nearly met their subsistence Chinook and chum salmon goals for the 2003 season and that the 2003 fishing season appeared better as compared to the 2002 fishing season.

Introduction

Chinook *Oncorhynchus tshawytscha* and chum *O. keta* salmon are important species for subsistence, commercial, sport and personal use fishermen in the Yukon River. Chinook salmon migrate in the Yukon River from the latter part of May or early in June through mid-July, although stragglers can appear as late as August (Gilbert 1921). Summer chum salmon enter the Yukon River in early May and overlap with the fall chum salmon run in July. Fall chum salmon enter the Yukon River in July and continue into September. Chinook salmon spawn throughout the Yukon drainage; some spawning grounds are located over 1,900 miles from saltwater (Healey 1991). Summer chum spawn primarily in tributaries in the lower and middle river reaches (the mouth of the Yukon River to the Tanana River drainage) while fall chum salmon spawn in the middle and upper reaches (Chandalar, Tanana, Porcupine River drainages and within the Canadian portion of the Yukon River mainstem) of the drainage (ADF&G 2002).

Chinook and chum salmon spawn in rivers located in the Yukon Delta, Koyukuk, Nowitna, Innoko, Kanuti, Arctic, and Yukon Flats National Wildlife Refuges and contribute to subsistence and commercial fisheries occurring in the Yukon River drainage (Figure 1). The Yukon River has total mileage of approximately 2,000 miles, of which 1,200 miles is located in Alaska and 800 miles is located in Canada (Kammerer 1990).

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Steady decline in salmon abundance on the Yukon River since 1998 lead the Alaska Department of Fish and Game (ADF&G) to conservative management actions and the designation of Chinook salmon as a stock of concern, classification of summer chum salmon as a management concern, and classification of fall chum salmon as a yield concern (Lingnau and Bue 2004). The State of Alaska Statute Sec.16.05.258 and the Alaska Native Interest Lands Conservation Act (ANILCA) Title VIII requires a priority for subsistence over other consumptive uses. Assessing how fishermen are progressing towards their subsistence harvest goals, prior to implementing other consumptive uses such as commercial fishing, helps to insure a subsistence priority. This inseason subsistence interview project, in place since 2002, supports this priority use.

With the introduction of federal fisheries management responsibilities in October 1999, Yukon River federal and state fishery managers recognized a need to collect and report inseason subsistence salmon harvest information in a standardized format inseason management evaluation. The Eastern, Western, and Yukon Delta Federal Regional Advisory Councils (RACs), ADF&G fishery managers, and concerned fishermen requested assistance from the U.S. Fish and Wildlife Service (USFWS) to address this issue. The Yukon River Drainage Fisheries Association (YRDFA), Koyukuk / Nowitna National Wildlife Refuge Complex (KNNWRC), Innoko National Wildlife Refuge (INWR), and Yukon Flats National Wildlife Refuge (YFNWR) also expressed interest in supporting the project.

Qualitative inseason subsistence information has been collected informally from Yukon River fishermen through phone and personal contact in the past (T. Lingnau and F. Bue, ADF&G, personal communication). However, data have not been standardized, or compiled into a format useful for managers or shared with others. ADF&G has collected postseason subsistence salmon fishery and harvest information annually since 1961 (Borba and Hamner 2001) but these data are typically unavailable until the following spring and do not provide information useful for inseason assessment. ADF&G postseason harvest surveys and annual permit data are intended to evaluate management actions postseason and to detect and quantify shifts in harvest patterns and amounts.

Historically, commercial fishing has provided fishery managers with inseason catch per unit of effort data valuable for assessing and comparing run strength to past seasons. Since 1998, reduced salmon run sizes have resulted in a corresponding reduction or cessation of commercial fishing on the Yukon River. This has produced a loss of an inter-annual and intra-annual salmon run comparison tool previously used by fishery managers to assess inseason salmon run strength and timing.

Further complicating Yukon River subsistence fisheries management is the unknown affect on subsistence salmon harvests created by the Alaska Board of Fisheries (BOF) subsistence fishing "windowed" schedule implemented in 2001. Prior to the 2001 fishing season, subsistence fishing opportunity was unregulated except to provide for commercial fishing activities consistent with the Yukon River salmon management plans (ADF&G 2003 a). The intention of the BOF in establishing the "windows" subsistence regulatory schedule was to provide a reasonable opportunity for subsistence fishermen to obtain an average subsistence harvest during years of normal to below average salmon run strength (Brase and Hamner 2003) by: 1) spreading the harvest throughout the run, 2) spreading subsistence harvest opportunity among users throughout the drainage, and 3) to potentially increase the quality of escapement. It is not

the intent of this project to address how the regulatory schedule affects the ability of subsistence users to meet their subsistence goals.

Approximately 1,300 households participated in subsistence fishing in 2002, harvesting an estimated 44,000 Chinook, 87,000 summer chum, and 20,000 fall chum salmon (Brase and Hamner 2003). Salmon are harvested along the entire 1,200 miles of the mainstem Yukon River in Alaska, the lower 225 miles of the Tanana River, and within 600 miles of the mainstem Yukon River in Canada. Managing overlapping species with compressed and similar entry timing and the use of different harvest types; set gill nets, drift gill nets, and fishwheels, each with variable catch efficiencies, constitutes an extremely complex task.

For the 2002 salmon fishing season the Fairbanks Fish and Wildlife Field Office (FFWFO) began an inseason pilot project following the format used on the Kuskokwim River which began in 2001 (Morgan 2002). Funding was provided in part by the Office of Subsistence Management (OSM) with the cooperation of USFWS Refuge Information Technicians (RITs) and local YRDFA hires to collect qualitative inseason subsistence salmon harvest data from active fishing households in Emmonak, Nulato, and Galena. Interviewers conducted weekly interviews to determine the rate of progression made by an individual household towards their harvest goals. As the salmon season progressed, households from the villages of Huslia, Grayling, Anvik, Shageluk, and Holy Cross were opportunistically interviewed by other RITs or local YRDFA hires. Interviewers summarized their information in weekly reports to fishery managers and presented results to the public during weekly YRDFA organized/administered teleconferences (Hander 2003).

The 2003 project objectives included: (1) Facilitate inseason subsistence salmon interviews from early June to late August in six Yukon River communities (Emmonak, Holy Cross, Nulato, Galena, Huslia, and Circle) conducted by locally residing interviewers; (2) Document subsistence harvest information in a standardized format from 5-10 active fishing households per village. Compile a summary of subsistence fishing activity to fisheries managers by Monday noon for inclusion in inseason fisheries management decision-making; (3) Use information gathered during weekly household interviews to determine subsistence fishermen's progress towards completion of their subsistence harvest goals; (4) Have local interviewers present their weekly interview summaries on YRDFA teleconferences; (5) Opportunistically assist ADF&G with the collection of age, sex, and length (ASL) samples from Chinook and chum salmon. This cooperative effort was included to increase numbers of samples normally obtained from commercial catch sampling. Design of the project was devised to achieve these objectives while not interfering with the ADF&G quantitative postseason interviews.

During the 2003 season, YRDFA conducted a pilot project identifying traditional ecological knowledge (TEK) on Chinook salmon stock morphologies in communities located on the Yukon River (Moncrieff et al. 2005). Although assistance in data collection for this YRDFA project was not a direct objective of the inseason subsistence interview, project interviewers were asked to support this TEK project by opportunistically performing the whitenose/blueback Chinook salmon interview questionnaire to increase the interview coverage beyond what YRDFA was able to conduct.

Methods

The 2003 concepts and general format were based on the 2002 Yukon River inseason subsistence harvest interview project (Hander 2003). FFWFO provided funding for preseason training, inseason coordination, postseason report preparation, and interview materials. USFWS personnel conducted a one-day training session in Fairbanks, AK on May 23 to familiarize interviewers with project methodology. USFWS fishery managers and RITs from the villages of Holy Cross, Nulato, and Circle, ADF&G Subsistence Division Staff, and YRDFA staff attended. Attendees provided suggestions and critical review comments for improving project methodology.

An interview is defined as a meeting between an interviewer and a representative of a subsistence fishing household where information was obtained and documented by the interviewer. Interviews were conducted throughout the fishing season on specific interview weeks beginning Monday and ending Sunday. Interviews not addressing all interview components were considered incomplete. Interview questions with no data entry resulted in a blank data cell, thus rendering the total number of "households contacted" to be different than data for "harvest progress", "catch rate", or "time fished". If a household reported they did not fish, then it was assumed that their percentage of harvest progression did not change from prior interview results. A household that reached 100% of their salmon harvest goals during the interview period was indicative of subsistence salmon harvest completion. If duplicative answers to harvest progression occurred, the earlier date was assumed the most representative. Unknown household status indicates that only one interview was conducted or an incomplete interview was performed, in both instances no harvest progression could be interpreted.

Based on interviewer input, all language on the 2003 data collection forms was standardized to increase consistency in reporting. Interviewers used a multiple-household form to collect field data, entitled Weekly Subsistence Fisher Catch Information: 2003 multiple family data form (Appendix A). This form combined information from multiple families onto one data form and decreased the numbers of forms an interviewer carried in the field. After fieldwork, data specific to each household were entered onto the Inseason Subsistence Salmon Fishing Monitoring: 2003 individual family data form (Appendix B). These forms were maintained as an individual household record for the entire interview period. Transcription of information onto the individual family data form was used to prevent the loss of household records. Interviewers compiled and summarized interview results using the Weekly Interview Summary Results Form, 2003 (Appendix C) which was transferred to the USFWS project leader. The USFWS project leader summarized the weekly subsistence information from all villages and provided results to fishery managers using the Subsistence Interviews Weekly Compilation and Summary Form, 2003 (Appendix D). Interviewers presented weekly reports summarizing local subsistence fishing activity (Appendix E - I) during the weekly YRDFA teleconferences occurring on Tuesdays at 1:00 pm. Interview information was considered confidential and no information was released to the public that could identify an individual fishing household.

Interviews were performed in Emmonak, Holy Cross, Nulato, Huslia, Galena, and Circle (Figure 2). In Emmonak, interviews were conducted by an Emmonak Tribal Council local hire under contract with USFWS. RITs located in Holy Cross, Nulato, Huslia, and Circle conducted harvest interviews in their villages. The KNNWRC subsistence coordinator conducted the interviews in Galena.

Prior to the salmon fishing season, ADF&G provided a household list for each village where interviews were to be conducted. The list was used to identify potential interview contacts within each village. These lists were extracted from the ADF&G postseason subsistence surveys and the ADF&G permit program. Information from the postseason surveys categorizes households into unique strata dependent upon their degree of harvest during the prior five fishing seasons. Subsistence survey strata harvest categories were: Unknown, Do Not Fish, Light (1-200 salmon), Medium (201-500 salmon), or Heavy (> 500 salmon) harvester (Brase and Hamner 2003). The inseason subsistence interview contact lists provided to the USFWS consisted of households identified as Medium or Heavy strata harvesters. It was believed that households in the upper harvest categories fished more frequently and steadily and would provide a greater consistency in weekly subsistence fishing input. The lists provided by ADF&G did not identify households by harvest strata. The exact number of medium or heavy households participating inseason was unknown to interviewers and the USFWS project leader. Prior to the fishing season onset, interviewers contacted households in person or by telephone to explain the project, determine if they were willing to participate, and gain their consent to be interviewed. The explanation indicated that participation would involve being interviewed on a weekly basis for approximately ten weeks to assess subsistence fishing progress.

Weekly household interviews were conducted to determine how the household perceived the timing and catch rate of their 2003 salmon harvests compared to 2002 and to ascertain their harvest progression towards completion of their 2003 subsistence harvest goals. Interviewers attempted to collect information from five to ten households per week. Interviews were conducted near the end or after a fishing period(s), in relation to the regulatory subsistence fishing schedule, when households would have harvest information available.

Draft copies of interview report summaries were submitted to the USFWS project leader to maintain standardization between interviewers, confirm household confidentiality, provide edits, and assure appropriate and consistent content. A standard weekly report (Appendix E - I) included the number of households that were interviewed during the past week, an overall summary of the fishing gear type used, comparison of the catch rate (Better, Same, Poor), and amount of time fished (More, Equal, Less) to the 2002 season, the relative fishing success, the harvest goal progress (expressed as a percentage) that households were making toward completing their subsistence harvest, and general comments from fishermen. Finalized interview report summaries were presented on weekly YRDFA teleconferences.

ASL sampling was conducted in support of ADF&G Commercial Fisheries Research Division inseason salmon age analysis. Samples were collected following the procedures of Moore (2002). ASL data is used for inseason run estimation by judging year class proportions entering the Yukon River as well as a number of other biostatistical uses postseason and reported in documents such as the Salmon Age and Sex Composition and Mean Lengths for the Yukon Area, 2003 (Dubois 2004).

