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# Subsistence Salmon Harvests in the Kuskokwim Area, 2011 and 2012

**Annual Report for Study 10-352**

**USFWS Office of Subsistence Management**

**Fisheries Resource Monitoring Program**

**by**

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## Symbols and Abbreviations

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**Weights and measures (metric)**

| | |
|---|---|
| centimeter | cm |
| deciliter | dL |
| gram | g |
| hectare | ha |
| kilogram | kg |
| kilometer | km |
| liter | L |
| meter | m |
| milliliter | mL |
| millimeter | mm |

**Weights and measures (English)**

| | |
|---|---|
| cubic feet per second | $ft^3/s$ |
| foot | ft |
| gallon | gal |
| inch | in |
| mile | mi |
| nautical mile | nmi |
| ounce | oz |
| pound | lb |
| quart | qt |
| yard | yd |

**Time and temperature**

| | |
|---|---|
| day | d |
| degrees Celsius | °C |
| degrees Fahrenheit | °F |
| degrees kelvin | K |
| hour | h |
| minute | min |
| second | s |

**Physics and chemistry**

| | |
|---|---|
| all atomic symbols | |
| alternating current | AC |
| ampere | A |
| calorie | cal |
| direct current | DC |
| hertz | Hz |
| horsepower | hp |
| hydrogen ion activity (negative log of) | pH |
| parts per million | ppm |
| parts per thousand | ppt, ‰ |
| volts | V |
| watts | W |

**General**

| | |
|---|---|
| Alaska Administrative Code | AAC |
| all commonly accepted abbreviations | e.g., Mr., Mrs., AM, PM, etc. |
| all commonly accepted professional titles | e.g., Dr., Ph.D., R.*N* ., etc. |
| at | @ |
| compass directions: | |
| east | E |
| north | *N* |
| south | S |
| west | W |
| copyright | © |
| corporate suffixes: | |
| Company | Co. |
| Corporation | Corp. |
| Incorporated | Inc. |
| Limited | Ltd. |
| District of Columbia | D.C. |
| et alii (and others) | et al. |
| et cetera (and so forth) | etc. |
| exempli gratia (for example) | e.g. |
| Federal Information Code | FIC |
| id est (that is) | i.e. |
| latitude or longitude | lat or long |
| monetary symbols (U.S.) | $, ¢ |
| months (tables and figures): first three letters | Jan,...,Dec |
| registered trademark | ® |
| trademark | ™ |
| United States (adjective) | U.S. |
| United States of America (noun) | USA |
| U.S.C. | United States Code |
| U.S. state | use two-letter abbreviations (e.g., AK, WA) |

**Mathematics, statistics**

| | |
|---|---|
| *all standard mathematical signs, symbols and abbreviations* | |
| alternate hypothesis | $H_A$ |
| base of natural logarithm | *e* |
| catch per unit effort | CPUE |
| coefficient of variation | CV |
| common test statistics | (F, t, $\chi^2$, etc.) |
| confidence interval | CI |
| correlation coefficient (multiple) | R |
| correlation coefficient (simple) | r |
| covariance | cov |
| degree (angular ) | ° |
| degrees of freedom | df |
| expected value | *E* |
| greater than | > |
| greater than or equal to | ≥ |
| harvest per unit effort | HPUE |
| less than | < |
| less than or equal to | ≤ |
| logarithm (natural) | ln |
| logarithm (base 10) | log |
| logarithm (specify base) | $\log_2$, etc. |
| minute (angular) | ' |
| not significant | NS |
| null hypothesis | $H_O$ |
| percent | % |
| probability | P |
| probability of a type I error (rejection of the null hypothesis when true) | α |
| probability of a type II error (acceptance of the null hypothesis when false) | β |
| second (angular) | " |
| standard deviation | SD |
| standard error | SE |
| variance | |
| population | Var |
| sample | var |

*FISHERY DATA SERIES NO. 14-20*

# SUBSISTENCE SALMON HARVESTS IN THE KUSKOKWIM AREA, 2011 AND 2012

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# ABSTRACT

The Alaska Department of Fish and Game (ADF&G) in partnership with Orutsararmiut Native Council (ONC) in Bethel and Kuskokwim Native Association (KNA) in Aniak have conducted a voluntary survey program to estimate subsistence salmon harvest for the Kuskokwim Area in 2011 and 2012. Harvest information was collected through postseason household interviews and harvest calendars. Simple random sampling, stratified random sampling, and 100% census techniques were used, based on community size and user group designations, to select households to be interviewed. For the communities of Bethel and Aniak, subsistence salmon harvest information was collected by ONC and KNA respectively. ADF&G surveyed the remaining communities in the Kuskokwim Area. Data from surveyed communities were applied to estimate the harvest of unsurveyed communities when historical data for the unsurveyed community existed. In both study years, Kuskokwim Area subsistence users were subject to moderate to severe restrictions with respect to the harvest of Chinook salmon. In 2011, households were surveyed in 28 communities in the Kuskokwim Area, including most communities along the Kuskokwim River, Kongiganak in north Kuskokwim Bay, and all communities within south Kuskokwim Bay. Subsistence salmon harvest estimates for 2011 were: 65,732 Chinook, 55,490 chum, 45,550 sockeye, 33,346 coho, and 739 pink salmon. In 2012, 25 Kuskokwim Area communities were successfully surveyed, including most communities along the Kuskokwim River and all communities within South Kuskokwim Bay. Subsistence salmon harvest estimates for 2012 were: 25,336 Chinook, 81,912 chum, 50,616 sockeye, 30,221 coho, and 2,160 pink salmon.

Key words: Chinook *Oncorhynchus tshawytscha*, chum *Oncorhynchus keta*, coho *Oncorhynchus kisutch*, and pink *Oncorhynchus gorbuscha* subsistence, salmon, harvest, Bethel, Aniak, Kuskokwim River, Kuskokwim Bay, Kuskokwim Area.

# INTRODUCTION

The purpose of this study is to quantitatively estimate the subsistence harvest of salmon, by species in the Kuskokwim Management Area, using postseason subsistence salmon harvest surveys. This study is a continuation of the Kuskokwim Area Subsistence Salmon Monitoring Program (Monitoring Program; Carroll and Hamazaki 2012b). The Monitoring Program collects data about the number and species of salmon harvested by area residents. These data are then analyzed to provide an estimate of the number of salmon harvested for subsistence purposes in the Kuskokwim Area. This report describes the outcome of surveys for the 2011 and 2012 fishing seasons in the Kuskokwim Area.

The Kuskokwim Area (Figure 1) subsistence salmon fishery is one of the largest in the state in terms of the number of residents who participate and the number of salmon harvested (Fall et al. 2012). Residents harvest all 5 locally occurring species of Pacific salmon for subsistence purposes: Chinook *Oncorhynchus tshawytscha*, chum *O. keta*, coho *O. kisutch*, sockeye *O. nerka*, and pink *O. gorbuscha* salmon. Studies conducted in the region by Alaska Department of Fish and Game (ADF&G) Division of Subsistence indicate that fish contribute as much as 85% of the total pounds of subsistence fish and wildlife harvested in a Kuskokwim Area community, and salmon contribute as much as 53% of the total annual subsistence harvest of fish and wildlife (Simon et al. 2007). Primary gear types used for harvesting salmon include drift gillnets, set gillnets and rod and reel.

Subsistence salmon harvest practices represent a complicated dynamic between culture, tradition, salmon biology, and local economy (Simon et al. 2007; Patton and Carroll 2012a). From June through October, the movement of families from permanent winter residences to summer fish camps situated along tributaries, sloughs, and along main river channels continues to be very important in annual subsistence harvest efforts. During these months, daily activities of many Kuskokwim Area households revolve around subsistence fishing.

There are 38 communities in the Kuskokwim Area, 28 of which are surveyed each year based on voluntary involvement in the study (Table 1; Figure 1). The majority of the Kuskokwim Area subsistence salmon harvest (all species combined) occurs in the Lower Kuskokwim River villages from Eek to Tuluksak (78% based on the last 10 years of unrestricted subsistence fishing; Figure 2; Appendices A1–A4). The middle Kuskokwim River villages from lower Kalskag up through Chuathbaluk typically harvest 9% of the total subsistence salmon. The upper River communities usually harvest about 6% of the total, south Kuskokwim Bay communities usually harvest 5% of the total, and north Kuskokwim Bay communities usually harvest about 3% of the total, on average (Figure 2; Appendices A1–A4). This is similar to the population distribution along the Kuskokwim River. In 2010, population percentages for the lower, middle, upper Kuskokwim River communities, the south Kuskokwim Bay communities, and Kongiganak on north Kuskokwim Bay were estimated to be 78%, 8%, 4%, 7%, and 3%, respectively (Carroll and Hamazaki 2012b)

The north Kuskokwim Bay communities of Kwigillingok, Kongiganak, and Kipnuk are not located on the Kuskokwim River, but some subsistence salmon fishing households from these communities travel to the Kuskokwim River to fish, in addition to fishing in areas closer to their communities (Fall et al. 2012). Of these north Kuskokwim Bay communities, only the community of Kongiganak (92 households in 2010, Carroll and Hamazaki 2012a) has usually participated in the voluntary ADF&G harvest survey.

The communities of Quinhagak, Goodnews Bay, and Platinum, located in south Kuskokwim Bay, comprised 7% of the total Kuskokwim Area households in 2010 (Carroll and Hamazaki 2012b). Subsistence fishermen from these communities harvest salmon primarily from the Kanektok, Arolik, and Goodnews River drainages (Simon et al. 2007).

Subsistence users from Bering Sea coastal communities have not chosen to participate in the ADF&G Monitoring Program for most years. These include the communities of Mekoryuk (on Nunivak Island), Newtok, Tununak, Toksook Bay, Nightmute, and Chefornak; and typically these communities harvest salmon from coastal waters as well as area rivers (Simon et al. 2007). In 2011, the Association of Village Council Presidents (AVCP) successfully conducted a subsistence survey of a number of Bering Sea coastal communities, including those listed above (Wolfe et al. 2012). AVCP has shared the results of this study with ADF&G and other agencies; however these findings are not included in this report because too few years of data exist for these villages to make meaningful comparisons between years. If this effort can be continued in future years, it may be possible to form a baseline by which these communities' harvest can be consistently estimated and later be added to the annual subsistence harvest assessment for the Kuskokwim Area.

At present, subsistence fishermen in the Kuskokwim Area are not required to report their harvest to ADF&G or to any federal management agencies, and licenses and permits are not required to participate in the subsistence fishery. With a few exceptions for special management areas (e.g., Aniak River), the Kuskokwim Management Area is largely free of subsistence harvest limits. Legal subsistence fishing gear includes gillnets (which are most common), beach seine, rod and reel, fish wheel, and spear (5 AAC 01.270). The mesh size used for drift and set gillnets are not regulated, but aggregate length of gillnets and depth is restricted by regulation.

Annual documentation of the subsistence salmon harvest is necessary to determine whether salmon are returning in sufficient numbers to the Kuskokwim Area rivers to meet escapement

and subsistence needs. The significance of salmon harvests and uses for subsistence in the Kuskokwim Area is well documented by ADF&G studies. Since 1960 the Monitoring Program has estimated salmon harvest primarily through household surveys, and to a lesser extent harvest calendars and postcard surveys. This information has been used by ADF&G, U.S. Fish and Wildlife Service (USFWS), the Alaska Board of Fisheries (BOF), and the Federal Subsistence Board to manage and provide reasonable opportunity for continued customary and traditional uses of salmon throughout the region. In 2001, the BOF found that the following amounts of fish were reasonably necessary for subsistence (ANS) in the Kuskokwim River drainage: 64,500 to 83,000 Chinook salmon; 39,500 to 75,500 chum salmon; 27,500 to 39,500 sockeye salmon; and 24,500 to 35,000 coho salmon (5 AAC 01.286.b). A species-specific ANS range provides an index of the extent to which reasonable opportunity was provided in each subsistence fishery. The BOF found that the remaining Kuskokwim Area communities, located outside the Kuskokwim River drainage, traditionally use 7,500–13,500 salmon (not broken down by species).

The Monitoring Program has changed hands over time, and some alternate datasets exist. Prior to 1988, the Division of Commercial Fisheries (DCF) was responsible for collecting subsistence salmon harvest information; from 1988 to 2007, the Division of Subsistence conducted harvest monitoring; and in 2008 the DCF again became responsible for supervision of the program. In 2008, the DCF reexamined existing methods and datasets and changed some aspects of the methodology. As part of this process, the archived data collected by the Division of Subsistence from 1990 through 2007 were reviewed and the annual subsistence salmon harvest was reconstructed using a standardized method. Analysis indicated that the change in methodology would not unduly bias or affect the accuracy of the results, compared with previous results (Hamazaki 2011; Carroll and Hamazaki 2012a). During the reconstruction, the original harvest estimates were expanded to represent the total harvest, including households and communities that had not been surveyed, and the resulting estimates tended to be somewhat higher than the original estimates. The difference was attributed to the adoption of 1) a stratified random sampling design which better represented household fishing patterns within a community; and 2) a new statistical approach for estimating harvest from unsurveyed or underrepresented communities, based on each community's historical harvest patterns (Hamazaki 2011).

The data collected during this survey serves a valuable role to fisheries managers. They are used for assessing annual run strength of various salmon species, forecasting the strength and age composition of future runs, setting preseason management plans, and developing long term management plans, including escapement goals. They also help managers assess subsistence needs and identify whether harvestable surpluses will be available for subsistence, commercial, and sport fishing uses (Brazil et al. 2013).

In 2011 and 2012, concerns for Chinook salmon abundance and escapement prompted managers to institute several preseason restrictions on subsistence salmon harvest (ADF&G 2011; ADF&G 2012a). Preseason measures were in effect in both years from June 1 to July 25. Restrictions included the closure of several lower Kuskokwim River tributaries to sport and subsistence hook and line fishing, and subsistence gillnet fishing for salmon (drift or set). Subsistence fishing was allowed for other species but gillnets were limited to 4 inches or less mesh and 60 feet or less in length. As each season progressed and Chinook salmon returns appeared weak, managers instituted further conservation measures via emergency order.

In 2011, subsistence fishing closures occurred in the lower Kuskokwim River mainstem, consistent with the lower Kuskokwim River fishing district, from June 16 to 19, June 23 to 28, and June 29 to July 7 (Brazil et al. 2013). From June 30 to July 2, there was an additional closure of all waters within the local Federal Conservation Unit, extending from the mouth of the Kuskokwim River to the Aniak River.

Subsistence Chinook salmon fishing closures in 2012 were implemented through a "rolling" management strategy. Closures started in the lower river, and were progressively implemented in 5 successive sections or reaches upriver, in an attempt to protect a mass of Chinook salmon as they moved up the Kuskokwim River (ADF&G 2012a). Inseason management actions affected all communities of the Kuskokwim River with 3 closed periods totaling 14 days of total closure, followed by 20 days with gillnets restricted to 6 inch or less mesh size (ADF&G 2012b). Dates in which closure were in effect in each of the 5 rolling closure sections are detailed in the 2012 preliminary Kuskokwim area salmon season summary (ADF&G 2012b).

# OBJECTIVES

The goal of the Kuskokwim Area subsistence salmon harvest monitoring program in 2011 and 2012 was to estimate total subsistence salmon harvests in the Kuskokwim Area for consistent comparison across years.

The objectives of the Fisheries Resource Monitoring Program study number 10-352 are:

1. Estimate the number of Chinook, chum, sockeye, coho, and pink salmon harvested for subsistence uses by subsistence fishermen in 28 communities within the Kuskokwim Area.
2. Separately estimate the number of Chinook, chum, sockeye, coho and pink salmon harvested by the communities of Aniak and Bethel;
3. Document gear types used by Kuskokwim Area subsistence fishermen;
4. Estimate fishing households, community population size, and households receiving salmon;
5. Document the number of dogs within Kuskokwim Area communities and salmon fed to dogs.
6. Document household responses relating to meeting of subsistence salmon needs in surveyed communities;
7. Document reported harvest of non-salmon fish species among fishermen in the Kuskokwim Area.

# METHODS

## STUDY DESIGN

In 2011 and 2012, household surveys were attempted in 28 of the 38 communities within the Kuskokwim Area, including most communities along the Kuskokwim River, Kongiganak in North Kuskokwim Bay, and all communities within South Kuskokwim Bay. With the exception of Bethel (simple random sample) and Aniak (census), the postseason subsistence harvest survey was designed based on stratified random survey methodology for the majority of communities (Scheaffer et al. 1999). In this survey design, each household was the primary sampling unit. A household generally consists of one or more people living together in a dwelling and sharing the same mailing address. Multiple generations living in one dwelling would be considered a single

household. From 1989 to 2010, each household was classified into 3 strata based on the household's recent 2 year history of participation in the subsistence fishery as follows:

- Usually fish: a household that participated in subsistence fishing activities at least once in the past 2 years;
- Usually do not fish: a household that did not participate in subsistence fishing activities in the past 2 years;
- Unknown: a household that has no harvest record in the past 2 years.

Beginning in 2011, the above household classification was expanded into 5 strata based on each household's most recent 2 documented years of participation within the past 5 years of the subsistence fishery. Classifications were selected based on the following criteria:

- High Harvester: a household that has averaged a harvest of more than 200 salmon per year, survey coverage 100%;
- Medium Harvester: a household that has averaged a harvest between 101 and 200 salmon per year, survey coverage 100%;
- Light Harvesters: a household that has averaged a harvest between 1 and 100 salmon per year, survey coverage 30%;
- Usually does not fish: a household that did not participate in subsistence fishing activities, survey coverage 30%;
- Unknown: a household that has no harvest record within any of the past 5 years, survey coverage 100%.

The Unknown group was further subdivided into: "true unknown" and "unknown fishing" households. The "true unknown" households were primarily new households with no harvest record. The "unknown fishing" households were those classified as fishing households in 2010 surveys, but either had never been surveyed, or had not been surveyed for 5 years prior to 2010. Two years of harvest records are required to assign a use group to a household. Therefore, these households remain in the unknown category and are handled the same way as the "true unknown" households. Otherwise, households with sufficient harvest record (any 2 years of the past 5), were assigned to their most recent year's classification.

For this study, "fishing household" was defined as a household that participated in subsistence fishing activities, such as harvesting and/or processing salmon. The household stratification was updated prior to the survey and was not re-assigned during the survey year (i.e., no postsurvey reclassification), with the exception of "unknown fishing" households. From each stratum, survey households were selected randomly in the following percentages: Heavy Harvester—100%; Medium Harvester—100%; Light Harvester—30%; usually do not fish—30%; unknown—100%. When the number of households in each stratum was less than 5 households, all households in the stratum were surveyed. Likewise, when the total number of households in a community was less than or equal to 40, all households in the community were surveyed and the survey method became a census (100% surveyed). In Aniak the survey method was also a census.

Postsurvey stratification was conducted only on the "unknown fishing" households. Based on reported harvests, the surveyed "unknown fishing" households were reclassified into corresponding (High, Medium, or Light) harvesting groups, or strata. Unsurveyed "unknown fishing" households were classified into "true unknown" households.

In Bethel, a 50% random survey was conducted based on simple random survey methodology where each dwelling (physical location instead of household) was the primary sampling unit. As a main hub city of western Alaska, the population of Bethel is highly fluid; a high proportion of the population moves in and out of Bethel on a regular basis (Krauthoefer 2005). In addition, people often change dwellings, making it difficult to maintain an accurate and complete household list. A dwelling list was obtained from the Bethel city planner's office and fire department occupant dwellings map and list. This list was ground-truthed and updated prior to the survey season. Based on the updated list, 50% of occupant dwellings were randomly selected for survey.

The postseason subsistence harvest surveys were conducted in early autumn because the majority of salmon fishing was finished, yet fishermen could still recall their harvest numbers because the season had ended recently. In Aniak and Bethel, the survey was conducted by Kuskokwim Native Association (KNA) and Orutsararmiut Native Council (ONC), respectively, and the other communities were surveyed by ADF&G.

Before conducting interviews, all surveyors (including KNA and ONC surveyors) were trained in surveying techniques, including direction of how to get the best information possible from people who are not accustomed to quantifying their fish harvest. The surveyors were trained in salmon species name identification, as local names for salmon vary throughout the drainage. The surveyors were also briefed on fishery issues or concerns from the recent subsistence and commercial salmon fishing season, to improve understanding of community members' reactions and comments during surveys.

During the survey, the crew contacted community officials to notify them about the project before arriving in the community to conduct surveys. The household lists were annotated and corrected as the surveyors completed the survey process in the community. During interviews, both surveyors and surveyed individuals contributed to the quality of the estimate. Surveyors were responsible to attempt contact with each selected household, ask questions consistently and understandably, and foster a cooperative atmosphere. Surveyors attempted to interview a member of each selected household, preferably the primary harvester. Occasionally, interviews were conducted with households not pre-selected for the survey. Those households were either 1) "new" or previously "unknown" households found by surveyors, or 2) voluntarily provided surveyors with their harvest information.

In Bethel, it was preferred, but was not always possible to contact the selected household. If the selected households were not available, neighboring households were surveyed. However, only data from pre-selected households were used for the postseason data analyses (Appendix D).

All survey data was entered into the ADF&G subsistence harvest database, and harvest estimates were generated for the Kuskokwim Area. All subsistence harvest data was treated as confidential, such that individual harvest data are not shared and all analysis is aggregate and anonymous. The study was generally conducted in accordance with the Alaska Federation of Natives' "Guidelines for Research" (AFN 2012).

## THE SURVEY INSTRUMENT

The survey instrument changed very slightly between 2011 and 2012, keeping the same questions in the same order, but using slightly different wording and placement (Appendices B1 and B2). This was intended to improve the flow of the survey and improve understanding.

Most interview questions were designed to provide a quantitative assessment of each household's subsistence salmon harvest. A fishing household was identified by Question 3, which asked whether anyone in the household harvested salmon for subsistence use OR kept fish for subsistence from the commercial fishery (Appendices B1 and B2). The surveyor was instructed to clarify that "harvest" includes any participation in the subsistence fishery, such as cutting fish. Household harvest included salmon that members of the household gave away, ate fresh, fed to dogs, or lost to spoilage. To avoid double-counting between households, salmon received from other households (outside the fishing group) were not considered part of the household harvest because they were part of the harvest of the household that *gave* the fish.

Individual household harvests form the basis of salmon harvest estimates for this study; therefore, an effort was made to differentiate "group harvest" (several households fishing with, or helping others), from individual household harvest to prevent bias. Households were asked about their harvest activities, whether they participated in group harvests, or fished alone (Question 6, Appendices B1 and B2). If surveyors identified a group harvest, they followed up by asking what portion of the group harvest the individual household had kept for itself (Question 7, Appendices B1 and B2).This helped to prevent the possibility that a single large harvest might be reported more than once by more than one member household of the fishing group defined in Question 6.

Households were also asked whether they had given salmon to other families (outside of the fishing group); or whether they had received salmon from other subsistence households (outside of the work group), from a commercial fisherman, or from a test fishery project. Households were asked how many salmon were harvested for dog food.

Fishermen who did not know the actual number of fish harvested occasionally reporting harvest in alternative terms, such as the number of 5-gallon buckets, plastic bags, gunny sacks, or pounds. ADF&G devised a conversion sheet to estimate fish numbers in these circumstances (Appendix C).

Assessment of whether a household's subsistence needs were met, for fishing and non-fishing households, was attempted as follows.

- Respondents were asked the *number* of fish, by species, the household would usually like to have or receive to meet their subsistence needs (Question 13, Appendices B1 and B2).
- For those who did not fish, respondents were asked the number of fish, by species, the household "usually received" or "expected to receive at the beginning of the season" to meet their subsistence needs.
- For fishing households, the number "usually" harvested was divided by actual household harvest of fish for fishing households (Question 7).
- For households receiving fish, the number "usually" received was divided by that actually received (Question 12).
- Results were binned by percentages of harvest goals met: 25%, 50%, 75% and 100%.

Responses were divided into 2 categories,

1) households that participated in harvesting salmon, and
2) households that did not participate in harvesting salmon.

For the purposes of this analysis, responses from the second group were not included. These households would likely receive salmon later in the year, so an assessment of harvest needs and

success would be premature at the time of the surveys. In order to assess the total number of fish that are needed for the whole community, the number of fish reported as needed from *all* households was expanded to create an overall estimate of how many salmon were needed.

After the households were interviewed, survey forms were reviewed. During this process, forms from fishing group members, were compared to identify discrepancies. Follow-up calls were made to try to settle discrepancies. Occasionally, fishing group members simply did not agree on numbers for salmon harvest. In this event, ADF&G project staff made a judgment on how to best represent the fish harvest on the appropriate survey forms and priority was always given to ensuring the accuracy of the *household* harvest over the *group* harvest. Data from all surveys was checked and key entered into the subsistence database. Each record was then rechecked by a different individual to assure accuracy.

## HARVEST CALENDARS

In addition to household harvest survey, subsistence salmon harvest calendars were distributed by mass mailing to households identified as those who "usually fish" in late April or early May each year to ensure they were available to fishermen prior to the start of the salmon fishing season. The calendar has been instrumental for examination of subsistence harvest timing, and assists fishermen in keeping track of their daily salmon harvest for reference during postseason surveys.

Calendar mailings were based on the most up-to-date household lists used in the harvest monitoring program. Extra calendars were kept at the Bethel ADF&G office for distribution as needed or upon request. In an effort to increase the use and return rate of subsistence calendars, public service announcements were broadcast on local radio stations inseason reminding fishermen to keep their calendars up to date and describing the importance of calendars for documenting subsistence use. Flyers describing the importance of subsistence calendars and the postseason subsistence survey project were also distributed to local communities for posting in public locations such as council offices, local stores, and post offices.

Data from the returned calendars were not normally used to directly generate Kuskokwim Area harvest estimates. On occasion a survey respondent would instruct surveyors to take harvest numbers directly from a calendar, either given during the survey or mailed in prior to the survey. Though not included in this report, calendars provide harvest timing data which is important for making fishery management decisions.

## DATA ANALYSIS

### Harvest Estimation

#### *Expanded Community Harvest*

Subsistence salmon harvest reported by sampled households was expanded to estimate total community harvest, by species, using a stratified random sampling expansion technique (Scheaffer et al. 1999). The stratified expansion procedure was performed for a community only if a sufficient number of households were sampled.

For harvests of each stratum, if 10 or fewer households were surveyed, and the proportion of surveyed households was less than 0.25 (for non- and light harvesters) or 0.3 (for other strata), then harvest expansion was not conducted. For estimates of community harvest, if the total number of surveyed households in each stratum was less than 50 and the proportion of surveyed

households was less than 0.3, total community harvest was not estimated. Instead, community-based harvest was estimated using Bayesian methods.

Denote that:

$N_{kj}$ = the number of households in $j$th ($j$ =5: unknown, usually do no harvest, light harvest, medium harvest, and heavy harvest) stratum of the $k$th community;

$n_{kj}$ = the number of surveyed households in the stratum of the $k$th community;

$y_{kji}$ = response of $i$th surveyed household ($i$ = 1 … $n_{kj}$) in the $j$th stratum of the $k$th community (e.g., the number of fish harvested by a household).

Mean household response in the $j$th stratum of the $k$th community ( $\bar{y}_{kj}$ ) was calculated as:

$$\bar{y}_{kj} = \frac{\sum_{i=1}^{n_{kj}} y_{kji}}{n_{kj}}. \tag{1}$$

Standard error of mean household response ($SE_{kj}$) was calculated as:

$$SE_{kj} = \sqrt{\frac{s_{kj}^2}{n_{kj}}\left(\frac{N_{kj}-n_{kj}}{N_{kj}}\right)} \text{ where } s_{kj}^2 = \frac{\sum_{i=1}^{n_{kj}}\left(y_{kji}-\bar{y}_{kj}\right)^2}{n_{kj}-1}. \tag{2}$$

The estimate of total harvest of the $k$th community ( $\hat{T}_k$ ) was calculated as:

$$\hat{T}_k = \sum_{j=1}^{5} N_{kj}\bar{y}_{kj}. \tag{3}$$

The 95% confidence interval of total community harvest (95% $CI_k$) was calculated as:

$$95\%\text{CI}_k = t_{(0.025,df=n-1)} \cdot \sqrt{\hat{V}(T_k)} \text{ where } \hat{V}(T_k) = \sum_{j=1}^{5} N_{kj}^2\left(\frac{N_{kj}-n_{kj}}{N_{kj}}\right)\left(\frac{s_{kj}^2}{n_{kj}}\right). \tag{4}$$

When a single stratum was not surveyed, total harvest of a community ( $\hat{T}_k$ ) was calculated as:

$$\hat{T}_k = \left(\frac{\sum_{j=1}^{5} N_{kj}}{\sum_{j=1}^{4} N_{kj}}\right)\sum_{j=1}^{4} N_{kj}\bar{y}_{kj}. \tag{5}$$

The 95% confidence interval of total community harvest when a single stratum was not surveyed (95% $CI_k$) was calculated as:

$$95\%\mathrm{CI}_k = t_{(0.025,df=n-1)} \cdot \sqrt{\hat{V}(T_k)} \text{ where } \hat{V}(T_k) = \left( \frac{\sum_{j=1}^{5} N_{kj}}{\sum_{j=1}^{4} N_{kj}} \right)^2 \sum_{j=1}^{4} N_{kj}^2 \left( \frac{N_{kj} - n_{kj}}{N_{kj}} \right) \left( \frac{s_{kj}^2}{n_{kj}} \right). \quad (6)$$

The above methods were used for estimation of salmon harvests (Question 7), and the number of people (Question 2). For the number of fish needed/usually harvested (Question 13), only harvests of those who subsistence fished were used.

For estimation of the number of subsistence fishing households in each community, the following expansion method was used.

Denote that

$n_{kj(s)}$ = the number of surveyed households that subsistence fish in the *j*th stratum of the *k*th community; and

$n_{kj}$ = the number of surveyed households in the *j*th stratum of the *k*th community.

Then, the proportion of households who subsistence fish in the *j*th stratum of the *k*th community ( $\hat{p}_{kj(s)}$ ) was calculated as:

$$\hat{p}_{kj(s)} = \frac{n_{kj(s)}}{n_{kj}}. \quad (7)$$

Estimated number of households that subsistence fish in the *k*th community ( $\hat{N}_{k(s)}$ ) was calculated as:

$$\hat{N}_{k(s)} = \sum_{j=1}^{5} N_{kj} \hat{p}_{kj(s)}; \quad (8)$$

The 95% confidence interval (95% $\mathrm{CI}_k$) was calculated as:

$$95\%\mathrm{CI}_k = t_{(0.025,df=n-1)} \cdot \sqrt{\hat{V}(\hat{N}_{k(s)})} \text{ where } \hat{V}(\hat{N}_{k(s)}) = \sum_{j=1}^{5} N_{kj}^2 \left( \frac{N_{kj} - n_{kj}}{N_{kj}} \right) \left( \frac{\hat{p}_{kj(s)}(1 - \hat{p}_{kj(s)})}{n_{kj} - 1} \right). \quad (9)$$

### *Harvest estimation of non-surveyed and under-surveyed communities*

Harvests of several communities were not estimated every year because surveys were not conducted or survey data were insufficient. Harvests of those communities were estimated by employing a Bayesian hierarchical multiple imputation method (Honaker and King 2010; King et al. 2001). In this method, it was assumed that,

1) events that cause missing harvest data follow a missing at random process (MAR), and
2) harvest data possess multivariate normal distribution.

Under these conditions, harvests of communities in particular years can be estimated from harvest records of the communities in other years and surrounding communities. For instance, the 2008 harvest of the community of Tuntutuliak (un-surveyed in that year) was estimated using its known harvest during 1990–2007, and harvests of other lower Kuskokwim communities. It should be noted that this estimation method is available and appropriate only for communities with several years of annual harvest estimates.

Let $D_{kj.obs}$ be observed data (e.g., average harvest per household) for $k$ communities (1…$k$) with $j$ years.

$$D_{kj.obs} \sim N(\mu_k, \Sigma_k) \quad , \tag{10}$$

where $\mu_k$ has a normal prior distribution with mean μ and variance $\sigma^2$, and $\Sigma_k$ is Wishhart distribution of $k \times k$ dimensions.

$$\begin{aligned} \mu_k &\sim N(\mu, \sigma^2) \\ \Sigma_k &\sim W(I_k, k) \end{aligned} \quad . \tag{11}$$

Then, posterior for $\mu_k$ and $\Sigma_k$ were derived as

$$\tilde{\mu}_k, \tilde{\Sigma}_k \sim P(\mu_k, \Sigma_k \mid D_{kj.obs}) \quad . \tag{12}$$

From this predicted value for missing data $D_{kj.mis}$ were derived as

$$\tilde{D}_{kj.mis} \sim P(D_{kj.mis} \mid D_{kj.obs}, \tilde{\mu}_k, \tilde{\Sigma}_k) \quad . \tag{13}$$

For grouping of the $k$ communities, geographic subareas of the Kuskokwim Management Area were used: 1) lower Kuskokwim River and Kongiganak; 2) middle Kuskokwim River; 3) upper Kuskokwim River; and 4) South Kuskokwim Bay.

In applying the above method, log-transformed annual average number of fish harvested per household $D_k = \log(T_k/N_k+1)$ was used. This was based on the following assumptions: 1) fishing characteristics of communities (e.g., proportion of fishing households, fishing demands, fishing efforts, etc.) are constant over time, and 2) changes in average household harvests are primarily due to abundance of fish or fishing regulations affecting all communities.

For the Bayesian estimation, WinBUGS 1.4.3 (Lunn et al. 2000) with default initial values were used. A total of 55,000 imputations were generated (after discarding 5,000 initial burn-in iterations) and the mean value of these imputations was calculated. The resulting mean household harvest was back-transformed and multiplied by the number of households in the community that year to estimate the unknown total community harvest. Total community harvest was calculated as:

$$\tilde{T}_{kj} = N_{kj} \exp(\tilde{D}_{kj.mis}) \quad , \tag{14}$$

and its 95% confidence interval was estimated as:

$$95\%\text{CI} = N_{kj} \exp\left(1.96 \cdot \sqrt{V(\tilde{D}_{kj.mis})}\right) \quad , \tag{15}$$

where $V(\tilde{D}_{kj}^{mis})$ is the standard deviation of the Bayesian estimate.

### *Total Kuskokwim Area Harvest*

Total number of salmon harvested in the Kuskokwim Area ($\hat{T}$) was estimated by summing harvest estimates of all communities,

$$\hat{T} = \sum_{k=1} \hat{T}_k \,, \tag{16}$$

and its 95% confidence interval (95% CI) was calculated as

$$95\%\text{CI} = t_{(0.025, df=n-1)} \cdot \sqrt{\hat{V}(T)} \text{ where } \hat{V}(T) = \sum_{k=1} \hat{V}(T_k) \,. \tag{17}$$

# RESULTS

## HOUSEHOLD SELECTION AND SURVEY

The Kuskokwim Area results reported here include communities located along Kuskokwim River, Kongiganak (2011 only) in north Kuskokwim Bay, and the South Kuskokwim Bay communities. The Bering Sea Coast communities and north Kuskokwim Bay communities of Kipnuk and Kwigillingok were not part of the voluntary survey process and estimates of their harvests were not otherwise possible; therefore, no data are reported for those communities.

### 2011

Partners ONC and KNA were successful in their sampling efforts in 2011. Bethel subsistence surveys were conducted by ONC from October through November. In 2011, ONC contacted 881 (42%) of 2,087 occupied dwellings, including 438 (53%) that had been preselected for survey, and 443 that were not selected (Table 2). As discussed previously, the non-selected households were discarded from the analysis due to an identified bias among the non-selected households in that community. (Appendix D). The selected household represented 21% of Bethel dwellings.

Aniak subsistence surveys were conducted by KNA from October through December, 2011. KNA contacted 169 (93%) of 182 households (Table 3). Of these, 153 had been preselected for survey and 16 households were randomly encountered (Table 2). Unlike Bethel, Aniak is a census survey and non-selected households were not excluded from the analysis.

In 2011, ADF&G door-to-door surveys were conducted from the first week of October through November, and were completed in most intended communities including: Eek, Tuntutuliak, Napakiak, Napaskiak, Oscarville, Nunapitchuk, Atmautluak, Kasigluk, Kwethluk, Akiak, Akiachak, Tuluksak, Lower Kalskag, Upper Kalskag, Chuathbaluk, Crooked Creek, Red Devil, Sleetmute, Stony River, McGrath, Takotna, Nikolai, Quinhagak, Goodnews Bay, and Platinum. Lime Village, probably the most remote of Kuskokwim River communities, was not surveyed due to weather constraints, however, this provided an opportunity to survey Takotna, a village that had not been selected, but had also not been surveyed in many years. All targeted north and south Kuskokwim Bay communities selected were successfully surveyed. These included Kongiganak, Goodnews Bay, Platinum, and Quinhagak. Overall, ADF&G contacted 1,315 (67%) of 1,972 households in targeted communities (Tables 2 and 3).

Twenty-eight of 38 total communities within the study area were surveyed door-to-door in 2011 (Table 2). In total, 2,265 households were surveyed, and of these, 1,822 were used in this analysis. Sixty-seven percent of households selected for survey (1,615) were successfully contacted. The remaining 159 surveyed households were unknown/new households that were randomly encountered and surveyed (Table 2). Surveys from 43% of all households in the Kuskokwim Area were used in the 2011 analysis. Data entry of all surveys was completed near the end of March 2012.

### 2012

Similar to 2011, partners ONC and KNA were successful in their sampling efforts in 2012. Bethel subsistence surveys were conducted by ONC from October through November, and 888 dwellings were contacted, 41% of 2,128 occupied dwellings, including 447 (53%) that had been preselected for survey, and 441 that were not selected (Table 4). Again, the non-selected households were discarded and only the selected households were used for analysis. In all, surveys from 21% of occupied Bethel dwellings were used in the analysis (Table 5).

In 2012, Aniak subsistence surveys were conducted by KNA from October through December. KNA contacted 155 (83%) of 187 households; including both preselected and non-selected households (Tables 4 and 5). Again, non-selected household are included in the Aniak census, and do not create a bias in this community.

In 2012, ADF&G surveys were conducted from mid-September through mid-November, and were completed in 23 of 26 targeted communities from lower to upper river: Eek, Tuntutuliak, Napakiak, Napaskiak, Oscarville, Nunapitchuk, Atmautluak, Kasigluk, Kwethluk, Akiachak, Tuluksak, Lower Kalskag, Upper Kalskag, Chuathbaluk, Crooked Creek, Red Devil, Sleetmute, Lime Village, McGrath, Nikolai, Quinhagak, Goodnews Bay, and Platinum. ADF&G was denied access to the village of Kongiganak and was advised not to visit the villages of Stony River and Akiak. Phone surveys were conducted for Akiak and Stony River, but were insufficient to provide reliable estimates. Takotna was not targeted for survey in 2012 (Tables 4 and 5). Overall, ADF&G contacted 884 (45%) of 1,979 households in targeted communities.

Twenty-three of 38 communities were surveyed door-to-door in 2012 (Table 4). In total, 2,010 households were surveyed; and of these, 1,569 were used for the analysis. Sixty-one percent of households selected for survey (1,422) were successfully contacted (Table 4). The remaining 147 households were unknown/new households that were randomly encountered and surveyed (Table 4). Surveys from 37% of all households in the Kuskokwim Area were used in the analysis in 2012. Data entry of all surveys collected was initially completed near the end of March 2013, and additional error checking and data quality control extended the data entry period until June of 2013.

## HARVEST ESTIMATES

For 2011, survey results were stratified and expanded for each community (Tables 6–10). The salmon harvest for Lime village, not surveyed in 2011, was estimated using Bayesian methods as described above (Table 3). The total expanded salmon harvests by species for the Kuskokwim Area (in communities for which estimates could be made) were 65,732 (95% CI +/-4,380) Chinook; 55,490 (95% CI +/-6,369) chum; 45,550 (95% CI +/-3,224) sockeye; 33,346 (95% CI +/-4,139) coho; and 739 (95% CI +/-198) pink salmon (Table 3). Overall, approximately 200,857 salmon were harvested in 2011 for subsistence use (Table 3).

For 2012, survey results were also stratified and expanded for each community (Tables 11–15). The salmon harvest for Kongiganak, Akiak, Stony River, and Takotna (not surveyed in 2011), was estimated using Bayesian methods as described above (Table 5). In 2012, survey results were stratified and expanded for each community (Tables 11–15). The total expanded salmon harvests by species for the Kuskokwim Area (in communities for which estimates could be made) were 25,336 (95% CI +/-1,897) Chinook; 81,912 (95% CI +/-8,341) chum; 50,616 (95% CI +/-3,964) sockeye; 30,221 (95% CI +/-4,395) coho; and 2,160 (95% CI +/-801) pink salmon (Table 5). Overall, approximately 190,245 salmon were harvested in 2012 for subsistence use (Table 5).

Harvest estimates for households that participate in commercial fishing include salmon retained for subsistence use from that activity. Salmon retained from commercial fishing were most commonly reported in the areas within or adjacent to commercial fishing districts, such as north and south Kuskokwim Bay and the lower Kuskokwim River (Tables 16–17). In both 2011 and 2012, in the interest of conserving Chinook salmon, commercial fish buyers in the area chose not to purchase Chinook salmon to encourage retention for subsistence use, and to discourage targeting of Chinook salmon by commercial fishermen. In 2011, the most commonly retained species from commercial harvests was Chinook salmon, followed by coho, sockeye, and few chum or pink salmon (Table 16). In 2012, however, the most commonly retained species was coho, followed by Chinook, sockeye, and chum salmon (Table 17).

## PRIMARY FISHING GEAR

In 2011, the majority (84%) of responding households throughout the Kuskokwim Area reported that the primary gear type used for subsistence salmon fishing was drift gillnets (Table 18). Gear type estimates were not expanded.

In 2012, the majority (79%) of responding households throughout the Kuskokwim Area reported that the primary gear type used for subsistence salmon fishing was drift gillnets (Table 19). Gear type estimates were not expanded.

## ESTIMATED FISHING HOUSEHOLDS, COMMUNITY POPULATION SIZE, AND HOUSEHOLDS RECEIVING SALMON

Similar numbers of households reported fishing in 2011 and 2012. An estimate of 2,571 households participated in the subsistence fishery for salmon in 2011 (Table 20). The total estimate of people living in surveyed communities of the Kuskokwim Area in 2011 was 15,672, (Table 21). An estimate of 2,201 households participated in the subsistence fishery for salmon in 2012 (Table 22). The total estimate of people living in surveyed communities of the Kuskokwim Area in 2012 was 15,680 (Table 23).

In Kuskokwim River subsistence activity, “sharing” of subsistence catch is a traditional practice. “Sharing,” is here defined as the immediate distribution (giving or receiving) of salmon, upon harvest, to households outside of one’s subsistence salmon harvest and processing work group. In 2011, a total of 1,545 households reported receiving 1,520 Chinook; 1,007 chum; 1,069 coho; 1,209 sockeye; and 3 pink salmon from subsistence fisherman, commercial fishermen, and the local Bethel test fishery (Table 24), with the majority of fish being received from subsistence fishermen. In 2012, a total of 1,336 households reported receiving 951 Chinook; 1,455 chum; 1,602 coho; 1,211 sockeye; and 52 pink salmon from subsistence fisherman, commercial

fishermen, and the local Bethel test fishery (Table 25), with 87% to 91% of fish being received from subsistence fishermen in 2011 and 2012, respectively.

## SUBSISTENCE USE OF SALMON FOR DOG FOOD

In 2011, regarding the question about owning dogs, 1,691 households responded and 66% of respondents reported owning 2,699 dogs. Of households reporting dogs, 2.4 was the average number per household. The number of households reported feeding whole salmon to dogs was 68 (or 6% of dog owners), and among these households an average of 94 salmon per household were fed to dogs (Table 26).

In 2012, 1,445 households responded to the question about owning dogs, and 63% of respondents reported owning 2,136 dogs. Of households reporting dogs, 2.4 was the average number per household. The number of households reported feeding whole salmon to dogs was 97 (or 11% of dog owners), and among these households an average of 121 salmon per household were fed to dogs (Table 27).

## LOST FISH

In 2011, from a total of 1,715 respondents, 1,854 salmon were reported as lost (i.e., not edible due to spoilage, animals, etc.; Table 28). Out of the 67 households that provided a reason for losing fish, 55% reported animals as the cause (e.g., “bears”, “birds”, “otters”); 37% reported weather-related reasons (e.g., “rain”, “moldy”, “flies”, “spoiled”); and 6% reported disease (fish) as having a negative affect (e.g., “diseased fish”). The remaining 2% provided answers that could not be placed in these categories or were not relevant to the question asked (Table 28).

In 2012, from a total of 1,490 respondents, 1,726 salmon were reported as lost (i.e., not edible due to spoilage, animals, etc.; Table 29). Out of the 62 households that provided a reason for losing fish, 68% reported weather-related reasons (e.g., “rain”, “moldy”, “flies”, “spoiled”), and 27% reported animals as the cause (e.g., “bears”, “birds”, “otters”). About 3% reported equipment failures (e.g. freezer, or boat motor failures), and the remaining 2% provided answers that could not be placed in these categories or were not relevant to the question asked (Table 29).

## SUBSISTENCE SALMON NEEDS

### 2011

Of 1,822 surveyed households, 1,309 (72%) responded to questions regarding needs met for the harvest of Chinook salmon. Of these, 52% of respondents indicated that they had “met 100% of their needs,” e.g., enough fish of this species were procured either through direct harvest, retention from the commercial fishery, or received through sharing. Eight percent of total respondents reported that they did not have a need for that species. Of the 726 respondents who indicated that they had not met their needs, 65% indicated this was due to “personal reasons” such as age, difficulties with equipment, the high price of fuel, work conflicts, or they had given away too many of the fish they harvested. Twenty-one percent of respondents cited fisheries management decisions as the reason they did not meet their needs, most often due to subsistence closures. A smaller number cited “run dynamics” (low abundance, timing of the run, 11%), river conditions (flooding, clarity, debris load; 1%), inclement weather (1%), intentionally abstaining for conservation reasons (<1%), or theft from humans or animals (<1%) (Table 30).

Regarding needs met for chum salmon, 913 households (50%) responded. Of these, 68% responded that they had met 100% of their needs, and 10% of respondents stated that they do not generally fish for this species. Of the 359 respondents that indicated that they had not met their needs for chum salmon, 75% cited personal reasons similar to those given for Chinook salmon. Fifteen percent cited salmon management actions, such as closures, as reasons why they had not met their needs. Five percent cited "run dynamics," 4% cited spoilage due to weather conditions, <1% cited river conditions, <1% cited conservation; and <1% combined cited theft from humans or animals as barriers to meeting subsistence needs (Table 31).

Regarding needs met for sockeye salmon, 1,147 households (36%) responded (Table 32). Of these, 60% responded that they had met 100% of their needs, and 24% of respondents stated that they do not generally fish for this species. Of the 539 respondents that indicated that they had not met their needs for chum salmon, 72% cited personal reasons similar to those given for Chinook salmon. Sixteen percent cited salmon management actions, such as closures, as reasons why they had not met their needs. Eight percent cited "run dynamics," 2% cited spoilage due to weather conditions, 1% cited river conditions, <1% cited conservation; and <1% combined cited theft from humans or animals as barriers to meeting subsistence needs (Table 32).

Regarding needs met for coho salmon, 913 households (29%) responded. Of these, 55% responded that they had met 100% of their needs, and 33% of respondents stated that they do not generally fish for this species. Of the 457 respondents that indicated that they had not met their needs for chum salmon, 86% cited personal reasons similar to those given for Chinook salmon. Four percent cited salmon management actions, such as closures, as reasons why they had not met their needs. Five percent cited "run dynamics," 4% cited spoilage due to weather conditions, <1% cited river conditions, <1% cited conservation; and <1% combined cited theft from humans or animals as barriers to meeting subsistence needs (Table 33).

In 2011 the estimated number of salmon needed was higher than the estimated number of salmon harvested by subarea and species (Table 34). This suggests that the unmet needs of households (Tables 30–33) may have been substantial.

### 2012

Of 1,569 households surveyed, 1,105 (70%) responded directly to questions of whether they had met their subsistence needs for Chinook salmon in 2012. Of these, 13% indicated that they had met 100% of their needs. Seventeen percent of respondents reported that they did not have a need for that species. Eighty-seven percent of households indicated that they did not meet their Chinook salmon subsistence needs in 2012. Of the 1,084 respondents who indicated that they had not met their needs, 32% indicated this was due to "personal reasons" such as age, difficulties with equipment, the high price of fuel, work conflicts, or they had given away too many of the fish they harvested. Fifty-two percent of households cited fisheries management decisions as the reason they did not meet their needs, most often due to subsistence closures. A smaller number of households cited "run dynamics" (11%), river conditions (2%), intentionally abstaining for conservation reasons (1%), or inclement weather (2%) (Table 35).

Regarding needs met for chum salmon, 759 households (48%) responded. Of these, 52% responded that they had met 100% of their needs, and 41% of respondents stated that they do not generally fish for this species. Of the 404 respondents that indicated that they had not met their needs for chum salmon, 51% cited personal reasons similar to those given for Chinook salmon. Thirty-seven percent cited salmon management actions, such as closures, as reasons why they

had not met their needs. Six percent cited "run dynamics," 4% cited spoilage due to weather conditions, 2% cited river conditions, 1% cited conservation; and <1% each cited theft from humans or animals as barriers to meeting subsistence needs (Table 36).

Regarding needs met for sockeye salmon, 930 households (59%) responded. Of these, 35% responded that they had met 100% of their needs, and 25% of respondents stated that they do not generally fish for this species. Of the 685 respondents that indicated that they had not met their needs for chum salmon, 49% cited personal reasons similar to those given for Chinook salmon. Thirty-eight percent cited salmon management actions, such as closures, as reasons why they had not met their needs. Nine percent cited "run dynamics," 2% cited spoilage due to weather conditions, 1% cited river conditions, <1% cited conservation; and <1% combined cited theft from animals as barriers to meeting subsistence needs (Table 37).

Regarding needs met for coho salmon, 865 households (55%) responded. Of these, 30% responded that they had met 100% of their needs, and 33% of respondents stated that they do not generally fish for this species. Of the 599 respondents that indicated that they had not met their needs for chum salmon, 68% cited personal reasons similar to those given for Chinook salmon. Thirteen percent cited salmon management actions, such as closures, as reasons why they had not met their needs. Eight percent cited "run dynamics," 7% cited spoilage due to weather conditions, 3% cited river conditions, <1% cited conservation; and <1% cited theft from animals as barriers to meeting subsistence needs (Table 38).

In 2012 the estimated number of salmon needed was higher than the estimated number of salmon harvested by subarea and species (Table 39). This suggests that the unmet needs of households (Tables 35–38) were substantial.

## REPORTED AND ESTIMATED HARVEST OF NON-SALMON SPECIES

In 2011, reported harvests of non-salmon species in the Kuskokwim Area included 16,667 humpback (*Coregonus pidschian*); 14,443 broad whitefish; (*Coregonus nasus*) 3,573 cisco (*Coregonus* spp.); 2,969 sheefish (*Stenodus leucichthys*); 6,062 burbot (*Lota lota*); 152,438 blackfish (*Dallia pectoralis*); 74,125 smelt (*Osmerus mordax*); 25,153 northern pike (*Esox lucius*); 9,613 Pacific herring (*Clupea pallasi*); 1,552 grayling (*Thymallus arcticus*); 5,422 char (*Salvelinus alpinus* and *S. malma*); and 651 rainbow trout (*Oncorhynchus mykiss*; Table 40). Humpback and broad whitefish harvests were expanded to total harvest estimates for all communities surveyed in 2011. The estimated harvest of humpback whitefish was 35,768 fish, and the estimated harvest of broad whitefish was 27,125 fish (Table 41).

In 2012, reported harvests of non-salmon species in the Kuskokwim Area included 15,073 humpback, 22,706 broad whitefish; 15,344 cisco; 2,109 sheefish; 4,961 burbot; 148,179 blackfish; 67,417 smelt; 15,403 northern pike; 2,658 Pacific herring; 1,683 grayling; 6,294 char; and 378 rainbow trout (Table 42). Humpback and broad whitefish harvests were expanded to total harvest estimates for all communities surveyed in 2012. The estimated harvest of humpback whitefish was 36,144 fish, and the estimated harvest of broad whitefish was 49,550 fish (Table 43).

# DISCUSSION

## HOUSEHOLD SELECTION AND SURVEY

In 2011, surveyors visited and successfully surveyed more communities and households than any project year since 2004 (Appendix A). The only community that had been targeted for survey that was not reached was Lime village, which is geographically and logistically more remote than other communities. ONC surveyors improved their sampling efficiency over previous years, sampling nearly 42% of total dwellings. This success was undermined by the fact that nearly half of these had not been preselected and therefore could not be used in this analysis. Aniak sampling, conducted by KNA, was also successful with 83% of all households surveyed.

In 2012, survey success was not as great as it had been in the previous 2 years. ADF&G surveyors were unable to visit 3 of 26 targeted villages either because they were not given permission to visit, or chose not to, based on sentiments expressed to them by village officials. The Kongiganak tribal council denied ADF&G permission to visit, citing impositions from previous survey efforts that may or may not have been associated with this survey project. With regard to the villages of Akiak and Stony River, residents of both villages had suggested that ADF&G would not be welcome in 2012, possibly due to discontent over subsistence fishing closures that year. ONC technicians were successful in conducting surveys (42% of Bethel dwellings), however, similar to 2011, only 50% of these had been preselected, and only the preselected portion could be used in the analysis. KNA successfully surveyed 83% of Aniak households in 2012.

Beginning in 2011 and continuing in 2012, a substantial number of opportunistic or unselected dwellings were surveyed in Bethel. This practiced developed from the conflicting needs of achieving the 50% sample of Bethel dwellings required by the sampling design, and logistical difficulties with reaching this goal. As described above, a 50% random survey was conducted based on simple random survey methodology. Surveyors were given some latitude to choose unselected households to improve sample sizes, but it was expected that would only be a small proportion overall. In 2011 and 2012, these opportunistic samples became a substantial proportion of the overall surveys collected, prompting concerns about bias (Appendix D).

On further analysis, it was determined that opportunistic surveys tended to be biased toward lower harvest than the preselected dwellings; therefore, the opportunistic surveys for Bethel were removed from analysis. Analysis was conducted using only the smaller sample of preselected households (21% in both years). This smaller sample size, representing only preselected households, resulted in a less precise estimate (i.e. larger confidence interval for each species; Tables 6–15), but was determined to be adequate for producing a harvest estimate for that community.

The logistical difficulties of surveying the community of Bethel still remain. With the possibility of fortifying sample sizes with opportunistic surveys removed, the importance of reaching each selected household is increased. Going forward, project leaders will preselect 25% of Bethel dwellings for survey. Surveyors will make at least 3 documented attempts to contact each preselected household, at differing times of day and different dates. If it becomes apparent that sample sizes will not be adequate, additional households will be randomly selected for survey in increments of 10 until an adequate sample is achieved. Increased attention to individual households decreases the number of households that can reasonably be contacted, and a sample

size of 25% has been determined to be reasonable for both achieving project goals for precision and accuracy and for achieving project logistical goals.

Bias can also occur in very small communities through estimation error that can occur due to small population size. Smaller communities harvest fewer fish; therefore a small difference in harvest by an individual fisherman can substantially increase or decrease the harvest estimate for a given community. The high harvester stratum in these villages could consist of just a handful of households and expansion of harvest for unsurveyed households has a greater chance of erroneously influencing the final estimate. A census, or near census, of these communities prevents, or reduces, the risk of over or underestimation of community harvest.

## HARVEST ESTIMATES

Factors affecting subsistence salmon harvests include personal, cultural, socioeconomic, environmental factors, and salmon run dynamics. From 2007 to 2012, Chinook salmon harvest in the Kuskokwim Area was below the recent 5- and 10-year averages and for the entire period, 1990–2010 (Appendix A1). The 2012 subsistence harvest of Chinook salmon is estimated to have been the lowest on record for our dataset (Figures 3 and 4). Furthermore, in 2011 and 2012 estimated Chinook salmon escapement on monitored tributaries was the lowest since 1990 (the earliest year in this subsistence harvest dataset), and escapement goals were not met at Kwethluk, Tuluksak, and George Rivers (Brazil et al. 2013; Kevin Schaberg, Commercial Fisheries Biologist, ADF&G, Anchorage; personal communication).

In 2011 and 2012, preseason outlooks suggested a weak return of Chinook salmon to the Kuskokwim River (ADF&G 2011; ADF&G 2012a). Kwethluk and Tuluksak River escapements of Chinook salmon had fallen short of escapement goals in recent years, and forecasts suggested a similar situation in both 2011 and 2012 (Brazil et al. 2013; ADF&G 2011; ADF&G 2012a). Managers began the season with concerns for area tributary escapements and the outlook for overall returns suggested that harvestable surpluses of Chinook salmon might not be adequate to meet traditional subsistence levels of harvest; which prompted preseason tributary closures to subsistence fishing. Inseason, a variety of management tools were used with the intent of increasing Chinook salmon escapements through reduction in harvest. Preseason tributary closures were followed by inseason mainstem closures. As chum salmon numbers increased in proportion to Chinook salmon, closures were lifted and gear restrictions were employed for reducing Chinook salmon harvest while providing opportunity to harvest more abundant species. The effectiveness of closures and gear restrictions to reduce harvest in 2011 is difficult to assess. Reductions of harvest observed in most villages are attributable to low Chinook salmon abundance, but may have been affected by the closures. In 2012, with much more restrictive actions on the mainstem Kuskokwim River than in 2011, Chinook salmon subsistence harvest was the lowest on record and about 70% below the 10-year average (Appendix A1). Overall abundance of Chinook salmon was estimated as being lower in 2012 than in 2011; however escapements of Chinook salmon to the Kuskokwim River were estimated to be higher in 2012 than in 2011 (Kevin Schaberg, Commercial Fisheries Biologist, ADF&G, Anchorage; personal communication). This suggests that management actions were affective in limiting harvest in and improving escapement in 2012.

In 2011 and 2012 the collective harvest of Chinook salmon in Kuskokwim River communities was below average (Figure 3; Appendix A1). In 2011, the middle and upper Kuskokwim River communities saw a slight increase from the previous year in Chinook salmon harvest. In 2012 all

but 3 Kuskokwim River communities reported the lowest harvest of Chinook salmon on record (1990 to present, Figure 4; Appendix A1). As expected, the majority of harvest of all species in the Kuskokwim River occurred in the lower river villages, followed by the middle and upper river, respectively (Figure 5).

In 2012, the Kuskokwim River communities of Red Devil and Nikolai and the Kuskokwim Bay community of Platinum reported Chinook salmon harvests higher than historical minimums, but the total numbers of fish harvested remain very small (Appendix A1). Overall Kuskokwim Bay communities have shown a general decrease in Chinook salmon harvest over the last several years (Figure 6), however, Goodnews and Platinum saw slight increases in Chinook salmon harvest in 2011 (Appendix A1). These communities are small in size, and harvest may be strongly influenced by the success or failure of just a few households, which reinforces the need to census smaller villages for harvest information each year to reduce any estimation error that can occur due to small population size.

In 2011 the total harvest of chum salmon was up from the previous 2 years but below average for the recent 5- and 10-years (Appendix A2). Despite harvest being below average for 2009–2011 (Figure 7), overall chum salmon abundances were considered to be good throughout the area in each of these years (Brazil et al. 2013). This suggests that the lower harvest levels of chum salmon in 2009–2011 years could have been based on user preference as opposed to abundance.

In 2012, the total chum salmon harvest for the Kuskokwim Area was up sharply, 38% and 27% above the recent 5- and 10-year averages (Appendix A2). Kuskokwim Bay communities have reported increasing harvests of chum salmon over the past 2 years (Appendix A2). Kuskokwim River communities generally reported above average harvests in 2012, and the pattern was consistent throughout the drainage (Figure 8; Appendix A2). It is possible that subsistence harvesters have been targeting more abundant species in years of lower Chinook salmon abundance.

Increases in chum salmon harvest may also be tied to both voluntary and involuntary changes in gear usage among subsistence users. Qualitative surveys conducted by Orutsararmiut Native council, in partnership with ADF&G, suggest that harvesters may be choosing to fish with smaller mesh nets in years of lower Chinook salmon abundance to improve catches of Chinook salmon (the preferred species) when larger mesh gear is less effective (Patton and Carroll 2012b; Patton et al. 2013; Chavez and Shelden 2013). In 2010 and continuing through 2012, mesh size was restricted to 6 inch or less through fisheries management actions (Brazil et al. 2011; Brazil et al. 2013; ADF&G 2013). These nets, though effective for capturing Chinook salmon, are more effective at capturing chum and sockeye salmon (Bue and Brazil 2012; Howard and Evensen 2010).

The total harvest of sockeye salmon in the Kuskokwim Area has increased each year since 2009 and in 2012 was above the recent 10-year average (Figure 9; Appendix A3). The reported harvest of sockeye salmon from Upper Kuskokwim River communities has been below the 10-year average since 2010 (Figure 10; Appendix A3). Similar to chum salmon, increases in sockeye harvest over 2009 and 2010 could be due, in part, to a shift downward from mesh size typically used in subsistence salmon harvest (Patton and Carroll 2012a and b). With reduced abundance of Chinook salmon, mesh size restrictions, and voluntary use of reduced mesh size used in recent years, more sockeye salmon may be harvested either coincidentally or by design.

For both 2011 and 2012, areawide coho salmon subsistence harvests were below both the recent 5- and 10-year averages, but similar to harvests in 2009 and 2010 (Figure 11; Appendix A4). The lower river communities have reported a reduced harvest in recent years, while middle and upper

river communities seem to be increasing their annual harvest of coho salmon relatively (Figure 12; Appendix A4). The middle and upper river communities are small and harvest few fish, so despite their increased harvest, the overall harvest is still decreased. Escapements of coho salmon in these years were adequate, which suggest that changing harvest patterns are not related to coho salmon abundance (Kevin Schaberg, Commercial Fisheries Biologist, ADF&G, Anchorage; personal communication).

Lost salmon are assessed primarily for their value in determining how many fish are harvested annually. A respondent may not think to include fish harvested and later lost, and may only include the harvest of fish successfully preserved. Because lost fish are reported and not expanded to the entire community, comparisons of total number of lost fish should be avoided between years, as they are affected by the number of households interviewed and the number of households responding to the question regarding harvest of non-salmon species (Tables 28 and 29).

## ASSESSMENT OF SUBSISTENCE NEEDS MET

In 2011 and 2012, Kuskokwim Area harvests of Chinook salmon fell below the ANS range. In both years, despite being lower than recent averages, subsistence harvests of chum and coho salmon in the Kuskokwim River were within or exceeded the ANS ranges defined for the area; however sockeye salmon harvests, also below average, were above the upper range of ANS.

The South Kuskokwim Bay ANS determination falls under 'remainder of the Kuskokwim Area' (5 AAC 01.286), and is not broken down by species. The ANS range is expressed in total number of salmon: 7,500 to 13,000. In 2011 and 2012, salmon harvests exceeded this range.

While comparisons of the annual drainagewide harvest with ANS provides insight into the relative success of all fishermen, the survey results provide additional information in assessing how well subsistence needs were met, by species and community (Tables 30–33 and 35–38). The total number of fish "usually harvested" or "needed" was calculated to estimate "demands" of subsistence harvests of the surveyed year (Tables 34 and 39). In this calculation, only answers (Question 13) provided by households that fished were used to determine need, and it was assumed that the households who did not fish in the surveyed year do not usually fish, instead meeting their subsistence needs by receiving fish from other households. This may, to a small degree, undercount demands of households that usually fish, but did not fish during the survey years. Because ANS is based on estimated harvest over time, and not on what households report as their needs, and because not all households can harvest needed amounts of fish even in a good year (Borba and Hamner 2001; Jallen and Hamazaki 2011), the estimated "demands" can be expected to be higher than ANS. Conversely, the number could become lower than ANS if the "demands" become lower, as in the case of a decline of chum salmon harvests which is attributed to declining use of sled dogs in the Kuskokwim Area.

In 2011 and 2012, respondent households reported a sharp decline in meeting their needs for Chinook salmon. In 2010, about a third of respondents indicated that they had not met 100% of their needs for Chinook salmon (Carroll and Hamazaki 2012b). In 2011, nearly half of respondents made this claim, and in 2012, the majority of respondents stated that they were not meeting all of their needs. In 2011, households that reported not meeting their needs listed mainly "personal reasons" or "not fishing" as to why they didn't meet their needs; but in 2012, the majority reported management decisions as being the main barrier.

The number of respondents reporting management decisions as a cause for not meeting salmon needs increased substantially. In 2010, few respondents reported this as a reason for any salmon species. In 2011, increasing numbers of respondents reported management decisions as an imposition to meeting their needs for chum, sockeye, and Chinook salmon. In 2012, over half of respondents reported management decisions as being responsible for them not meeting their needs for these species. The number of respondents reporting management decisions as a barrier to meeting their needs for coho salmon also increased in 2012.

The availability of salmon is lower as one travels further upriver due to fish turning off into respective tributaries and removal by harvest downstream. Harvester reports indicate salmon catchability decreases in the middle and upper river portions of the Kuskokwim River drainage (Bailey and Shelden 2013). This is reflected in the fact that approximately 77 to 85% of the total harvest comes from the lower river (Figure 5), where 78% of the households are situated (Figure 13). In 2011, the fishing restrictions imposed on lower river communities may have translated into fish traveling in greater densities to spawning grounds, which may help explain why a few community harvests of Chinook salmon reported in the upper system were above average in 2011 while the overall harvest was below average (Table 3; Appendices A1–A4). In 2012, with restrictions affecting all communities along the river, harvest decreased everywhere (Table 5; Appendices A1–A4).

Not all households that identify a need for salmon are households that fish, which can pose problems for the assessment of household "needs met." Households that fall into this category include those that may use salmon, or would like to harvest salmon for subsistence use, but are not able to fish for themselves because of physical (elderly or disabled) or economic (no equipment or employment conflicts) restrictions. People who need fish but do not fish, rely on receiving fish from family, friends, or others (Brown et al. 2012; Brown et al. 2013). Fish may be given to them throughout the winter as the need arises. At the time of survey, it may be difficult for non-fishers to assess whether their needs have or will be met because they may not have received fish yet, or may not know whether what they have received will last them the winter. Conversely, fishing families that generally harvest fish to share with others may include the fish they plan to give away in their estimated need. In which case, if both those that give and that receive fish report their level of needs, it is possible to overestimate overall need and underestimate needs met. The pattern of sharing fish between households makes it difficult to separate and account for overestimated need. Also, fish are often transferred as processed food (canned, dried, smoked or salted), making it difficult to quantify the actual number of fish received (Jallen and Hamazaki 2011; Appendix C).