Whitenose and blueback Chinook salmon interviews were completed using a YRDFA questionnaire (Appendix J) and photographs of salmon were taken. The project was designed to address if Chinook salmon described as whitenose and bluebacks could be identified as separate stocks in conjunction with DNA research and scale pattern analysis being performed by genetic laboratories (Moncrieff et al. 2005).

Results

Interviews were performed between June 2 and August 31, 2003. The number of interview weeks and weekly interviews differed between interviewers, ranging from 2 to 14 interview weeks and 2 to 16 weekly interviews (Table 1). Data were summarized and presented in two different formats, written and oral. Written data forms were received from all interviewers on each interview week in Emmonak, Holy Cross, Nulato, Galena, and Circle. Oral summaries were presented by interviewers on weekly YRDFA teleconferences in the villages of Emmonak, Holy Cross, Nulato, Huslia, Galena, and Circle (Table 2). Summary presentations are contained in Appendix E.

Sixty-three households were interviewed on the Yukon River to assess Chinook salmon harvest progression. Of these households, 36 (57%) reported making 100% of their harvest goals, 1 (2%) reported making 75% of their harvest goals, 3 (5%) reported making 50% of their harvest goals, 1 (2%) reported making 25% of their harvest goals, and 22 (35%) had an unknown completion of harvest goals (Figure 3). Seventeen households were interviewed on the Yukon River to assess chum salmon harvest progression. Of these households, 10 (59%) reported making 100% of their harvest goals, 3 (18%) reported making 75% of their harvest goals, 3 (18%) reported making 50% of their harvest goals, and 1 (6%) had an unknown completion of chum salmon harvest goals (Figure 4).

Emmonak

Interviews began on June 2 and ended on August 31, a period of 14 weeks. One to 12 households were interviewed weekly. Seventeen households were initially contacted during the week of June 2 to solicit their participation in subsistence salmon interviews throughout the fishing season. One household declined to participate in the interview at the onset. Sixteen separate households contributed data during the 14-week period. During several weeks within the salmon fishing season multiple households reported they did not fish. Reasons for not fishing were attributed to bad weather, mechanical breakdown, being out of town, smokehouse was full, work interfered, kept fish from commercial periods, received fish from ADF&G lower river set-net project, or berry picking. One household did comment that they could not fish because subsistence windows were not open. Six households reported receiving salmon from ADF&G lower Yukon test net project throughout the fishing season.

Reported Chinook salmon harvests began on June 2 and ended on July 27. Twelve households reported meeting their subsistence Chinook salmon harvest goals and three households reported making 50% of their harvest goals. The earliest report of a household completing their harvest goals occurred on June 15 and the latest was on July 27 (Figure 5). Frequent comments by fishermen during the Chinook salmon fishing season included that "the fishing was great", "better than the last two years", and "that we caught our fish quickly".

Reported chum salmon harvests began June 8 and ended August 31. No distinction was made on the interview form between the harvest of summer and fall chum salmon. Nine households reported meeting their subsistence chum salmon harvest goals, three reported making 75%, and three reported making 50% of their harvest goals. The earliest report of a household completing their harvest goals was on June 15 and the latest occurred on August 31 (Figure 6). The most frequent comment made on the chum salmon fishing season by fishermen was that the fish were "slow but steady".

One household reported being at 0% on June 22 for Chinook and chum salmon, but declined interview participation for the remainder of the fishing season. This household was included in summary information for the week of June 22, but considered in an unknown harvest completion status in the overall season summary.

Holy Cross

Interviews were conducted during the weeks of June 22 and June 29. Nineteen separate households contributed data in the two-week period. Five to 16 households were interviewed weekly. Two households were interviewed on both weeks. All households targeted Chinook salmon. During the week of June 22, 16 households were interviewed. One household reported achieving 100% of their harvest goals for Chinook salmon, six reported achieving 75% of their harvest goals, six reported achieving 50% of their harvest goals, and three households reported being below 50%. During the week of June 29, five households were interviewed. Two households reported achieving 100%, two reported achieving 75%, and one reported achieving 25% of their harvest goals for Chinook salmon.

Overall, three households achieved 100% of their harvest goals, one reported making 75% of their harvest goals, and 15 were of an unknown status (Figure 7). Frequent comments by fishermen from households in Holy Cross were that the "fish were a week early", "of good quality", and "in high numbers".

Nulato

Interviews were conducted between the weeks of June 15 and July 13 and during the weeks of August 3 and August 10. Nine separate households contributed data during the 7-week period. One to 7 households were interviewed weekly. All households indicated that they fished for Chinook salmon and one household indicated that they fished for chum salmon.

Reported Chinook salmon harvests began on June 15 and ended on July 13. Eight out of nine interviewed households met 100% of their Chinook salmon harvest goals and one household reported making 25%. The household reporting incompletion of their harvest goal was interviewed one time on June 22 and indicated a harvest percentage of 25%, consistent with other area households at that time, but because a follow up interview was not conducted, no harvest progression could be interpreted, thus the household was considered in an unknown harvest completion status. The earliest report of a household completing their harvest goal was on June 22. All households reporting a 100% harvest goal completion were finished by July 13 (Figure 8).

Reported chum salmon harvests began August 3 through August 10. One household was interviewed and reported meeting 100% of their harvest goal on August 10 (Figure 9).

Huslia

Although no data forms were received from the KNNWRC RIT located in Huslia, fisheries information was received during seven YRDFA teleconferences and in a postseason report (Appendix H). The report indicated that most households did not achieve their subsistence harvest goals for Chinook salmon because fishing in high water made their set-nets less effective. Huslia area fishermen reported that they did not achieve harvest goals for summer

chum because fishing was closed by regulation during the peak summer chum salmon passage periods of August 10 to August 20 or were hindered by high water.

Galena

Interviews began the week of June 15 and ended July 20. Five separate households contributed data over the 6-week period. One to 5 households were interviewed weekly. All households targeted Chinook salmon. All five households reported meeting 100% of their harvest goals. Four households reached their harvest goals on the week of July 6 and one household reached their harvest goal on the week of July 20 (Figure 10). Frequent comments from fishermen in Galena households were that the fish were "running earlier" and were of "better quality and larger size."

Circle

Interviews began the week of June 22 and ended on August 3. No interviews were performed during the weeks of July 13 and July 20. Fourteen separate households contributed data during the five-week period. Two to 9 households were interviewed weekly. All households targeted Chinook salmon. Nine households were interviewed in the Circle area. Additional subsistence salmon harvest information was collected during the week of July 27 by RIT and YFNWR personnel whom performed subsistence interviews by boat from the Yukon Bridge to the village of Circle (Akaran 2003).

Eight households reported meeting 100% of their harvest goals, three households reported being at 50%, one household reported being at 25%, and two households reported they did not fish. The earliest report of a household completing their harvest goals was on July 27 and the latest was on August 3. Of the six households reporting incomplete harvest goals, five were interviewed once with no follow up interview, therefore no harvest progression could be interpreted and these households were considered in an unknown harvest completion status (Figure 11).

2003 Catch Rates and Fishing Time

A total of 119 responses were made by 63 households during the Chinook salmon fishing season to the interview question, “Compared to this time last year, how were your catch rates for salmon this week, Poor/Same/Better?” Responses were received from Emmonak, Holy Cross, Nulato, Galena, and Circle between June 1 and July 13 and from July 27 to August 3. Eight responses rated the catch rate as poor, 21 responses rated the catch rate as the same, and 90 responses rated the catch rate as better. A total of 117 interview responses were made by households when asked the question of, “Compared to this time last year, is the amount of time you have fished, Less/Same/More?” Thirty-nine responded that they fished less in 2003, 49 responded that they fished an equal amount, and 29 responded that they fished more in 2003 (Table 3).

Interview responses comparing the 2003 chum salmon fishing season to the 2002 fishing season were conducted between June 1 and August 10 in Emmonak and Nulato. A total of 39 interview responses were made by 17 households when asked the question of, “Compared to this time last year, how were your catch rates for salmon this week, Poor/Same/Better?” Two responses rated the catch rate as poor, six responses rated the catch rate as the same, and 31 responses rated the catch rate as better. A total of 39 interview responses were made by households when asked the question of, “Compared to this time last year is the amount of time you have fished,

Less/Same/More?" Thirty-three responded that they fished less in 2003, two responded that they fished an equal amount, and four responded that they fished more in 2003 (Table 4).

Gear Type

Different regulations regarding fishing gear type exist in the lower river (Districts 1 - 3) and upper river (Districts 4 - 6). Subdistrict 4A has a limited drift gillnet fishery regulated by date, see 5AAC 01.220(e) (1) (2) (ADF&G 2003 a). Forty-three subsistence fishermen were interviewed for gear type in Districts 1 and 3. Twenty-one reported fishing with a drift gillnet, 16 reported fishing with a set gillnet, and six reported fishing with both drift and set gillnets. Twenty-six subsistence fishermen were interviewed for gear type in Subdistricts 4A, 4B, 4C, and 5D. Six reported fishing with a fishwheel, 10 reported fishing with set gillnets, nine reported fishing with drift gillnets, and one reported fishing with both drift and set gillnets (Figure 12).

Age, Sex, and Length Sample Collection

ASL sampling was conducted in the village of Emmonak and in fish camps between the Yukon River Bridge and the village of Circle in concert with inseason subsistence interviews. The ASL and subsistence harvest data collection effort was accomplished by visiting fish camps via boat where households were fishing or processing their harvest. Support for this effort from interview personnel during the Chinook and chum salmon fishing season was secondary to the inseason interview. Sampling in the Emmonak area was conducted by a USFWS local hire and ADF&G personnel. Samples were turned into ADF&G for inseason processing at the Emmonak field office. RIT and YFNWR personnel collected three ASL samples during inseason subsistence interviews in the Circle area. The low number of samples was a result of households processing fish prior to interviewers arriving at their fish camps. Samples were given to ADF&G in February 2004 because interviewers were not aware that the samples should be submitted at the end of the fishing season.

Whitenose and Blueback Chinook salmon Samples

Two supplemental whitenose and blueback interviews were conducted in the Emmonak area opportunistically with the inseason subsistence harvest interviews. Twenty-seven digital photos were taken of whitenose Chinook salmon caught in ADF&G test nets on the Emmonak ADF&G dock and associated with the local assessment of whitenose or blueback Chinook salmon. Two questionnaires and all photos were given to the YRDFA traditional ecological knowledge coordinator.

Available Subsistence fishing time

Liberalizations and reductions to the BOF subsistence fishing schedule did occur during inseason management. During the summer season liberalizations, were predominant and additional subsistence fishing hours were implemented in all fishing districts excluding District 1, which had a reduction of 45 hours. During the fall season, reductions were predominant with a reduction of 344 hours in the Coastal district, 9 hours in District 1, 160 hours in the Koyukuk district, 126 in Subdistricts 4B and 4C, 56 hours in Subdistricts 5B and 5C, and 76 hours in Subdistrict 5D (Table 5).

Commercial fishing vs. Subsistence fishing

The first commercial fishing period in District 1 occurred on June 16. Thirteen subsistence fishermen in the village of Emmonak were interviewed prior to this commercial period on June 15. Five households were non-commercial permit holders and eight were commercial permit holders. Overall, eight (61%) of subsistence households had finished with 50% or more of their subsistence harvest goals, while five (39%) were below 50%. Of those households at or above 50% of their harvest goal progression, six (75%) were households with a commercial fishing permit (Figure 13).

Discussion

Regional Advisory Councils have urged the active participation by subsistence users in contributing their knowledge and observations about the salmon runs to fishery managers inseason. Success of inseason subsistence harvest assessment is dependent upon the cooperation of active fishing households, collection and documentation of qualitative information, and the presentation of this information in a standardized and timely manner. Based on these elements, the inseason subsistence interviews attempted to obtain a weekly qualitative assessment of subsistence fishing household success and the perception of how their 2003 fishing experience compared to their 2002 fishing season and subsistence harvest. Based on the information collected during the 2003 salmon fishing season it appears that most interviewed households met or nearly met their subsistence harvest goals, catch rates were reported as better in 2002, and interviewed households reported fishing less time than in 2002 to complete their subsistence salmon harvest goals for Chinook and chum salmon.