Household needs can vary from year to year, and the perception of whether needs are met may, for some, have more to do with the volume of fish harvested than an exact number of fish of one species or another. For example, a household may prefer to harvest more Chinook salmon, but actual catches may include more chum or sockeye salmon than intended. The household may not attempt to continue fishing for Chinook salmon if overall harvest, though not ideally proportioned, is adequate to meet their needs. Harvest timing and processing can also play a part, in that a household may not have the capacity to process more salmon (space limited) or may need to begin focusing on other subsistence tasks, like berry picking (time limited). In situations like these, the household may choose not to continue fishing, even if more fish are desired or other species are preferred.

Though the qualitative data about whether or not people met their needs does not describe the experiences from individual households within and among subareas, it indicates that despite changes in levels of subsistence harvest, the majority of respondents were not able to meet their subsistence salmon needs in 2011 and 2012. It is important to reiterate that in a given year, the number of salmon caught and the number of salmon needed may fluctuate naturally, and it is not possible to ascertain why these fluctuations occur within the scope of this study.

Fishery managers have routinely maintained communications with fishermen to obtain information on fishing success in communities, particularly through the Kuskokwim River Salmon Management Working Group meetings. This process provides fishermen in the entire Kuskokwim River drainage the opportunity to discuss the salmon run and their harvests via teleconference (Bailey and Carroll 2012). During Working Group meetings, participants and the public discuss a range of salmon related topics, including, but not limited to weekly success with salmon harvests (subsistence, commercial, and sport), observations of run dynamics such as timing and abundance, and the effect of weather on subsistence activities. Similarly, the Lower Kuskokwim River inseason subsistence catch monitoring project collects data on subsistence fishermen's assessment of relative salmon run timing and abundance, whether or not fishermen are achieving their harvest goals, and other factors affecting their harvests. Reports are given weekly during the fishing season at the Working Group meetings (Patton and Carroll 2012b; Patton et al. 2013; Chavez and Shelden 2013; Bailey and Carroll 2012). These methods of assessing harvest success are valuable for salmon management inseason. However, they are entirely qualitative and do not provide harvest estimates, nor are all subareas of the Kuskokwim Area represented. For this reason, the postseason subsistence harvest survey program is invaluable to gaining a more complete picture of the salmon harvest for the whole Kuskokwim Area each year, though the data is not available until several months after the fishing season ends.

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# TABLES AND FIGURES

Table 1.–Kuskokwim Area communities by geographic location.

| | |
|---|---|
| North Kuskokwim Bay | Kipnuk* |
| | Kwigillingok* |
| | Kongiganak |
| Lower Kuskokwim | Tuntutuliak |
| | Eek |
| | Kasigluk |
| | Nunapitchuk |
| | Atmautluak |
| | Napakiak |
| | Napaskiak |
| | Oscarville |
| | Bethel |
| | Kwethluk |
| | Akiachak |
| | Akiak |
| | Tuluksak |
| Middle Kuskokwim | Lower Kalskag |
| | Upper Kalskag |
| | Aniak |
| | Chuathbaluk |
| Upper Kuskokwim | Crooked Creek |
| | Red Devil |
| | Sleetmute |
| | Stony River |
| | Lime Village |
| | McGrath |
| | Takotna |
| | Nikolai |
| | Telida |
| South Kuskokwim Bay | Quinhagak |
| | Goodnews Bay |
| | Platinum |
| Bering Sea Coast | Mekoryuk* |
| | Newtok* |
| | Nightmute* |
| | Toksook Bay* |
| | Tununak* |
| | Chefornak* |

*Note*: An asterisk means that the community was not surveyed because they chose to not participate in the study.

Table 2.–Households selected and surveyed by user group, 2011.

| | Unknown | | | | | Does Not Usually Fish | | | | | Light Harvester | | | | | Medium Harvester | | | | | High Harvester | | | | | Combined use groups | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | *N* | S | ns | U | PS | *N* | S | ns | U | PS | *N* | S | ns | U | PS | *N* | S | ns | U | PS | *N* | S | ns | U | PS | *N* | S | ns | U | PS |
| Kongiganak | 7 | 5 | 5 | 2 | 1.4 | 22 | 7 | 5 | 1 | 0.9 | 46 | 24 | 20 | 0 | 0.8 | 9 | 9 | 9 | 0 | 1 | 3 | 3 | 2 | 0 | 0.7 | 90 | 51 | 44 | 3 | 0.9 |
| N. Kuskokwim Bay | 7 | 5 | 5 | 2 | 1.4 | 22 | 7 | 5 | 1 | 0.9 | 46 | 24 | 20 | 0 | 0.8 | 9 | 9 | 9 | 0 | 1 | 3 | 3 | 2 | 0 | 0.7 | 90 | 51 | 44 | 3 | 0.9 |
| Tuntutuliak | 7 | 5 | 4 | 2 | 1.2 | 9 | 3 | 3 | 0 | 1 | 37 | 18 | 17 | 1 | 1 | 17 | 17 | 17 | 0 | 1 | 13 | 13 | 13 | 0 | 1 | 85 | 58 | 56 | 3 | 1 |
| Eek | 9 | 1 | 0 | 7 | 7 | 18 | 6 | 6 | 0 | 1 | 42 | 21 | 19 | 2 | 1 | 9 | 9 | 8 | 0 | 0.9 | 2 | 2 | 2 | 0 | 1 | 87 | 46 | 41 | 9 | 1.1 |
| Kasigluk | 23 | 11 | 10 | 10 | 1.8 | 23 | 7 | 6 | 0 | 0.9 | 33 | 17 | 16 | 1 | 1 | 12 | 12 | 12 | 0 | 1 | 5 | 5 | 5 | 0 | 1 | 108 | 64 | 60 | 11 | 1.1 |
| Nunapitchuk | 8 | 6 | 6 | 2 | 1.3 | 25 | 8 | 6 | 0 | 0.8 | 50 | 25 | 22 | 2 | 1 | 17 | 17 | 15 | 0 | 0.9 | 14 | 14 | 14 | 0 | 1 | 118 | 74 | 67 | 4 | 1 |
| Atmautluak | 4 | 2 | 2 | 0 | 1 | 15 | 5 | 5 | 0 | 1 | 24 | 12 | 11 | 2 | 1.1 | 12 | 12 | 12 | 0 | 1 | 2 | 2 | 2 | 0 | 1 | 60 | 36 | 34 | 2 | 1 |
| Napakiak | 5 | 4 | 4 | 1 | 1.3 | 28 | 9 | 8 | 1 | 1 | 42 | 20 | 20 | 1 | 1.1 | 13 | 13 | 13 | 0 | 1 | 5 | 5 | 5 | 0 | 1 | 93 | 51 | 50 | 3 | 1 |
| Napaskiak | 11 | 1 | 0 | 7 | 7 | 14 | 5 | 5 | 0 | 1 | 30 | 15 | 13 | 2 | 1 | 35 | 35 | 33 | 0 | 0.9 | 6 | 6 | 4 | 0 | 0.7 | 99 | 65 | 55 | 9 | 1 |
| Oscarville | – | – | – | – | – | 2 | 2 | 2 | 0 | 1 | 3 | 3 | 3 | 0 | 1 | 9 | 9 | 9 | 0 | 1 | 1 | 1 | 0 | – | – | 16 | 16 | 15 | 0 | 0.9 |
| Bethel | – | – | – | – | – | – | – | – | – | – | 2,087 | 1,017 | 438 | 443 | 1 | – | – | – | – | – | – | – | – | – | – | 2,087 | 1,017 | 438 | 443 | 0.9 |
| Kwethluk | 16 | 5 | 4 | 11 | 3 | 31 | 10 | 8 | 2 | 1 | 72 | 36 | 30 | 4 | 0.9 | 29 | 29 | 28 | 0 | 1 | 13 | 13 | 13 | 0 | 1 | 165 | 97 | 84 | 17 | 1 |
| Akiachak | 16 | 10 | 8 | 5 | 1.3 | 22 | 6 | 6 | 1 | 1.2 | 57 | 29 | 24 | 7 | 1.1 | 37 | 37 | 34 | 0 | 0.9 | 16 | 16 | 16 | 0 | 1 | 152 | 102 | 91 | 13 | 1 |
| Akiak | 4 | 4 | 3 | 0 | 0.8 | 10 | 4 | 3 | 0 | 0.8 | 35 | 17 | 13 | 1 | 0.8 | 15 | 15 | 14 | 0 | 0.9 | 13 | 13 | 4 | 0 | 0.3 | 80 | 56 | 38 | 1 | 0.7 |
| Tuluksak | 8 | 2 | 1 | 4 | 2.5 | 17 | 5 | 5 | 1 | 1.2 | 31 | 16 | 14 | 4 | 1.1 | 17 | 17 | 16 | 0 | 0.9 | 9 | 9 | 8 | 0 | 0.9 | 86 | 53 | 47 | 9 | 1.1 |
| Lower Kuskokwim | 111 | 51 | 42 | 49 | 2 | 214 | 70 | 63 | 5 | 1 | 2,543 | 1,246 | 640 | 470 | 0.9 | 222 | 222 | 211 | 0 | 1 | 99 | 99 | 86 | 0 | 0.9 | 3,236 | 1,735 | 1,076 | 524 | 0.9 |
| Lower Kalskag | 17 | 1 | 1 | 11 | 12 | 17 | 5 | 3 | 1 | 0.8 | 27 | 13 | 12 | 2 | 1.1 | 14 | 14 | 14 | 0 | 1 | 3 | 3 | 3 | 0 | 1 | 79 | 37 | 34 | 14 | 1.3 |
| Upper Kalskag | 8 | 2 | 1 | 6 | 3.5 | 13 | 5 | 3 | 0 | 0.6 | 34 | 17 | 15 | 4 | 1.1 | 5 | 5 | 5 | 0 | 1 | 5 | 5 | 5 | 0 | 1 | 67 | 36 | 31 | 10 | 1.1 |
| Aniak | – | – | – | – | – | – | – | – | – | – | 182 | 166 | 153 | 16 | 1 | – | – | – | – | – | – | – | – | – | – | 182 | 166 | 153 | 16 | 1 |
| Chuathbaluk | 2 | 0 | 0 | 2 | – | 8 | 8 | 8 | 0 | 1 | 14 | 14 | 13 | 0 | 0.9 | 5 | 5 | 5 | 0 | 1 | 2 | 2 | 2 | 0 | 1 | 31 | 29 | 28 | 2 | 1 |
| Middle Kuskokwim | 27 | 3 | 2 | 19 | 7 | 38 | 18 | 14 | 1 | 0.8 | 257 | 210 | 193 | 22 | 1 | 24 | 24 | 24 | 0 | 1 | 10 | 10 | 10 | 0 | 1 | 359 | 268 | 246 | 42 | 1.1 |
| Crooked Creek | 5 | 2 | 1 | 3 | 2 | 12 | 4 | 1 | 3 | 1 | 15 | 8 | 6 | 5 | 1.4 | 6 | 6 | 4 | 0 | 0.7 | – | – | – | – | – | 38 | 20 | 12 | 11 | 1.2 |
| Red Devil | 2 | 0 | 0 | 2 | – | 3 | 3 | 3 | 0 | 1 | 5 | 5 | 5 | 0 | 1 | 2 | 2 | 2 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 13 | 11 | 11 | 2 | 1.2 |
| Sleetmute | 4 | 2 | 2 | 1 | 1.5 | 11 | 11 | 10 | 0 | 0.9 | 17 | 17 | 13 | 0 | 0.8 | 3 | 3 | 2 | 0 | 0.7 | 2 | 2 | 1 | 0 | 0.5 | 37 | 35 | 28 | 1 | 0.8 |
| Stony River | – | – | – | – | – | 6 | 6 | 5 | 0 | 0.8 | 5 | 5 | 5 | 0 | 1 | 2 | 2 | 2 | 0 | 1 | 3 | 3 | 3 | 0 | 1 | 16 | 16 | 15 | 0 | 0.9 |
| Lime Village | 7 | 7 | 1 | 0 | 0.1 | 1 | 1 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 15 | 15 | 2 | 0 | 0.1 |
| McGrath | 18 | 12 | 9 | 6 | 1.3 | 75 | 23 | 20 | 1 | 0.9 | 37 | 19 | 12 | 0 | 0.6 | 1 | 1 | 0 | – | – | 1 | 1 | 0 | – | – | 136 | 60 | 41 | 7 | 0.8 |
| Takotna | 11 | 7 | 3 | 3 | 0.9 | 9 | 9 | 8 | 0 | 0.9 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 23 | 19 | 14 | 3 | 0.9 |
| Nikolai | 2 | 0 | 0 | 2 | – | 9 | 9 | 9 | 0 | 1 | 21 | 21 | 20 | 0 | 1 | – | – | – | – | – | 1 | 1 | 1 | 0 | 1 | 33 | 31 | 30 | 2 | 1 |
| Telida | – | – | – | – | – | 2 | 2 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 | 2 | 0 | – | 0 |
| Upper Kuskokwim | 49 | 30 | 16 | 17 | 1.1 | 128 | 68 | 56 | 4 | 0.9 | 100 | 75 | 61 | 5 | 0.9 | 14 | 14 | 10 | 0 | 0.7 | 8 | 8 | 6 | 0 | 0.8 | 313 | 209 | 153 | 26 | 0.9 |
| Kuskokwim River[a] | 194 | 89 | 65 | 87 | 1.7 | 402 | 163 | 138 | 11 | 0.9 | 2,946 | 1,555 | 914 | 497 | 0.9 | 269 | 269 | 254 | 0 | 0.9 | 120 | 120 | 104 | 0 | 0.9 | 3,998 | 2,263 | 1,519 | 595 | 0.9 |

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Table 2.–Page 2 of 2.

| | Unknown | | | | | Does Not Usually Fish | | | | | Light Harvester | | | | | Medium Harvester | | | | | High Harvester | | | | | Combined use groups | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | *N* | S | ns | U | PS | *N* | S | ns | U | PS | *N* | S | ns | U | PS | *N* | S | ns | U | PS | *N* | S | ns | U | PS | *N* | S | ns | U | PS |
| Quinhagak | 20 | 9 | 7 | 11 | 2 | 25 | 6 | 5 | 3 | 1.3 | 85 | 44 | 44 | 6 | 1.1 | 19 | 19 | 19 | 0 | 1 | 4 | 4 | 3 | 0 | 0.8 | 155 | 84 | 80 | 20 | 1.2 |
| Goodnews Bay | 4 | 2 | 1 | 2 | 1.5 | 15 | 5 | 5 | 0 | 1 | 46 | 23 | 20 | 1 | 0.9 | 3 | 3 | 3 | 0 | 1 | 3 | 3 | 3 | 0 | 1 | 71 | 36 | 32 | 3 | 1 |
| Platinum | – | – | – | – | – | 4 | 4 | 4 | 0 | 1 | 13 | 13 | 12 | 0 | 0.9 | – | – | – | – | – | – | – | – | – | – | 17 | 17 | 16 | 0 | 0.9 |
| S. Kuskokwim Bay | 24 | 11 | 8 | 13 | 1.9 | 44 | 15 | 14 | 3 | 1.1 | 144 | 80 | 76 | 7 | 1 | 22 | 22 | 22 | 0 | 1 | 7 | 7 | 6 | 0 | 0.9 | 243 | 137 | 128 | 23 | 1.1 |
| Total | 218 | 100 | 73 | 100 | 1.7 | 446 | 178 | 152 | 14 | 0.9 | 3090 | 1635 | 990 | 504 | 0.9 | 291 | 291 | 276 | 0 | 1 | 127 | 127 | 110 | 0 | 0.9 | 4,241 | 2,400 | 1,647 | 618 | 0.9 |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, S = number selected for survey, ns = number selected and surveyed, U = number of unselected houses that were surveyed, PS = the proportion of selected households surveyed.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 3.–Total estimated subsistence salmon harvest by species and community for the Kuskokwim Area, 2011.

| | Households (HH) | | | Chinook | | | Chum | | | Sockeye | | | Coho | | | Pink | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | Total *N* | total *n* | % survey | avg harvest/ HH | Est. Total harvest | CI (95%) | avg harvest/ HH | Est. Total harvest | CI (95%) | avg harvest/ HH | Est. Total harvest | CI (95%) | avg harvest/ HH | Est. Total harvest | CI (95%) | avg harvest/ HH | Est. Total harvest | CI (95%) |
| Kongiganak | 90 | 47 | 52% | 13 | 1,208 | 324 | 31 | 2,809 | 763 | 14 | 1,266 | 416 | 7 | 613 | 291 | 0 | 34 | 14 |
| N. Kuskokwim Bay | 90 | 47 | 52% | 13 | 1,208 | 324 | 31 | 2,809 | 763 | 14 | 1,266 | 416 | 7 | 613 | 291 | 0 | 34 | 14 |
| Tuntutuliak | 85 | 59 | 69% | 36 | 3,032 | 438 | 22 | 1,865 | 253 | 15 | 1,274 | 258 | 3 | 250 | 84 | 0 | 3 | 0 |
| Eek | 87 | 50 | 57% | 16 | 1,378 | 300 | 6 | 486 | 115 | 8 | 664 | 194 | 3 | 280 | 134 | 0 | 22 | 28 |
| Kasigluk | 108 | 71 | 66% | 26 | 2,823 | 388 | 19 | 2,029 | 355 | 12 | 1,269 | 174 | 4 | 430 | 99 | 0 | 6 | 8 |
| Nunapitchuk | 118 | 71 | 60% | 30 | 3,559 | 441 | 36 | 4,257 | 403 | 19 | 2,223 | 247 | 3 | 407 | 108 | 0 | 0 | 0 |
| Atmautluak | 60 | 36 | 60% | 21 | 1,236 | 253 | 31 | 1,864 | 525 | 14 | 827 | 247 | 4 | 263 | 98 | 0 | 7 | 8 |
| Napakiak | 93 | 53 | 57% | 21 | 1,963 | 471 | 17 | 1,546 | 224 | 15 | 1,351 | 317 | 10 | 927 | 267 | 0 | 43 | 45 |
| Napaskiak | 99 | 64 | 65% | 34 | 3,360 | 611 | 18 | 1,783 | 272 | 16 | 1,587 | 296 | 5 | 471 | 155 | 0 | 12 | 5 |
| Oscarville | 16 | 15 | 94% | 43 | 694 | 0 | 25 | 402 | 0 | 14 | 228 | 0 | 3 | 43 | 0 | 0 | 0 | 0 |
| Bethel[a] | 2,087 | 438 | 21% | 12 | 25,093 | 4,052 | 7 | 15,324 | 6,057 | 8 | 16,946 | 2,829 | 9 | 18,141 | 3,556 | 0 | 187 | 113 |
| Kwethluk | 165 | 101 | 61% | 15 | 2,467 | 291 | 21 | 3,484 | 455 | 14 | 2,357 | 363 | 7 | 1,097 | 360 | 1 | 106 | 107 |
| Akiachak | 152 | 104 | 68% | 25 | 3,852 | 343 | 21 | 3,205 | 403 | 17 | 2,647 | 271 | 9 | 1,440 | 173 | 0 | 45 | 16 |
| Akiak | 80 | 39 | 49% | 31 | 2,455 | 649 | 30 | 2,421 | 962 | 32 | 2,576 | 766 | 6 | 505 | 250 | 2 | 136 | 111 |
| Tuluksak | 86 | 56 | 65% | 14 | 1,230 | 258 | 31 | 2,697 | 649 | 20 | 1,699 | 507 | 2 | 163 | 55 | 0 | 3 | 1 |
| Lower Kuskokwim | 3,236 | 1,157 | 36% | 16 | 53,142 | 4,289 | 13 | 41,362 | 6,258 | 11 | 35,647 | 3,082 | 8 | 24,416 | 3,609 | 0 | 570 | 196 |
| Lower Kalskag | 79 | 48 | 61% | 16 | 1,260 | 262 | 21 | 1,643 | 362 | 10 | 802 | 212 | 9 | 684 | 257 | 0 | 0 | 0 |
| Upper Kalskag | 67 | 41 | 61% | 26 | 1,772 | 306 | 24 | 1,599 | 157 | 14 | 938 | 193 | 15 | 998 | 456 | 0 | 33 | 3 |
| Aniak | 182 | 169 | 93% | 12 | 2,214 | 193 | 13 | 2,391 | 417 | 6 | 1,168 | 106 | 12 | 2,215 | 429 | 0 | 28 | 7 |
| Chuathbaluk | 31 | 30 | 97% | 13 | 409 | 62 | 22 | 686 | 100 | 10 | 300 | 33 | 4 | 109 | 24 | 0 | 5 | 3 |
| Middle Kuskokwim | 359 | 288 | 80% | 16 | 5,655 | 451 | 18 | 6,318 | 583 | 9 | 3,208 | 307 | 11 | 4,006 | 677 | 0 | 66 | 8 |
| Crooked Creek | 38 | 23 | 61% | 11 | 402 | 124 | 23 | 862 | 304 | 6 | 243 | 83 | 8 | 297 | 128 | 0 | 3 | 3 |
| Red Devil | 13 | 13 | 100% | 14 | 186 | 0 | 33 | 434 | 0 | 39 | 502 | 0 | 10 | 130 | 0 | 0 | 5 | 0 |
| Sleetmute | 37 | 29 | 78% | 7 | 242 | 30 | 19 | 689 | 126 | 19 | 693 | 123 | 12 | 426 | 45 | 0 | 15 | 11 |
| Stony River | 16 | 15 | 94% | 8 | 134 | 0 | 32 | 516 | 0 | 19 | 303 | 0 | 21 | 333 | 0 | 1 | 9 | 0 |
| Lime Village[b] | 15 | 2 | 0% | ***8*** | ***120*** | ***47*** | ***34*** | ***504*** | ***39*** | ***50*** | ***745*** | ***47*** | ***40*** | ***596*** | ***55*** | – | – | – |
| McGrath | 136 | 48 | 35% | 6 | 829 | 457 | 4 | 476 | 537 | 5 | 630 | 633 | 10 | 1,331 | 1,859 | 0 | 4 | 6 |
| Takotna[c] | 23 | 17 | 74% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 |
| Nikolai | 33 | 32 | 97% | 14 | 450 | 62 | 11 | 349 | 12 | 0 | 13 | 3 | 1 | 20 | 5 | 0 | 0 | 0 |
| Telida | 2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Upper Kuskokwim | 313 | 179 | 57% | 7 | 2,242 | 481 | 11 | 3,326 | 631 | 8 | 2,385 | 652 | 8 | 2,540 | 1,865 | 0 | 35 | 12 |

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Table 3.–Page 2 of 2.

| | Households (HH) | | | Chinook | | | Chum | | | Sockeye | | | Coho | | | Pink | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | Total *N* | total *n* | % survey | avg harvest/ HH | Est. Total harvest | CI (95%) | avg harvest/ HH | Est. Total harvest | CI (95%) | avg harvest/ HH | Est. Total harvest | CI (95%) | avg harvest/ HH | Est. Total harvest | CI (95%) | avg harvest/ HH | Est. Total harvest | CI (95%) |
| Kuskokwim River[d] | 3,998 | 1,671 | 42% | 16 | 62,248 | 4,351 | 13 | 53,816 | 6,363 | 11 | 42,505 | 3,192 | 8 | 31,575 | 4,128 | 0 | 706 | 197 |
| Quinhagak | 155 | 100 | 65% | 17 | 2,588 | 444 | 8 | 1,255 | 226 | 10 | 1,582 | 318 | 9 | 1,369 | 263 | 0 | 19 | 13 |
| Goodnews Bay | 71 | 35 | 49% | 12 | 834 | 238 | 5 | 349 | 172 | 19 | 1,328 | 323 | 4 | 259 | 150 | 0 | 14 | 15 |
| Platinum | 17 | 16 | 94% | 4 | 62 | 19 | 4 | 70 | 18 | 8 | 135 | 38 | 8 | 143 | 38 | 0 | 0 | 0 |
| S. Kuskokwim Bay | 243 | 151 | 62% | 14 | 3,484 | 506 | 7 | 1,674 | 280 | 13 | 3,044 | 455 | 7 | 1,771 | 305 | 0 | 33 | 20 |
| Total | 4,241 | 1,822 | 43% | 15 | 65,732 | 4,380 | 13 | 55,490 | 6,369 | 11 | 45,550 | 3,224 | 8 | 33,346 | 4,139 | 0 | 739 | 198 |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed, CI (95)% = 95% confidence interval.

[a] A total of 881 Bethel households were surveyed. Of these, 438 were preselected, and these were used for determining harvest estimates for this village.

[b] Villages not surveyed are estimated using historical average household harvest expanded by the number of households.

[c] Takotna is normally not surveyed, and harvest has been estimated to be zero based on harvest practices. In 2011, surveyors were able to visit Takotna and check assumptions, which were found to be accurate.

[d] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 4.–Households selected and surveyed by user group, 2012.

| | Unknown | | | | | Does Not Usually Fish | | | | | Light Harvester | | | | | Medium Harvester | | | | | High Harvester | | | | | Combined use groups | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | *N* | S | ns | U | PS | *N* | S | ns | U | PS | *N* | S | ns | U | PS | *N* | S | ns | U | PS | *N* | S | ns | U | PS | *N* | S | ns | U | PS |
| Kongiganak | – | – | – | – | – | 28 | 9 | 0 | – | – | 53 | 27 | 0 | – | – | 8 | 8 | 0 | – | – | 1 | 1 | 0 | – | – | 90 | 45 | 0 | – | 0 |
| N. Kuskokwim Bay | – | – | – | – | – | 28 | 9 | 0 | – | 0 | 53 | 27 | 0 | – | 0 | 8 | 8 | 0 | – | 0 | 1 | 1 | 0 | – | 0 | 90 | 45 | 0 | – | 0 |
| Tuntutuliak | 8 | 1 | 1 | 3 | 4 | 9 | 9 | 8 | 0 | 0.9 | 48 | 24 | 19 | 2 | 0.9 | 18 | 18 | 14 | 0 | 0.8 | 7 | 7 | 6 | 0 | 0.9 | 90 | 59 | 48 | 5 | 0.9 |
| Eek | 5 | 2 | 0 | 3 | 1.5 | 23 | 7 | 6 | 0 | 0.9 | 50 | 26 | 21 | 8 | 1.1 | 6 | 6 | 5 | 0 | 0.8 | 1 | 1 | 1 | 0 | 1 | 86 | 43 | 34 | 11 | 1.1 |
| Kasigluk | 2 | 1 | 1 | 1 | 2 | 30 | 9 | 8 | 1 | 1 | 60 | 30 | 27 | 3 | 1 | 7 | 7 | 6 | 0 | 0.9 | 3 | 3 | 3 | 0 | 1 | 104 | 52 | 46 | 5 | 1 |
| Nunapitchuk | 1 | 0 | 0 | 1 | – | 29 | 10 | 6 | 0 | 0.6 | 54 | 27 | 25 | 2 | 1 | 16 | 16 | 16 | 0 | 1 | 10 | 10 | 10 | 0 | 1 | 111 | 64 | 58 | 3 | 1 |
| Atmautluak | 6 | 2 | 1 | 4 | 2.5 | 17 | 6 | 6 | 0 | 1 | 25 | 12 | 11 | 0 | 0.9 | 9 | 9 | 9 | 0 | 1 | 4 | 4 | 4 | 0 | 1 | 61 | 33 | 31 | 4 | 1.1 |
| Napakiak | 11 | 0 | 0 | 6 | – | 30 | 9 | 8 | 2 | 1.1 | 45 | 22 | 19 | 1 | 0.9 | 12 | 12 | 9 | 0 | 0.8 | 1 | 1 | 1 | 0 | 1 | 99 | 44 | 37 | 9 | 1.1 |
| Napaskiak | 8 | 5 | 3 | 2 | 1 | 17 | 6 | 3 | 0 | 0.5 | 44 | 22 | 18 | 0 | 0.8 | 22 | 22 | 13 | 0 | 0.6 | 6 | 6 | 3 | 0 | 0.5 | 97 | 61 | 40 | 2 | 0.7 |
| Oscarville | – | – | – | – | – | 3 | 3 | 3 | 0 | 1 | 2 | 2 | 2 | 0 | 1 | 8 | 8 | 8 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 14 | 14 | 14 | 0 | 1 |
| Bethel | – | – | – | – | – | – | – | – | – | – | 2,128 | 1,040 | 447 | 441 | 0.9 | – | – | – | – | – | – | – | – | – | – | 2,128 | 1,040 | 447 | 441 | 0.9 |
| Kwethluk | 6 | 1 | 1 | 4 | 5 | 40 | 13 | 10 | 3 | 1 | 84 | 42 | 36 | 2 | 0.9 | 27 | 27 | 22 | 0 | 0.8 | 5 | 5 | 4 | 0 | 0.8 | 164 | 90 | 74 | 9 | 0.9 |
| Akiachak | 12 | 2 | 1 | 7 | 4 | 32 | 10 | 7 | 3 | 1 | 73 | 35 | 23 | 3 | 0.7 | 32 | 32 | 22 | 0 | 0.7 | 8 | 8 | 8 | 0 | 1 | 157 | 87 | 61 | 13 | 0.9 |
| Akiak | 2 | 2 | 0 | – | – | 13 | 4 | 1 | 2 | 0.8 | 34 | 18 | 2 | 5 | 0.4 | 18 | 18 | 3 | 0 | 0.2 | 10 | 10 | 2 | 0 | 0.2 | 79 | 54 | 9 | 7 | 0.3 |
| Tuluksak | 11 | 3 | 1 | 6 | 2.3 | 18 | 4 | 4 | 0 | 1 | 36 | 17 | 16 | 3 | 1.1 | 16 | 16 | 16 | 0 | 1 | 7 | 7 | 7 | 0 | 1 | 89 | 48 | 44 | 9 | 1.1 |
| Lower Kuskokwim | 72 | 19 | 9 | 37 | 2.4 | 261 | 90 | 70 | 11 | 0.9 | 2,683 | 1,317 | 666 | 470 | 0.9 | 191 | 191 | 143 | 0 | 0.8 | 63 | 63 | 50 | 0 | 0.8 | 3,279 | 1,689 | 943 | 518 | 0.9 |
| Lower Kalskag | 7 | 5 | 4 | 1 | 1 | 27 | 7 | 7 | 0 | 1 | 35 | 18 | 18 | 1 | 1.1 | 7 | 7 | 7 | 0 | 1 | 3 | 3 | 3 | 0 | 1 | 79 | 40 | 39 | 2 | 1 |
| Upper Kalskag | 3 | 2 | 1 | 1 | 1 | 16 | 5 | 4 | 1 | 1 | 36 | 19 | 16 | 1 | 0.9 | 4 | 4 | 4 | 0 | 1 | 3 | 3 | 3 | 0 | 1 | 62 | 33 | 28 | 3 | 0.9 |
| Aniak | – | – | – | – | – | – | – | – | – | – | 187 | 170 | 139 | 16 | 0.9 | – | – | – | – | – | – | – | – | – | – | 187 | 170 | 139 | 16 | 0.9 |
| Chuathbaluk | 8 | 0 | 0 | 7 | – | 7 | 7 | 6 | 0 | 0.9 | 13 | 13 | 11 | 0 | 0.9 | 5 | 5 | 4 | 0 | 0.8 | – | – | – | – | – | 33 | 25 | 21 | 7 | 1.1 |
| Middle Kuskokwim | 18 | 7 | 5 | 9 | 2 | 50 | 19 | 17 | 1 | 1 | 271 | 220 | 184 | 18 | 0.9 | 16 | 16 | 15 | 0 | 0.9 | 6 | 6 | 6 | 0 | 1 | 361 | 268 | 227 | 28 | 1 |
| Crooked Creek | 6 | 1 | 0 | 5 | 5 | 14 | 14 | 12 | 0 | 0.9 | 12 | 12 | 10 | 0 | 0.8 | 5 | 5 | 4 | 0 | 0.8 | – | – | – | – | – | 37 | 32 | 26 | 5 | 1 |
| Red Devil | – | – | – | – | – | 3 | 3 | 2 | 0 | 0.7 | 7 | 7 | 5 | 0 | 0.7 | 1 | 1 | 1 | 0 | 1 | 2 | 2 | 2 | 0 | 1 | 13 | 13 | 10 | 0 | 0.8 |
| Sleetmute | 4 | 1 | 1 | 3 | 4 | 13 | 13 | 11 | 0 | 0.9 | 19 | 19 | 16 | 0 | 0.8 | 2 | 2 | 2 | 0 | 1 | 2 | 2 | 2 | 0 | 1 | 40 | 37 | 32 | 3 | 1 |
| Stony River | – | – | – | – | – | 8 | 8 | 1 | 0 | 0.1 | 6 | 6 | 2 | 0 | 0.3 | 1 | 1 | 0 | – | – | 1 | 1 | 0 | – | – | 16 | 16 | 3 | 0 | 0.2 |
| Lime Village | 7 | 6 | 5 | 0 | 0.8 | 1 | 1 | 1 | 0 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 14 | 13 | 10 | 0 | 0.8 |
| McGrath | 12 | 3 | 0 | 3 | 1 | 87 | 24 | 18 | 5 | 1 | 32 | 16 | 14 | 1 | 0.9 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 136 | 48 | 36 | 9 | 0.9 |
| Takotna | 5 | 5 | 0 | – | – | 18 | 18 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 23 | 23 | 0 | – | 0 |
| Nikolai | 1 | 0 | 0 | 1 | – | 12 | 12 | 9 | 0 | 0.8 | 20 | 20 | 19 | 0 | 1 | – | – | – | – | – | 1 | 1 | 1 | 0 | 1 | 34 | 33 | 29 | 1 | 0.9 |
| Telida | – | – | – | – | – | 2 | 2 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 | 2 | 0 | – | 0 |
| Upper Kuskokwim | 35 | 16 | 6 | 12 | 1.1 | 158 | 95 | 54 | 5 | 0.6 | 96 | 80 | 66 | 1 | 0.8 | 10 | 10 | 8 | 0 | 0.8 | 7 | 7 | 6 | 0 | 0.9 | 315 | 217 | 146 | 18 | 0.8 |
| Kuskokwim River[a] | 125 | 42 | 20 | 58 | 1.9 | 497 | 213 | 141 | 17 | 0.7 | 3,103 | 1,644 | 916 | 489 | 0.9 | 225 | 225 | 166 | 0 | 0.7 | 77 | 77 | 62 | 0 | 0.8 | 4,045 | 2,219 | 1,316 | 564 | 0.9 |

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Table 4.–Page 2 of 2.

| | Unknown | | | | | Does Not Usually Fish | | | | | Light Harvester | | | | | Medium Harvester | | | | | High Harvester | | | | | Combined use groups | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | *N* | S | ns | U | PS | *N* | S | ns | U | PS | *N* | S | ns | U | PS | *N* | S | ns | U | PS | *N* | S | ns | U | PS | *N* | S | ns | U | PS |
| Quinhagak | 11 | 3 | 2 | 8 | 3.3 | 41 | 13 | 10 | 0 | 0.8 | 103 | 52 | 44 | 6 | 1 | 5 | 5 | 5 | 0 | 1 | 2 | 2 | 2 | 0 | 1 | 162 | 75 | 63 | 14 | 1 |
| Goodnews Bay | 2 | 0 | 0 | 2 | – | 21 | 6 | 6 | 2 | 1.3 | 43 | 22 | 21 | 4 | 1.1 | 2 | 2 | 2 | 0 | 1 | – | – | – | – | – | 68 | 30 | 29 | 8 | 1.2 |
| Platinum | 3 | 0 | 0 | 2 | – | 5 | 5 | 5 | 0 | 1 | 11 | 11 | 9 | 0 | 0.8 | – | – | – | – | – | – | – | – | – | – | 19 | 16 | 14 | 2 | 1 |
| S. Kuskokwim Bay | 16 | 3 | 2 | 12 | 4.7 | 67 | 24 | 21 | 2 | 1 | 157 | 85 | 74 | 10 | 1 | 7 | 7 | 7 | 0 | 1 | 2 | 2 | 2 | 0 | 1 | 249 | 121 | 106 | 24 | 1.1 |
| Total | 141 | 45 | 22 | 70 | 2 | 564 | 237 | 162 | 19 | 0.8 | 3,260 | 1,729 | 990 | 499 | 0.9 | 232 | 232 | 173 | 0 | 0.8 | 79 | 79 | 64 | 0 | 0.8 | 4,294 | 2,340 | 1,422 | 588 | 0.9 |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, S = number selected for survey, ns = number selected and surveyed, U = number of unselected houses that were surveyed, PS = the proportion of selected households surveyed.

[a] Kuskokwim River total includes the Lower, Middle and Upper Kuskokwim areas and the North Kuskokwim Bay.

Table 5.–Estimated subsistence salmon harvest by species and community for the Kuskokwim Area, 2012.

| | Households (HH) | | | Chinook | | | Chum | | | Sockeye | | | Coho | | | Pink | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | Total *N* | total *n* | % survey | avg harvest/ HH | Est. Total harvest | CI (95%) | avg harvest/ HH | Est. Total harvest | CI (95%) | avg harvest/ HH | Est. Total harvest | CI (95%) | avg harvest/ HH | Est. Total harvest | CI (95%) | Medium Harvester | Est. Total harvest | CI (95%) |
| Kongiganak[a] | 90 | 0 | 0% | ***6*** | ***571*** | ***282*** | ***21*** | ***1,901*** | ***188*** | ***13*** | ***1,211*** | ***173*** | ***5*** | ***458*** | ***196*** | **–** | **–** | **–** |
| N. Kuskokwim Bay | 90 | 0 | 0% | 6 | 571 | 282 | 21 | 1,901 | 188 | 13 | 1,211 | 173 | 5 | 458 | 196 | 0 | 0 | – |
| Tuntutuliak | 90 | 53 | 59% | 12 | 1,123 | 253 | 29 | 2,614 | 490 | 17 | 1,516 | 277 | 6 | 565 | 234 | 0 | 15 | 11 |
| Eek | 86 | 45 | 52% | 12 | 1,004 | 308 | 18 | 1,552 | 537 | 17 | 1,490 | 336 | 7 | 612 | 262 | 1 | 50 | 52 |
| Kasigluk | 104 | 51 | 49% | 5 | 552 | 191 | 31 | 3,261 | 838 | 14 | 1,451 | 386 | 3 | 303 | 206 | 0 | 0 | 0 |
| Nunapitchuk | 111 | 61 | 55% | 8 | 845 | 135 | 48 | 5,312 | 742 | 22 | 2,396 | 254 | 3 | 319 | 76 | 0 | 32 | 22 |
| Atmautluak | 61 | 35 | 57% | 4 | 234 | 79 | 44 | 2,701 | 620 | 27 | 1,623 | 533 | 6 | 383 | 189 | 0 | 22 | 3 |
| Napakiak | 99 | 46 | 46% | 5 | 457 | 163 | 17 | 1,711 | 371 | 12 | 1,141 | 328 | 4 | 402 | 128 | 0 | 0 | 0 |
| Napaskiak | 97 | 42 | 43% | 11 | 1,108 | 265 | 33 | 3,216 | 951 | 21 | 2,065 | 453 | 3 | 269 | 151 | 1 | 122 | 135 |
| Oscarville[b] | 14 | 14 | 100% | 4 | 51 | 0 | 43 | 599 | 140 | 23 | 323 | 0 | 3 | 38 | 24 | – | – | – |
| Bethel[c] | 2,128 | 447 | 21% | 3 | 7,321 | 1,474 | 13 | 26,872 | 7,720 | 9 | 18,282 | 3,605 | 6 | 13,280 | 3,906 | 0 | 305 | 172 |
| Kwethluk | 164 | 83 | 51% | 10 | 1,709 | 450 | 23 | 3,849 | 684 | 18 | 2,884 | 522 | 6 | 1,013 | 286 | 1 | 91 | 51 |
| Akiachak | 157 | 74 | 47% | 18 | 2,862 | 666 | 26 | 4,150 | 928 | 22 | 3,443 | 668 | 5 | 714 | 240 | 0 | 53 | 52 |
| Akiak[b] | 79 | 16 | 20% | ***11*** | ***856*** | ***178*** | ***31*** | ***2,416*** | ***184*** | ***23*** | ***1,820*** | ***157*** | 6 | ***474*** | ***199*** | **–** | **–** | **–** |
| Tuluksak | 89 | 53 | 60% | 7 | 651 | 88 | 29 | 2,585 | 346 | 16 | 1,380 | 226 | 4 | 341 | 143 | 0 | 8 | 9 |
| Lower Kuskokwim | 3,279 | 1,020 | 31% | 6 | 18,773 | 1,782 | 19 | 60,838 | 8,019 | 12 | 39,814 | 3,846 | 6 | 18,713 | 3,963 | 0 | 698 | 235 |
| Lower Kalskag | 79 | 41 | 52% | 6 | 459 | 121 | 42 | 3,284 | 1,083 | 11 | 891 | 260 | 14 | 1,107 | 441 | 0 | 25 | 36 |
| Upper Kalskag | 62 | 31 | 50% | 9 | 562 | 129 | 31 | 1,930 | 571 | 12 | 770 | 144 | 6 | 360 | 177 | 0 | 30 | 0 |
| Aniak | 187 | 155 | 83% | 5 | 993 | 162 | 30 | 5,667 | 1,779 | 7 | 1,375 | 243 | 18 | 3,365 | 1,340 | 5 | 940 | 756 |
| Chuathbaluk | 33 | 28 | 85% | 3 | 103 | 45 | 24 | 796 | 213 | 9 | 297 | 81 | 5 | 179 | 52 | 0 | 2 | 2 |
| Middle Kuskokwim | 361 | 255 | 71% | 6 | 2,117 | 244 | 32 | 11,677 | 2,170 | 9 | 3,333 | 392 | 14 | 5,011 | 1,423 | 3 | 997 | 754 |
| Crooked Creek | 37 | 31 | 84% | 3 | 124 | 36 | 16 | 610 | 81 | 6 | 234 | 53 | 4 | 149 | 40 | 0 | 2 | 2 |
| Red Devil | 13 | 10 | 77% | 17 | 225 | 71 | 40 | 516 | 194 | 39 | 511 | 159 | 18 | 238 | 134 | 3 | 42 | 22 |
| Sleetmute | 40 | 35 | 88% | 3 | 132 | 25 | 25 | 1,004 | 88 | 18 | 715 | 77 | 20 | 784 | 43 | 3 | 120 | 2 |
| Stony River[b] | 16 | 3 | 19% | ***13*** | ***212*** | ***86*** | ***39*** | ***619*** | ***39*** | ***25*** | ***398*** | ***47*** | ***23*** | ***372*** | ***36*** | **–** | **–** | **–** |
| Lime Village | 14 | 10 | 0% | 2 | 29 | 19 | 30 | 419 | 304 | 56 | 780 | 691 | 8 | 117 | 95 | – | 129 | 157 |
| McGrath | 136 | 45 | 33% | 1 | 68 | 54 | 7 | 885 | 326 | 2 | 233 | 106 | 17 | 2,257 | 1,184 | 0 | 14 | 15 |
| Takotna [a] | 23 | – | – | ***0*** | ***0*** | ***108*** | ***0*** | ***0*** | ***55*** | ***0*** | ***2*** | ***42*** | ***0*** | ***22*** | ***77*** | **–** | **–** | **–** |
| Nikolai | 34 | 30 | 88% | 8 | 276 | 37 | 31 | 1,044 | 289 | 0 | 0 | 0 | 6 | 214 | 65 | 0 | 0 | 0 |
| Telida | 2 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Upper Kuskokwim | 315 | 164 | 52% | 3 | 1,066 | 175 | 16 | 5,097 | 582 | 9 | 2,873 | 726 | 13 | 4,153 | 1202 | 1 | 307 | 139 |

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Table 5.–Page 2 of 2.

| | Households (HH) | | | Chinook | | | Chum | | | Sockeye | | | Coho | | | Pink | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | Total *N* | total *n* | % survey | avg harvest/ HH | Est. Total harvest | CI (95%) | avg harvest/ HH | Est. Total harvest | CI (95%) | avg harvest/ HH | Est. Total harvest | CI (95%) | avg harvest/ HH | Est. Total harvest | CI (95%) | avg harvest/ HH | Est. Total harvest | CI (95%) |
| Kuskokwim River[d] | 4,045 | 1,439 | 36% | 6 | 22,527 | 1,829 | 20 | 79,513 | 8,330 | 12 | 47,231 | 3,937 | 7 | 28,335 | 4,383 | 0 | 2,002 | 799 |
| Quinhagak | 162 | 77 | 48% | 15 | 2,396 | 495 | 12 | 2,001 | 416 | 12 | 2,015 | 386 | 9 | 1,380 | 275 | 0 | 70 | 43 |
| Goodnews Bay | 68 | 37 | 54% | 6 | 389 | 104 | 5 | 322 | 92 | 18 | 1,197 | 247 | 6 | 382 | 152 | 0 | 72 | 37 |
| Platinum | 19 | 16 | 84% | 1 | 24 | 4 | 4 | 76 | 27 | 9 | 173 | 72 | 7 | 124 | 70 | 1 | 16 | 12 |
| S. Kuskokwim Bay | 249 | 130 | 52% | 11 | 2,809 | 506 | 10 | 2,399 | 424 | 14 | 3,385 | 464 | 8 | 1,886 | 322 | 1 | 158 | 57 |
| Total | 4,294 | 1,569 | 37% | 6 | 25,336 | 1,897 | 19 | 81,912 | 8,341 | 12 | 50,616 | 3,964 | 7 | 30,221 | 4,395 | 1 | 2,160 | 801 |

*Note*: Dashes indicate data is unavailable. Bold indicates Bayesian estimates. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed, CI (95)% = 95% confidence interval.

[a] Villages not surveyed. Estimated using historical average household harvest expanded by the number of households.

[b] Villages surveyed, but numbers of selected households or total number or surveyed households insufficient. Estimated using historical average household harvest expanded by the number of households.

[c] A total of 888 Bethel households were surveyed. Of these, 441 were preselected, and these were used for determining harvest estimates for this village.

[d] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 6.–Expanded harvest of Chinook salmon, for communities surveyed, Kuskokwim Area, 2011.

| | Unknown | | | | Does Not Usually Harvest | | | | Light Harvesters | | | | Medium Harvesters | | | | High Harvesters | | | | Combined use groups | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | Total *N* | total *n* | Est. Total | CI (95%) |
| Kongiganak | 7 | 7 | 3 | 0 | 22 | 6 | 5 | 3 | 46 | 20 | 16 | 3 | 9 | 9 | 14 | 0 | 3 | 2 | 8 | 3 | 90 | 47 | 1,208 | 324 |
| Tuntutuliak | 7 | 6 | 28 | 3 | 9 | 3 | 14 | 7 | 37 | 18 | 28 | 6 | 17 | 17 | 46 | 0 | 13 | 13 | 67 | 0 | 85 | 59 | 3,032 | 438 |
| Eek | 9 | 7 | 1 | 1 | 18 | 6 | 2 | 2 | 42 | 21 | 24 | 3 | 9 | 8 | 19 | 2 | 2 | 2 | 45 | 0 | 87 | 50 | 1,378 | 300 |
| Kasigluk | 23 | 18 | 17 | 2 | 23 | 6 | 6 | 4 | 33 | 17 | 26 | 4 | 12 | 11 | 37 | 2 | 5 | 5 | 46 | 0 | 108 | 68 | 2,823 | 388 |
| Nunapitchuk | 8 | 7 | 1 | 1 | 25 | 6 | 8 | 4 | 50 | 24 | 21 | 3 | 17 | 15 | 51 | 4 | 14 | 14 | 64 | 0 | 118 | 69 | 3,559 | 441 |
| Atmautluak | 4 | 2 | 0 | 0 | 15 | 5 | 0 | 0 | 24 | 12 | 28 | 5 | 12 | 12 | 39 | 0 | 2 | 2 | 28 | 0 | 60 | 35 | 1,236 | 253 |
| Napakiak | 5 | 5 | 11 | 0 | 28 | 9 | 10 | 6 | 42 | 21 | 23 | 4 | 13 | 13 | 34 | 0 | 5 | 5 | 43 | 0 | 93 | 53 | 1,963 | 471 |
| Napaskiak | 11 | 5 | 30 | 14 | 14 | 5 | 0 | 0 | 30 | 15 | 23 | 7 | 35 | 33 | 46 | 1 | 6 | 4 | 102 | 22 | 99 | 62 | 3,360 | 611 |
| Oscarville | – | – | – | – | 2 | 2 | 0 | 0 | 3 | 3 | 18 | 0 | 9 | 9 | 66 | 0 | 1 | 0 | – | – | 16 | 15 | 694 | 0 |
| Bethel | – | – | – | – | – | – | – | – | 2,087 | 429 | 12 | 1 | – | – | – | – | – | – | – | – | 2,087 | 429 | 25,093 | 4,052 |
| Kwethluk | 16 | 14 | 11 | 1 | 31 | 10 | 2 | 1 | 72 | 33 | 10 | 2 | 29 | 27 | 34 | 1 | 13 | 13 | 37 | 0 | 165 | 98 | 2,467 | 291 |
| Akiachak | 16 | 13 | 9 | 2 | 22 | 7 | 5 | 3 | 57 | 30 | 21 | 2 | 37 | 34 | 44 | 2 | 16 | 16 | 44 | 0 | 152 | 103 | 3,852 | 343 |
| Akiak | 4 | 2 | 16 | 4 | 10 | 3 | 17 | 14 | 35 | 13 | 34 | 8 | 15 | 13 | 30 | 3 | 13 | 4 | 45 | 6 | 80 | 36 | 2,455 | 649 |
| Tuluksak | 8 | 5 | 23 | 12 | 17 | 6 | 4 | 3 | 31 | 16 | 8 | 2 | 17 | 16 | 27 | 1 | 9 | 8 | 29 | 4 | 86 | 54 | 1,230 | 258 |
| Lower Kalskag | 17 | 12 | 9 | 3 | 17 | 4 | 0 | 0 | 27 | 14 | 13 | 3 | 14 | 14 | 26 | 0 | 3 | 3 | 35 | 0 | 79 | 48 | 1,260 | 262 |
| Upper Kalskag | 8 | 7 | 12 | 4 | 13 | 3 | 0 | 0 | 34 | 19 | 26 | 3 | 5 | 5 | 48 | 0 | 5 | 5 | 42 | 0 | 67 | 41 | 1,772 | 306 |
| Aniak | – | – | – | – | – | – | – | – | 182 | 168 | 12 | 1 | – | – | – | – | – | – | – | – | 182 | 168 | 2,214 | 193 |
| Chuathbaluk | 2 | 2 | 1 | 0 | 8 | 8 | 0 | 0 | 14 | 13 | 5 | 1 | 5 | 4 | 41 | 6 | 2 | 2 | 62 | 0 | 31 | 29 | 409 | 62 |
| Crooked Creek | 5 | 4 | 3 | 1 | 12 | 4 | 3 | 2 | 15 | 11 | 16 | 3 | 6 | 4 | 19 | 4 | – | – | – | – | 38 | 23 | 402 | 124 |
| Red Devil | 2 | 2 | 0 | 0 | 3 | 3 | 0 | 0 | 5 | 5 | 17 | 0 | 2 | 2 | 6 | 0 | 1 | 1 | 90 | – | 13 | 13 | 186 | 0 |
| Sleetmute | 4 | 3 | 5 | 3 | 11 | 10 | 0 | 0 | 17 | 13 | 4 | 1 | 3 | 2 | 8 | 1 | 2 | 1 | 61 | – | 37 | 29 | 242 | 30 |
| Stony River | – | – | – | – | 6 | 5 | 0 | 0 | 5 | 5 | 5 | 0 | 2 | 2 | 25 | 0 | 3 | 3 | 20 | 0 | 16 | 15 | 134 | 0 |
| Lime Village | 7 | 1 | 1 | – | 1 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 15 | 2 | – | – |
| McGrath | 18 | 15 | 4 | 1 | 75 | 21 | 0 | 0 | 37 | 11 | 19 | 6 | 1 | 0 | – | – | 1 | 0 | – | – | 136 | 47 | 829 | 457 |
| Takotna | 11 | 6 | 0 | 0 | 9 | 8 | 0 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | 23 | 17 | 0 | 0 |
| Nikolai | 2 | 2 | 15 | 0 | 9 | 9 | 6 | 0 | 21 | 20 | 15 | 1 | – | – | – | – | 1 | 1 | 64 | – | 33 | 32 | 450 | 62 |
| Telida | – | – | – | – | 2 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 | 0 | – | – |
| Quinhagak | 20 | 17 | 10 | 2 | 25 | 7 | 0 | 0 | 85 | 49 | 16 | 2 | 19 | 19 | 23 | 0 | 4 | 3 | 32 | 3 | 155 | 97 | 2,588 | 444 |
| Goodnews Bay | 4 | 3 | 12 | 4 | 15 | 5 | 0 | 0 | 46 | 21 | 15 | 3 | 3 | 3 | 18 | 0 | 3 | 3 | 14 | 0 | 71 | 35 | 834 | 238 |
| Platinum | – | – | – | – | 4 | 4 | 2 | 0 | 13 | 12 | 4 | 1 | – | – | – | – | – | – | – | – | 17 | 16 | 62 | 19 |

*Note*: This table depicts only the expanded harvest estimates by village. It does not include Bayesian estimates for missed villages. Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed, SE = standard error, CI (95)% = 95% confidence interval.

Table 7.–Expanded harvest of chum salmon, for communities surveyed, Kuskokwim Area, 2011.

| | Unknown | | | | Does Not Usually Harvest | | | | Light Harvesters | | | | Medium Harvesters | | | | High Harvesters | | | | Combined use groups | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | Total *N* | total *n* | Est. Total | CI (95%) |
| Kongiganak | 7 | 7 | 4 | 0 | 22 | 6 | 10 | 4 | 46 | 20 | 36 | 6 | 9 | 9 | 31 | 0 | 3 | 2 | 28 | 1 | 90 | 47 | 2,809 | 763 |
| Tuntutuliak | 7 | 5 | 21 | 9 | 9 | 3 | 12 | 5 | 37 | 18 | 14 | 3 | 17 | 17 | 33 | 0 | 13 | 13 | 40 | 0 | 85 | 58 | 1,865 | 253 |
| Eek | 9 | 7 | 2 | 1 | 18 | 6 | 0 | 0 | 42 | 21 | 8 | 1 | 9 | 8 | 9 | 2 | 2 | 2 | 8 | 0 | 87 | 50 | 486 | 115 |
| Kasigluk | 23 | 18 | 14 | 2 | 23 | 6 | 17 | 9 | 33 | 17 | 19 | 4 | 12 | 11 | 20 | 2 | 5 | 5 | 56 | 0 | 108 | 68 | 2,029 | 355 |
| Nunapitchuk | 8 | 6 | 0 | 0 | 25 | 5 | 0 | 0 | 50 | 24 | 18 | 3 | 17 | 15 | 44 | 3 | 14 | 14 | 121 | 0 | 118 | 67 | 4,257 | 403 |
| Atmautluak | 4 | 2 | 0 | 0 | 15 | 5 | 0 | 0 | 24 | 12 | 27 | 11 | 12 | 12 | 68 | 0 | 2 | 2 | 180 | 0 | 60 | 35 | 1,864 | 525 |
| Napakiak | 5 | 5 | 16 | 0 | 28 | 9 | 4 | 3 | 42 | 21 | 13 | 2 | 13 | 13 | 30 | 0 | 5 | 5 | 85 | 0 | 93 | 53 | 1,546 | 224 |
| Napaskiak | 11 | 5 | 21 | 7 | 14 | 5 | 0 | 0 | 30 | 15 | 9 | 3 | 35 | 33 | 29 | 1 | 6 | 4 | 34 | 6 | 99 | 62 | 1,783 | 272 |
| Oscarville | – | – | – | – | 2 | 2 | 0 | 0 | 3 | 3 | 33 | 0 | 9 | 9 | 31 | 0 | 1 | 0 | – | – | 16 | 15 | 402 | 0 |
| Bethel | – | – | – | – | – | – | – | – | 2,087 | 426 | 7 | 1 | – | – | – | – | – | – | – | – | 2,087 | 426 | 15,324 | 6,057 |
| Kwethluk | 16 | 15 | 29 | 3 | 31 | 10 | 5 | 3 | 72 | 33 | 14 | 3 | 29 | 27 | 42 | 2 | 13 | 13 | 46 | 0 | 165 | 99 | 3,484 | 455 |
| Akiachak | 16 | 13 | 9 | 2 | 22 | 7 | 3 | 2 | 57 | 30 | 19 | 3 | 37 | 34 | 35 | 1 | 16 | 15 | 34 | 2 | 152 | 102 | 3,205 | 403 |
| Akiak | 4 | 2 | 27 | 16 | 10 | 3 | 1 | 1 | 35 | 12 | 39 | 12 | 15 | 13 | 24 | 2 | 13 | 4 | 46 | 14 | 80 | 35 | 2,421 | 962 |
| Tuluksak | 8 | 5 | 10 | 6 | 17 | 6 | 14 | 8 | 31 | 16 | 30 | 9 | 17 | 16 | 47 | 2 | 9 | 8 | 59 | 8 | 86 | 54 | 2,697 | 649 |
| Lower Kalskag | 17 | 12 | 9 | 4 | 17 | 4 | 0 | 0 | 27 | 14 | 14 | 4 | 14 | 14 | 20 | 0 | 3 | 3 | 158 | 0 | 79 | 48 | 1,643 | 362 |
| Upper Kalskag | 8 | 7 | 2 | 1 | 13 | 3 | 0 | 0 | 34 | 19 | 8 | 2 | 5 | 5 | 20 | 0 | 5 | 5 | 171 | 0 | 67 | 41 | 1,599 | 157 |
| Aniak | – | – | – | – | – | – | – | – | 182 | 168 | 13 | 1 | – | – | – | – | – | – | – | – | 182 | 168 | 2,391 | 417 |
| Chuathbaluk | 2 | 2 | 20 | 0 | 8 | 8 | 5 | 0 | 14 | 13 | 21 | 3 | 5 | 4 | 45 | 7 | 2 | 2 | 41 | 0 | 31 | 29 | 686 | 100 |
| Crooked Creek | 5 | 4 | 3 | 1 | 12 | 4 | 3 | 2 | 15 | 11 | 31 | 6 | 6 | 4 | 60 | 19 | – | – | – | – | 38 | 23 | 862 | 304 |
| Red Devil | 2 | 2 | 0 | 0 | 3 | 3 | 0 | 0 | 5 | 5 | 26 | 0 | 2 | 2 | 152 | 0 | 1 | 1 | 0 | – | 13 | 13 | 434 | 0 |
| Sleetmute | 4 | 3 | 13 | 7 | 11 | 10 | 0 | 0 | 17 | 13 | 17 | 3 | 3 | 2 | 26 | 8 | 2 | 1 | 139 | – | 37 | 29 | 689 | 126 |
| Stony River | – | – | – | – | 6 | 5 | 0 | 0 | 5 | 5 | 3 | 0 | 2 | 2 | 50 | 0 | 3 | 3 | 133 | 0 | 16 | 15 | 516 | 0 |
| Lime Village | 7 | 1 | 83 | – | 1 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 15 | 2 | – | – |
| McGrath | 18 | 15 | 3 | 1 | 75 | 21 | 1 | 0 | 37 | 12 | 10 | 7 | 1 | 0 | – | – | 1 | 0 | – | – | 136 | 48 | 476 | 537 |
| Takotna | 11 | 6 | 0 | 0 | 9 | 8 | 0 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | 23 | 17 | 0 | 0 |
| Nikolai | 2 | 2 | 0 | 0 | 9 | 9 | 0 | 0 | 21 | 20 | 2 | 0 | – | – | – | – | 1 | 1 | 300 | – | 33 | 32 | 349 | 12 |
| Telida | – | – | – | – | 2 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 | 0 | – | – |
| Quinhagak | 20 | 17 | 5 | 1 | 25 | 7 | 0 | 0 | 85 | 49 | 6 | 1 | 19 | 18 | 20 | 2 | 4 | 3 | 14 | 2 | 155 | 96 | 1,255 | 226 |
| Goodnews Bay | 4 | 3 | 2 | 1 | 15 | 5 | 0 | 0 | 46 | 21 | 7 | 2 | 3 | 3 | 8 | 0 | 3 | 3 | 3 | 0 | 71 | 35 | 349 | 172 |
| Platinum | – | – | – | – | 4 | 4 | 1 | 0 | 13 | 12 | 5 | 1 | – | – | – | – | – | – | – | – | 17 | 16 | 70 | 18 |

*Note*: This table depicts only the expanded harvest estimates by village. It does not include Bayesian estimates for missed villages. Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed, SE = standard error, CI (95)% = 95% confidence interval.

Table 8.–Expanded harvest of sockeye salmon, for communities surveyed, Kuskokwim Area, 2011.

| | Unknown | | | | Does Not Usually Harvest | | | | Light Harvesters | | | | Medium Harvesters | | | | High Harvesters | | | | Combined use groups | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | Total *N* | total *n* | Est. Total | CI (95%) |
| Kongiganak | 7 | 7 | 2 | 0 | 22 | 6 | 7 | 3 | 46 | 20 | 16 | 3 | 9 | 9 | 18 | 0 | 3 | 2 | 12 | 1 | 90 | 47 | 1,266 | 416 |
| Tuntutuliak | 7 | 5 | 14 | 5 | 9 | 3 | 8 | 4 | 37 | 18 | 14 | 3 | 17 | 17 | 17 | 0 | 13 | 13 | 22 | 0 | 85 | 57 | 1,274 | 258 |
| Eek | 9 | 7 | 1 | 0 | 18 | 6 | 0 | 0 | 42 | 21 | 12 | 2 | 9 | 8 | 5 | 1 | 2 | 2 | 10 | 0 | 87 | 50 | 664 | 194 |
| Kasigluk | 23 | 18 | 9 | 1 | 23 | 6 | 2 | 1 | 33 | 17 | 11 | 2 | 12 | 11 | 21 | 2 | 5 | 5 | 19 | 0 | 108 | 68 | 1,269 | 174 |
| Nunapitchuk | 8 | 6 | 0 | 0 | 25 | 5 | 1 | 1 | 50 | 24 | 9 | 2 | 17 | 15 | 24 | 2 | 14 | 14 | 62 | 0 | 118 | 67 | 2,223 | 247 |
| Atmautluak | 4 | 2 | 0 | 0 | 15 | 5 | 0 | 0 | 24 | 12 | 13 | 5 | 12 | 12 | 30 | 0 | 2 | 2 | 70 | 0 | 60 | 35 | 827 | 247 |
| Napakiak | 5 | 5 | 10 | 0 | 28 | 9 | 10 | 4 | 42 | 21 | 14 | 3 | 13 | 13 | 16 | 0 | 5 | 5 | 44 | 0 | 93 | 53 | 1,351 | 317 |
| Napaskiak | 11 | 5 | 21 | 8 | 14 | 5 | 0 | 0 | 30 | 15 | 8 | 3 | 35 | 33 | 24 | 1 | 6 | 4 | 37 | 12 | 99 | 62 | 1,587 | 296 |
| Oscarville | – | – | – | – | 2 | 2 | 0 | 0 | 3 | 3 | 17 | 0 | 9 | 9 | 18 | 0 | 1 | 0 | – | – | 16 | 15 | 228 | 0 |
| Bethel | – | – | – | – | – | – | – | – | 2,087 | 426 | 8 | 1 | – | – | – | – | – | – | – | – | 2,087 | 426 | 16,946 | 2,829 |
| Kwethluk | 16 | 15 | 12 | 1 | 31 | 10 | 7 | 4 | 72 | 33 | 9 | 2 | 29 | 27 | 28 | 2 | 13 | 12 | 34 | 3 | 165 | 98 | 2,357 | 363 |
| Akiachak | 16 | 13 | 9 | 2 | 22 | 7 | 3 | 2 | 57 | 30 | 15 | 2 | 37 | 34 | 28 | 1 | 16 | 15 | 35 | 2 | 152 | 102 | 2,647 | 271 |
| Akiak | 4 | 2 | 28 | 16 | 10 | 3 | 2 | 1 | 35 | 13 | 31 | 9 | 15 | 13 | 31 | 3 | 13 | 4 | 68 | 15 | 80 | 36 | 2,576 | 766 |
| Tuluksak | 8 | 5 | 8 | 4 | 17 | 6 | 8 | 4 | 31 | 16 | 22 | 8 | 17 | 16 | 34 | 2 | 9 | 8 | 25 | 4 | 86 | 54 | 1,699 | 507 |
| Lower Kalskag | 17 | 12 | 9 | 4 | 17 | 4 | 0 | 0 | 27 | 14 | 7 | 2 | 14 | 14 | 16 | 0 | 3 | 3 | 19 | 0 | 79 | 48 | 802 | 212 |
| Upper Kalskag | 8 | 7 | 1 | 1 | 13 | 3 | 0 | 0 | 34 | 19 | 13 | 2 | 5 | 5 | 32 | 0 | 5 | 5 | 29 | 0 | 67 | 41 | 938 | 193 |
| Aniak | – | – | – | – | – | – | – | – | 182 | 168 | 6 | 0 | – | – | – | – | – | – | – | – | 182 | 168 | 1,168 | 106 |
| Chuathbaluk | 2 | 2 | 4 | 0 | 8 | 8 | 4 | 0 | 14 | 13 | 8 | 1 | 5 | 4 | 22 | 2 | 2 | 2 | 17 | 0 | 31 | 29 | 300 | 33 |
| Crooked Creek | 5 | 4 | 0 | 0 | 12 | 4 | 0 | 0 | 15 | 11 | 12 | 2 | 6 | 4 | 11 | 4 | – | – | – | – | 38 | 23 | 243 | 83 |
| Red Devil | 2 | 2 | 3 | 0 | 3 | 3 | 2 | 0 | 5 | 5 | 29 | 0 | 2 | 2 | 25 | 0 | 1 | 1 | 300 | – | 13 | 13 | 502 | 0 |
| Sleetmute | 4 | 3 | 8 | 4 | 11 | 10 | 1 | 0 | 17 | 13 | 18 | 3 | 3 | 2 | 76 | 3 | 2 | 1 | 57 | – | 37 | 29 | 693 | 123 |
| Stony River | – | – | – | – | 6 | 5 | 0 | 0 | 5 | 5 | 5 | 0 | 2 | 2 | 33 | 0 | 3 | 3 | 71 | 0 | 16 | 15 | 303 | 0 |
| Lime Village | 7 | 1 | 82 | – | 1 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 15 | 2 | – | – |
| McGrath | 18 | 15 | 2 | 1 | 75 | 21 | 0 | 0 | 37 | 12 | 15 | 8 | 1 | 0 | – | – | 1 | 0 | – | – | 136 | 48 | 630 | 633 |
| Takotna | 11 | 6 | 0 | 0 | 9 | 8 | 0 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | 23 | 17 | 0 | 0 |
| Nikolai | 2 | 2 | 0 | 0 | 9 | 9 | 0 | 0 | 21 | 20 | 0 | 0 | – | – | – | – | 1 | 1 | 4 | – | 33 | 32 | 13 | 3 |
| Telida | – | – | – | – | 2 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 | 0 | – | – |
| Quinhagak | 20 | 17 | 3 | 1 | 25 | 7 | 0 | 0 | 85 | 49 | 8 | 1 | 19 | 18 | 17 | 1 | 4 | 3 | 57 | 24 | 155 | 96 | 1,582 | 318 |
| Goodnews Bay | 4 | 3 | 22 | 8 | 15 | 5 | 0 | 0 | 46 | 21 | 18 | 3 | 3 | 3 | 53 | 0 | 3 | 3 | 80 | 0 | 71 | 35 | 1,328 | 323 |
| Platinum | – | – | – | – | 4 | 4 | 2 | 0 | 13 | 12 | 10 | 1 | – | – | – | – | – | – | – | – | 17 | 16 | 135 | 38 |

*Note*: This table depicts only the expanded harvest estimates by village. It does not include Bayesian estimates for missed villages. Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed, SE = standard error, CI (95)% = 95% confidence interval.