Experienced interviewers facilitated project continuation by providing support to a new USFWS project leader and providing recommendations on project protocol. Interviewers in all villages except Circle had participated in the 2002 pilot project and had experience in conducting inseason subsistence interviews. Villages are geographically separate so incoming information provided different perspectives about the subsistence fishery. The local interviewers are vitally important to the project because they have in-depth knowledge about their community, the fishing activities, and have rapport with local fishermen. Increasing the number of interviews during the fishing season to provide a larger sample size was a concern. Interviewer experience, fishermen rapport, and increased communication with the project leader was important in increasing the number of interviews in 2003 (214 interviews) as compared to 2002 (156 interviews). Local hires also acted as project representatives by transferring the knowledge they gained from participating in a drainage-wide project to community members and could relay concerns of villagers to fishery managers. Local hires were also active in community outreach by inviting volunteers, whom they identified with an interest in biological/social sciences, to participate in interviews.

In 2003, the lower Yukon River was ice-free on May 17, which is the second earliest date since ADF&G began maintaining records in 1961 and ten days earlier then the historic average (1962-2002) of May 27 (Lingnau and Salomone 2003). ADF&G lower Yukon River test net project began ten days later on May 27 and Chinook salmon were caught immediately after project onset suggesting an early run entry, compared to the average date for the first caught Chinook salmon of June 1. Households interviewed in Emmonak, Holy Cross, and Galena provided comments on early run timing for Chinook salmon. The quality of the Chinook salmon was also reported to be better with many "good quality" and "larger size" fish comments. YRDFA teleconference

participants in the lower river noted that the water was low early in the season and higher later in the season while upper river participants commented on the opposite. These water conditions contributed to good fishing conditions in most interviewed villages producing better catch rates and requiring less time to reach subsistence salmon harvest goals in 2003 than in 2002.

As previously noted, it is not the goal of this project to gauge the effect of the 2001 Alaska BOF subsistence fishing schedule. However, it is important to recognize that this management tool did change the time available in some areas for subsistence fishing households to meet their subsistence harvest goals and likely changed their pattern of subsistence salmon fishing. Due to the subsistence priority, fishery managers are tasked with providing a subsistence fishing opportunity that should allow subsistence fishermen to attain their harvest goals. In 2003, the Chinook and summer chum salmon returned in sufficient numbers to allow for liberalization of the windows schedule. Whereas, managers entered the fall chum salmon season with a "reduced" windows schedule to address the poor fall chum salmon outlook and returned to the 2001 windows schedule near the three quarter point of the run. Overall, comparisons made by subsistence fishermen between 2003 and 2002 indicated that the 2003 season was better than 2002. The one exception to this perspective was fishermen from Huslia. Huslia area fishermen reported that when fish arrived managers had reduced the fishing time. This limited subsistence fishing time in combination with high water conditions prohibited them from completing their subsistence salmon harvest goals. Regulations provide for subsistence fishing on the Koyukuk River 24 hours/day 7 days/week, except when restrictions are implemented to address escapement concerns. Fishing on the Koyukuk River was reduced to 3.5 days a week on August 9 in an effort to conserve fall chum salmon (ADF&G 2003 b). The reduction represented a loss of 160 hours (approximately 6.6 days) until liberalization occurred on August 19 when the Koyukuk River fishing schedule returned to 24 hour/day 7 days/week.

There was no evidence that gear type affected rates of harvest progression. Households generally reported using only one gear type, but households in the Emmonak and Nulato area did report using both drift and set gillnets. Galena, located in Subdistrict 4-B, has no regulation allowing a drift gillnet fishery. However, most households fished with drift gillnets in Subdistrict 4-A, approximately a 20 mile one way trip.

Presentation of the weekly subsistence interview information on YRDFA teleconferences not only needed to accurately reflect the information collected, but needed to be concisely presented due to a limited amount of available time. Changes in the 2003 summary presentation addressed concerns raised by managers about presentations being too long during the 2002 fishing season. Efforts were made to keep narratives to less then five sentences. In some instances, the inseason subsistence interview results reported by local hire interviewers represented the only weekly information reported from these villages, increasing the importance of teleconference attendance by interviewers. This reporting format was also adopted by other YRDFA teleconference participants not affiliated with the inseason interviews project, which was helpful in decreasing teleconference time and valuable for managers to receive standardized summaries from a larger reporting group.

Effective collection of data and consistent completion of weekly interviews was not maintained by all interviewers and gaps in weekly reporting exist. Similar to 2002, lack of repeat interviews is most evident in the number of interviewed households whose harvest completion status was identified as "unknown." This was most predominant in the Holy Cross area, where the majority

of households were only interviewed one time. This interviewer was located in McGrath during the 2002 fishing season, but relocated to Holy Cross during the 2003 fishing season intending to have greater contact with subsistence fishermen. Unfortunately, lack of office infrastructure made weekly contact between the USFWS project leader and interviewer difficult, resulting in inconsistent participation and a low number of repeat household interviews. However, at the time the unknown Holy Cross households were interviewed, many were on track to complete their harvest goals and appeared to track similar to the harvest completion timeline of those with known harvest goal completion dates.

Utilization of inseason subsistence interviews differed between managers. The ADF&G Yukon River Chinook and summer chum salmon fisheries manager indicated that the inseason harvest assessment project did not provide him any information that he did not already have in the lower Yukon River area and the information reported by RITs on the YRDFA teleconference was duplicative and less useful. However, he did note that the interviews were of use in the Koyukuk River and upper Yukon River, due to less interaction with households from those areas (T. Lingnau, ADF&G, personal communication). Information presented to the ADF&G Yukon River fall season fisheries manager was minimal as most interviewers contributed information only in the summer season. USFWS Yukon River inseason subsistence fishery manager evaluated the shorter summaries reported on the YRDFA teleconference as an improvement, but that inconsistency in RIT participation was problematic in presenting data in a timely manner. He indicated that feedback from households about subsistence harvest progress was one of several tools used to make management decisions as documented in nine statements of nonobjections concerning commercial fishery implementation. More accessible use of the information was hampered by data transfer from the interviewers to the managers prior to YRDFA teleconferences. This information transfer delay resulted in collected information being less valuable or excluded from evaluation in making some management decisions.

Subsistence harvests for Yukon River Chinook, summer chum, and fall chum salmon harvests have shown a substantial decrease in yield and low run sizes since 1998, which has resulted in conservative management strategies (Lingnau and Bue 2004). Contact with fishermen during the fishing season has typically been maintained by telephone calls and the utilization of river-wide teleconferences to increase understanding of intra-season subsistence use. However, these techniques may not be representative of the "normal" subsistence fisherman on the river. Fishermen without telephones, with full time jobs, or living in fish camps would not be represented in the historical weekly contacts. It is also of concern that subsistence fishermen who have a commercial permit may be more aggressive in trying to meet their subsistence harvest goals, recognizing that once people begin to report completing their goals, ADF&G begins to consider commercial fishing opportunities. Local hire interviewers can contact a larger group, hopefully more representative of the "normal" subsistence fisherman, and relay this information in a standardized format beneficial to managers and users participating in teleconferences. Furthermore, weekly phone calls and teleconferences cannot be compared with past fishing seasons, as no database is available for comparison. Using inseason interviews in combination with teleconferences and personal telephone calls can increase the manager's ability to assess inseason fishermen progression. Continued development of a qualitative inseason run assessment with increased participation from fishing households and interviewers should prove valuable in monitoring escapement and providing opportunity for all user groups with the Yukon River drainage.

Recommendations

Maintaining a river-wide subsistence perspective from geographically distinct users and facilitating user input into management decisions demands consistency in participation of fishermen and interviewers. Standardized data collection with effective information transfer between users, interviewers, and fishery managers is also important. Continuation of preseason training needs to be available for all interview participants in order to expect high-quality standardized data in a timely manner during the fishing season.

Fisheries managers need to know the status of households harvest progression when management decisions are pending. Qualitative data can be collected from a large number of households, but is most useful to harvest progression if households contribute information throughout the season. Villages that have larger population bases, such as Emmonak, will benefit from focusing interview efforts on a group of households that can be interviewed on a weekly basis. Some of the households in or near Emmonak were only interviewed twice during the 14-week interview period while others were interviewed up to 11 times. Contacting as many households as possible during an interview week was beneficial for that moment in time, in regards to assessing subsistence harvest, but this approach reduces the ability to draw conclusions about a household's subsistence harvest and does not provide ample information for future reference purposes. This is not meant to discourage obtaining as much information as possible during an interview week, but rather to recognize that for reporting and future reference that focusing on a group of households throughout the interview period will yield a better picture of harvest progression.

Initially, households must be willing to participate in inseason interviews, but it is the responsibility of the interviewer to collect that information and transfer it to fisheries managers. Interviewer participation was different in all villages and resulted in different amounts of information being conveyed to managers. Multiple reasons for inconsistent data collection have been introduced in the previous sections, but the greatest cause was competing project priorities. RITs are involved in fisheries and wildlife projects within their respective refuges. Prioritizing of other projects by the RITs' supervisors conflicted with the objectives and protocols for a weekly inseason fisheries assessment. Supervisors need to participate in preseason training and be involved with fisheries issues in order to maintain inseason harvest assessment participation. Villages where interviewers had direct supervision yielded greater participation than those without. Identifying the inseason subsistence harvest assessment as a priority to interviewers' supervisors would likely be a first step in maintaining interviewer participation and in providing a consistent link from subsistence fishermen to managers.

The 2003 fishing season was the second year of formal inseason interviews and facilitating the ease of data collection needs to continue. Data forms need to be tailored for ease and efficiency in field conditions, must be comprehensive of all information, should facilitate the formation of summaries, and should be culturally appropriate to the extent possible. Currently, interviewers are tasked with filling out three datasheets and producing a summary on a weekly basis, which requires a great deal of time to organize and transfer to managers. Reducing the amount of datasheets will aid interviewers in transferring data in a timely manner and meeting deadlines, however, it is important not to compromise content.

Acknowledgements

We gratefully thank all of the subsistence fishermen who were willing to share their harvest information with interviewers throughout the season. Thanks to the Fairbanks Fish and Wildlife Office for funding. Thank you to the ADF&G Commercial Fisheries and Subsistence Divisions for valuable project recommendations and suggestions. Great appreciation goes to the interview personnel: USFWS Emmonak local hire Ted Hamilton, Innoko NWR Holy Cross local hire RIT Clara Demientieff, KNNWRC Nulato local hire RIT Patrick Madros Jr., KNNWRC Huslia local hire RIT Orville Huntington, KNNWRC Subsistence Coordinator Geoff Beyersdorf, Yukon Flats NWR Circle local hire RIT Albert Carroll Jr., Yukon Flats NWR Subsistence Coordinator Wennona Brown, Yukon Flats NWR Beaver local hire RIT Paul Williams Sr. and Yukon Flats NWR Fish and Wildlife Biologist Jim Akaran.

We also recognize the efforts of Ray Hander who initiated the inseason subsistence harvest assessment interviews and continues to provide project advice. We appreciate the assistance of Brandy Berkbigler for facilitating inseason communication logistics and project support.

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Table 1. Number of weekly interviews by interview week conducted by local hire and refuge information technicians during the 2003 salmon fishing season.

Week ending	Emmonak	Holy Cross	Nulato	Huslia	Galena	Circle
1-Jun	2					
8-Jun	12					
15-Jun	13		1		2	
22-Jun	11	16	7		3	2
29-Jun	9	5	9		5	5
6-Jul	10		7		5	10
13-Jul	10		1		1	
20-Jul	6				1	
27-Jul	7					9
3-Aug	9		1			9
10-Aug	10		1			
17-Aug	8					
24-Aug	6					
31-Aug	1					
Total # of interviews	114	21	27	0	17	35
Total interview weeks	14	2	7	0	6	5

Table 2. YRDFA teleconferences attendance by local hire and refuge information technicians during the 2003 salmon fishing season.

Teleconference date	Emmonak	Holy Cross	Nulato	Huslia	Galena	Circle
3-Jun	X					
10-Jun	X	X		X	X	X
17-Jun	X				X	
24-Jun	X		X		X	X
1-Jul	X	X	X	X	X	X
8-Jul	X		X	X		
15-Jul	X					X
22-Jul	X				X	X
29-Jul	X				X	X
5-Aug	X			X	X	
12-Aug	X			X		
19-Aug	X				X	
26-Aug	X			X	X	X
2-Sep				X		
9-Sep						
16-Sep						
Total	13	2	3	7	9	7

Table 3. Results of household responses to the 2003 inseason subsistence interview questions for Chinook salmon.

	Compared with this time "LAST" year, how were your catch rates for salmon this week?			Compared with this time "LAST" year, is the amount of time you have fished?		
Interview date	Poor	Same	Better	Less	Equal	More
			Emmonak			
1-Jun		1	1		1	1
8-Jun	1	3	7	7	1	2
15-Jun			10	10		
22-Jun			2	2		
29-Jun			2	2		
6-Jul		1	2	3		
13-Jul			1	1		
			Holy Cross			
22-Jun			13	3		10
29-Jun			5			5
			Nulato			
15-Jun	1					1
22-Jun	5	1	1		3	4
29-Jun	1		8		8	1
6-Jul		7			7	
13-Jul		1				1
			Galena			
15-Jun			1	1		
22-Jun			3	3		
29-Jun		1	4	2	1	2
6-Jul		2	3	3	2	
13-Jul			1	1		
20-Jul			1	1		
			Circle			
22-Jun		2			2	
29-Jun		1	4		5	
6-Jul			10		10	
27-Jul			3			2
3-Aug		1	8		9	
Total	8	21	90	39	49	29

Table 4. Results of household responses to the 2003 inseason subsistence interview questions for chum salmon.

	Compared with this time "LAST" year, how were your catch rates for salmon this week?			Compared with this time "LAST" year, is the amount of time you have fished?		
Interview date	Poor	Same	Better	Less	Equal	More
			Emmonak			
8-Jun	2	1	5	6		2
15-Jun			10	10		
22-Jun			2	2		
29-Jun			2	2		
6-Jul		2	1	3		
13-Jul		1	5	5	1	
20-Jul			1	1		
27-Jul			1	1		
3-Aug			2	2		
10-Aug		1			1	
			Nulato			
29-Jun		1		1		
3-Aug			1			1
10-Aug			1			1
Total	2	6	31	33	2	4

Table 5. Results of household responses to the 2003 inseason subsistence interview questions for chum salmon.

District	Dates	Subsistence hours-BOF	Subsistence hours-2003	Difference between 2003 and BOF subsistence hours
		Summer season		
Coastal	5/28 - 7/15	1,176	1,176	0
1	5/29 - 7/15	516	471	-45
2	6/1 -7/15	488	494	6
3	6/4 - 7/15	452	548	96
4A	6/11 - 7/25	642	792	150
Koyukuk	6/11 - 7/25	1,080	1,080	0
4BC	6/11 - 7/29	690	690	0
5A	6/20 - 8/3	564	564	0
5BC	6/20 - 8/2	624	672	48
5D	6/20 - 8/16	1,392	1,392	0
6ABC	6/2 - 8/3	756	756	0
		Fall season		
Coastal	7/16 - 9/30	1,176	832	-344
1	7/16 - 9/30	792	783	-9
2	7/16 - 9/30	792	1,084	292
3	7/16 - 9/30	792	1,084	292
4A	7/26 - 9/30	912	1,040	128
Koyukuk	7/26 - 9/30	1,608	1,448	-160
4BC	7/30 - 9/30	864	738	-126
5A	8/4 - 9/30	678	786	108
5BC	8/3 - 9/30	792	736	-56
5D	8/17 - 9/30	1,080	1,004	-76
6ABC	8/4 - 9/30	702	702	0

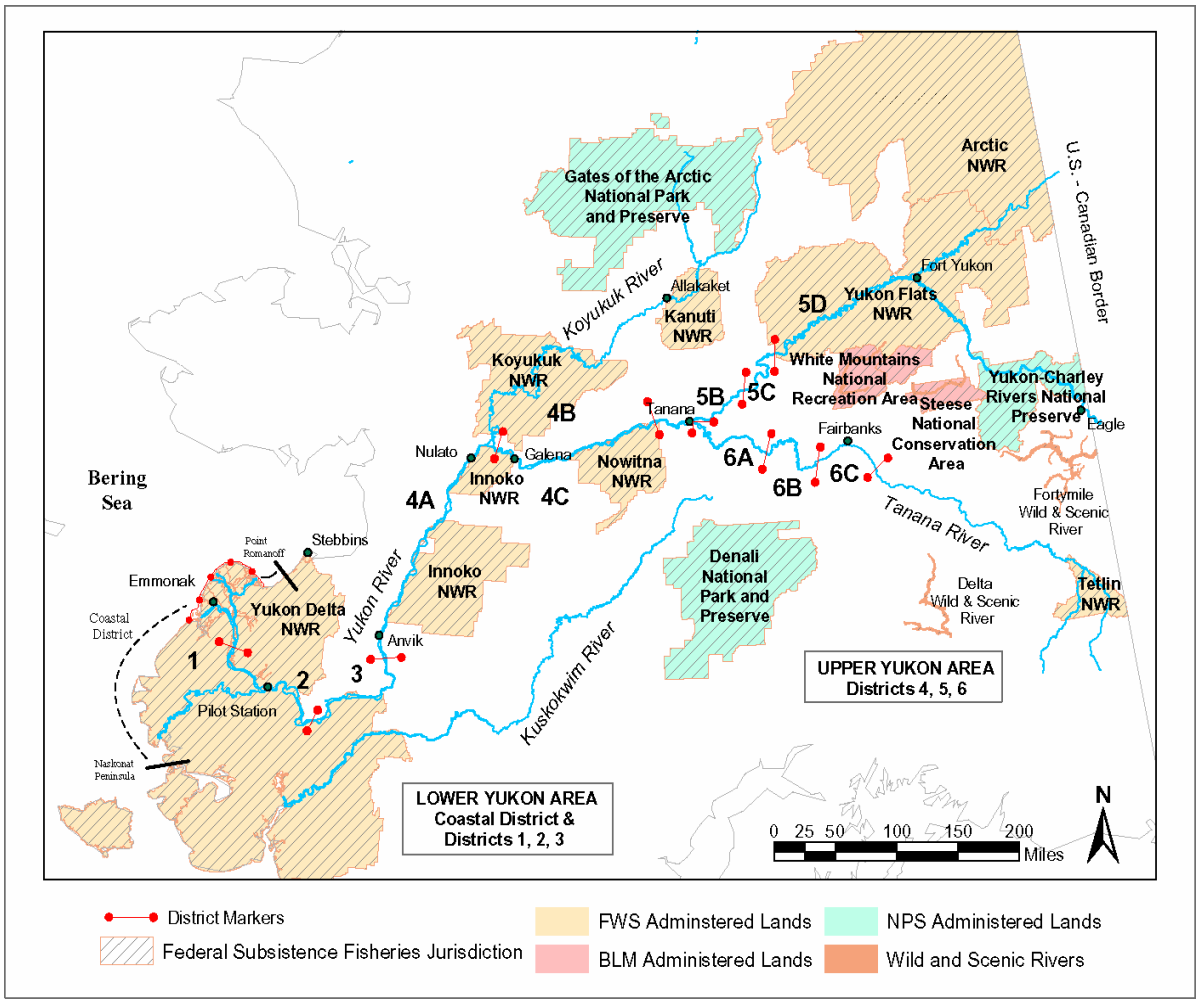


Figure 1. Map of the Yukon River drainage highlighting Yukon River federal conservation units.

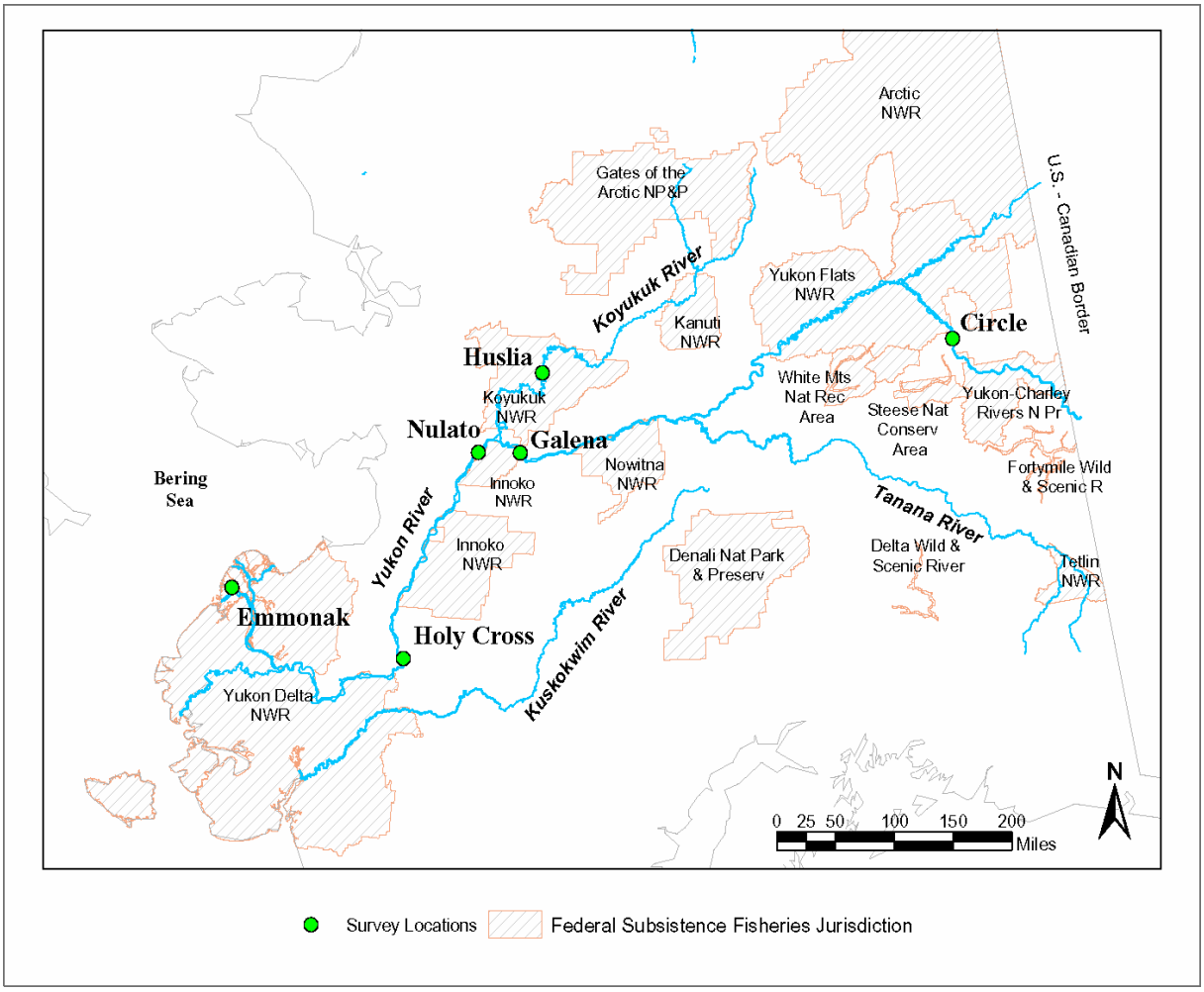


Figure 2. Map of the Yukon River drainage highlighting the villages of Emmonak, Holy Cross, Nulato, Huslia, Galena, and Circle.

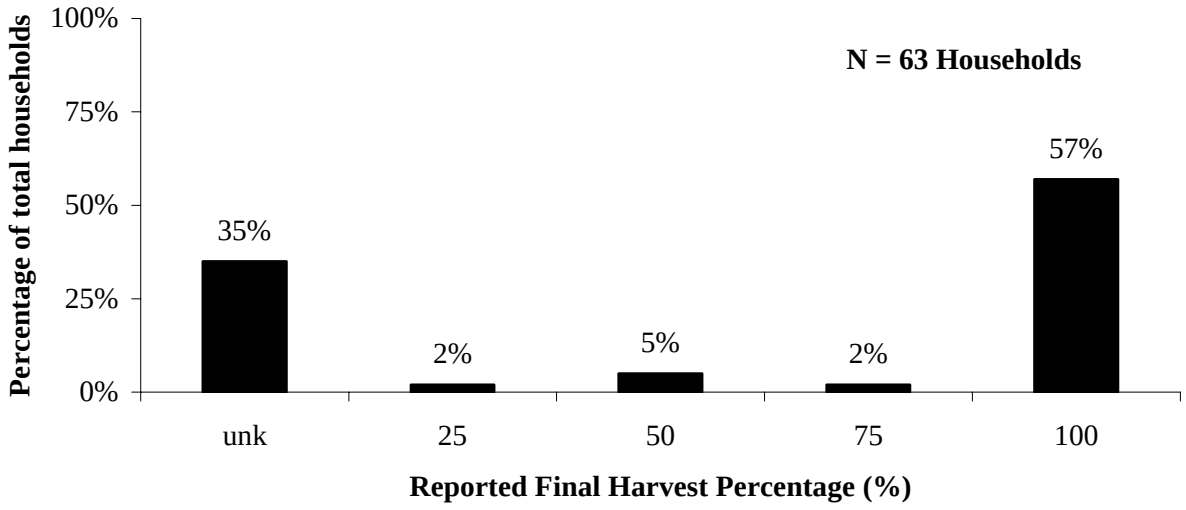


Figure 3. Final responses of harvest progression for Chinook salmon in all interviewed villages.