Table 9.–Expanded harvest of coho salmon, for surveyed communities, Kuskokwim Area, 2011.

| | Unknown | | | | Does Not Usually Harvest | | | | Light Harvesters | | | | Medium Harvesters | | | | High Harvesters | | | | Combined use groups | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | Total *N* | total *n* | Est. Total | CI (95%) |
| Kongiganak | 7 | 7 | 2 | 0 | 22 | 6 | 2 | 1 | 46 | 20 | 7 | 2 | 9 | 9 | 6 | 0 | 3 | 2 | 7 | 4 | 90 | 47 | 613 | 291 |
| Tuntutuliak | 7 | 5 | 0 | 0 | 9 | 3 | 0 | 0 | 37 | 18 | 2 | 1 | 17 | 17 | 6 | 0 | 13 | 13 | 5 | 0 | 85 | 57 | 250 | 84 |
| Eek | 9 | 7 | 4 | 2 | 18 | 6 | 0 | 0 | 42 | 21 | 5 | 2 | 9 | 8 | 2 | 0 | 2 | 2 | 0 | 0 | 87 | 50 | 280 | 134 |
| Kasigluk | 23 | 18 | 3 | 1 | 23 | 6 | 0 | 0 | 33 | 16 | 4 | 1 | 12 | 10 | 3 | 1 | 5 | 5 | 19 | 0 | 108 | 66 | 430 | 99 |
| Nunapitchuk | 8 | 7 | 0 | 0 | 25 | 5 | 0 | 0 | 50 | 23 | 1 | 0 | 17 | 15 | 0 | 0 | 14 | 13 | 17 | 2 | 118 | 66 | 407 | 108 |
| Atmautluak | 4 | 2 | 0 | 0 | 15 | 5 | 0 | 0 | 24 | 13 | 5 | 2 | 12 | 12 | 10 | 0 | 2 | 2 | 8 | 0 | 60 | 36 | 263 | 98 |
| Napakiak | 5 | 5 | 0 | 0 | 28 | 9 | 4 | 2 | 42 | 21 | 16 | 3 | 13 | 12 | 5 | 1 | 5 | 5 | 18 | 0 | 93 | 52 | 927 | 267 |
| Napaskiak | 11 | 5 | 0 | 0 | 14 | 5 | 0 | 0 | 30 | 15 | 1 | 1 | 35 | 32 | 10 | 2 | 6 | 4 | 13 | 5 | 99 | 61 | 471 | 155 |
| Oscarville | – | – | – | – | 2 | 2 | 0 | 0 | 3 | 3 | 5 | 0 | 9 | 9 | 3 | 0 | 1 | 0 | – | – | 16 | 15 | 43 | 0 |
| Bethel | – | – | – | – | – | – | – | – | 2,087 | 426 | 9 | 1 | – | – | – | – | – | – | – | – | 2,087 | 426 | 18,141 | 3,556 |
| Kwethluk | 16 | 15 | 5 | 1 | 31 | 10 | 2 | 1 | 72 | 33 | 8 | 2 | 29 | 27 | 7 | 1 | 13 | 13 | 13 | 0 | 165 | 99 | 1,097 | 360 |
| Akiachak | 16 | 13 | 10 | 3 | 22 | 7 | 0 | 0 | 57 | 30 | 4 | 1 | 37 | 34 | 7 | 1 | 16 | 16 | 50 | 0 | 152 | 103 | 1,440 | 173 |
| Akiak | 4 | 2 | 5 | 3 | 10 | 3 | 1 | 1 | 35 | 12 | 8 | 3 | 15 | 13 | 9 | 1 | 13 | 4 | 5 | 2 | 80 | 35 | 505 | 250 |
| Tuluksak | 8 | 5 | 0 | 0 | 17 | 6 | 0 | 0 | 31 | 16 | 2 | 1 | 17 | 16 | 2 | 0 | 9 | 8 | 8 | 2 | 86 | 54 | 163 | 55 |
| Lower Kalskag | 17 | 12 | 10 | 3 | 17 | 4 | 0 | 0 | 27 | 14 | 7 | 3 | 14 | 14 | 4 | 0 | 3 | 3 | 40 | 0 | 79 | 48 | 684 | 257 |
| Upper Kalskag | 8 | 7 | 1 | 0 | 13 | 3 | 2 | 2 | 34 | 19 | 16 | 5 | 5 | 5 | 24 | 0 | 5 | 5 | 28 | 0 | 67 | 41 | 998 | 456 |
| Aniak | – | – | – | – | – | – | – | – | 182 | 168 | 12 | 1 | – | – | – | – | – | – | – | – | 182 | 168 | 2,215 | 429 |
| Chuathbaluk | 2 | 2 | 13 | 0 | 8 | 8 | 0 | 0 | 14 | 13 | 4 | 1 | 5 | 4 | 3 | 1 | 2 | 2 | 5 | 0 | 31 | 29 | 109 | 24 |
| Crooked Creek | 5 | 4 | 5 | 2 | 12 | 4 | 5 | 4 | 15 | 11 | 13 | 2 | 6 | 4 | 2 | 1 | – | – | – | – | 38 | 23 | 297 | 128 |
| Red Devil | 2 | 2 | 0 | 0 | 3 | 3 | 0 | 0 | 5 | 5 | 16 | 0 | 2 | 2 | 26 | 0 | 1 | 1 | 0 | – | 13 | 13 | 130 | 0 |
| Sleetmute | 4 | 3 | 2 | 1 | 11 | 10 | 0 | 0 | 17 | 13 | 2 | 1 | 3 | 2 | 10 | 6 | 2 | 1 | 174 | – | 37 | 29 | 426 | 45 |
| Stony River | – | – | – | – | 6 | 5 | 0 | 0 | 5 | 5 | 10 | 0 | 2 | 2 | 0 | 0 | 3 | 3 | 94 | 0 | 16 | 15 | 333 | 0 |
| Lime Village | 7 | 1 | 51 | – | 1 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 15 | 2 | – | – |
| McGrath | 18 | 15 | 2 | 1 | 75 | 21 | 1 | 1 | 37 | 12 | 32 | 24 | 1 | 0 | – | – | 1 | 0 | – | – | 136 | 48 | 1,331 | 1,859 |
| Takotna | 11 | 6 | 0 | 0 | 9 | 8 | 0 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | 23 | 17 | 3 | 3 |
| Nikolai | 2 | 2 | 0 | 0 | 9 | 9 | 0 | 0 | 21 | 20 | 1 | 0 | – | – | – | – | 1 | 1 | 0 | – | 33 | 32 | 20 | 5 |
| Telida | – | – | – | – | 2 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 | 0 | – | – |
| Quinhagak | 20 | 17 | 5 | 1 | 25 | 8 | 3 | 2 | 85 | 49 | 10 | 1 | 19 | 19 | 16 | 0 | 4 | 3 | 17 | 4 | 155 | 98 | 1,369 | 263 |
| Goodnews Bay | 4 | 3 | 5 | 1 | 15 | 5 | 1 | 1 | 46 | 21 | 4 | 2 | 3 | 3 | 18 | 0 | 3 | 3 | 2 | 0 | 71 | 35 | 259 | 150 |
| Platinum | – | – | – | – | 4 | 4 | 0 | 0 | 13 | 12 | 11 | 1 | – | – | – | – | – | – | – | – | 17 | 16 | 143 | 38 |

*Note*: This table depicts only the expanded harvest estimates by village. It does not include Bayesian estimates for missed villages. Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed, SE = standard error, CI (95)% = 95% confidence interval.

Table 10.–Expanded harvest of pink salmon for communities surveyed, Kuskokwim Area, 2011.

| | Unknown | | | | Does Not Usually Harvest | | | | Light Harvesters | | | | Medium Harvesters | | | | High Harvesters | | | | Combined use groups | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | Total *N* | total *n* | Est. Total | CI (95%) |
| Kongiganak | 7 | 6 | 0 | 0 | 22 | 6 | 0 | 0 | 46 | 20 | 0 | 0 | 9 | 9 | 0 | 0 | 3 | 2 | 0 | 0 | 90 | 46 | 34 | 14 |
| Tuntutuliak | 7 | 5 | 0 | 0 | 9 | 3 | 0 | 0 | 37 | 18 | 0 | 0 | 17 | 17 | 0 | 0 | 13 | 13 | 0 | 0 | 85 | 57 | 3 | 0 |
| Eek | 9 | 7 | 0 | 0 | 18 | 6 | 0 | 0 | 42 | 21 | 1 | 0 | 9 | 8 | 0 | 0 | 2 | 2 | 0 | 0 | 87 | 50 | 22 | 28 |
| Kasigluk | 23 | 16 | 0 | 0 | 23 | 6 | 0 | 0 | 33 | 16 | 0 | 0 | 12 | 10 | 0 | 0 | 5 | 3 | 1 | 1 | 108 | 62 | 6 | 8 |
| Nunapitchuk | 8 | 6 | 0 | 0 | 25 | 5 | 0 | 0 | 50 | 23 | 0 | 0 | 17 | 15 | 0 | 0 | 14 | 12 | 0 | 0 | 118 | 64 | 0 | 0 |
| Atmautluak | 4 | 2 | 0 | 0 | 15 | 5 | 0 | 0 | 24 | 13 | 0 | 0 | 12 | 12 | 0 | 0 | 2 | 2 | 0 | 0 | 60 | 36 | 7 | 8 |
| Napakiak | 5 | 5 | 0 | 0 | 28 | 9 | 0 | 0 | 42 | 21 | 1 | 1 | 13 | 11 | 0 | 0 | 5 | 5 | 0 | 0 | 93 | 51 | 43 | 45 |
| Napaskiak | 11 | 5 | 0 | 0 | 14 | 5 | 0 | 0 | 30 | 12 | 0 | 0 | 35 | 31 | 0 | 0 | 6 | 4 | 0 | 0 | 99 | 57 | 12 | 5 |
| Oscarville | – | – | – | – | 2 | 2 | 0 | 0 | 3 | 3 | 0 | 0 | 9 | 9 | 0 | 0 | 1 | 0 | – | – | 16 | 15 | 0 | 0 |
| Bethel | – | – | – | – | – | – | – | – | 2,087 | 423 | 0 | 0 | – | – | – | – | – | – | – | – | 2,087 | 423 | 187 | 113 |
| Kwethluk | 16 | 15 | 0 | 0 | 31 | 10 | 0 | 0 | 72 | 31 | 1 | 1 | 29 | 27 | 0 | 0 | 13 | 13 | 2 | 0 | 165 | 97 | 106 | 107 |
| Akiachak | 16 | 13 | 0 | 0 | 22 | 7 | 0 | 0 | 57 | 30 | 0 | 0 | 37 | 34 | 0 | 0 | 16 | 15 | 2 | 1 | 152 | 102 | 45 | 16 |
| Akiak | 4 | 2 | 0 | 0 | 10 | 3 | 0 | 0 | 35 | 12 | 2 | 1 | 15 | 13 | 2 | 1 | 13 | 4 | 4 | 3 | 80 | 35 | 136 | 111 |
| Tuluksak | 8 | 5 | 0 | 0 | 17 | 6 | 0 | 0 | 31 | 15 | 0 | 0 | 17 | 16 | 0 | 0 | 9 | 8 | 0 | 0 | 86 | 52 | 3 | 1 |
| Lower Kalskag | 17 | 12 | 0 | 0 | 17 | 4 | 0 | 0 | 27 | 14 | 0 | 0 | 14 | 14 | 0 | 0 | 3 | 3 | 0 | 0 | 79 | 48 | 0 | 0 |
| Upper Kalskag | 8 | 7 | 0 | 0 | 13 | 3 | 0 | 0 | 34 | 19 | 0 | 0 | 5 | 5 | 0 | 0 | 5 | 5 | 5 | 0 | 67 | 41 | 33 | 3 |
| Aniak | – | – | – | – | – | – | – | – | 182 | 168 | 0 | 0 | – | – | – | – | – | – | – | – | 182 | 168 | 28 | 7 |
| Chuathbaluk | 2 | 2 | 1 | 0 | 8 | 8 | 0 | 0 | 14 | 13 | 0 | 0 | 5 | 4 | 1 | 0 | 2 | 2 | 0 | 0 | 31 | 29 | 5 | 3 |
| Crooked Creek | 5 | 4 | 0 | 0 | 12 | 4 | 0 | 0 | 15 | 11 | 0 | 0 | 6 | 4 | 0 | 0 | – | – | – | – | 38 | 23 | 3 | 3 |
| Red Devil | 2 | 2 | 0 | 0 | 3 | 3 | 0 | 0 | 5 | 5 | 0 | 0 | 2 | 2 | 2 | 0 | 1 | 1 | 0 | – | 13 | 13 | 5 | 0 |
| Sleetmute | 4 | 3 | 0 | 0 | 11 | 10 | 0 | 0 | 17 | 13 | 0 | 0 | 3 | 2 | 3 | 2 | 2 | 1 | 3 | – | 37 | 29 | 15 | 11 |
| Stony River | – | – | – | – | 6 | 5 | 0 | 0 | 5 | 5 | 0 | 0 | 2 | 2 | 0 | 0 | 3 | 3 | 3 | 0 | 16 | 15 | 9 | 0 |
| Lime Village | 7 | 1 | 3 | – | 1 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 15 | 2 | – | – |
| McGrath | 18 | 15 | 0 | 0 | 75 | 21 | 0 | 0 | 37 | 12 | 0 | 0 | 1 | 0 | – | – | 1 | 0 | – | – | 136 | 48 | 4 | 6 |
| Takotna | 11 | 6 | 0 | 0 | 9 | 8 | 0 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | 23 | 17 | 0 | 0 |
| Nikolai | 2 | 2 | 0 | 0 | 9 | 9 | 0 | 0 | 21 | 20 | 0 | 0 | – | – | – | – | 1 | 1 | 0 | – | 33 | 32 | 0 | 0 |
| Telida | – | – | – | – | 2 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 | 0 | – | – |
| Quinhagak | 20 | 17 | 0 | 0 | 25 | 7 | 0 | 0 | 85 | 47 | 0 | 0 | 19 | 18 | 0 | 0 | 4 | 3 | 0 | 0 | 155 | 94 | 19 | 13 |
| Goodnews Bay | 4 | 3 | 0 | 0 | 15 | 5 | 0 | 0 | 46 | 20 | 0 | 0 | 3 | 3 | 0 | 0 | 3 | 2 | 0 | 0 | 71 | 33 | 14 | 15 |
| Platinum | – | – | – | – | 4 | 4 | 0 | 0 | 13 | 10 | 0 | 0 | – | – | – | – | – | – | – | – | 17 | 14 | 0 | 0 |

*Note*: This table depicts only the expanded harvest estimates by village. Bayesian estimates are not performed for pink salmon for missed villages. Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed, SE = standard error, CI (95)% = 95% confidence interval.

Table 11.–Expanded harvest of Chinook salmon, for communities surveyed, Kuskokwim Area, 2012.

| | Unknown | | | | Does Not Usually Harvest | | | | Light Harvesters | | | | Medium Harvesters | | | | High Harvesters | | | | Combined use groups | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | Total *N* | total *n* | Est. Total | CI (95%) |
| Kongiganak | – | – | – | – | 28 | 0 | – | – | 53 | 0 | – | – | 8 | 0 | – | – | 1 | 0 | – | – | 90 | 0 | – | – |
| Tuntutuliak | 8 | 4 | 24 | 9 | 9 | 8 | 1 | 0 | 48 | 21 | 9 | 2 | 18 | 13 | 17 | 3 | 7 | 6 | 26 | 3 | 90 | 52 | 1,123 | 253 |
| Eek | 5 | 3 | 2 | 1 | 23 | 6 | 7 | 6 | 50 | 27 | 12 | 2 | 6 | 4 | 20 | 4 | 1 | 1 | 20 | – | 86 | 42 | 1,004 | 308 |
| Kasigluk | 2 | 2 | 3 | 0 | 30 | 9 | 2 | 1 | 60 | 29 | 7 | 2 | 7 | 6 | 6 | 1 | 3 | 3 | 6 | 0 | 104 | 50 | 552 | 191 |
| Nunapitchuk | 1 | 1 | 0 | – | 29 | 6 | 0 | 0 | 54 | 27 | 5 | 1 | 16 | 16 | 11 | 0 | 10 | 10 | 16 | 0 | 111 | 61 | 845 | 135 |
| Atmautluak | 6 | 5 | 3 | 1 | 17 | 6 | 0 | 0 | 25 | 11 | 6 | 2 | 9 | 8 | 5 | 1 | 4 | 4 | 7 | 0 | 61 | 34 | 234 | 79 |
| Napakiak | 11 | 6 | 0 | 0 | 30 | 10 | 2 | 2 | 45 | 20 | 6 | 1 | 12 | 9 | 8 | 1 | 1 | 1 | 35 | – | 99 | 46 | 457 | 163 |
| Napaskiak | 8 | 5 | 10 | 6 | 17 | 3 | 1 | 1 | 44 | 16 | 6 | 2 | 22 | 13 | 16 | 2 | 6 | 3 | 35 | 8 | 97 | 40 | 1,108 | 265 |
| Oscarville | – | – | – | – | 3 | 3 | 0 | 0 | 2 | 2 | 0 | 0 | 8 | 8 | 6 | 0 | 1 | 1 | 6 | – | 14 | 14 | 51 | 0 |
| Bethel | – | – | – | – | – | – | – | – | 2,128 | 434 | 3 | 0 | – | – | – | – | – | – | – | – | 2,128 | 434 | 7,321 | 1,474 |
| Kwethluk | 6 | 5 | 0 | 0 | 40 | 13 | 2 | 1 | 84 | 36 | 13 | 3 | 27 | 22 | 16 | 2 | 5 | 4 | 29 | 7 | 164 | 81 | 1,709 | 450 |
| Akiachak | 12 | 7 | 1 | 1 | 32 | 8 | 1 | 0 | 73 | 23 | 15 | 3 | 32 | 20 | 31 | 4 | 8 | 8 | 24 | 0 | 157 | 66 | 2,862 | 666 |
| Akiak | 2 | 0 | – | – | 13 | 3 | 0 | 0 | 34 | 7 | 4 | 2 | 18 | 3 | 5 | 4 | 10 | 2 | 9 | 8 | 79 | 16 | 0 | – |
| Tuluksak | 11 | 7 | 3 | 1 | 18 | 4 | 1 | 0 | 36 | 17 | 3 | 1 | 16 | 16 | 18 | 0 | 7 | 7 | 9 | 0 | 89 | 51 | 651 | 88 |
| Lower Kalskag | 7 | 5 | 2 | 1 | 27 | 7 | 0 | 0 | 35 | 18 | 7 | 1 | 7 | 7 | 7 | 0 | 3 | 3 | 1 | 0 | 79 | 40 | 459 | 121 |
| Upper Kalskag | 3 | 2 | 2 | 1 | 16 | 5 | 0 | 0 | 36 | 16 | 9 | 2 | 4 | 4 | 35 | 0 | 3 | 2 | 33 | 1 | 62 | 29 | 562 | 129 |
| Aniak | – | – | – | – | – | – | – | – | 187 | 155 | 5 | 0 | – | – | – | – | – | – | – | – | 187 | 155 | 993 | 162 |
| Chuathbaluk | 8 | 6 | 2 | 1 | 7 | 6 | 0 | 0 | 13 | 10 | 4 | 1 | 5 | 3 | 8 | 4 | – | – | – | – | 33 | 25 | 103 | 45 |
| Crooked Creek | 6 | 4 | 0 | 0 | 14 | 12 | 0 | 0 | 12 | 10 | 5 | 1 | 5 | 4 | 14 | 2 | – | – | – | – | 37 | 30 | 124 | 36 |
| Red Devil | – | – | – | – | 3 | 2 | 0 | 0 | 7 | 5 | 17 | 5 | 1 | 1 | 5 | – | 2 | 2 | 50 | 0 | 13 | 10 | 225 | 71 |
| Sleetmute | 4 | 4 | 0 | 0 | 13 | 11 | 3 | 1 | 19 | 16 | 2 | 0 | 2 | 2 | 1 | 0 | 2 | 2 | 32 | 0 | 40 | 35 | 132 | 25 |
| Stony River | – | – | – | – | 8 | 1 | 0 | – | 6 | 2 | 0 | 0 | 1 | 0 | – | – | 1 | 0 | – | – | 16 | 3 | – | – |
| Lime Village | 7 | 5 | 3 | 1 | 1 | 1 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | 14 | 10 | 29 | 19 |
| McGrath | 12 | 3 | 6 | 5 | 87 | 22 | 0 | 0 | 32 | 15 | 2 | 1 | 1 | 1 | 0 | – | 1 | 1 | 5 | – | 136 | 44 | 68 | 54 |
| Takotna | 5 | 0 | – | – | 18 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 23 | 0 | – | – |
| Nikolai | 1 | 1 | 12 | – | 12 | 9 | 0 | 0 | 20 | 19 | 13 | 1 | – | – | – | – | 1 | 1 | 3 | – | 34 | 30 | 276 | 37 |
| Telida | – | – | – | – | 2 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 | 0 | – | – |
| Quinhagak | 11 | 10 | 6 | 1 | 41 | 10 | 7 | 6 | 103 | 49 | 15 | 2 | 5 | 5 | 26 | 0 | 2 | 2 | 31 | 0 | 162 | 76 | 2,396 | 495 |
| Goodnews Bay | 2 | 2 | 0 | 0 | 21 | 8 | 0 | 0 | 43 | 25 | 8 | 1 | 2 | 2 | 16 | 0 | – | – | – | – | 68 | 37 | 389 | 104 |
| Platinum | 3 | 2 | 0 | 0 | 5 | 5 | 1 | 0 | 11 | 9 | 2 | 0 | – | – | – | – | – | – | – | – | 19 | 16 | 24 | 4 |

*Note*: This table depicts only the expanded harvest estimates by village. It does not include Bayesian estimates for missed villages. Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed, SE = standard error, CI (95)% = 95% confidence interval.

Table 12.–Expanded harvest of chum salmon, for communities surveyed, Kuskokwim Area, 2012.

| | Unknown | | | | Does Not Usually Harvest | | | | Light Harvesters | | | | Medium Harvesters | | | | High Harvesters | | | | Combined use groups | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | Total *N* | total *n* | Est. Total | CI (95%) |
| Kongiganak | – | – | – | – | 28 | 0 | – | – | 53 | 0 | – | – | 8 | 0 | – | – | 1 | 0 | – | – | 90 | 0 | – | – |
| Tuntutuliak | 8 | 4 | 23 | 10 | 9 | 8 | 1 | 0 | 48 | 20 | 20 | 4 | 18 | 13 | 58 | 5 | 7 | 6 | 59 | 7 | 90 | 51 | 2,614 | 490 |
| Eek | 5 | 3 | 7 | 4 | 23 | 6 | 7 | 4 | 50 | 27 | 18 | 4 | 6 | 4 | 22 | 6 | 1 | 1 | 75 | – | 86 | 42 | 1,552 | 537 |
| Kasigluk | 2 | 2 | 24 | 0 | 30 | 9 | 16 | 7 | 60 | 29 | 36 | 6 | 7 | 6 | 38 | 5 | 3 | 3 | 80 | 0 | 104 | 50 | 3,261 | 838 |
| Nunapitchuk | 1 | 1 | 0 | – | 29 | 6 | 0 | 0 | 54 | 27 | 30 | 5 | 16 | 16 | 62 | 0 | 10 | 10 | 130 | 0 | 111 | 61 | 5,312 | 742 |
| Atmautluak | 6 | 5 | 37 | 8 | 17 | 6 | 0 | 0 | 25 | 11 | 53 | 11 | 9 | 8 | 96 | 11 | 4 | 4 | 73 | 0 | 61 | 34 | 2,701 | 620 |
| Napakiak | 11 | 6 | 5 | 3 | 30 | 10 | 6 | 4 | 45 | 20 | 25 | 3 | 12 | 9 | 30 | 4 | 1 | 1 | 0 | – | 99 | 46 | 1,711 | 371 |
| Napaskiak | 8 | 5 | 5 | 3 | 17 | 3 | 18 | 16 | 44 | 17 | 14 | 2 | 22 | 13 | 61 | 10 | 6 | 3 | 112 | 49 | 97 | 41 | 3,216 | 951 |
| Oscarville | – | – | – | – | 3 | 3 | 0 | 0 | 2 | 2 | 1 | 0 | 8 | 7 | 65 | 8 | 1 | 1 | 78 | – | 14 | 13 | 599 | 140 |
| Bethel | – | – | – | – | – | – | – | – | 2,128 | 435 | 13 | 2 | – | – | – | – | – | – | – | – | 2,128 | 435 | 26,872 | 7,720 |
| Kwethluk | 6 | 5 | 0 | 0 | 40 | 13 | 7 | 4 | 84 | 36 | 19 | 3 | 27 | 22 | 52 | 4 | 5 | 4 | 114 | 23 | 164 | 81 | 3,849 | 684 |
| Akiachak | 12 | 7 | 5 | 2 | 32 | 8 | 4 | 2 | 73 | 23 | 21 | 4 | 32 | 21 | 37 | 5 | 8 | 8 | 61 | 0 | 157 | 67 | 4,150 | 928 |
| Akiak | 2 | 0 | – | – | 13 | 3 | 0 | 0 | 34 | 7 | 4 | 2 | 18 | 3 | 35 | 16 | 10 | 2 | 42 | 37 | 79 | 16 | 474 | – |
| Tuluksak | 11 | 7 | 18 | 6 | 18 | 4 | 0 | 0 | 36 | 17 | 16 | 3 | 16 | 16 | 50 | 0 | 7 | 7 | 64 | 0 | 89 | 51 | 2,585 | 346 |
| Lower Kalskag | 7 | 5 | 22 | 7 | 27 | 7 | 0 | 0 | 35 | 17 | 36 | 10 | 7 | 7 | 76 | 0 | 3 | 3 | 67 | 0 | 79 | 39 | 3,284 | 1,083 |
| Upper Kalskag | 3 | 2 | 2 | 1 | 16 | 5 | 0 | 0 | 36 | 16 | 24 | 8 | 4 | 4 | 104 | 0 | 3 | 3 | 217 | 0 | 62 | 30 | 1,930 | 571 |
| Aniak | – | – | – | – | – | – | – | – | 187 | 155 | 30 | 5 | – | – | – | – | – | – | – | – | 187 | 155 | 5,667 | 1,779 |
| Chuathbaluk | 8 | 6 | 2 | 1 | 7 | 6 | 6 | 2 | 13 | 10 | 23 | 4 | 5 | 3 | 88 | 18 | – | – | – | – | 33 | 25 | 796 | 213 |
| Crooked Creek | 6 | 4 | 0 | 0 | 14 | 12 | 0 | 0 | 12 | 10 | 22 | 2 | 5 | 4 | 70 | 6 | – | – | – | – | 37 | 30 | 610 | 81 |
| Red Devil | – | – | – | – | 3 | 2 | 0 | 0 | 7 | 5 | 35 | 12 | 1 | 1 | 70 | – | 2 | 2 | 100 | 0 | 13 | 10 | 516 | 194 |
| Sleetmute | 4 | 4 | 0 | 0 | 13 | 11 | 3 | 1 | 19 | 16 | 11 | 2 | 2 | 2 | 75 | 0 | 2 | 2 | 308 | 0 | 40 | 35 | 1,004 | 88 |
| Stony River | – | – | – | – | 8 | 1 | 0 | – | 6 | 2 | 6 | 5 | 1 | 0 | – | – | 1 | 0 | – | – | 16 | 3 | – | – |
| Lime Village | 7 | 4 | 38 | 14 | 1 | 1 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | 14 | 9 | 419 | 304 |
| McGrath | 12 | 3 | 15 | 13 | 87 | 22 | 1 | 0 | 32 | 15 | 8 | 4 | 1 | 1 | 50 | – | 1 | 1 | 450 | – | 136 | 44 | 885 | 326 |
| Takotna | 5 | 0 | – | – | 18 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 23 | 0 | – | – |
| Nikolai | 1 | 1 | 0 | – | 12 | 9 | 0 | 0 | 20 | 18 | 27 | 7 | – | – | – | – | 1 | 1 | 500 | – | 34 | 29 | 1,044 | 289 |
| Telida | – | – | – | – | 2 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 | 0 | – | – |
| Quinhagak | 11 | 10 | 12 | 2 | 41 | 10 | 2 | 1 | 103 | 49 | 12 | 2 | 5 | 5 | 23 | 0 | 2 | 2 | 20 | 0 | 162 | 76 | 2,001 | 416 |
| Goodnews Bay | 2 | 2 | 5 | 0 | 21 | 8 | 0 | 0 | 43 | 25 | 7 | 1 | 2 | 2 | 11 | 0 | – | – | – | – | 68 | 37 | 322 | 92 |
| Platinum | 3 | 2 | 0 | 0 | 5 | 5 | 0 | 0 | 11 | 9 | 7 | 1 | – | – | – | – | – | – | – | – | 19 | 16 | 76 | 27 |

*Note*: This table depicts only the expanded harvest estimates by village. It does not include Bayesian estimates for missed villages. Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed, SE = standard error, CI (95)% = 95% confidence interval.

Table 13.–Expanded harvest of sockeye salmon, for communities surveyed, Kuskokwim Area, 2012.

| | Unknown | | | | Does Not Usually Harvest | | | | Light Harvesters | | | | Medium Harvesters | | | | High Harvesters | | | | Combined use groups | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | Total *N* | total *n* | Est. Total | CI (95%) |
| Kongiganak | – | – | – | – | 28 | 0 | – | – | 53 | 0 | – | – | 8 | 0 | – | – | 1 | 0 | – | – | 90 | 0 | – | – |
| Tuntutuliak | 8 | 4 | 22 | 11 | 9 | 8 | 1 | 0 | 48 | 21 | 11 | 2 | 18 | 13 | 32 | 3 | 7 | 6 | 32 | 3 | 90 | 52 | 1,516 | 277 |
| Eek | 5 | 3 | 7 | 3 | 23 | 6 | 8 | 5 | 50 | 27 | 17 | 2 | 6 | 4 | 21 | 4 | 1 | 1 | 100 | – | 86 | 42 | 1,490 | 336 |
| Kasigluk | 2 | 2 | 10 | 0 | 30 | 9 | 8 | 4 | 60 | 29 | 15 | 3 | 7 | 6 | 17 | 2 | 3 | 3 | 29 | 0 | 104 | 50 | 1,451 | 386 |
| Nunapitchuk | 1 | 1 | 0 | – | 29 | 6 | 0 | 0 | 54 | 27 | 13 | 2 | 16 | 16 | 30 | 0 | 10 | 10 | 58 | 0 | 111 | 61 | 2,396 | 254 |
| Atmautluak | 6 | 5 | 23 | 6 | 17 | 6 | 0 | 0 | 25 | 11 | 41 | 10 | 9 | 8 | 18 | 2 | 4 | 4 | 71 | 0 | 61 | 34 | 1,623 | 533 |
| Napakiak | 11 | 6 | 3 | 2 | 30 | 10 | 6 | 4 | 45 | 20 | 16 | 2 | 12 | 9 | 16 | 2 | 1 | 1 | 20 | – | 99 | 46 | 1,141 | 328 |
| Napaskiak | 8 | 5 | 8 | 5 | 17 | 3 | 2 | 2 | 44 | 17 | 13 | 3 | 22 | 13 | 34 | 6 | 6 | 3 | 52 | 8 | 97 | 41 | 2,065 | 453 |
| Oscarville | – | – | – | – | 3 | 3 | 0 | 0 | 2 | 2 | 8 | 0 | 8 | 8 | 38 | 0 | 1 | 1 | 5 | – | 14 | 14 | 323 | 0 |
| Bethel | – | – | – | – | – | – | – | – | 2,128 | 433 | 9 | 1 | – | – | – | – | – | – | – | – | 2,128 | 433 | 18,282 | 3,605 |
| Kwethluk | 6 | 5 | 0 | 0 | 40 | 13 | 3 | 1 | 84 | 36 | 17 | 3 | 27 | 21 | 37 | 4 | 5 | 4 | 72 | 18 | 164 | 80 | 2,884 | 522 |
| Akiachak | 12 | 7 | 4 | 2 | 32 | 8 | 4 | 2 | 73 | 23 | 18 | 3 | 32 | 21 | 30 | 3 | 8 | 8 | 54 | 0 | 157 | 67 | 3,443 | 668 |
| Akiak | 2 | 0 | – | – | 13 | 3 | 0 | 0 | 34 | 7 | 2 | 1 | 18 | 3 | 18 | 9 | 10 | 2 | 33 | 30 | 79 | 16 | 158 | – |
| Tuluksak | 11 | 7 | 18 | 6 | 18 | 4 | 1 | 1 | 36 | 17 | 6 | 2 | 16 | 16 | 20 | 0 | 7 | 7 | 47 | 0 | 89 | 51 | 1,380 | 226 |
| Lower Kalskag | 7 | 5 | 5 | 2 | 27 | 7 | 0 | 0 | 35 | 17 | 10 | 2 | 7 | 7 | 25 | 0 | 3 | 3 | 5 | 0 | 79 | 39 | 891 | 260 |
| Upper Kalskag | 3 | 2 | 0 | 0 | 16 | 5 | 0 | 0 | 36 | 16 | 11 | 2 | 4 | 4 | 33 | 0 | 3 | 3 | 77 | 0 | 62 | 30 | 770 | 144 |
| Aniak | – | – | – | – | – | – | – | – | 187 | 155 | 7 | 1 | – | – | – | – | – | – | – | – | 187 | 155 | 1,375 | 243 |
| Chuathbaluk | 8 | 6 | 3 | 2 | 7 | 6 | 5 | 2 | 13 | 10 | 11 | 2 | 5 | 3 | 19 | 4 | – | – | – | – | 33 | 25 | 297 | 81 |
| Crooked Creek | 6 | 4 | 0 | 0 | 14 | 12 | 0 | 0 | 12 | 10 | 12 | 2 | 5 | 4 | 19 | 2 | – | – | – | – | 37 | 30 | 234 | 53 |
| Red Devil | – | – | – | – | 3 | 2 | 0 | 0 | 7 | 5 | 41 | 10 | 1 | 1 | 20 | – | 2 | 2 | 102 | 0 | 13 | 10 | 511 | 159 |
| Sleetmute | 4 | 4 | 0 | 0 | 13 | 11 | 3 | 1 | 19 | 16 | 12 | 2 | 2 | 2 | 100 | 0 | 2 | 2 | 123 | 0 | 40 | 35 | 715 | 77 |
| Stony River | – | – | – | – | 8 | 1 | 0 | – | 6 | 2 | 3 | 2 | 1 | 0 | – | – | 1 | 0 | – | – | 16 | 3 | – | – |
| Lime Village | 7 | 4 | 30 | 12 | 1 | 1 | 60 | – | – | – | – | – | – | – | – | – | – | – | – | – | 14 | 9 | 780 | 691 |
| McGrath | 12 | 3 | 7 | 6 | 87 | 22 | 0 | 0 | 32 | 15 | 3 | 2 | 1 | 1 | 100 | – | 1 | 1 | 25 | – | 136 | 44 | 233 | 106 |
| Takotna | 5 | 0 | – | – | 18 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 23 | 0 | – | – |
| Nikolai | 1 | 1 | 0 | – | 12 | 9 | 0 | 0 | 20 | 19 | 0 | 0 | – | – | – | – | 1 | 1 | 0 | – | 34 | 30 | 0 | 0 |
| Telida | – | – | – | – | 2 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 | 0 | – | – |
| Quinhagak | 11 | 10 | 12 | 1 | 41 | 10 | 12 | 6 | 103 | 49 | 11 | 1 | 5 | 5 | 21 | 0 | 2 | 2 | 47 | 0 | 162 | 76 | 2,015 | 386 |
| Goodnews Bay | 2 | 2 | 0 | 0 | 21 | 8 | 1 | 1 | 43 | 25 | 25 | 3 | 2 | 2 | 53 | 0 | – | – | – | – | 68 | 37 | 1,197 | 247 |
| Platinum | 3 | 2 | 6 | 3 | 5 | 5 | 1 | 0 | 11 | 9 | 14 | 3 | – | – | – | – | – | – | – | – | 19 | 16 | 173 | 72 |

*Note*: This table depicts only the expanded harvest estimates by village. It does not include Bayesian estimates for missed villages. Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed, SE = standard error, CI (95)% = 95% confidence interval.