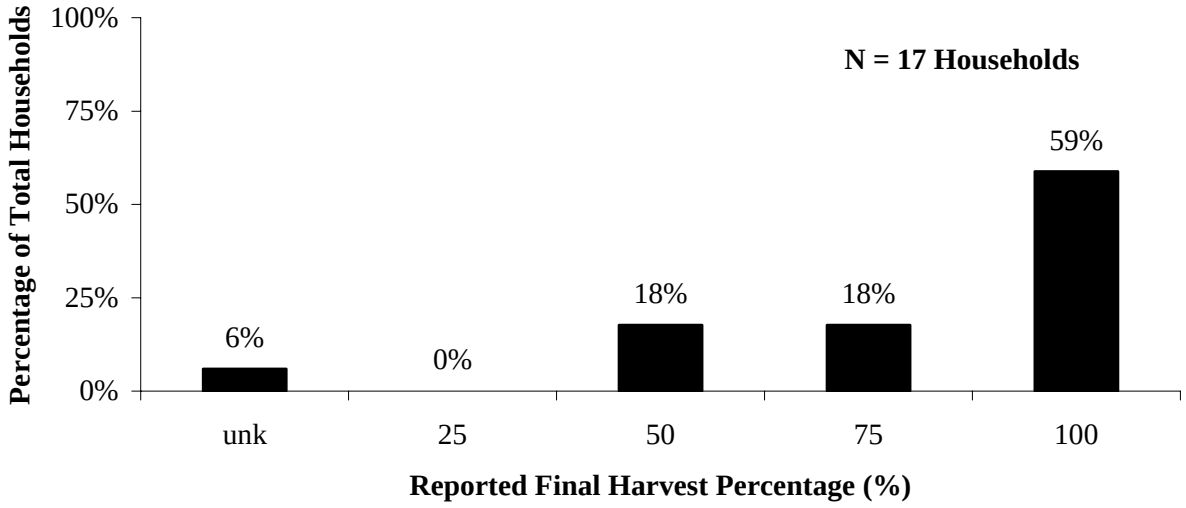


Figure 4. Final responses of harvest progression for chum salmon in all interviewed villages.

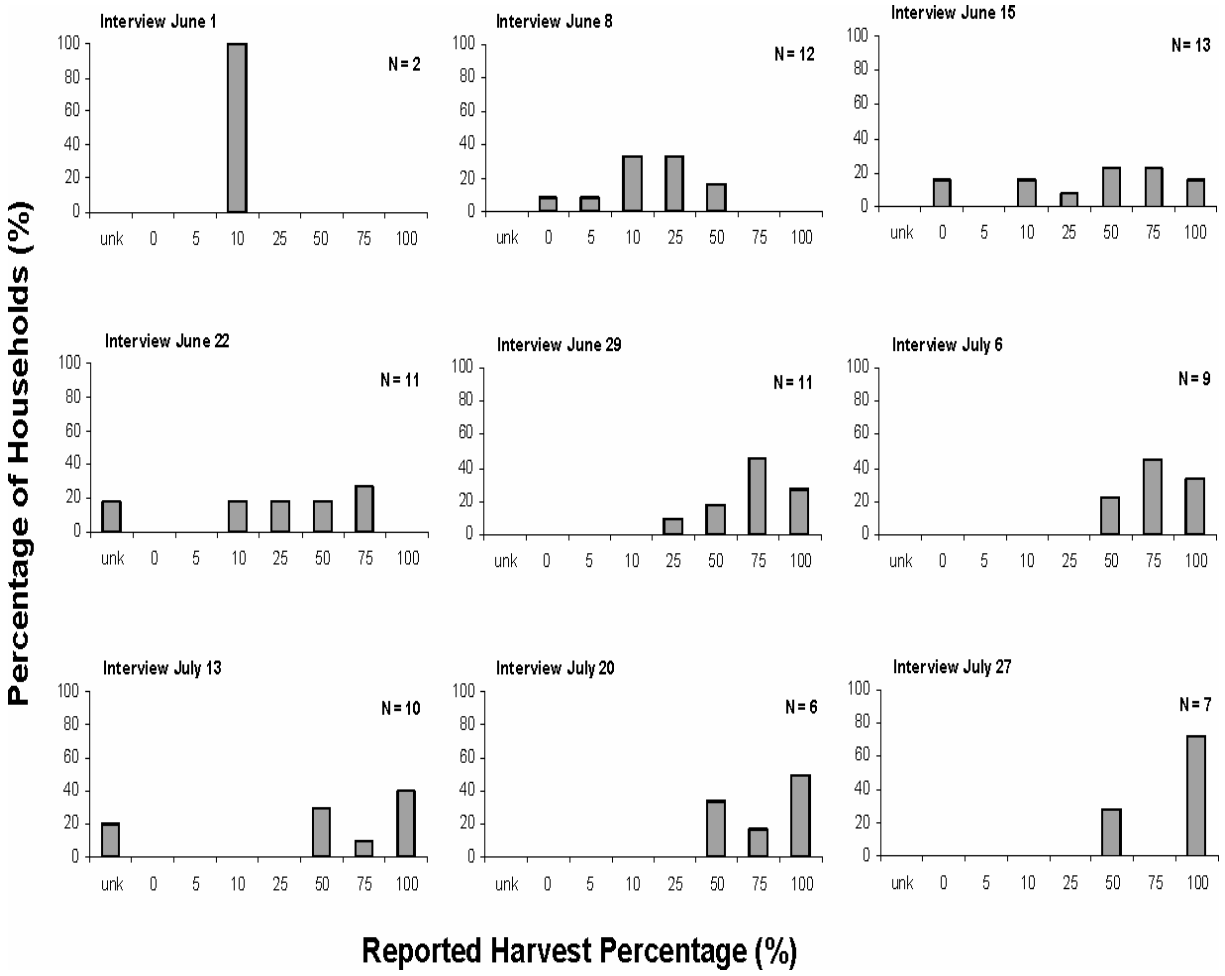


Figure 5. Reported harvest progression for Chinook salmon in Emmonak by interview week.

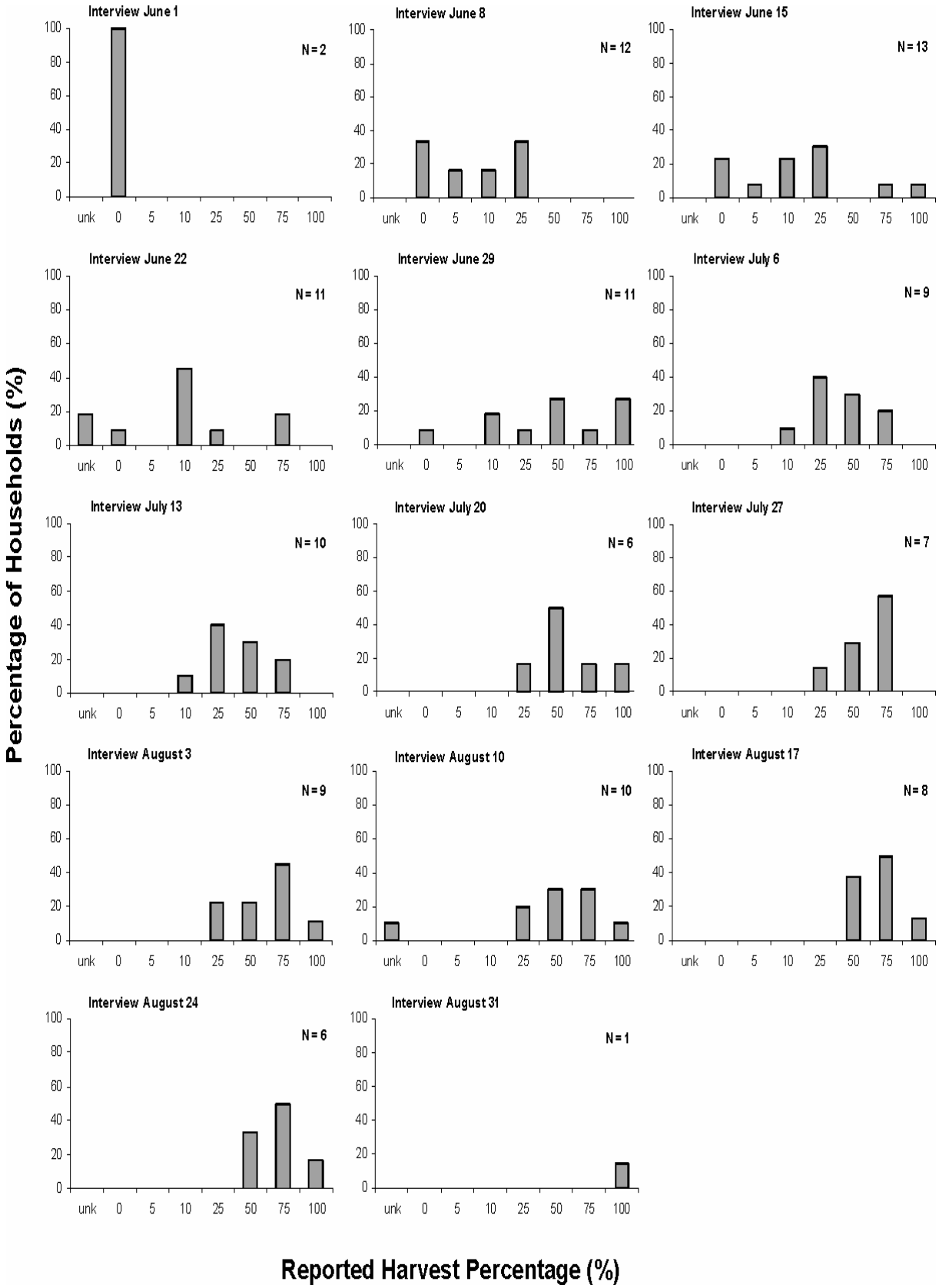

Interview June 1
N = 2
Interview June 8
N = 12
Interview June 15
N = 13
Interview June 22
N = 11
Interview June 29
N = 11
Interview July 6
N = 9
Interview July 13
N = 10
Interview July 20
N = 6
Interview July 27
N = 7
Interview August 3
N = 9
Interview August 10
N = 10
Interview August 17
N = 8
Interview August 24
N = 6
Interview August 31
N = 1
0 20 40 60 80 100
unk 0 5 10 25 50 75 100
Percentage of Households (%)
Reported Harvest Percentage (%)

Figure 6. Reported harvest progression for chum salmon in Emmonak by interview week.

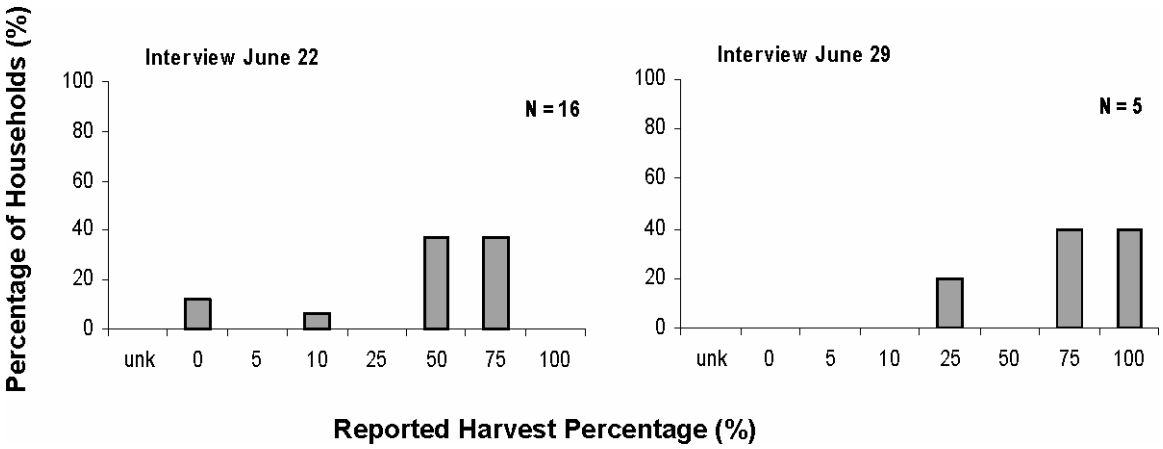


Figure 7. Reported harvest progression for Chinook salmon in Holy Cross by interview week.