Table 14.–Expanded harvest of coho salmon, for surveyed communities, Kuskokwim Area, 2012.

| | Unknown | | | | Does Not Usually Harvest | | | | Light Harvesters | | | | Medium Harvesters | | | | High Harvesters | | | | Combined use groups | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | Total *N* | total *n* | Est. Total | CI (95%) |
| Kongiganak | – | – | – | – | 28 | 0 | – | – | 53 | 0 | – | – | 8 | 0 | – | – | 1 | 0 | – | – | 90 | 0 | – | – |
| Tuntutuliak | 8 | 4 | 8 | 3 | 9 | 8 | 1 | 0 | 48 | 21 | 5 | 2 | 18 | 13 | 10 | 2 | 7 | 6 | 12 | 2 | 90 | 52 | 565 | 234 |
| Eek | 5 | 3 | 3 | 2 | 23 | 6 | 5 | 3 | 50 | 27 | 5 | 1 | 6 | 4 | 30 | 14 | 1 | 1 | 0 | – | 86 | 42 | 612 | 262 |
| Kasigluk | 2 | 2 | 0 | 0 | 30 | 9 | 1 | 1 | 60 | 30 | 4 | 2 | 7 | 6 | 1 | 0 | 3 | 3 | 6 | 0 | 104 | 51 | 303 | 206 |
| Nunapitchuk | 1 | 1 | 0 | – | 29 | 6 | 0 | 0 | 54 | 27 | 2 | 1 | 16 | 16 | 6 | 0 | 10 | 10 | 5 | 0 | 111 | 61 | 319 | 76 |
| Atmautluak | 6 | 5 | 25 | 10 | 17 | 6 | 0 | 0 | 25 | 11 | 5 | 3 | 9 | 8 | 0 | 0 | 4 | 4 | 25 | 0 | 61 | 34 | 383 | 189 |
| Napakiak | 11 | 6 | 0 | 0 | 30 | 10 | 2 | 1 | 45 | 20 | 6 | 1 | 12 | 9 | 8 | 2 | 1 | 1 | 0 | – | 99 | 46 | 402 | 128 |
| Napaskiak | 8 | 5 | 0 | 0 | 17 | 3 | 0 | 0 | 44 | 17 | 2 | 1 | 22 | 13 | 4 | 1 | 6 | 3 | 7 | 5 | 97 | 41 | 269 | 151 |
| Oscarville | – | – | – | – | 3 | 3 | 0 | 0 | 2 | 2 | 4 | 0 | 8 | 7 | 4 | 1 | 1 | 1 | 0 | – | 14 | 13 | 38 | 24 |
| Bethel | – | – | – | – | – | – | – | – | 2,128 | 436 | 6 | 1 | – | – | – | – | – | – | – | – | 2,128 | 436 | 13,280 | 3,906 |
| Kwethluk | 6 | 5 | 0 | 0 | 40 | 13 | 6 | 3 | 84 | 37 | 5 | 1 | 27 | 22 | 14 | 1 | 5 | 4 | 0 | 0 | 164 | 82 | 1,013 | 286 |
| Akiachak | 12 | 7 | 0 | 0 | 32 | 8 | 3 | 2 | 73 | 23 | 3 | 1 | 32 | 19 | 4 | 2 | 8 | 8 | 23 | 0 | 157 | 65 | 714 | 240 |
| Akiak | 2 | 0 | – | – | 13 | 3 | 0 | 0 | 34 | 7 | 4 | 2 | 18 | 3 | 4 | 3 | 10 | 2 | 4 | 3 | 79 | 16 | 0 | – |
| Tuluksak | 11 | 7 | 6 | 2 | 18 | 4 | 2 | 2 | 36 | 17 | 5 | 1 | 16 | 16 | 1 | 0 | 7 | 7 | 2 | 0 | 89 | 51 | 341 | 143 |
| Lower Kalskag | 7 | 5 | 28 | 9 | 27 | 7 | 0 | 0 | 35 | 17 | 9 | 4 | 7 | 7 | 15 | 0 | 3 | 3 | 33 | 0 | 79 | 39 | 1,107 | 441 |
| Upper Kalskag | 3 | 2 | 3 | 1 | 16 | 5 | 1 | 1 | 36 | 17 | 8 | 2 | 4 | 4 | 7 | 0 | 3 | 3 | 4 | 0 | 62 | 31 | 360 | 177 |
| Aniak | – | – | – | – | – | – | – | – | 187 | 155 | 18 | 4 | – | – | – | – | – | – | – | – | 187 | 155 | 3,365 | 1,340 |
| Chuathbaluk | 8 | 6 | 4 | 2 | 7 | 6 | 1 | 0 | 13 | 10 | 6 | 1 | 5 | 4 | 14 | 3 | – | – | – | – | 33 | 26 | 179 | 52 |
| Crooked Creek | 6 | 4 | 0 | 0 | 14 | 12 | 4 | 1 | 12 | 10 | 4 | 1 | 5 | 4 | 10 | 3 | – | – | – | – | 37 | 30 | 149 | 40 |
| Red Devil | – | – | – | – | 3 | 2 | 0 | 0 | 7 | 5 | 25 | 9 | 1 | 1 | 60 | – | 2 | 2 | 0 | 0 | 13 | 10 | 238 | 134 |
| Sleetmute | 4 | 4 | 0 | 0 | 13 | 11 | 1 | 0 | 19 | 16 | 5 | 1 | 2 | 2 | 0 | 0 | 2 | 2 | 340 | 0 | 40 | 35 | 784 | 43 |
| Stony River | – | – | – | – | 8 | 1 | 0 | – | 6 | 2 | 3 | 2 | 1 | 0 | – | – | 1 | 0 | – | – | 16 | 3 | – | – |
| Lime Village | 7 | 4 | 8 | 3 | 1 | 1 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | 14 | 9 | 117 | 95 |
| McGrath | 12 | 2 | 0 | 0 | 87 | 23 | 9 | 4 | 32 | 15 | 26 | 12 | 1 | 1 | 0 | – | 1 | 1 | 400 | – | 136 | 44 | 2,257 | 1,184 |
| Takotna | 5 | 0 | – | – | 18 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 23 | 0 | – | – |
| Nikolai | 1 | 1 | 0 | – | 12 | 9 | 2 | 1 | 20 | 19 | 9 | 1 | – | – | – | – | 1 | 1 | 0 | – | 34 | 30 | 214 | 65 |
| Telida | – | – | – | – | 2 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 | 0 | – | – |
| Quinhagak | 11 | 10 | 10 | 2 | 41 | 10 | 3 | 2 | 103 | 50 | 8 | 1 | 5 | 5 | 9 | 0 | 2 | 2 | 9 | 0 | 162 | 77 | 1,380 | 275 |
| Goodnews Bay | 2 | 2 | 0 | 0 | 21 | 8 | 2 | 1 | 43 | 25 | 8 | 2 | 2 | 2 | 5 | 0 | – | – | – | – | 68 | 37 | 382 | 152 |
| Platinum | 3 | 2 | 3 | 1 | 5 | 5 | 0 | 0 | 11 | 9 | 11 | 3 | – | – | – | – | – | – | – | – | 19 | 16 | 124 | 70 |

*Note*: This table depicts only the expanded harvest estimates by village. It does not include Bayesian estimates for missed villages. Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed, SE = standard error, CI (95)% = 95% confidence interval.

Table 15.–Expanded harvest of pink salmon for communities surveyed, Kuskokwim Area, 2012.

| | Unknown | | | | Does Not Usually Harvest | | | | Light Harvesters | | | | Medium Harvesters | | | | High Harvesters | | | | Combined use groups | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | Total *N* | total *n* | Est. Total | CI (95%) |
| Kongiganak | – | – | – | – | 28 | 0 | – | – | 53 | 0 | – | – | 8 | 0 | – | – | 1 | 0 | – | – | 90 | 0 | – | – |
| Tuntutuliak | 8 | 4 | 0 | 0 | 9 | 8 | 0 | 0 | 48 | 21 | 0 | 0 | 18 | 13 | 0 | 0 | 7 | 6 | 0 | 0 | 90 | 52 | 15 | 11 |
| Eek | 5 | 3 | 0 | 0 | 23 | 6 | 1 | 1 | 50 | 27 | 1 | 0 | 6 | 3 | 0 | 0 | 1 | 1 | 5 | – | 86 | 41 | 50 | 52 |
| Kasigluk | 2 | 2 | 0 | 0 | 30 | 9 | 0 | 0 | 60 | 29 | 0 | 0 | 7 | 6 | 0 | 0 | 3 | 3 | 0 | 0 | 104 | 50 | 0 | 0 |
| Nunapitchuk | 1 | 1 | 0 | – | 29 | 6 | 0 | 0 | 54 | 27 | 0 | 0 | 16 | 16 | 0 | 0 | 10 | 10 | 0 | 0 | 111 | 61 | 32 | 22 |
| Atmautluak | 6 | 5 | 0 | 0 | 17 | 6 | 0 | 0 | 25 | 11 | 0 | 0 | 9 | 8 | 0 | 0 | 4 | 4 | 5 | 0 | 61 | 34 | 22 | 3 |
| Napakiak | 11 | 6 | 0 | 0 | 30 | 10 | 0 | 0 | 45 | 19 | 0 | 0 | 12 | 9 | 0 | 0 | 1 | 1 | 0 | – | 99 | 45 | 0 | 0 |
| Napaskiak | 8 | 5 | 0 | 0 | 17 | 3 | 0 | 0 | 44 | 17 | 2 | 1 | 22 | 13 | 0 | 0 | 6 | 3 | 0 | 0 | 97 | 41 | 122 | 135 |
| Oscarville | – | – | – | – | 3 | 3 | 0 | 0 | 2 | 2 | 0 | 0 | 8 | 8 | 0 | 0 | 1 | 1 | 0 | – | 14 | 14 | 1 | 0 |
| Bethel | – | – | – | – | – | – | – | – | 2,128 | 425 | 0 | 0 | – | – | – | – | – | – | – | – | 2,128 | 425 | 305 | 172 |
| Kwethluk | 6 | 5 | 0 | 0 | 40 | 13 | 0 | 0 | 84 | 36 | 1 | 0 | 27 | 22 | 1 | 0 | 5 | 4 | 1 | 0 | 164 | 81 | 91 | 51 |
| Akiachak | 12 | 7 | 0 | 0 | 32 | 8 | 0 | 0 | 73 | 23 | 0 | 0 | 32 | 20 | 1 | 0 | 8 | 8 | 1 | 0 | 157 | 66 | 53 | 52 |
| Akiak | 2 | 0 | – | – | 13 | 3 | 0 | 0 | 34 | 7 | 0 | 0 | 18 | 3 | 9 | 4 | 10 | 2 | 0 | 0 | 79 | 16 | 0 | – |
| Tuluksak | 11 | 7 | 0 | 0 | 18 | 4 | 0 | 0 | 36 | 16 | 0 | 0 | 16 | 16 | 0 | 0 | 7 | 7 | 0 | 0 | 89 | 50 | 8 | 9 |
| Lower Kalskag | 7 | 5 | 0 | 0 | 27 | 7 | 0 | 0 | 35 | 17 | 0 | 0 | 7 | 7 | 0 | 0 | 3 | 3 | 0 | 0 | 79 | 39 | 25 | 36 |
| Upper Kalskag | 3 | 1 | 0 | – | 16 | 5 | 0 | 0 | 36 | 16 | 0 | 0 | 4 | 4 | 0 | 0 | 3 | 3 | 10 | 0 | 62 | 29 | 30 | 0 |
| Aniak | – | – | – | – | – | – | – | – | 187 | 154 | 5 | 2 | – | – | – | – | – | – | – | – | 187 | 154 | 940 | 756 |
| Chuathbaluk | 8 | 6 | 0 | 0 | 7 | 6 | 0 | 0 | 13 | 10 | 0 | 0 | 5 | 4 | 0 | 0 | – | – | – | – | 33 | 26 | 2 | 2 |
| Crooked Creek | 6 | 4 | 0 | 0 | 14 | 12 | 0 | 0 | 12 | 10 | 0 | 0 | 5 | 4 | 0 | 0 | – | – | – | – | 37 | 30 | 2 | 2 |
| Red Devil | – | – | – | – | 3 | 2 | 0 | 0 | 7 | 5 | 3 | 1 | 1 | 1 | 0 | – | 2 | 2 | 12 | 0 | 13 | 10 | 42 | 22 |
| Sleetmute | 4 | 4 | 0 | 0 | 13 | 11 | 0 | 0 | 19 | 16 | 0 | 0 | 2 | 2 | 0 | 0 | 2 | 2 | 58 | 0 | 40 | 35 | 120 | 2 |
| Stony River | – | – | – | – | 8 | 1 | 0 | – | 6 | 2 | 0 | 0 | 1 | 0 | – | – | 1 | 0 | – | – | 16 | 3 | – | – |
| Lime Village | 7 | 4 | 1 | 0 | 1 | 1 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | 14 | 9 | 129 | 157 |
| McGrath | 12 | 3 | 0 | 0 | 87 | 22 | 0 | 0 | 32 | 15 | 0 | 0 | 1 | 1 | 0 | – | 1 | 1 | 0 | – | 136 | 43 | 14 | 15 |
| Takotna | 5 | 0 | – | – | 18 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 23 | 0 | – | – |
| Nikolai | 1 | 1 | 0 | – | 12 | 9 | 0 | 0 | 20 | 19 | 0 | 0 | – | – | – | – | 1 | 1 | 0 | – | 34 | 30 | 0 | 0 |
| Telida | – | – | – | – | 2 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 | 0 | – | – |
| Quinhagak | 11 | 10 | 0 | 0 | 41 | 10 | 2 | 1 | 103 | 49 | 0 | 0 | 5 | 5 | 0 | 0 | 2 | 2 | 0 | 0 | 162 | 76 | 70 | 43 |
| Goodnews Bay | 2 | 2 | 0 | 0 | 21 | 8 | 0 | 0 | 43 | 25 | 2 | 0 | 2 | 2 | 0 | 0 | – | – | – | – | 68 | 37 | 72 | 37 |
| Platinum | 3 | 2 | 3 | 2 | 5 | 5 | 0 | 0 | 11 | 9 | 1 | 0 | – | – | – | – | – | – | – | – | 19 | 16 | 16 | 12 |

*Note*: This table depicts only the expanded harvest estimates by village. Bayesian estimates are not performed for missed villages with reference to pink salmon. Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed, SE = standard error, CI (95)% = 95% confidence interval.

Table 16.–Reported number of salmon retained from commercial fishing for subsistence use, Kuskokwim Area, 2011.

| Community | *N* | *n* | Chinook | Chum | Coho | Sockeye | Pink |
|---|---|---|---|---|---|---|---|
| Kongiganak | 90 | 2 | 0 | 0 | 0 | 0 | 0 |
| N. Kuskokwim Bay | 92 | 2 | 0 | 0 | 0 | 0 | 0 |
| Tuntutuliak | 85 | 29 | 12 | 3 | 4 | 0 | 0 |
| Eek | 87 | 14 | 0 | 0 | 0 | 27 | 0 |
| Kasigluk | 108 | 16 | 18 | 0 | 0 | 0 | 0 |
| Nunapitchuk | 118 | 14 | 25 | 0 | 0 | 0 | 0 |
| Atmautluak | 60 | 7 | 8 | 3 | 0 | 1 | 3 |
| Napakiak | 93 | 16 | 124 | 0 | 7 | 5 | 0 |
| Napaskiak | 99 | 13 | 13 | 0 | 0 | 5 | 5 |
| Oscarville | 16 | 4 | 14 | 0 | 0 | 0 | 0 |
| Bethel | 2,087 | 16 | 14 | 0 | 3 | 0 | 0 |
| Kwethluk | 165 | 29 | 72 | 0 | 44 | 0 | 0 |
| Akiachak | 152 | 38 | 112 | 0 | 0 | 0 | 0 |
| Akiak | 80 | 11 | 61 | 0 | 30 | 0 | 0 |
| Tuluksak | 86 | 8 | 24 | 0 | 0 | 0 | 0 |
| Lower Kuskokwim | 2,166 | 215 | 497 | 6 | 88 | 38 | 8 |
| Lower Kalskag | 79 | 0 | 0 | 0 | 0 | 0 | 0 |
| Upper Kalskag | 67 | 0 | 0 | 0 | 0 | 0 | 0 |
| Aniak | 182 | 2 | 0 | 0 | 0 | 0 | 0 |
| Chuathbaluk | 31 | 0 | 0 | 0 | 0 | 0 | 0 |
| Middle Kuskokwim | 359 | 2 | 0 | 0 | 0 | 0 | 0 |
| Crooked Creek | 38 | 0 | 0 | 0 | 0 | 0 | 0 |
| Red Devil | 13 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sleetmute | 37 | 0 | 0 | 0 | 0 | 0 | 0 |
| Stony River | 16 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lime Village | 15 | 0 | – | – | – | – | – |
| McGrath | 136 | 0 | 0 | 0 | 0 | 0 | 0 |
| Takotna | 23 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nikolai | 33 | 0 | 0 | 0 | 0 | 0 | 0 |
| Telida | 2 | 0 | – | – | – | – | – |
| Upper Kuskokwim | 313 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kuskokwim River[a] | 2,930 | 219 | 497 | 6 | 88 | 38 | 8 |
| Quinhagak | 155 | 40 | 71 | 12 | 67 | 22 | 0 |
| Goodnews Bay | 71 | 10 | 2 | 0 | 8 | 34 | 2 |
| Platinum | 17 | 4 | 5 | 13 | 4 | 9 | 0 |
| S. Kuskokwim Bay | 243 | 54 | 78 | 25 | 79 | 65 | 2 |
| Survey Total | 3,173 | 273 | 575 | 31 | 167 | 103 | 10 |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 17.–Reported number of salmon retained from commercial fishing for subsistence use, Kuskokwim Area, 2012.

| Community | *N* | *n* | Chinook | Chum | Coho | Sockeye | Pink |
|---|---|---|---|---|---|---|---|
| Kongiganak | 90 | 0 | – | – | – | – | – |
| N. Kuskokwim Bay | 92 | 0 | – | – | – | – | – |
| Tuntutuliak | 90 | 22 | 39 | 0 | 40 | 7 | 6 |
| Eek | 86 | 20 | 16 | 0 | 40 | 0 | 0 |
| Kasigluk | 104 | 17 | 40 | 30 | 74 | 46 | 0 |
| Nunapitchuk | 111 | 20 | 19 | 5 | 51 | 8 | 3 |
| Atmautluak | 61 | 6 | 6 | 15 | 26 | 0 | 0 |
| Napakiak | 99 | 11 | 8 | 2 | 0 | 0 | 0 |
| Napaskiak | 97 | 4 | 5 | 0 | 0 | 0 | 0 |
| Oscarville | 14 | 3 | 4 | 1 | 9 | 15 | 0 |
| Bethel | 2,128 | 20 | 17 | 0 | 1 | 0 | 0 |
| Kwethluk | 164 | 18 | 19 | 0 | 28 | 5 | 6 |
| Akiachak | 157 | 30 | 76 | 17 | 5 | 35 | 4 |
| Akiak | 79 | 2 | 5 | 0 | 0 | 0 | 0 |
| Tuluksak | 89 | 7 | 0 | 0 | 0 | 0 | 0 |
| Lower Kuskokwim | 2,191 | 180 | 254 | 70 | 274 | 116 | 19 |
| Lower Kalskag | 79 | 1 | 0 | 0 | 0 | 0 | 0 |
| Upper Kalskag | 62 | 0 | 0 | 0 | 0 | 0 | 0 |
| Aniak | 187 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chuathbaluk | 33 | 0 | 0 | 0 | 0 | 0 | 0 |
| Middle Kuskokwim | 361 | 1 | 0 | 0 | 0 | 0 | 0 |
| Crooked Creek | 37 | 0 | 0 | 0 | 0 | 0 | 0 |
| Red Devil | 13 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sleetmute | 40 | 0 | 0 | 0 | 0 | 0 | 0 |
| Stony River | 16 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lime Village | 14 | 0 | 0 | 0 | 0 | 0 | 0 |
| McGrath | 136 | 0 | 0 | 0 | 0 | 0 | 0 |
| Takotna | 23 | 0 | – | – | – | – | – |
| Nikolai | 34 | 0 | 0 | 0 | 0 | 0 | 0 |
| Telida | 2 | 0 | – | – | – | – | – |
| Upper Kuskokwim | 315 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kuskokwim River[a] | 2,959 | 181 | 254 | 70 | 274 | 116 | 19 |
| Quinhagak | 162 | 28 | 16 | 5 | 11 | 29 | 6 |
| Goodnews Bay | 68 | 11 | 14 | 0 | 10 | 8 | 26 |
| Platinum | 19 | 4 | 5 | 1 | 27 | 5 | 5 |
| S. Kuskokwim Bay | 249 | 43 | 35 | 6 | 48 | 42 | 37 |
| Survey Total | 3,208 | 224 | 289 | 76 | 322 | 158 | 56 |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 18.–Fishing gear reported as the primary type used by subsistence fishermen, Kuskokwim Area, 2011.

| Community | *N* | *n* | Set Net | Drift Net | Fish wheel | Hook & Line |
|---|---|---|---|---|---|---|
| Kongiganak | 90 | 0 | 1 | 32 | – | – |
| N. Kuskokwim Bay | 92 | 33 | 1 | 32 | – | – |
| Tuntutuliak | 85 | 48 | – | 48 | – | – |
| Eek | 87 | 30 | 8 | 21 | – | 1 |
| Kasigluk | 108 | 54 | 2 | 52 | – | – |
| Nunapitchuk | 118 | 51 | 2 | 49 | – | – |
| Atmautluak | 60 | 25 | 2 | 23 | – | – |
| Napakiak | 93 | 42 | 8 | 34 | – | – |
| Napaskiak | 99 | 39 | 8 | 31 | – | – |
| Oscarville | 16 | 10 | 3 | 7 | – | – |
| Bethel | 2,087 | 487 | 19 | 448 | – | 20 |
| Kwethluk | 165 | 73 | 7 | 64 | – | 2 |
| Akiachak | 152 | 77 | 7 | 70 | – | – |
| Akiak | 80 | 29 | 5 | 24 | – | – |
| Tuluksak | 86 | 36 | 11 | 24 | – | 1 |
| Lower Kuskokwim | 3,236 | 1,001 | 82 | 895 | – | 24 |
| Lower Kalskag | 79 | 31 | 5 | 25 | – | 1 |
| Upper Kalskag | 67 | 30 | 3 | 27 | – | – |
| Aniak | 182 | 99 | 5 | 77 | – | 17 |
| Chuathbaluk | 31 | 14 | – | 13 | – | 1 |
| Middle Kuskokwim | 359 | 174 | 13 | 142 | – | 19 |
| Crooked Creek | 38 | 16 | – | 14 | – | 2 |
| Red Devil | 13 | 9 | 5 | 4 | – | – |
| Sleetmute | 37 | 15 | 6 | 7 | – | 2 |
| Stony River | 16 | 9 | 6 | 1 | 1 | 1 |
| Lime Village | 15 | 0 | – | – | – | – |
| McGrath | 136 | 14 | 10 | 2 | – | 2 |
| Takotna | 23 | 5 | – | – | – | 5 |
| Nikolai | 33 | 17 | 13 | – | – | 4 |
| Telida | 2 | 0 | – | – | – | – |
| Upper Kuskokwim | 313 | 85 | 40 | 28 | 1 | 16 |
| Kuskokwim River[a] | 4,000 | 1,293 | 136 | 1,097 | 1 | 59 |
| Quinhagak | 155 | 63 | 7 | 49 | – | 7 |
| Goodnews Bay | 71 | 24 | 10 | 12 | – | 2 |
| Platinum | 17 | 9 | 4 | 3 | – | 2 |
| S. Kuskokwim Bay | 243 | 96 | 21 | 64 | – | 11 |
| Total | 4,243 | 1,389 | 157 | 1,161 | 1 | 70 |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 19.–Fishing gear reported as the primary type used by subsistence fishermen, Kuskokwim Area, 2012.

| Community | *N* | *n* | Set Net | Drift Net | Fish wheel | Hook & Line |
|---|---|---|---|---|---|---|
| Kongiganak | 90 | 0 | – | – | – | – |
| N. Kuskokwim Bay | 92 | 0 | – | – | – | – |
| Tuntutuliak | 90 | 43 | – | 43 | – | – |
| Eek | 86 | 31 | 5 | 26 | – | – |
| Kasigluk | 104 | 32 | 1 | 31 | – | – |
| Nunapitchuk | 111 | 41 | – | 41 | – | – |
| Atmautluak | 61 | 23 | 1 | 22 | – | – |
| Napakiak | 99 | 30 | 1 | 29 | – | – |
| Napaskiak | 97 | 28 | 4 | 24 | – | – |
| Oscarville | 14 | 8 | – | 8 | – | – |
| Bethel | 2,128 | 168 | 10 | 145 | – | 13 |
| Kwethluk | 164 | 50 | 5 | 43 | – | 2 |
| Akiachak | 157 | 55 | 10 | 45 | – | – |
| Akiak | 79 | 5 | 2 | 3 | – | – |
| Tuluksak | 89 | 41 | 6 | 33 | – | 2 |
| Lower Kuskokwim | 2,191 | 555 | 45 | 493 | – | 17 |
| Lower Kalskag | 79 | 24 | – | 24 | – | – |
| Upper Kalskag | 62 | 19 | – | 19 | – | – |
| Aniak | 187 | 89 | 6 | 60 | – | 23 |
| Chuathbaluk | 33 | 17 | – | 14 | – | 3 |
| Middle Kuskokwim | 361 | 149 | 6 | 117 | – | 26 |
| Crooked Creek | 37 | 16 | 1 | 13 | – | 2 |
| Red Devil | 13 | 6 | 3 | 2 | – | 1 |
| Sleetmute | 40 | 14 | 6 | 6 | – | 2 |
| Stony River | 16 | 1 | 1 | – | – | – |
| Lime Village | 14 | 6 | 5 | – | – | 1 |
| McGrath | 136 | 14 | 7 | 3 | 1 | 3 |
| Takotna | 23 | 0 | – | – | – | – |
| Nikolai | 34 | 20 | 10 | – | – | 10 |
| Telida | 2 | 0 | – | – | – | – |
| Upper Kuskokwim | 315 | 77 | 33 | 24 | 1 | 19 |
| Kuskokwim River[a] | 2,959 | 781 | 84 | 634 | 1 | 62 |
| Quinhagak | 162 | 58 | 6 | 41 | – | 11 |
| Goodnews Bay | 68 | 29 | 8 | 18 | – | 3 |
| Platinum | 19 | 10 | 3 | 2 | – | 5 |
| S. Kuskokwim Bay | 249 | 97 | 17 | 61 | – | 19 |
| Total | 3,208 | 878 | 101 | 695 | 1 | 81 |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 20.–Estimated number of households that subsistence fished in communities surveyed, Kuskokwim Area, 2011.