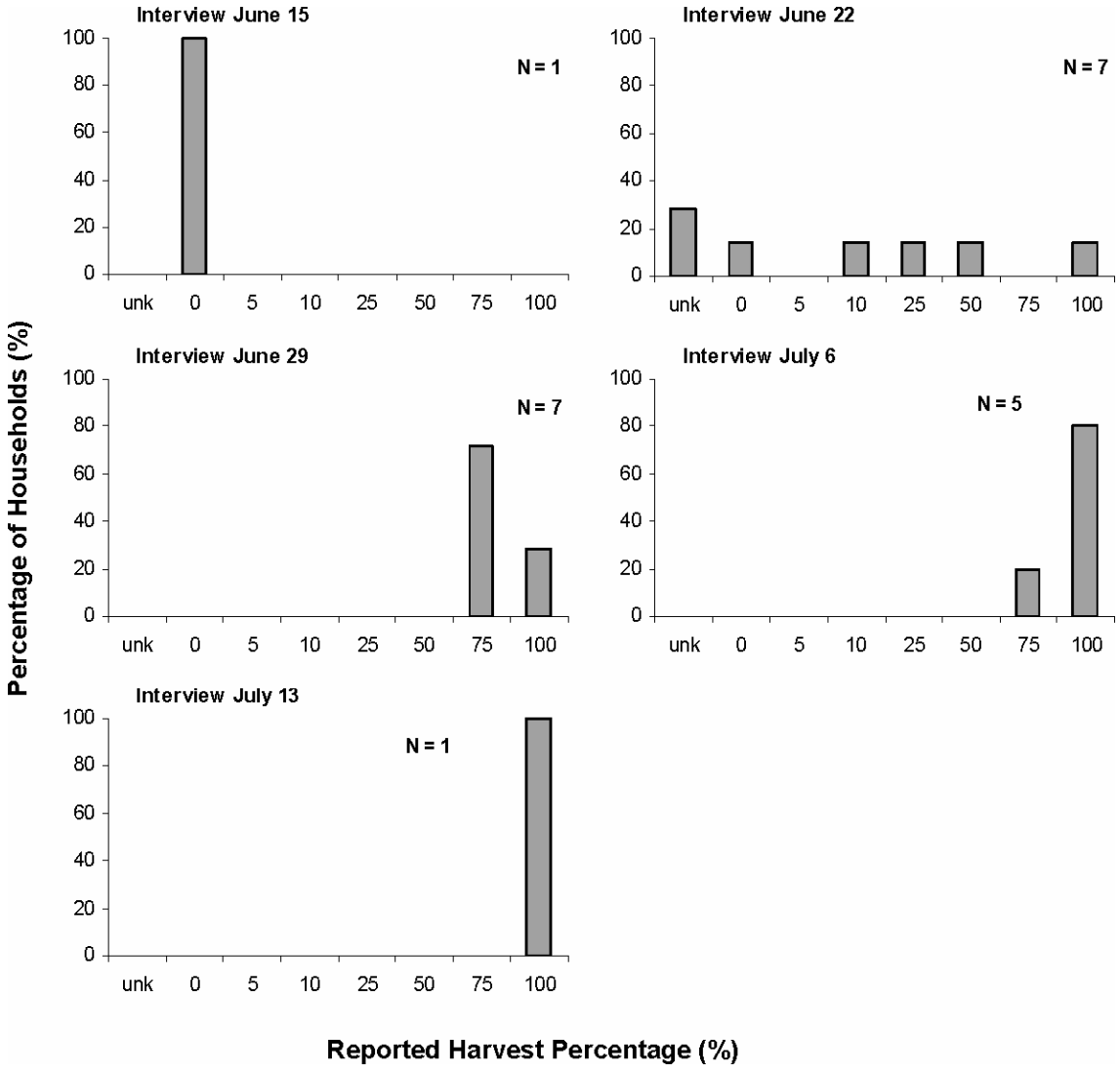


Figure 8. Reported harvest progression for Chinook salmon in Nulato by interview week.

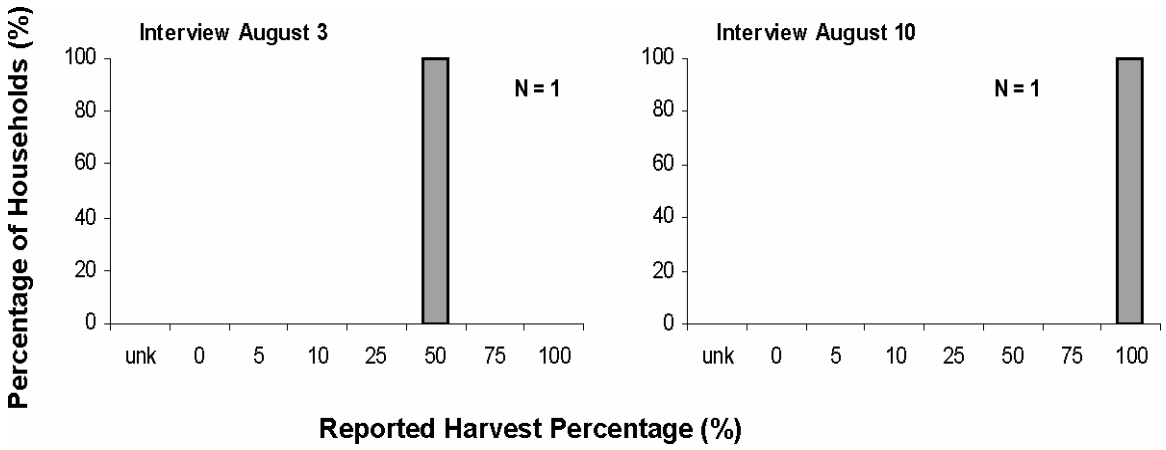


Figure 9. Reported harvest progression for chum salmon in Nulato by interview week.

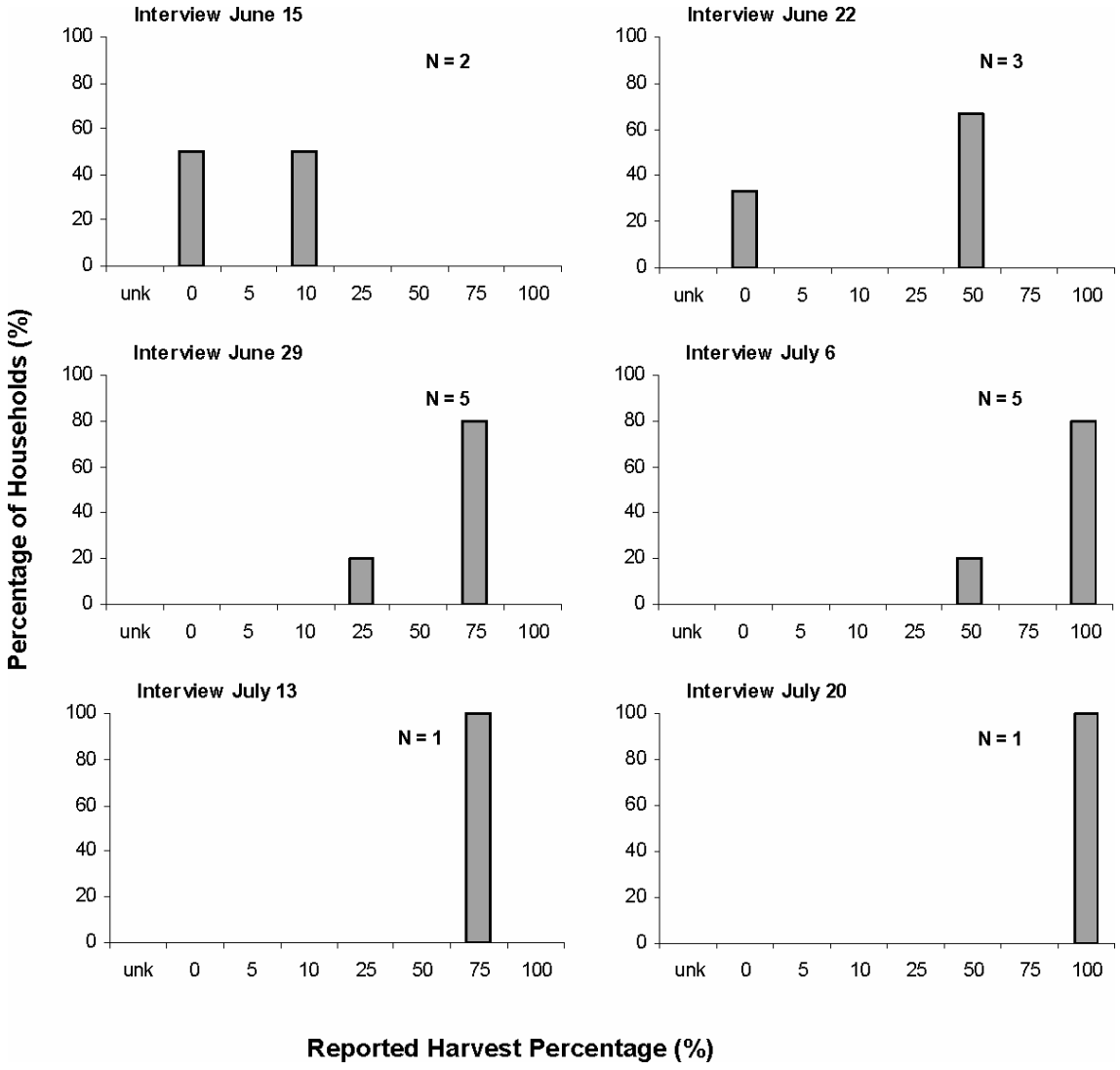


Figure 10. Reported harvest progression for Chinook salmon in Galena by interview week.

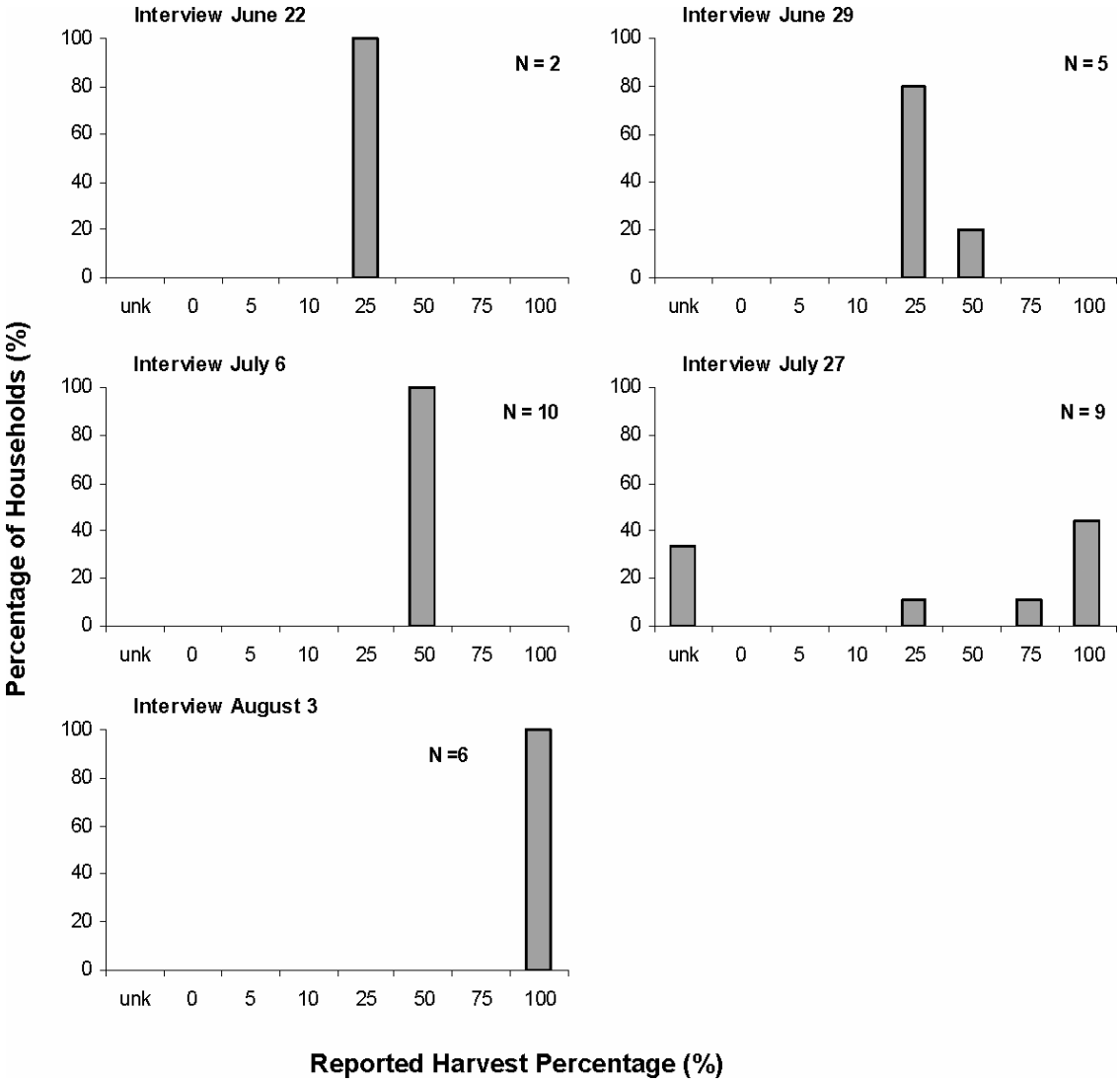
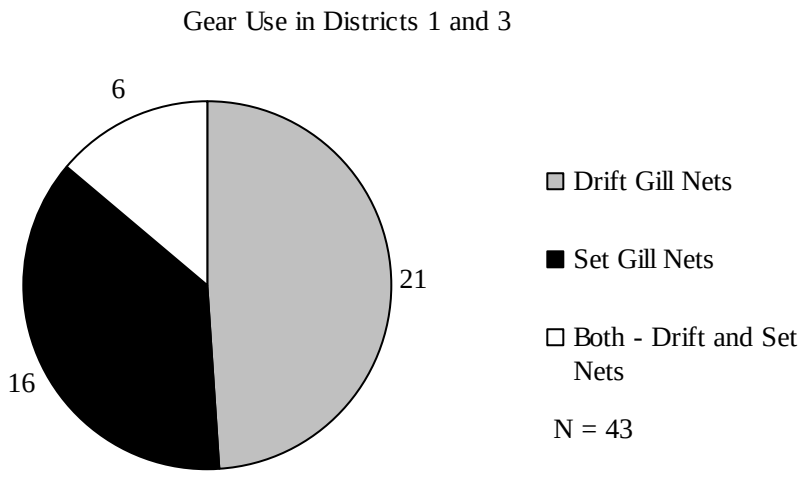


Figure 11. Reported harvest progression for Chinook salmon in Circle by interview week.



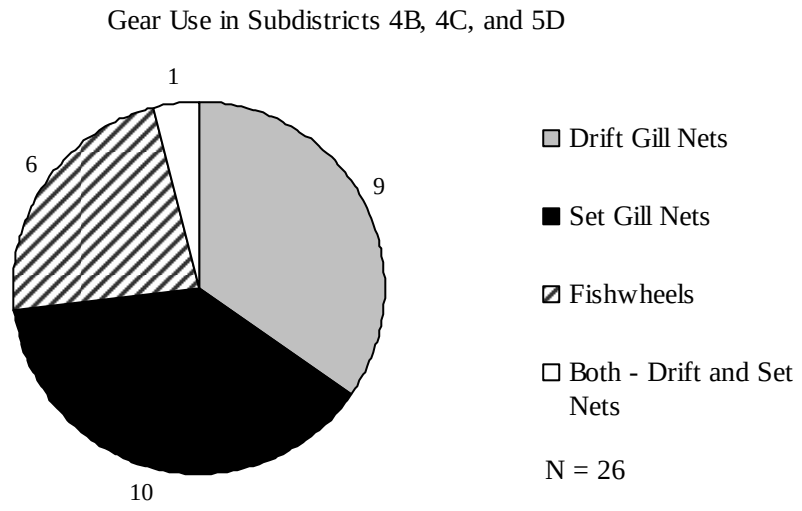


Figure 12. Reported gear type use by fishermen in interviewed villages.

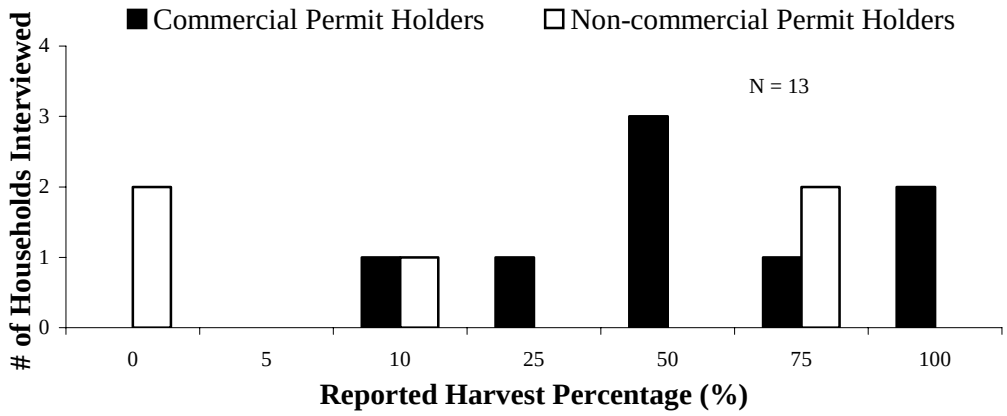


Figure 13. Harvest progress reported by subsistence users in Emmonak on June 15, prior to the first commercial fishing period.

Appendix A. Weekly Subsistence Fisher Catch Information: 2003 multiple family data form.

Survey Date: _____

Year: _____ Surveyor Name: _____

Remind fishers to use their subsistence harvest calendars

Date Caught	Name	Catch Location	Gear		Voluntary: Net Length	Voluntary: Mesh Size	Voluntary: Catch King	Voluntary: Catch Chum	Compared to "LAST" year how were your catch rates? King	Compared to "LAST" year how were your catch rates? Chum	Compared to "LAST" year is the amount of time fished? King	Compared to "LAST" year is the amount of time fished? Chum	Where are you at in your harvest? (%) King	Where are you at in your harvest? (%) Chum	Comments (size of fish, healthy, water levels, timing, more/less effort, abundance, fishing more places than usual, etc…)
			DN	chum					Poor	Poor	Less	Less	0	0	
			SN	king					Same	Same	Equal	Equal	10 25 50 75	10 25 50 75	
			UNK	UNK					Better	Better	More	More	100	100	
			DN	chum					Poor	Poor	Less	Less	0	0	
			SN	king					Same	Same	Equal	Equal	10 25 50 75	10 25 50 75	
			UNK	UNK					Better	Better	More	More	100	100	
			DN	chum					Poor	Poor	Less	Less	0	0	
			SN	king					Same	Same	Equal	Equal	10 25 50 75	10 25 50 75	
			UNK	UNK					Better	Better	More	More	100	100	
			DN	chum					Poor	Poor	Less	Less	0	0	
			SN	king					Same	Same	Equal	Equal	10 25 50 75	10 25 50 75	
			UNK	UNK					Better	Better	More	More	100	100	
			DN	chum					Poor	Poor	Less	Less	0	0	
			SN	king					Same	Same	Equal	Equal	10 25 50 75	10 25 50 75	
			UNK	UNK					Better	Better	More	More	100	100	
			DN	chum					Poor	Poor	Less	Less	0	0	
			SN	king					Same	Same	Equal	Equal	10 25 50 75	10 25 50 75	
			UNK	UNK					Better	Better	More	More	100	100	
			DN	chum					Poor	Poor	Less	Less	0	0	
			SN	king					Same	Same	Equal	Equal	10 25 50 75	10 25 50 75	
			UNK	UNK					Better	Better	More	More	100	100	
			DN	chum					Poor	Poor	Less	Less	0	0	
			SN	king					Same	Same	Equal	Equal	10 25 50 75	10 25 50 75	
			UNK	UNK					Better	Better	More	More	100	100	
			DN	chum					Poor	Poor	Less	Less	0	0	
			SN	king					Same	Same	Equal	Equal	10 25 50 75	10 25 50 75	
			UNK	UNK					Better	Better	More	More	100	100	
			DN	chum					Poor	Poor	Less	Less	0	0	
			SN	king					Same	Same	Equal	Equal	10 25 50 75	10 25 50 75	
			UNK	UNK					Better	Better	More	More	100	100	

DN = drift gillnet SN = set gillnet UNK = unknown

More room for comments on reverse side

Appendix B. Inseason Subsistence Salmon Fishing Monitoring: 2003 individual family data form.

Family Name: Lastname, Firstname

Fishcamp Location

Date family started salmon fishing this year (month, day)

Primary Subsistence Salmon Fishing Areas

What are your family's salmon harvest goals this year ? (number of salmon) King _____, Chum _____, Coho _____
Chinook Silver

Data Sheet ID #		Salmon Fishing Gear Used This Week						Compared with this time "LAST" year, how were your catch rates for salmon this week?						Compared with this time "LAST" year, is the amount of time you have fished?						Where are you at in your harvest? (%)	
Calendar ID #		Net Type						King Salmon			Chum Salmon			King Salmon			Chum Salmon			King	Chum
Surveyor initials	**Week Ending**	Drift Net	Set Net	Mesh Size?	Net Length?	Rod Reel	Fish Wheel	Poor	Same	Better	Poor	Same	Better	Less	Equal	More	Less	Equal	More	0 10 25 50 75 100	0 10 25 50 75 100
	1-Jun																				
	8-Jun																				
	15-Jun																				
	22-Jun																				
	29-Jun																				
	6-Jul																				
	13-Jul																				
	20-Jul																				
	27-Jul																				
		Net Type						Chum Salmon			Coho Salmon			Chum Salmon			Coho Salmon			Chum	Coho
Surveyor initials	**Week Ending**	Drift Net	Set Net	Mesh Size?	Net Length?	Rod Reel	Fish Wheel	Poor	Same	Better	Poor	Same	Better	Less	Equal	More	Less	Equal	More	0 10 25 50 75 100	0 10 25 50 75 100
	3-Aug																				
	10-Aug																				
	17-Aug																				
	24-Aug																				
	31-Aug																				

Comments on reverse side

Appendix C. Weekly Interview Summary Results Form, 2003.

Yukon River In-Season Subsistence Report For the Week of _____

Interviewer (RIT) _____

Number of Families contacted_____

Number of Families Interviewed _____

Number of Families who fished _____

Number of Families who did not fish_____

Gear

# of Families using only drift gillnets less than 6”_____greater than 6” _____

# of Families using only set gillnets less than 6”_____greater than 6” _____

# of Families using both set gillnets and drift gillnets _____

# of Families using fishwheels_____

# of Families using rod and reel _____

King Salmon (Chinook)	Chum Salmon
# reporting catches as “very good”_____	_____
# reporting catches as “normal” _____	_____
# reporting catches as “poor” _____	_____

Summary with questions and notes on fishing, weather, and water conditions.

Appendix D. Subsistence Interviews Weekly Compilation and Summary Form, 2003.

Chinook	Number of	Catch rate comparison to 2002			Time fished comparison to 2002			% harvested?						
Week ending	households interviewed	**POOR**	**SAME**	**BETTER**	**LESS**	**EQUAL**	**MORE**	**0**	**5**	**10**	**25**	**50**	**75**	**100**
1-Jun														
8-Jun														
15-Jun														
22-Jun														
29-Jun														
6-Jul														
13-Jul														
20-Jul														
27-Jul														
3-Aug														
10-Aug														
17-Aug														
24-Aug														
31-Aug														

Chums	Number of	Catch rate comparison to 2002			Time fished comparison to 2002			% harvested?						
Week ending	households interviewed	**POOR**	**SAME**	**BETTER**	**LESS**	**EQUAL**	**MORE**	**0**	**5**	**10**	**25**	**50**	**75**	**100**
1-Jun														
8-Jun														
15-Jun														
22-Jun														
29-Jun														
6-Jul														
13-Jul														
20-Jul														
27-Jul														
3-Aug														
10-Aug														
17-Aug														
24-Aug														
31-Aug														

Appendix E. Emmonak summary reports for the YRDFA teleconferences from the inseason subsistence harvest interview, 2003.

Yukon River Inseason Report for the Week of June 2 - 9
Summary for YRDFA Teleconference June 10

Good afternoon, I am Ted Hamilton and I am reporting subsistence fishing for Emmonak. 11 households were interviewed last week, with 8 families who had fished, and most indicated that fishing as the same or better for Kings as this time last year. Most families have not started fishing for chum salmon, and those that did fish, for chums, indicated that fishing was poor compared to this time last year. One family reported that they are half way in their King harvest with most families reporting that they had just started fishing for salmon. The water level here on the Lower Yukon River Delta is lower than normal and that the water is much clearer than normal. Thank you.