| | Unknown | | | | Does Not Usually Harvest | | | | Light Harvesters | | | | Medium Harvesters | | | | High Harvesters | | | | Combined use groups | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | Total *N* | total *n* | Est. Total | CI (95%) |
| Kongiganak | 7 | 7 | 0 | 0 | 22 | 6 | 1 | 0 | 46 | 20 | 1 | 0 | 9 | 9 | 1 | 0 | 3 | 2 | 1 | 0 | 90 | 47 | 69 | 8 |
| N. Kuskokwim Bay | 7 | 7 | 0 | 0 | 22 | 6 | – | – | 46 | 20 | 1 | 0 | 9 | 9 | 1 | 0 | 3 | 2 | 1 | 0 | 90 | 47 | 69 | 8 |
| Tuntutuliak | 7 | 6 | 1 | 0 | 9 | 3 | 1 | 0 | 37 | 18 | 1 | 0 | 17 | 17 | 1 | 0 | 13 | 13 | 1 | 0 | 85 | 59 | 73 | 5 |
| Eek | 9 | 7 | 0 | 0 | 18 | 6 | 0 | 0 | 42 | 21 | 1 | 0 | 9 | 8 | 1 | 0 | 2 | 2 | 1 | 0 | 87 | 50 | 58 | 7 |
| Kasigluk | 23 | 20 | 1 | 0 | 23 | 6 | 1 | 0 | 33 | 17 | 1 | 0 | 12 | 12 | 1 | 0 | 5 | 5 | 1 | 0 | 108 | 71 | 86 | 6 |
| Nunapitchuk | 8 | 8 | 0 | 0 | 25 | 6 | 1 | 0 | 50 | 24 | 1 | 0 | 17 | 15 | 1 | 0 | 14 | 14 | 1 | 0 | 118 | 71 | 92 | 8 |
| Atmautluak | 4 | 2 | 0 | 0 | 15 | 5 | 0 | 0 | 24 | 13 | 1 | 0 | 12 | 12 | 1 | 0 | 2 | 2 | 1 | 0 | 60 | 36 | 36 | 4 |
| Napakiak | 5 | 5 | 0 | 0 | 28 | 9 | 1 | 0 | 42 | 21 | 1 | 0 | 13 | 13 | 1 | 0 | 5 | 5 | 1 | 0 | 93 | 53 | 74 | 9 |
| Napaskiak | 11 | 7 | 1 | 0 | 14 | 5 | 0 | 0 | 30 | 15 | 1 | 0 | 35 | 33 | 1 | 0 | 6 | 4 | 1 | 0 | 99 | 64 | 66 | 6 |
| Oscarville | – | – | – | – | 2 | 2 | 0 | 0 | 3 | 3 | 0 | 0 | 9 | 9 | 1 | 0 | 1 | 0 | – | – | 16 | 15 | 11 | 0 |
| Bethel | – | – | – | – | – | – | – | – | 2,087 | 881 | 1 | 0 | – | – | – | – | – | – | – | – | 2,087 | 881 | 1,175 | 52 |
| Kwethluk | 16 | 15 | 1 | 0 | 31 | 10 | 0 | 0 | 72 | 34 | 1 | 0 | 29 | 28 | 1 | 0 | 13 | 13 | 1 | 0 | 165 | 101 | 108 | 12 |
| Akiachak | 16 | 13 | 1 | 0 | 22 | 7 | 0 | 0 | 57 | 31 | 1 | 0 | 37 | 34 | 1 | 0 | 16 | 16 | 1 | 0 | 152 | 104 | 108 | 9 |
| Akiak | 4 | 3 | 1 | 0 | 10 | 3 | 0 | 0 | 35 | 14 | 1 | 0 | 15 | 14 | 1 | 0 | 13 | 4 | 1 | 0 | 80 | 39 | 58 | 9 |
| Tuluksak | 8 | 5 | 0 | 0 | 17 | 6 | 0 | 0 | 31 | 18 | 1 | 0 | 17 | 16 | 1 | 0 | 9 | 8 | 1 | 0 | 86 | 56 | 56 | 8 |
| Lower Kuskokwim | 111 | 91 | 1 | 0 | 214 | 68 | 0 | 0 | 2,543 | 1,110 | 1 | 0 | 222 | 211 | 1 | 0 | 99 | 86 | 1 | 0 | 3,236 | 1,600 | 2,000 | 58 |
| Lower Kalskag | 17 | 12 | 0 | 0 | 17 | 4 | 0 | 0 | 27 | 14 | 1 | 0 | 14 | 14 | 1 | 0 | 3 | 3 | 1 | 0 | 79 | 48 | 54 | 7 |
| Upper Kalskag | 8 | 7 | 0 | 0 | 13 | 3 | 0 | 0 | 34 | 19 | 1 | 0 | 5 | 5 | 1 | 0 | 5 | 5 | 1 | 0 | 67 | 41 | 51 | 6 |
| Aniak | – | – | – | – | – | – | – | – | 182 | 169 | 1 | 0 | – | – | – | – | – | – | – | – | 182 | 169 | 107 | 4 |
| Chuathbaluk | 2 | 2 | 1 | 0 | 8 | 8 | 0 | 0 | 14 | 13 | 1 | 0 | 5 | 5 | 1 | 0 | 2 | 2 | 1 | 0 | 31 | 30 | 16 | 1 |
| Middle Kuskokwim | 27 | 21 | 0 | 0 | 38 | 15 | 0 | 0 | 257 | 215 | 1 | 0 | 24 | 24 | 1 | 0 | 10 | 10 | 1 | 0 | 359 | 288 | 227 | 10 |
| Crooked Creek | 5 | 4 | 1 | 0 | 12 | 4 | 0 | 0 | 15 | 11 | 1 | 0 | 6 | 4 | 1 | 0 | – | – | – | – | 38 | 23 | 24 | 6 |
| Red Devil | 2 | 2 | 1 | 0 | 3 | 3 | 0 | 0 | 5 | 5 | 1 | 0 | 2 | 2 | 1 | 0 | 1 | 1 | 1 | – | 13 | 13 | 9 | 0 |
| Sleetmute | 4 | 3 | 0 | 0 | 11 | 10 | 0 | 0 | 17 | 13 | 1 | 0 | 3 | 2 | 1 | 0 | 2 | 1 | 1 | – | 37 | 29 | 22 | 3 |
| Stony River | – | – | – | – | 6 | 5 | 0 | 0 | 5 | 5 | 1 | 0 | 2 | 2 | 1 | 0 | 3 | 3 | 1 | 0 | 16 | 15 | 9 | 0 |
| Lime Village | 7 | 1 | 1 | – | 1 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 15 | 2 | – | – |
| McGrath | 18 | 15 | 0 | 0 | 75 | 21 | 0 | 0 | 37 | 12 | 1 | 0 | 1 | 0 | – | – | 1 | 0 | – | – | 136 | 48 | 36 | 13 |
| Takotna | 11 | 6 | 1 | 0 | 9 | 8 | 0 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | 23 | 17 | 8 | 4 |
| Nikolai | 2 | 2 | 1 | 0 | 9 | 9 | 0 | 0 | 21 | 20 | 1 | 0 | – | – | – | – | 1 | 1 | 1 | – | 33 | 32 | 18 | 1 |
| Telida | – | – | – | – | 2 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 | 0 | – | – |
| Upper Kuskokwim | 49 | 33 | 0 | 0 | 128 | 60 | 0 | 0 | 100 | 66 | 1 | 0 | 14 | 10 | 1 | 0 | 8 | 6 | 1 | 0 | 313 | 179 | 125 | 15 |
| Kuskokwim River[a] | 194 | 152 | 1 | 0 | 402 | 149 | 0 | 0 | 2,946 | 1,411 | 1 | 0 | 269 | 254 | 1 | 0 | 120 | 104 | 1 | 0 | 3,998 | 2,114 | 2,421 | 61 |

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Table 20.–Page 2 of 2.

| | Unknown | | | | Does Not Usually Harvest | | | | Light Harvesters | | | | Medium Harvesters | | | | High Harvesters | | | | Combined use groups | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | Total *N* | total *n* | Est. Total | CI (95%) |
| Quinhagak | 20 | 18 | 1 | 0 | 25 | 8 | 0 | 0 | 85 | 50 | 1 | 0 | 19 | 19 | 1 | 0 | 4 | 3 | 1 | 0 | 155 | 100 | 97 | 10 |
| Goodnews Bay | 4 | 3 | 1 | 0 | 15 | 5 | 0 | 0 | 46 | 21 | 1 | 0 | 3 | 3 | 1 | 0 | 3 | 3 | 1 | 0 | 71 | 35 | 44 | 9 |
| Platinum | – | – | – | – | 4 | 4 | 0 | 0 | 13 | 12 | 1 | 0 | – | – | – | – | – | – | – | – | 17 | 16 | 10 | 1 |
| S. Kuskokwim Bay | 24 | 21 | 1 | 0 | 44 | 17 | 0 | 0 | 144 | 83 | 1 | 0 | 22 | 22 | 1 | 0 | 7 | 6 | 1 | 0 | 243 | 151 | 150 | 13 |
| Total | 218 | 173 | 1 | 0 | 446 | 166 | 0 | 0 | 3,090 | 1,494 | 1 | 0 | 291 | 276 | 1 | 0 | 127 | 110 | 1 | 0 | 4,241 | 2,265 | 2,571 | 62 |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed, SE = standard error, Est. Total = estimated total number of households from all use groups that subsistence fished, expressed as a proportion of households from each group that fished, based on the number of households surveyed, and their responses to the question: "Did you subsistence fish?", CI (95)% = 95% confidence interval.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 21.–Estimated number of people living in communities surveyed, Kuskokwim Area, 2011.

| | Unknown | | | | Does Not Usually Harvest | | | | Light Harvesters | | | | Medium Harvesters | | | | High Harvesters | | | | Combined use groups | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | Total *N* | total *n* | Est. Total | CI (95%) |
| Kongiganak | 7 | 7 | 4 | 0 | 22 | 6 | 4 | 1 | 46 | 20 | 6 | 0 | 9 | 9 | 6 | 0 | 3 | 2 | 6 | 0 | 90 | 47 | 493 | 56 |
| N. Kuskokwim Bay | 7 | 7 | 4 | 0 | 22 | 6 | – | – | 46 | 20 | 6 | 0 | 9 | 9 | 6 | 0 | 3 | 2 | 6 | 0 | 90 | 47 | 493 | 56 |
| Tuntutuliak | 7 | 6 | 6 | 0 | 9 | 3 | 7 | 1 | 37 | 18 | 6 | 1 | 17 | 17 | 4 | 0 | 13 | 13 | 4 | 0 | 85 | 59 | 441 | 44 |
| Eek | 9 | 7 | 2 | 0 | 18 | 6 | 3 | 1 | 42 | 21 | 4 | 0 | 9 | 8 | 3 | 0 | 2 | 2 | 4 | 0 | 87 | 50 | 289 | 44 |
| Kasigluk | 23 | 19 | 6 | 0 | 23 | 6 | 6 | 1 | 33 | 17 | 6 | 0 | 12 | 10 | 6 | 0 | 5 | 4 | 6 | 1 | 108 | 66 | 647 | 43 |
| Nunapitchuk | 8 | 8 | 4 | 0 | 25 | 6 | 3 | 1 | 50 | 24 | 4 | 0 | 17 | 15 | 5 | 0 | 14 | 13 | 6 | 0 | 118 | 70 | 553 | 47 |
| Atmautluak | 4 | 2 | 3 | 0 | 15 | 5 | 3 | 1 | 24 | 10 | 5 | 0 | 12 | 12 | 5 | 0 | 2 | 2 | 7 | 0 | 60 | 33 | 270 | 26 |
| Napakiak | 5 | 5 | 5 | 0 | 28 | 9 | 2 | 0 | 42 | 21 | 4 | 0 | 13 | 13 | 4 | 0 | 5 | 5 | 5 | 0 | 93 | 53 | 354 | 43 |
| Napaskiak | 11 | 7 | 4 | 0 | 14 | 5 | 4 | 1 | 30 | 10 | 5 | 1 | 35 | 29 | 6 | 0 | 6 | 4 | 3 | 0 | 99 | 55 | 501 | 48 |
| Oscarville | – | – | – | – | 2 | 2 | 2 | 0 | 3 | 3 | 5 | 0 | 9 | 8 | 5 | 0 | 1 | 0 | – | – | 16 | 14 | 66 | 6 |
| Bethel | – | – | – | – | – | – | – | – | 2,087 | 868 | 3 | 0 | – | – | – | – | – | – | – | – | 2,087 | 868 | 6,893 | 165 |
| Kwethluk | 16 | 14 | 5 | 0 | 31 | 10 | 4 | 1 | 72 | 34 | 4 | 0 | 29 | 28 | 6 | 0 | 13 | 13 | 6 | 0 | 165 | 100 | 766 | 53 |
| Akiachak | 16 | 12 | 3 | 0 | 22 | 7 | 3 | 1 | 57 | 30 | 4 | 0 | 37 | 34 | 5 | 0 | 16 | 15 | 5 | 0 | 152 | 101 | 617 | 36 |
| Akiak | 4 | 2 | 5 | 0 | 10 | 3 | 4 | 1 | 35 | 13 | 5 | 0 | 15 | 12 | 4 | 0 | 13 | 3 | 6 | 1 | 80 | 34 | 353 | 43 |
| Tuluksak | 8 | 5 | 5 | 1 | 17 | 6 | 4 | 1 | 31 | 15 | 5 | 1 | 17 | 16 | 5 | 0 | 9 | 8 | 7 | 0 | 86 | 53 | 451 | 48 |
| Lower Kuskokwim | 111 | 87 | 5 | 0 | 214 | 68 | 4 | 0 | 2,543 | 1,084 | 4 | 0 | 222 | 202 | 5 | 0 | 99 | 82 | 5 | 0 | 3,236 | 1,556 | 12,202 | 218 |
| Lower Kalskag | 17 | 12 | 3 | 0 | 17 | 4 | 1 | 0 | 27 | 14 | 4 | 0 | 14 | 14 | 5 | 0 | 3 | 3 | 4 | 0 | 79 | 48 | 329 | 28 |
| Upper Kalskag | 8 | 7 | 3 | 0 | 13 | 2 | 4 | 1 | 34 | 19 | 3 | 0 | 5 | 5 | 4 | 0 | 5 | 5 | 3 | 0 | 67 | 40 | 218 | 28 |
| Aniak | – | – | – | – | – | – | – | – | 182 | 168 | 3 | 0 | – | – | – | – | – | – | – | – | 182 | 168 | 583 | 14 |
| Chuathbaluk | 2 | 2 | 4 | 0 | 8 | 7 | 4 | 0 | 14 | 13 | 4 | 0 | 5 | 5 | 5 | 0 | 2 | 2 | 3 | 0 | 31 | 29 | 131 | 9 |
| Middle Kuskokwim | 27 | 21 | 3 | 0 | 38 | 13 | 4 | 0 | 257 | 214 | 3 | 0 | 24 | 24 | 5 | 0 | 10 | 10 | 3 | 0 | 359 | 285 | 1,261 | 42 |
| Crooked Creek | 5 | 4 | 1 | 0 | 12 | 4 | 2 | 1 | 15 | 11 | 3 | 0 | 6 | 4 | 4 | 1 | – | – | – | – | 38 | 23 | 103 | 23 |
| Red Devil | 2 | 2 | 2 | 0 | 3 | 3 | 1 | 0 | 5 | 5 | 2 | 0 | 2 | 2 | 2 | 0 | 1 | 1 | 4 | – | 13 | 13 | 26 | 0 |
| Sleetmute | 4 | 3 | 2 | 0 | 11 | 10 | 2 | 0 | 17 | 13 | 2 | 0 | 3 | 2 | 3 | 1 | 2 | 0 | – | – | 37 | 28 | 83 | 11 |
| Stony River | – | – | – | – | 6 | 5 | 2 | 0 | 5 | 5 | 1 | 0 | 2 | 2 | 4 | 0 | 3 | 3 | 3 | 0 | 16 | 15 | 39 | 5 |
| Lime Village | 7 | 0 | – | – | 1 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 15 | 0 | – | – |
| McGrath | 18 | 13 | 3 | 0 | 75 | 20 | 3 | 0 | 37 | 12 | 2 | 0 | 1 | 0 | – | – | 1 | 0 | – | – | 136 | 45 | 336 | 40 |
| Takotna | 11 | 6 | 3 | 1 | 9 | 8 | 3 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | 23 | 17 | 61 | 14 |
| Nikolai | 2 | 2 | 2 | 0 | 9 | 9 | 3 | 0 | 21 | 19 | 2 | 0 | – | – | – | – | 1 | 1 | 5 | – | 33 | 31 | 83 | 4 |
| Telida | – | – | – | – | 2 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 | 0 | – | – |
| Upper Kuskokwim | 49 | 30 | 2 | 0 | 128 | 59 | 2 | 0 | 100 | 65 | 2 | 0 | 14 | 10 | 3 | 0 | 8 | 5 | 4 | 0 | 313 | 172 | 732 | 48 |
| Kuskokwim River[a] | 194 | 145 | 4 | 0 | 402 | 146 | 3 | 0 | 2,946 | 1,383 | 4 | 0 | 269 | 245 | 5 | 0 | 120 | 99 | 5 | 0 | 3,998 | 2,060 | 14,687 | 233 |

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Table 21.–Page 2 of 2.

| | Unknown | | | | Does Not Usually Harvest | | | | Light Harvesters | | | | Medium Harvesters | | | | High Harvesters | | | | Combined use groups | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | Total *N* | total *n* | Est. Total | CI (95%) |
| Quinhagak | 20 | 18 | 5 | 0 | 25 | 8 | 4 | 1 | 85 | 50 | 4 | 0 | 19 | 19 | 5 | 0 | 4 | 3 | 5 | 1 | 155 | 100 | 643 | 46 |
| Goodnews Bay | 4 | 3 | 2 | 0 | 15 | 4 | 2 | 0 | 46 | 20 | 4 | 0 | 3 | 3 | 6 | 0 | 3 | 3 | 3 | 0 | 71 | 33 | 276 | 39 |
| Platinum | – | – | – | – | 4 | 4 | 2 | 0 | 13 | 12 | 4 | 0 | – | – | – | – | – | – | – | – | 17 | 16 | 65 | 6 |
| S. Kuskokwim Bay | 24 | 21 | 5 | 0 | 44 | 16 | 3 | 1 | 144 | 82 | 4 | 0 | 22 | 22 | 5 | 0 | 7 | 6 | 4 | 0 | 243 | 149 | 984 | 60 |
| Survey Total | 218 | 166 | 4 | 0 | 446 | 162 | 3 | 0 | 3,090 | 1,465 | 4 | 0 | 291 | 267 | 5 | 0 | 127 | 105 | 5 | 0 | 4,241 | 2,209 | 15,672 | 241 |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed, SE = standard error, Est. Total = estimated total number of households from all use groups that subsistence fished, expressed as a proportion of households from each group that fished, based on the number of households surveyed, and their responses to the question: "Did you subsistence fish?", CI (95)% = 95% confidence interval.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 22.–Estimated number of households that subsistence fished in communities surveyed, Kuskokwim Area, 2012.

| | Unknown | | | | Does Not Usually Harvest | | | | Light Harvesters | | | | Medium Harvesters | | | | High Harvesters | | | | Combined use groups | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | Total *N* | total *n* | Est. Total | CI (95%) |
| Kongiganak | – | – | – | – | 28 | 0 | – | – | 53 | 0 | – | – | 8 | 0 | – | – | 1 | 0 | – | – | 90 | 0 | – | – |
| N. Kuskokwim Bay | – | – | – | – | 28 | 0 | – | – | 53 | 0 | – | – | 8 | 0 | – | – | 1 | 0 | – | – | 90 | 0 | – | – |
| Tuntutuliak | 8 | 4 | 1 | 0 | 9 | 8 | 0 | 0 | 48 | 21 | 1 | 0 | 18 | 14 | 1 | 0 | 7 | 6 | 1 | 0 | 90 | 53 | 75 | 6 |
| Eek | 5 | 3 | 1 | 0 | 23 | 6 | 1 | 0 | 50 | 29 | 1 | 0 | 6 | 5 | 1 | 0 | 1 | 1 | 1 | – | 86 | 45 | 68 | 7 |
| Kasigluk | 2 | 2 | 1 | 0 | 30 | 9 | 0 | 0 | 60 | 30 | 1 | 0 | 7 | 6 | 1 | 0 | 3 | 3 | 1 | 0 | 104 | 51 | 68 | 11 |
| Nunapitchuk | 1 | 1 | 1 | – | 29 | 6 | 0 | 0 | 54 | 27 | 1 | 0 | 16 | 16 | 1 | 0 | 10 | 10 | 1 | 0 | 111 | 61 | 87 | 9 |
| Atmautluak | 6 | 5 | 1 | 0 | 17 | 6 | 0 | 0 | 25 | 11 | 1 | 0 | 9 | 9 | 1 | 0 | 4 | 4 | 1 | 0 | 61 | 35 | 38 | 4 |
| Napakiak | 11 | 6 | 0 | 0 | 30 | 10 | 0 | 0 | 45 | 20 | 1 | 0 | 12 | 9 | 1 | 0 | 1 | 1 | 1 | – | 99 | 46 | 62 | 9 |
| Napaskiak | 8 | 5 | 0 | 0 | 17 | 3 | 0 | 0 | 44 | 18 | 1 | 0 | 22 | 13 | 1 | 0 | 6 | 3 | 1 | 0 | 97 | 42 | 71 | 10 |
| Oscarville | – | – | – | – | 3 | 3 | 0 | 0 | 2 | 2 | 1 | 0 | 8 | 8 | 1 | 0 | 1 | 1 | 1 | – | 14 | 14 | 10 | 0 |
| Bethel | – | – | – | – | – | – | – | – | 2,128 | 447 | 0 | 0 | – | – | – | – | – | – | – | – | 2,128 | 447 | 824 | 86 |
| Kwethluk | 6 | 5 | 0 | 0 | 40 | 13 | 0 | 0 | 84 | 38 | 1 | 0 | 27 | 22 | 1 | 0 | 5 | 4 | 1 | 0 | 164 | 83 | 96 | 13 |
| Akiachak | 12 | 8 | 1 | 0 | 32 | 10 | 0 | 0 | 73 | 26 | 1 | 0 | 32 | 22 | 1 | 0 | 8 | 8 | 1 | 0 | 157 | 74 | 113 | 13 |
| Akiak | 2 | 0 | – | – | 13 | 3 | 0 | 0 | 34 | 7 | 1 | 0 | 18 | 3 | 1 | 0 | 10 | 2 | 1 | 0 | 79 | 16 | 79 | – |
| Tuluksak | 11 | 7 | 1 | 0 | 18 | 4 | 1 | 0 | 36 | 19 | 1 | 0 | 16 | 16 | 1 | 0 | 7 | 7 | 1 | 0 | 89 | 53 | 67 | 8 |
| Lower Kuskokwim | 72 | 46 | 1 | 0 | 261 | 81 | 0 | 0 | 2,683 | 695 | 0 | 0 | 191 | 143 | 1 | 0 | 63 | 50 | 1 | 0 | 3,279 | 1,020 | 1,659 | 91 |
| Lower Kalskag | 7 | 5 | 1 | 0 | 27 | 7 | 0 | 0 | 35 | 19 | 1 | 0 | 7 | 7 | 1 | 0 | 3 | 3 | 0 | 0 | 79 | 41 | 57 | 8 |
| Upper Kalskag | 3 | 2 | 1 | 0 | 16 | 5 | 0 | 0 | 36 | 17 | 1 | 0 | 4 | 4 | 1 | 0 | 3 | 3 | 1 | 0 | 62 | 31 | 37 | 8 |
| Aniak | – | – | – | – | – | – | – | – | 187 | 155 | 1 | 0 | – | – | – | – | – | – | – | – | 187 | 155 | 107 | 6 |
| Chuathbaluk | 8 | 7 | 1 | 0 | 7 | 6 | 0 | 0 | 13 | 11 | 1 | 0 | 5 | 4 | 1 | 0 | – | – | – | – | 33 | 28 | 21 | 2 |
| Middle Kuskokwim | 18 | 14 | 1 | 0 | 50 | 18 | 0 | 0 | 271 | 202 | 1 | 0 | 16 | 15 | 1 | 0 | 6 | 6 | 1 | 0 | 361 | 255 | 223 | 13 |
| Crooked Creek | 6 | 5 | 0 | 0 | 14 | 12 | 0 | 0 | 12 | 10 | 1 | 0 | 5 | 4 | 1 | 0 | – | – | – | – | 37 | 31 | 21 | 2 |
| Red Devil | – | – | – | – | 3 | 2 | 0 | 0 | 7 | 5 | 1 | 0 | 1 | 1 | 1 | – | 2 | 2 | 1 | 0 | 13 | 10 | 7 | 2 |
| Sleetmute | 4 | 4 | 0 | 0 | 13 | 11 | 0 | 0 | 19 | 16 | 1 | 0 | 2 | 2 | 1 | 0 | 2 | 2 | 1 | 0 | 40 | 35 | 18 | 3 |
| Stony River | – | – | – | – | 8 | 1 | 0 | – | 6 | 2 | 1 | 0 | 1 | 0 | – | – | 1 | 0 | – | – | 16 | 3 | – | – |
| Lime Village | 7 | 5 | 1 | 0 | 1 | 1 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | 14 | 10 | 8 | 3 |
| McGrath | 12 | 3 | 0 | 0 | 87 | 23 | 0 | 0 | 32 | 15 | 0 | 0 | 1 | 1 | 1 | – | 1 | 1 | 1 | – | 136 | 45 | 41 | 16 |
| Takotna | 5 | 0 | – | – | 18 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 23 | 0 | – | – |
| Nikolai | 1 | 1 | 1 | – | 12 | 9 | 0 | 0 | 20 | 19 | 1 | 0 | – | – | – | – | 1 | 1 | 1 | – | 34 | 30 | 22 | 2 |
| Telida | – | – | – | – | 2 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 | 0 | – | – |
| Upper Kuskokwim | 35 | 18 | 0 | 0 | 158 | 59 | 0 | 0 | 96 | 67 | 1 | 0 | 10 | 8 | 1 | 0 | 7 | 6 | 1 | 0 | 315 | 164 | 117 | 17 |
| Kuskokwim River[a] | 125 | 78 | 1 | 0 | 497 | 158 | 0 | 0 | 3,103 | 964 | 0 | 0 | 225 | 166 | 1 | 0 | 77 | 62 | 1 | 0 | 4,045 | 1,439 | 1,998 | 93 |

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Table 22.–Page 2 of 2.

| | Unknown | | | | Does Not Usually Harvest | | | | Light Harvesters | | | | Medium Harvesters | | | | High Harvesters | | | | Combined use groups | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | Total *N* | total *n* | Est. Total | CI (95%) |
| Quinhagak | 11 | 10 | 1 | 0 | 41 | 10 | 1 | 0 | 103 | 50 | 1 | 0 | 5 | 5 | 1 | 0 | 2 | 2 | 1 | 0 | 162 | 77 | 136 | 10 |
| Goodnews Bay | 2 | 2 | 1 | 0 | 21 | 8 | 0 | 0 | 43 | 25 | 1 | 0 | 2 | 2 | 1 | 0 | – | – | – | – | 68 | 37 | 54 | 6 |
| Platinum | 3 | 2 | 1 | 0 | 5 | 5 | 0 | 0 | 11 | 9 | 1 | 0 | – | – | – | – | – | – | – | – | 19 | 16 | 13 | 2 |
| S. Kuskokwim Bay | 16 | 14 | 1 | 0 | 67 | 23 | 0 | 0 | 157 | 84 | 1 | 0 | 7 | 7 | 1 | 0 | 2 | 2 | 1 | 0 | 249 | 130 | 203 | 12 |
| Total | 141 | 92 | 1 | 0 | 564 | 181 | 0 | 0 | 3,260 | 1,048 | 1 | 0 | 232 | 173 | 1 | 0 | 79 | 64 | 1 | 0 | 4,294 | 1,569 | 2,201 | 94 |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed, SE = standard error, Est. Total = estimated total number of households from all use groups that subsistence fished, expressed as a proportion of households from each group that fished, based on the number of households surveyed, and their responses to the question: "Did you subsistence fish?", CI (95)% = 95% confidence interval.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 23.–Estimated number of people living in communities surveyed, Kuskokwim Area, 2012.

| | Unknown | | | | Does Not Usually Harvest | | | | Light Harvesters | | | | Medium Harvesters | | | | High Harvesters | | | | Combined use groups | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | Total *N* | total *n* | Est. Total | CI (95%) |
| Kongiganak | – | – | – | – | 28 | 0 | – | – | 53 | 0 | – | – | 8 | 0 | – | – | 1 | 0 | – | – | 90 | 0 | – | – |
| N. Kuskokwim Bay | – | – | – | – | 28 | 0 | – | – | 53 | 0 | – | – | 8 | 0 | – | – | 1 | 0 | – | – | 90 | 0 | – | – |
| Tuntutuliak | 8 | 4 | 5 | 1 | 9 | 8 | 4 | 0 | 48 | 21 | 4 | 0 | 18 | 14 | 5 | 0 | 7 | 5 | 5 | 0 | 90 | 52 | 401 | 37 |
| Eek | 5 | 3 | 5 | 1 | 23 | 6 | 5 | 1 | 50 | 27 | 4 | 0 | 6 | 5 | 3 | 0 | 1 | 1 | 5 | – | 86 | 43 | 338 | 37 |
| Kasigluk | 2 | 2 | 4 | 0 | 30 | 9 | 5 | 1 | 60 | 29 | 6 | 0 | 7 | 6 | 7 | 0 | 3 | 3 | 7 | 0 | 104 | 50 | 594 | 57 |
| Nunapitchuk | 1 | 1 | 5 | – | 29 | 5 | 4 | 2 | 54 | 26 | 5 | 0 | 16 | 15 | 6 | 0 | 10 | 10 | 5 | 0 | 111 | 58 | 571 | 42 |
| Atmautluak | 6 | 5 | 4 | 0 | 17 | 6 | 4 | 1 | 25 | 10 | 5 | 1 | 9 | 9 | 6 | 0 | 4 | 4 | 7 | 0 | 61 | 34 | 296 | 42 |
| Napakiak | 11 | 6 | 2 | 0 | 30 | 9 | 3 | 1 | 45 | 20 | 4 | 0 | 12 | 8 | 3 | 0 | 1 | 1 | 7 | – | 99 | 44 | 337 | 45 |
| Napaskiak | 8 | 5 | 4 | 0 | 17 | 3 | 6 | 1 | 44 | 17 | 5 | 1 | 22 | 11 | 6 | 1 | 6 | 3 | 4 | 1 | 97 | 39 | 491 | 64 |
| Oscarville | – | – | – | – | 3 | 3 | 4 | 0 | 2 | 2 | 5 | 0 | 8 | 7 | 5 | 0 | 1 | 1 | 2 | – | 14 | 13 | 59 | 6 |
| Bethel | – | – | – | – | – | – | – | – | 2,128 | 434 | 3 | 0 | – | – | – | – | – | – | – | – | 2,128 | 434 | 7,311 | 324 |
| Kwethluk | 6 | 5 | 3 | 0 | 40 | 12 | 4 | 1 | 84 | 36 | 5 | 0 | 27 | 21 | 5 | 0 | 5 | 4 | 9 | 1 | 164 | 79 | 789 | 83 |
| Akiachak | 12 | 8 | 4 | 0 | 32 | 10 | 3 | 1 | 73 | 26 | 5 | 0 | 32 | 22 | 4 | 0 | 8 | 7 | 5 | 0 | 157 | 73 | 694 | 72 |
| Akiak | 2 | 0 | – | – | 13 | 3 | 3 | 1 | 34 | 7 | 4 | 0 | 18 | 3 | 4 | 2 | 10 | 1 | 1 | – | 79 | 15 | 316 | – |
| Tuluksak | 11 | 6 | 4 | 0 | 18 | 4 | 4 | 1 | 36 | 16 | 5 | 0 | 16 | 15 | 6 | 0 | 7 | 7 | 6 | 0 | 89 | 48 | 461 | 39 |
| Lower Kuskokwim | 72 | 45 | 4 | 0 | 261 | 78 | 4 | 0 | 2,683 | 671 | 4 | 0 | 191 | 136 | 5 | 0 | 63 | 47 | 6 | 0 | 3,279 | 982 | 12,658 | 364 |
| Lower Kalskag | 7 | 5 | 3 | 0 | 27 | 6 | 3 | 1 | 35 | 18 | 4 | 0 | 7 | 7 | 6 | 0 | 3 | 2 | 3 | 1 | 79 | 38 | 308 | 34 |
| Upper Kalskag | 3 | 2 | 3 | 0 | 16 | 5 | 2 | 0 | 36 | 16 | 5 | 0 | 4 | 4 | 7 | 0 | 3 | 3 | 3 | 0 | 62 | 30 | 242 | 33 |
| Aniak | – | – | – | – | – | – | – | – | 187 | 148 | 3 | 0 | – | – | – | – | – | – | – | – | 187 | 148 | 600 | 27 |
| Chuathbaluk | 8 | 7 | 2 | 0 | 7 | 6 | 4 | 0 | 13 | 11 | 3 | 0 | 5 | 4 | 4 | 1 | – | – | – | – | 33 | 28 | 103 | 8 |
| Middle Kuskokwim | 18 | 14 | 2 | 0 | 50 | 17 | 2 | 0 | 271 | 193 | 3 | 0 | 16 | 15 | 6 | 0 | 6 | 5 | 3 | 0 | 361 | 244 | 1,253 | 54 |
| Crooked Creek | 6 | 5 | 2 | 0 | 14 | 12 | 2 | 0 | 12 | 10 | 3 | 0 | 5 | 4 | 6 | 0 | – | – | – | – | 37 | 31 | 98 | 7 |
| Red Devil | – | – | – | – | 3 | 2 | 2 | 0 | 7 | 5 | 2 | 0 | 1 | 0 | – | – | 2 | 1 | 1 | – | 13 | 8 | 22 | 4 |
| Sleetmute | 4 | 4 | 4 | 0 | 13 | 11 | 3 | 0 | 19 | 14 | 2 | 0 | 2 | 2 | 4 | 0 | 2 | 1 | 1 | – | 40 | 32 | 104 | 9 |
| Stony River | – | – | – | – | 8 | 1 | 1 | – | 6 | 2 | 4 | 1 | 1 | 0 | – | – | 1 | 0 | – | – | 16 | 3 | – | – |
| Lime Village | 7 | 5 | 2 | 0 | 1 | 1 | 1 | – | – | – | – | – | – | – | – | – | – | – | – | – | 14 | 10 | 28 | 7 |
| McGrath | 12 | 3 | 4 | 1 | 87 | 23 | 3 | 0 | 32 | 14 | 2 | 0 | 1 | 1 | 2 | – | 1 | 1 | 2 | – | 136 | 44 | 333 | 60 |
| Takotna | 5 | 0 | – | – | 18 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 23 | 0 | – | – |
| Nikolai | 1 | 1 | 2 | – | 12 | 9 | 2 | 0 | 20 | 18 | 4 | 0 | – | – | – | – | 1 | 1 | 1 | – | 34 | 29 | 94 | 8 |
| Telida | – | – | – | – | 2 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 2 | 0 | – | – |
| Upper Kuskokwim | 35 | 18 | 2 | 0 | 158 | 59 | 2 | 0 | 96 | 63 | 3 | 0 | 10 | 7 | 5 | 0 | 7 | 4 | 1 | – | 315 | 157 | 680 | 60 |
| Kuskokwim River[a] | 125 | 77 | 3 | 0 | 497 | 154 | 3 | 0 | 3,103 | 927 | 4 | 0 | 225 | 158 | 5 | 0 | 77 | 56 | 5 | 0 | 4,045 | 1,383 | 14,592 | 373 |

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Table 23.–Page 2 of 2.

| | Unknown | | | | Does Not Usually Harvest | | | | Light Harvesters | | | | Medium Harvesters | | | | High Harvesters | | | | Combined use groups | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | *N* | *n* | Mean | SE | Total *N* | total *n* | Est. Total | CI (95%) |
| Quinhagak | 11 | 10 | 3 | 0 | 41 | 9 | 4 | 1 | 103 | 49 | 5 | 0 | 5 | 5 | 6 | 0 | 2 | 2 | 5 | 0 | 162 | 75 | 756 | 63 |
| Goodnews Bay | 2 | 2 | 2 | 0 | 21 | 8 | 2 | 1 | 43 | 24 | 5 | 0 | 2 | 2 | 4 | 0 | – | – | – | – | 68 | 36 | 259 | 40 |
| Platinum | 3 | 2 | 1 | 0 | 5 | 5 | 4 | 0 | 11 | 9 | 5 | 0 | – | – | – | – | – | – | – | – | 19 | 16 | 73 | 9 |
| S. Kuskokwim Bay | 16 | 14 | 2 | 0 | 67 | 22 | 3 | 0 | 157 | 82 | 5 | 0 | 7 | 7 | 5 | 0 | 2 | 2 | 5 | 0 | 249 | 127 | 1,088 | 74 |
| Survey Total | 141 | 91 | 3 | 0 | 564 | 176 | 3 | 0 | 3,260 | 1,009 | 4 | 0 | 232 | 165 | 5 | 0 | 79 | 58 | 5 | 0 | 4,294 | 1,510 | 15,680 | 380 |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed, SE = standard error, CI (95)% = 95% confidence interval.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 24.–Number of fish reported as received from subsistence, commercial and test fisheries, Kuskokwim Area, 2011.