Emmonak Area Yukon River Inseason Report for June 10 - 16
Summary for YRDFA Teleconference June 17

Good afternoon, I am Ted Hamilton, reporting subsistence fishing for Emmonak and a boat trip to fish camps above Emmonak on Friday, June 13. On the boat trip, we interviewed 11 families with about half using King gear and the other half using Chum gear. About half used set nets and the other half were using drift nets. In my Emmonak interviews conducted on Saturday and Sunday, 11 of 12 households had fished this past week. In both fish camps and Emmonak interviews, about half were still fishing for Kings and the other half had finished King fishing and were fishing for chums. Most families reported catch rates as better than last year for both kings and chums and that they are fishing less to meet their goals. Most of the fishermen commented that they are lots of fish in the river and that fishing is better than the last few years.

Emmonak Area Yukon River Inseason Report for June 17 - 23
Summary for YRDFA Teleconference June 24

Good afternoon, I am Ted Hamilton, reporting subsistence fishing for Emmonak. 11 families were contacted and 2 families were interviewed last week. One family used King Gear and the other family using Chum gear All families reported catch rates for both kings and chums as better than last year and they used less time fishing to meet their goals. 9 families did not fish this week. 5 of those families are waiting for room on their dry racks and will fish again next week. Thank you.

Emmonak Area Yukon River Inseason Report for June 24 - 30
Summary for YRDFA Teleconference July 1

Good afternoon, I am Ted Hamilton, reporting subsistence fishing for Emmonak. 9 families were contacted and 4 families were interviewed this week. 2 families are finished with subsistence fishing. 2 families are fishing with chum gear, one using set net and the other one using a drift net. These families report catch rates for both kings and chums as better than last year and that they used less time to meet their harvest goals. 4 families did not fish this week, but indicated they will fish next week. Thank you.

Appendix E. Continued.

Emmonak Area Yukon River Inseason Report for July 1 - 7
Summary for YRDFA Teleconference July 8

Good afternoon, I am Ted Hamilton, reporting subsistence fishing for Emmonak. 10 families were contacted and interviewed with 3 who fished last week. 2 more families are finished with subsistence fishing. 2 families are fishing with chum gear, both using a drift net. 1 household used king gear in a set net site. For Kings, 2 families reported their catch rates as better that last year and 1 said it was the same as last year. For Chums, 2 families reported their catch rates as the same, while the other said better. All households reported that they are fishing less to meet their harvest goals. Thank you.

Emmonak Area Yukon River Inseason Report for July 8 - 14
Summary for YRDFA Teleconference July 15

Good afternoon, I am Ted Hamilton, reporting subsistence fishing for Emmonak. 10 families were contacted and 6 families were fishing. All families are fishing for chum. One family is using a set net and 5 families are using drift nets. 3 families report their catches as better then last year and report their fishing time as less. 3 families report their catches as the same as last year and they are fishing an equal amount of time. Fish are reported of excellent quality. Fall chum have began to enter the river. Water is low.

Emmonak Area Yukon River Inseason Report for July 15 - 21
Summary for YRDFA Teleconference July 22

Good afternoon, I am Ted Hamilton, reporting subsistence fishing for Emmonak. 7 households were contacted and 1 family reported fishing for chums using a drift net. The household reported catches as better than last year and reported their fishing time as less. The salmon are reported to be of excellent quality. Water levels are rising. Other families are salmon berry picking and fishing for whitefish.

Emmonak Area Yukon River Inseason Report for July 22 - 28
Summary for YRDFA Teleconference July 29

Good afternoon, I am Ted Hamilton, reporting subsistence fishing for Emmonak. 7 families were contacted. 1 family reports fishing for chums using a drift net. The family reported catches as better than last year and reports their fishing time as less. The salmon are reported to be of excellent quality. Water levels are holding steady. More families went berry picking, taking advantage of the windy weather.

Appendix E. Continued.

Emmonak Area Yukon River Inseason Report for July 29 - August 4
Summary for YRDFA Teleconference August 5

Good afternoon, I am Ted Hamilton, reporting subsistence fishing for Emmonak. 9 families were contacted, 7 families did not fish for chum and 2 families did. One used a set net and the other used a drift net. Both report their catches as better than last year and report their fishing time as less. The salmon are reported to be of excellent quality. Water levels are holding steady. 4 families went berry picking and 2 families set nets for whitefish. Thank you.

Emmonak Area Yukon River Inseason Report for August 5 - 11
Summary for YRDFA Teleconference August 12

Good afternoon, I am Ted Hamilton, reporting subsistence fishing for Emmonak. 10 families were contacted and 1 family reports fishing using a set net. The fisherman reported his catch as the same as last year at this time and reports the fishing time as equal. The salmon are reported to be of excellent quality. The water levels are rising. Thank you.

Appendix F. Holy Cross summary reports for the YRDFA teleconferences from the inseason subsistence harvest interview, 2003.

Holy Cross Area Yukon River Inseason Report for June 24 - 30
Summary for YRDFA Teleconference July 1

My name is Clara Demientieff and I am reporting fishing information for Holy Cross. 5 families were interviewed last week and all fishermen reported that the fishing was excellent compared to last year. Almost everyone has reported that by the end of this week should be the end of their king season until the blue backs and white nose's start coming. Some have already indicated a few catches. 3 families indicated they were done fishing for kings and 2 families are quite done. Everyone indicted that the salmon are very rich and of good quality. The water level had dropped considerably but there still seems to be fish in the river. Many are thankful for the open period this past week because some fishermen had the time to take a break from their jobs to go fishing.

Holy Cross Area Yukon River Inseason Report for July 8 - 14
Summary for YRDFA Teleconference July 15

No fishermen have been fishing. Possibly everyone got a quota of salmon this summer and no one I know of right now is fishing for chums. The weather around Holy Cross has been very mild with temperatures at least up to 80 degrees. The Yukon River from Grayling on down to Holy Cross is very low with a lot of sand dunes showing.

Appendix G. Nulato summary reports for the YRDFA teleconferences from the inseason subsistence harvest interview, 2003.

Nulato Area Yukon River Inseason Report for June 24 - 30
Summary for YRDFA Teleconference July 1

My name is Patrick Madros Jr. and I am reporting fishing information for Nulato. Seven households were contacted last week and seven of them were interviewed. Seven households reported their catches for kings as better compared to last year and reported their fishing time as equal. Five households reported using driftnets to catch their kings, while two households reported using king set nets. One fisherman reported using a silver salmon set net to catch their fish. One fisherman reported their catches for chum as the same and reported using less fishing time. Most households reported that the color of the fish was redder than the previous week but the quality of the meat was ok. The water level dropped again this week but has slowed dramatically.

Nulato Area Yukon River Inseason Report for July 1 - 7
Summary for YRDFA Teleconference July 8

My name is Patrick Madros Jr. and I am reporting fishing information for Nulato. Five households were contacted last week and all were interviewed. Five households reported their catches as the same or ok compared to last year. All five households reported fishing about the same amount of time compared to last year. Four households reported using king driftnets to harvest their fish and one household reported using a king set net to catch their fish. No households interviewed reported targeting chum last week and no comparison was made. I also talked to one fisherman from Kaltag. He reported having harvested enough kings for their household and was waiting for fall fish to arrive to resume fishing. Most fishermen stated that the fish were still ok in meat quality but are beginning to look stressed. All but one fisherman had finished harvesting kings and they were at around ninety percent finished with their harvest goals. Water levels stayed about the same with little drop. This concludes my report for Nulato.

Nulato Area Yukon River Inseason Report for July 8 - 14
Summary for YRDFA Teleconference July 15

Hello my name is Patrick Madros Jr. and I am reporting fishing information for Nulato. I contacted several households and one was interviewed. The fisherman reported fishing as ok compared to last year and used less effort when fishing. The fishermen used a king drift net to harvest their fish and also reported their fish as good. Water levels stayed about the same with a little rise in elevation. Most fishermen talked too reported as achieving their harvest goals for kings. Also, some fisherman talked to were waiting for the silvers to arrive to continue fishing activities. This concludes my report.

Appendix H. Summary report of subsistence fishing on the Koyukuk River around the village of Huslia, Alaska, summer season 2003.

Refuge Information Technician
Koyukuk/Nowitna NWR
Orville H. Huntington

Most fishermen in the Huslia area were subsistence fishing during the entire summer season in 2003. All fishermen used set nets along the Koyukuk River and drainages within the Koyukuk National Wildlife Refuge. Some used rod and reel for freshwater fishing, but not for salmon.

In 2003, the Chinook salmon run on the Koyukuk was good for fisherman with set nets on the East side of the Koyukuk River, but poor for the West side of the drainage. With high water levels reported by fisherman, only two of twelve families were able to take advantage of the East side fishery during the chinook pulse on the Koyukuk River and met their subsistence goals. All other fisherman were not able to catch enough for their families needs fishing on the West side of the Koyukuk River within the Huslia area during these reported high water level events, and there was only low water reported in 2003 during the normally short summer chum pulse.

During most of the summer chum salmon run on the Koyukuk River the water was high to very high. In the Huslia area, the water level was low and good for fishing with set nets during the time when the main pulse of summer chum were going through and fishing on the Koyukuk River was closed. For this reason, all fishermen were not able to meet their goals for summer chum salmon. When the Department of Fish and Game opened fishing for summer chum on the Koyukuk River, the main pulse already went by and the water level came back up, and was too high to catch many summer chum. There were no window affects to the fisherman as the Koyukuk River is opened for seven days a week when it is open and there is no commercial fishery on the Koyukuk River. But there may be an in-direct affect to the overall run strength of the Koyukuk River pulse, because when more fish pass through on the lower Yukon River, fisherman on the Koyukuk are allowed to fish during the pulse in the Koyukuk River drainage. Weather on the Koyukuk River is what drives the success of set netters within the middle Koyukuk River fishery, as when it is raining the water gets high very fast and when it is sunny the water level goes down or stabilizes.

The fall chum salmon run on the Koyukuk River is also a small pulse. Although the season was open the weather was too rainy and the water was too high for set netters to catch many fall chum salmon. Most fishermen caught just enough to feed their families at a low percentage of their normal annual catch, and not much to put away for winter use. The late summer weather was very warm and allowed for a very late fishing period of what appeared to be coho salmon. Although these fish are not preferred for eating, as the meat is very dry and not much oil in it and there wasn't ever much access to these fish, as this pulse normally goes by during fall ice-flow on the Koyukuk River. There are many things going on with the Koyukuk River fishery that have to do with climate change that will not be covered in this report, but that will be covered by a report I am working on from the Huslia Climate Change meetings from 2003 and 2004.

Appendix I. Circle summary reports for the YRDFA teleconferences from the inseason subsistence harvest interview, 2003.

Circle Area Yukon Rive Inseason Report for June 17 - 23
Summary for YRDFA Teleconference June 24

My name is Albert Carroll Jr. and I am reporting fishing information for Circle. 3 households were interviewed last week. 2 families are using fish wheels and one family is using a set net. All families report catch rates as the same compared to last year and have fished an equal amount of time. Families report the quality of kings as good. Water level is low this week.

Circle Area Yukon Rive Inseason Report for June 24 - 30
Summary for YRDFA Teleconference July 1

My name is Albert Carroll Jr. and I am reporting fishing information for Circle. 10 households were interviewed last week. 5 families used fish wheels and 5 families used set nets. 5 families report catch rates as better compared to last year and have fished an equal amount of time. 5 families did not catch fish this week. Most families report being 25% finished with king harvests. Families report the quality of kings as good. Water level is low this week.

Appendix J. YRDFA whitenose and blueback Chinook salmon interview form, 2003.

Community _____ Date of Survey_____
Interviewer_____ Person Interviewed_____ (fisher/cutter)

YRDFA received money this year to ask people about white nose and blue back king salmon. Local people have reported catching these different kinds of king salmon and we'd like to know what you know about these fish.

Do you think you can identify a blue back or white nose king salmon?

Are there other kinds of king salmon you know about? What do you call them? (Local name?)

(if no- "As far as you know, there is only one kind of king salmon?")

King Salmon Run Descriptions	**White Nose**	**Blue Back**	**Other_____**
When does each run arrive in your area? How long does each run last? Where do you catch them or see them? What kind of gear do you use to catch them? Do you know where they are headed (spawning)? **Characteristics** What are the distinguishing characteristics of each run of king salmon?			
What is the color of their back?			
-- their nose?			
Which is the largest? Which are the fattest and the thinnest? (mark order in size) What is the shape of their nose? -- belly / stomach			
Are any of the fins shaped differently, or are they further forward or back on the fish? Is there a particular meaning or significance to the placement or shape of the fin? Do any fish have a black spot under the chin? Is this a specific run or group? What is the meat like? (firm, soft, oily, etc) What do you use them for (i.e. strips, etc)? **Other comments or drawings...**			