| | | | Subsistence fishermen | | | | | Commercial fishermen | | | | | Bethel Test Fishery | | | | | All Fisheries combined | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | *N* | *n* | Chinook | chum | coho | sockeye | pink | Chinook | chum | coho | sockeye | pink | Chinook | chum | coho | sockeye | pink | Chinook | chum | coho | sockeye | pink |
| Kongiganak | 90 | 43 | 92 | 35 | 60 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 92 | 35 | 60 | 54 | 0 |
| N. Kuskokwim Bay | 92 | 43 | 92 | 35 | 60 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 92 | 35 | 60 | 54 | 0 |
| Tuntutuliak | 85 | 53 | 13 | 0 | 3 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 3 | 18 | 0 |
| Eek | 87 | 43 | 13 | 4 | 3 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 4 | 3 | 7 | 0 |
| Kasigluk | 108 | 62 | 76 | 32 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 76 | 32 | 38 | 0 | 0 |
| Nunapitchuk | 118 | 56 | 44 | 44 | 26 | 5 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 44 | 44 | 26 | 8 | 0 |
| Atmautluak | 60 | 24 | 36 | 165 | 33 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 165 | 33 | 10 | 0 |
| Napakiak | 93 | 47 | 17 | 37 | 36 | 3 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 37 | 36 | 11 | 0 |
| Napaskiak | 99 | 45 | 67 | 25 | 27 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 67 | 25 | 27 | 23 | 0 |
| Oscarville | 16 | 14 | 2 | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 0 | 4 | 0 |
| Bethel | 2,087 | 383 | 309 | 130 | 212 | 193 | 0 | 0 | 0 | 0 | 0 | 0 | 157 | 115 | 152 | 164 | 0 | 466 | 245 | 364 | 357 | 0 |
| Kwethluk | 165 | 77 | 32 | 29 | 37 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 29 | 37 | 60 | 0 |
| Akiachak | 152 | 89 | 65 | 56 | 57 | 93 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 65 | 56 | 57 | 93 | 0 |
| Akiak | 80 | 28 | 13 | 6 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 6 | 2 | 1 | 0 |
| Tuluksak | 86 | 42 | 72 | 50 | 39 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72 | 50 | 39 | 16 | 0 |
| Lower Kuskokwim | 2,166 | 963 | 759 | 582 | 513 | 433 | 0 | 0 | 0 | 0 | 11 | 0 | 157 | 115 | 152 | 164 | 0 | 916 | 697 | 665 | 608 | 0 |
| Lower Kalskag | 79 | 41 | 38 | 45 | 11 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 45 | 11 | 12 | 0 |
| Upper Kalskag | 67 | 39 | 17 | 2 | 7 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 2 | 7 | 24 | 0 |
| Aniak | 182 | 165 | 153 | 88 | 79 | 213 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 153 | 88 | 79 | 213 | 1 |
| Chuathbaluk | 31 | 28 | 15 | 50 | 4 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 50 | 4 | 25 | 0 |
| Middle Kuskokwim | 359 | 273 | 223 | 185 | 101 | 274 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 223 | 185 | 101 | 274 | 1 |
| Crooked Creek | 38 | 23 | 16 | 3 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 3 | 5 | 0 | 0 |
| Red Devil | 13 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sleetmute | 37 | 25 | 22 | 2 | 6 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 2 | 6 | 2 | 0 |
| Stony River | 16 | 13 | 15 | 0 | 4 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 4 | 24 | 0 |
| Lime Village | 15 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| McGrath | 136 | 40 | 17 | 0 | 86 | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 86 | 80 | 0 |
| Takotna | 23 | 14 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 |
| Nikolai | 33 | 27 | 49 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 2 | 5 | 0 | 0 |
| Telida | 2 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Upper Kuskokwim | 313 | 154 | 119 | 7 | 113 | 106 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 119 | 7 | 113 | 106 | 0 |
| Kuskokwim River[a] | 2,930 | 1,433 | 1,193 | 809 | 787 | 847 | 1 | 0 | 0 | 0 | 11 | 0 | 157 | 115 | 152 | 184 | 0 | 1,350 | 924 | 939 | 1,042 | 1 |
| Quinhagak | 155 | 86 | 136 | 38 | 65 | 112 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 136 | 38 | 65 | 112 | 0 |
| Goodnews Bay | 71 | 21 | 13 | 45 | 42 | 25 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 45 | 42 | 25 | 2 |
| Platinum | 17 | 5 | 1 | 0 | 23 | 30 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 23 | 30 | 0 |
| S. Kuskokwim Bay | 243 | 112 | 150 | 83 | 130 | 167 | 2 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 170 | 83 | 130 | 167 | 2 |
| Survey Total | 3,173 | 1,545 | 1,343 | 892 | 917 | 1,014 | 3 | 20 | 0 | 0 | 11 | 0 | 157 | 115 | 152 | 184 | 0 | 1,520 | 1,007 | 1,069 | 1,209 | 3 |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 25.–Number of fish reported as received from subsistence, commercial and test fisheries, Kuskokwim Area, 2012.

| | | | Subsistence fishermen | | | | | Commercial fishermen | | | | | Bethel Test Fishery | | | | | All Fisheries combined | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Community | *N* | *n* | Chinook | chum | coho | sockeye | pink | Chinook | chum | coho | sockeye | pink | Chinook | chum | coho | sockeye | pink | Chinook | chum | coho | sockeye | pink |
| Kongiganak | 90 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| N. Kuskokwim Bay | 92 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Tuntutuliak | 90 | 48 | 20 | 9 | 10 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 9 | 10 | 23 | 0 |
| Eek | 86 | 39 | 12 | 37 | 6 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 37 | 6 | 20 | 0 |
| Kasigluk | 104 | 47 | 13 | 98 | 14 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 98 | 14 | 21 | 0 |
| Nunapitchuk | 111 | 49 | 12 | 89 | 32 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 89 | 32 | 22 | 0 |
| Atmautluak | 61 | 29 | 56 | 96 | 39 | 55 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 57 | 96 | 39 | 55 | 0 |
| Napakiak | 99 | 41 | 17 | 31 | 87 | 38 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 31 | 87 | 38 | 25 |
| Napaskiak | 97 | 39 | 8 | 17 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 17 | 2 | 0 | 0 |
| Oscarville | 14 | 13 | 34 | 15 | 217 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 20 | 0 | 0 | 34 | 35 | 237 | 15 | 0 |
| Bethel | 2,128 | 367 | 197 | 452 | 391 | 380 | 1 | 0 | 0 | 0 | 0 | 0 | 76 | 116 | 82 | 108 | 0 | 273 | 568 | 473 | 488 | 1 |
| Kwethluk | 164 | 68 | 27 | 59 | 83 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 59 | 83 | 33 | 0 |
| Akiachak | 157 | 60 | 9 | 29 | 12 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 29 | 12 | 24 | 0 |
| Akiak | 79 | 13 | 101 | 32 | 52 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 101 | 32 | 52 | 16 | 0 |
| Tuluksak | 89 | 47 | 21 | 107 | 73 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 107 | 73 | 7 | 0 |
| Lower Kuskokwim | 2,191 | 860 | 527 | 1,071 | 1,018 | 654 | 26 | 1 | 0 | 0 | 0 | 0 | 76 | 136 | 102 | 108 | 0 | 604 | 1,207 | 1,120 | 762 | 26 |
| Lower Kalskag | 79 | 34 | 12 | 12 | 5 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 12 | 5 | 15 | 0 |
| Upper Kalskag | 62 | 24 | 20 | 11 | 38 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 11 | 38 | 60 | 0 |
| Aniak | 187 | 146 | 176 | 107 | 126 | 180 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 176 | 107 | 126 | 180 | 0 |
| Chuathbaluk | 33 | 26 | 2 | 10 | 20 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10 | 20 | 37 | 0 |
| Middle Kuskokwim | 361 | 230 | 210 | 140 | 189 | 292 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 210 | 140 | 189 | 292 | 0 |
| Crooked Creek | 37 | 26 | 4 | 10 | 15 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 10 | 15 | 5 | 0 |
| Red Devil | 13 | 10 | 5 | 17 | 33 | 12 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 17 | 33 | 12 | 10 |
| Sleetmute | 40 | 30 | 9 | 24 | 66 | 23 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 24 | 66 | 23 | 2 |
| Stony River | 16 | 3 | 2 | 10 | 20 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10 | 20 | 2 | 0 |
| Lime Village | 14 | 4 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| McGrath | 136 | 35 | 7 | 3 | 21 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 7 | 3 | 21 | 30 | 0 |
| Takotna | 23 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Nikolai | 34 | 27 | 9 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 5 | 0 |
| Telida | 2 | 0 | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Upper Kuskokwim | 315 | 135 | 36 | 64 | 155 | 78 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 36 | 64 | 155 | 80 | 12 |
| Kuskokwim River[a] | 2,959 | 1,225 | 773 | 1,275 | 1,362 | 1,024 | 38 | 1 | 0 | 0 | 0 | 0 | 76 | 136 | 102 | 110 | 0 | 850 | 1,411 | 1,464 | 1,134 | 38 |
| Quinhagak | 162 | 67 | 83 | 34 | 50 | 62 | 9 | 8 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 91 | 34 | 50 | 62 | 14 |
| Goodnews Bay | 68 | 33 | 6 | 4 | 55 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 4 | 55 | 0 | 0 |
| Platinum | 19 | 11 | 4 | 6 | 18 | 7 | 0 | 0 | 0 | 15 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 6 | 33 | 15 | 0 |
| S. Kuskokwim Bay | 249 | 111 | 93 | 44 | 123 | 69 | 9 | 8 | 0 | 15 | 8 | 5 | 0 | 0 | 0 | 0 | 0 | 101 | 44 | 138 | 77 | 14 |
| Survey Total | 3,208 | 1,336 | 866 | 1,319 | 1,485 | 1,093 | 47 | 9 | 0 | 15 | 8 | 5 | 76 | 136 | 102 | 110 | 0 | 951 | 1,455 | 1,602 | 1,211 | 52 |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 26.–Number of people that own dogs, number reporting feeding salmon to dogs, and number of salmon fed to dogs, by species, Kuskokwim Area, 2011.

| Community | *N* | *n* | own dog | feed salmon | # dogs | Chinook | Chum | Sockeye | Coho | Pink |
|---|---|---|---|---|---|---|---|---|---|---|
| Kongiganak | 90 | 46 | 25 | 2 | 36 | 0 | 60 | 5 | 0 | 0 |
| N. Kuskokwim Bay | 92 | 46 | 25 | 2 | 36 | 0 | 60 | 5 | 0 | 0 |
| Tuntutuliak | 85 | 56 | 41 | 0 | 112 | 0 | 0 | 0 | 0 | 0 |
| Eek | 87 | 44 | 32 | 1 | 64 | 0 | 0 | 0 | 10 | 0 |
| Kasigluk | 108 | 65 | 49 | 1 | 113 | 0 | 0 | 0 | 0 | 0 |
| Nunapitchuk | 118 | 65 | 48 | 1 | 117 | 0 | 25 | 0 | 0 | 0 |
| Atmautluak | 60 | 27 | 24 | 1 | 92 | 0 | 0 | 0 | 60 | 0 |
| Napakiak | 93 | 50 | 28 | 0 | 51 | 0 | 0 | 0 | 0 | 0 |
| Napaskiak | 99 | 50 | 30 | 3 | 122 | 5 | 60 | 0 | 200 | 0 |
| Oscarville | 16 | 14 | 12 | 1 | 24 | 0 | 97 | 0 | 0 | 0 |
| Bethel | 2,087 | 418 | 251 | 6 | 357 | 5 | 6 | 6 | 4 | 0 |
| Kwethluk | 165 | 96 | 72 | 5 | 222 | 0 | 185 | 25 | 45 | 30 |
| Akiachak | 152 | 90 | 55 | 7 | 229 | 0 | 110 | 110 | 830 | 33 |
| Akiak | 80 | 33 | 30 | 2 | 157 | 0 | 25 | 25 | 0 | 0 |
| Tuluksak | 86 | 48 | 41 | 1 | 126 | 0 | 0 | 0 | 5 | 0 |
| Lower Kuskokwim | 2,166 | 1,056 | 713 | 29 | 1,786 | 10 | 508 | 166 | 1,154 | 63 |
| Lower Kalskag | 79 | 47 | 32 | 6 | 82 | 0 | 515 | 0 | 200 | 0 |
| Upper Kalskag | 67 | 38 | 26 | 6 | 74 | 0 | 715 | 0 | 25 | 10 |
| Aniak | 182 | 168 | 97 | 10 | 289 | 0 | 701 | 8 | 434 | 0 |
| Chuathbaluk | 31 | 29 | 25 | 0 | 48 | 0 | 0 | 0 | 0 | 0 |
| Middle Kuskokwim | 359 | 282 | 180 | 22 | 493 | 0 | 1,931 | 8 | 659 | 10 |
| Crooked Creek | 38 | 22 | 12 | 4 | 41 | 0 | 280 | 0 | 0 | 0 |
| Red Devil | 13 | 13 | 8 | 3 | 20 | 0 | 403 | 8 | 16 | 2 |
| Sleetmute | 37 | 28 | 15 | 1 | 30 | 0 | 11 | 0 | 0 | 0 |
| Stony River | 16 | 15 | 8 | 1 | 11 | 0 | 35 | 0 | 0 | 0 |
| Lime Village | 15 | 0 | – | – | – | – | – | – | – | – |
| McGrath | 136 | 45 | 24 | 3 | 44 | 0 | 140 | 0 | 350 | 0 |
| Takotna | 23 | 17 | 10 | 0 | 18 | 0 | 0 | 0 | 0 | 0 |
| Nikolai | 33 | 32 | 22 | 1 | 58 | 0 | 300 | 0 | 0 | 0 |
| Telida | 2 | 0 | – | – | – | – | – | – | – | – |
| Upper Kuskokwim | 313 | 172 | 99 | 13 | 222 | 0 | 1,169 | 8 | 366 | 2 |
| Kuskokwim River[a] | 2,930 | 1,556 | 1,017 | 66 | 2,537 | 10 | 3,668 | 187 | 2,179 | 75 |
| Quinhagak | 155 | 92 | 62 | 0 | 93 | 0 | 0 | 0 | 0 | 0 |
| Goodnews Bay | 71 | 29 | 18 | 2 | 45 | 0 | 40 | 190 | 20 | 0 |
| Platinum | 17 | 14 | 12 | 0 | 24 | 0 | 0 | 0 | 0 | 0 |
| S. Kuskokwim Bay | 243 | 135 | 92 | 2 | 162 | 0 | 40 | 190 | 20 | 0 |
| Survey Total | 3,173 | 1,691 | 1,109 | 68 | 2,699 | 10 | 3,708 | 377 | 2,199 | 75 |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed, # dog = number of dogs reported / owned by the respondent.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 27.–Number of people that own dogs, number reporting feeding salmon to dogs, and number of salmon fed to dogs, by species, Kuskokwim Area, 2012.

| Community | *N* | *n* | own dog | feed salmon | # dogs | Chinook | Chum | Sockeye | Coho | Pink |
|---|---|---|---|---|---|---|---|---|---|---|
| Kongiganak | 90 | 0 | – | – | – | – | – | – | – | – |
| N. Kuskokwim Bay | 92 | 0 | – | – | – | – | – | – | – | – |
| Tuntutuliak | 90 | 52 | 42 | 1 | 103 | 0 | 40 | 0 | 0 | 0 |
| Eek | 86 | 44 | 36 | 4 | 70 | 5 | 42 | 15 | 5 | 0 |
| Kasigluk | 104 | 50 | 42 | 1 | 93 | 12 | 30 | 45 | 0 | 0 |
| Nunapitchuk | 111 | 58 | 47 | 3 | 102 | 0 | 30 | 0 | 1 | 0 |
| Atmautluak | 61 | 33 | 27 | 6 | 113 | 0 | 89 | 27 | 65 | 21 |
| Napakiak | 99 | 41 | 24 | 2 | 31 | 0 | 14 | 4 | 0 | 0 |
| Napaskiak | 97 | 37 | 22 | 2 | 69 | 0 | 0 | 0 | 0 | 0 |
| Oscarville | 14 | 13 | 10 | 3 | 20 | 0 | 175 | 0 | 0 | 0 |
| Bethel | 2,128 | 384 | 182 | 5 | 276 | 0 | 111 | 0 | 300 | 15 |
| Kwethluk | 164 | 80 | 62 | 5 | 143 | 15 | 65 | 22 | 30 | 12 |
| Akiachak | 157 | 72 | 38 | 5 | 177 | 3 | 149 | 89 | 0 | 4 |
| Akiak | 79 | 13 | 8 | 2 | 44 | 2 | 30 | 20 | 0 | 12 |
| Tuluksak | 89 | 48 | 34 | 4 | 96 | 10 | 45 | 15 | 0 | 0 |
| Lower Kuskokwim | 2,191 | 925 | 574 | 43 | 1,337 | 47 | 820 | 237 | 401 | 64 |
| Lower Kalskag | 79 | 36 | 28 | 5 | 72 | 0 | 260 | 15 | 150 | 0 |
| Upper Kalskag | 62 | 28 | 20 | 2 | 73 | 0 | 550 | 0 | 0 | 30 |
| Aniak | 187 | 151 | 90 | 13 | 255 | 0 | 3,376 | 25 | 1,532 | 770 |
| Chuathbaluk | 33 | 27 | 19 | 1 | 38 | 0 | 30 | 0 | 0 | 0 |
| Middle Kuskokwim | 361 | 242 | 157 | 21 | 438 | 0 | 4,216 | 40 | 1,682 | 800 |
| Crooked Creek | 37 | 30 | 22 | 5 | 61 | 2 | 140 | 0 | 0 | 0 |
| Red Devil | 13 | 9 | 7 | 4 | 14 | 0 | 235 | 8 | 0 | 9 |
| Sleetmute | 40 | 35 | 19 | 5 | 36 | 0 | 368 | 18 | 337 | 60 |
| Stony River | 16 | 3 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Lime Village | 14 | 10 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| McGrath | 136 | 39 | 17 | 3 | 29 | 0 | 462 | 0 | 561 | 0 |
| Takotna | 23 | 0 | – | – | – | – | – | – | – | – |
| Nikolai | 34 | 28 | 24 | 2 | 56 | 0 | 900 | 0 | 115 | 0 |
| Telida | 2 | 0 | – | – | – | – | – | – | – | – |
| Upper Kuskokwim | 315 | 154 | 93 | 19 | 201 | 14 | 26 | 15 | 8 | 1 |
| Kuskokwim River[a] | 2,959 | 1,321 | 824 | 83 | 1,976 | 1 | 12 | 8 | 11 | 1 |
| Quinhagak | 162 | 75 | 48 | 10 | 90 | 0 | 1 | 0 | 0 | 0 |
| Goodnews Bay | 68 | 34 | 23 | 3 | 42 | 15 | 39 | 23 | 19 | 2 |
| Platinum | 19 | 15 | 12 | 1 | 28 | 64 | 7,180 | 326 | 3,115 | 935 |
| S. Kuskokwim Bay | 249 | 124 | 83 | 14 | 160 | 79 | 7,220 | 349 | 3,134 | 937 |
| Survey Total | 3,208 | 1,445 | 907 | 97 | 2,136 | 80 | 7,232 | 357 | 3,145 | 938 |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed, # dog = number of dogs reported / owned by the respondent.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 28.–Number of salmon, by species reported as "lost" due to spoilage, animals, etc., Kuskokwim Area, 2011.

| Community | *N* | *n* | Chinook | Chum | Coho | Sockeye |
|---|---|---|---|---|---|---|
| Kongiganak | 90 | 44 | 0 | 105 | 0 | 13 |
| N. Kuskokwim Bay | 92 | 44 | 0 | 105 | 0 | 13 |
| Tuntutuliak | 85 | 52 | 10 | 0 | 0 | 5 |
| Eek | 87 | 48 | 27 | 0 | 0 | 0 |
| Kasigluk | 108 | 64 | 0 | 13 | 0 | 11 |
| Nunapitchuk | 118 | 65 | 0 | 0 | 0 | 33 |
| Atmautluak | 60 | 31 | 0 | 0 | 0 | 0 |
| Napakiak | 93 | 50 | 5 | 25 | 10 | 25 |
| Napaskiak | 99 | 46 | 7 | 0 | 0 | 0 |
| Oscarville | 16 | 15 | 0 | 0 | 0 | 0 |
| Bethel | 2,087 | 436 | 7 | 15 | 0 | 5 |
| Kwethluk | 165 | 93 | 59 | 75 | 0 | 31 |
| Akiachak | 152 | 100 | 85 | 155 | 10 | 78 |
| Akiak | 80 | 35 | 0 | 0 | 0 | 0 |
| Tuluksak | 86 | 41 | 17 | 30 | 0 | 10 |
| Lower Kuskokwim | 2,166 | 1,076 | 217 | 313 | 20 | 198 |
| Lower Kalskag | 79 | 44 | 11 | 50 | 10 | 0 |
| Upper Kalskag | 67 | 41 | 0 | 1 | 0 | 0 |
| Aniak | 182 | 169 | 19 | 15 | 26 | 9 |
| Chuathbaluk | 31 | 28 | 0 | 0 | 0 | 0 |
| Middle Kuskokwim | 359 | 282 | 30 | 66 | 36 | 9 |
| Crooked Creek | 38 | 23 | 2 | 0 | 15 | 8 |
| Red Devil | 13 | 13 | 1 | 0 | 24 | 6 |
| Sleetmute | 37 | 28 | 0 | 0 | 0 | 0 |
| Stony River | 16 | 15 | 127 | 412 | 65 | 90 |
| Lime Village | 15 | 0 | – | – | – | – |
| McGrath | 136 | 46 | 0 | 0 | 0 | 0 |
| Takotna | 23 | 17 | 0 | 0 | 0 | 0 |
| Nikolai | 33 | 32 | 0 | 0 | 0 | 0 |
| Telida | 2 | 0 | – | – | – | – |
| Upper Kuskokwim | 313 | 174 | 130 | 412 | 104 | 104 |
| Kuskokwim River[a] | 2,930 | 1,576 | 377 | 896 | 160 | 324 |
| Quinhagak | 155 | 93 | 5 | 30 | 20 | 40 |
| Goodnews Bay | 71 | 31 | 0 | 2 | 0 | 0 |
| Platinum | 17 | 15 | 0 | 0 | 0 | 0 |
| S. Kuskokwim Bay | 243 | 139 | 5 | 32 | 20 | 40 |
| Survey Total | 3,173 | 1,715 | 382 | 928 | 180 | 364 |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 29.–Number of salmon, by species reported as "lost" due to spoilage, animals, etc., Kuskokwim Area, 2012.

| Community | *N* | *n* | Chinook | Chum | Coho | Sockeye |
|---|---|---|---|---|---|---|
| Kongiganak | 90 | 0 | – | – | – | – |
| N. Kuskokwim Bay | 92 | 0 | – | – | – | – |
| Tuntutuliak | 90 | 49 | 12 | 58 | 0 | 59 |
| Eek | 86 | 41 | 0 | 10 | 0 | 10 |
| Kasigluk | 104 | 50 | 0 | 3 | 0 | 0 |
| Nunapitchuk | 111 | 57 | 0 | 0 | 0 | 0 |
| Atmautluak | 61 | 33 | 0 | 53 | 0 | 37 |
| Napakiak | 99 | 45 | 1 | 31 | 1 | 4 |
| Napaskiak | 97 | 38 | 27 | 41 | 0 | 16 |
| Oscarville | 14 | 11 | 4 | 0 | 0 | 0 |
| Bethel | 2,128 | 431 | 60 | 300 | 140 | 300 |
| Kwethluk | 164 | 79 | 3 | 0 | 0 | 0 |
| Akiachak | 157 | 66 | 0 | 75 | 0 | 35 |
| Akiak | 79 | 14 | 0 | 10 | 0 | 0 |
| Tuluksak | 89 | 51 | 19 | 55 | 0 | 10 |
| Lower Kuskokwim | 2,191 | 965 | 126 | 636 | 141 | 471 |
| Lower Kalskag | 79 | 39 | 0 | 6 | 0 | 0 |
| Upper Kalskag | 62 | 29 | 0 | 0 | 0 | 0 |
| Aniak | 187 | 150 | 0 | 5 | 6 | 8 |
| Chuathbaluk | 33 | 26 | 0 | 0 | 0 | 0 |
| Middle Kuskokwim | 361 | 244 | 0 | 11 | 6 | 8 |
| Crooked Creek | 37 | 30 | 0 | 0 | 0 | 0 |
| Red Devil | 13 | 10 | 2 | 17 | 25 | 17 |
| Sleetmute | 40 | 32 | 3 | 203 | 5 | 3 |
| Stony River | 16 | 3 | 0 | 0 | 0 | 0 |
| Lime Village | 14 | 10 | 0 | 0 | 0 | 0 |
| McGrath | 136 | 42 | 0 | 0 | 0 | 0 |
| Takotna | 23 | 0 | – | – | – | – |
| Nikolai | 34 | 28 | 0 | 0 | 0 | 0 |
| Telida | 2 | 0 | – | – | – | – |
| Upper Kuskokwim | 315 | 155 | 5 | 220 | 30 | 20 |
| Kuskokwim River[a] | 2,959 | 1,364 | 131 | 867 | 177 | 499 |
| Quinhagak | 162 | 75 | 14 | 4 | 5 | 18 |
| Goodnews Bay | 68 | 35 | 0 | 0 | 0 | 11 |
| Platinum | 19 | 16 | 0 | 0 | 0 | 0 |
| S. Kuskokwim Bay | 249 | 126 | 14 | 4 | 5 | 29 |
| Survey Total | 3,208 | 1,490 | 145 | 871 | 182 | 528 |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 30.–Percentage of estimated Chinook salmon subsistence needs met, for households that subsistence fished, Kuskokwim Area, 2011.

| Community | *N* | *n* | 25% needs met | 50% needs met | 75% needs met | 100% needs met |
|---|---|---|---|---|---|---|
| Kongiganak | 90 | 43 | 16% | 21% | 9% | 53% |
| N. Kuskokwim Bay | 90 | 43 | 16% | 21% | 9% | 53% |
| Tuntutuliak | 85 | 42 | 10% | 7% | 7% | 76% |
| Eek | 87 | 35 | 14% | 17% | 6% | 63% |
| Kasigluk | 108 | 51 | 14% | 22% | 18% | 47% |
| Nunapitchuk | 118 | 51 | 22% | 20% | 4% | 55% |
| Atmautluak | 60 | 27 | 7% | 26% | 19% | 48% |
| Napakiak | 93 | 34 | 15% | 15% | 18% | 53% |
| Napaskiak | 99 | 40 | 15% | 20% | 10% | 55% |
| Oscarville | 16 | 10 | 10% | 0% | 20% | 70% |
| Bethel | 2,087 | 338 | 25% | 9% | 5% | 62% |
| Kwethluk | 165 | 73 | 25% | 40% | 4% | 32% |
| Akiachak | 152 | 80 | 26% | 13% | 16% | 45% |
| Akiak | 80 | 27 | 11% | 33% | 15% | 41% |
| Tuluksak | 86 | 40 | 40% | 18% | 5% | 38% |
| Lower Kuskokwim | 2,166 | 848 | 21% | 16% | 8% | 54% |
| Lower Kalskag | 79 | 36 | 47% | 14% | 8% | 31% |
| Upper Kalskag | 67 | 34 | 18% | 18% | 6% | 59% |
| Aniak | 182 | 135 | 39% | 19% | 7% | 35% |
| Chuathbaluk | 31 | 19 | 37% | 21% | 5% | 37% |
| Middle Kuskokwim | 359 | 224 | 37% | 18% | 7% | 38% |
| Crooked Creek | 38 | 16 | 50% | 13% | 6% | 31% |
| Red Devil | 13 | 7 | 57% | 0% | 0% | 43% |
| Sleetmute | 37 | 15 | 40% | 27% | 0% | 33% |
| Stony River | 16 | 10 | 30% | 0% | 0% | 70% |
| Lime Village | 15 | – | – | – | – | – |
| McGrath | 136 | 20 | 35% | 10% | 5% | 50% |
| Takotna | 23 | 2 | 100% | 0% | 0% | 0% |
| Nikolai | 33 | 20 | 35% | 5% | 0% | 60% |
| Telida | 2 | – | – | – | – | – |
| Upper Kuskokwim | 313 | 90 | 41% | 10% | 2% | 47% |
| Kuskokwim River[a] | 2,928 | 1,205 | 26% | 16% | 8% | 51% |
| Quinhagak | 155 | 72 | 14% | 3% | 8% | 75% |
| Goodnews Bay | 71 | 24 | 21% | 4% | 8% | 67% |
| Platinum | 17 | 8 | 13% | 50% | 0% | 38% |
| S. Kuskokwim Bay | 243 | 104 | 15% | 7% | 8% | 70% |
| Survey Total | 3,171 | 1,309 | 25% | 15% | 8% | 52% |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed. The percentage is estimated by dividing the total number of fish harvested by the total responders said were needed.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 31.–Percentage of estimated chum salmon subsistence needs met, for households that subsistence fished, Kuskokwim Area, 2011.

| Community | *N* | *n* | 25% needs met | 50% needs met | 75% needs met | 100% needs met |
|---|---|---|---|---|---|---|
| Kongiganak | 90 | 34 | 15% | 15% | 9% | 62% |
| N. Kuskokwim Bay | 90 | 34 | 15% | 15% | 9% | 62% |
| Tuntutuliak | 85 | 35 | 11% | 14% | 9% | 66% |
| Eek | 87 | 25 | 8% | 4% | 0% | 88% |
| Kasigluk | 108 | 44 | 7% | 11% | 7% | 75% |
| Nunapitchuk | 118 | 45 | 9% | 11% | 9% | 71% |
| Atmautluak | 60 | 24 | 17% | 8% | 4% | 71% |
| Napakiak | 93 | 29 | 17% | 17% | 0% | 66% |
| Napaskiak | 99 | 38 | 13% | 16% | 5% | 66% |
| Oscarville | 16 | 11 | 18% | 18% | 9% | 55% |
| Bethel | 2,087 | 197 | 26% | 4% | 1% | 69% |
| Kwethluk | 165 | 62 | 16% | 13% | 11% | 60% |
| Akiachak | 152 | 71 | 8% | 7% | 0% | 85% |
| Akiak | 80 | 25 | 12% | 12% | 4% | 72% |
| Tuluksak | 86 | 40 | 13% | 20% | 5% | 63% |
| Lower Kuskokwim | 2,166 | 646 | 16% | 10% | 4% | 70% |
| Lower Kalskag | 79 | 21 | 24% | 5% | 5% | 67% |
| Upper Kalskag | 67 | 19 | 5% | 5% | 0% | 89% |
| Aniak | 182 | 54 | 35% | 15% | 4% | 46% |
| Chuathbaluk | 31 | 14 | 21% | 0% | 7% | 71% |
| Middle Kuskokwim | 359 | 108 | 26% | 9% | 4% | 61% |
| Crooked Creek | 38 | 11 | 18% | 0% | 9% | 73% |
| Red Devil | 13 | 5 | 40% | 20% | 0% | 40% |
| Sleetmute | 37 | 10 | 20% | 10% | 10% | 60% |
| Stony River | 16 | 1 | 0% | 0% | 0% | 100% |
| Lime Village | 15 | – | – | – | – | – |
| McGrath | 136 | 9 | 33% | 11% | 0% | 56% |
| Takotna | 23 | 2 | 100% | 0% | 0% | 0% |
| Nikolai | 33 | 7 | 29% | 14% | 0% | 57% |
| Telida | 2 | – | – | – | – | – |
| Upper Kuskokwim | 313 | 45 | 29% | 9% | 4% | 58% |
| Kuskokwim Rivera | 2,928 | 833 | 18% | 10% | 4% | 68% |
| Quinhagak | 155 | 52 | 13% | 15% | 2% | 69% |
| Goodnews Bay | 71 | 20 | 25% | 0% | 5% | 70% |
| Platinum | 17 | 8 | 25% | 0% | 0% | 75% |
| S. Kuskokwim Bay | 243 | 80 | 18% | 10% | 3% | 70% |
| Survey Total | 3,171 | 913 | 18% | 10% | 4% | 68% |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed. The percentage is estimated by dividing the total number of fish harvested by the total responders said were needed.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 32.–Percentage of estimated sockeye salmon subsistence needs met, for households that subsistence fished, Kuskokwim Area, 2011.

| Community | *N* | *n* | 25% needs met | 50% needs met | 75% needs met | 100% needs met |
|---|---|---|---|---|---|---|
| Kongiganak | 90 | 38 | 21% | 16% | 13% | 50% |
| N. Kuskokwim Bay | 90 | 38 | 21% | 16% | 13% | 50% |
| Tuntutuliak | 85 | 36 | 8% | 17% | 3% | 72% |
| Eek | 87 | 28 | 21% | 4% | 4% | 71% |
| Kasigluk | 108 | 49 | 14% | 20% | 10% | 55% |
| Nunapitchuk | 118 | 48 | 13% | 15% | 10% | 63% |
| Atmautluak | 60 | 26 | 27% | 8% | 4% | 62% |
| Napakiak | 93 | 33 | 15% | 24% | 3% | 58% |
| Napaskiak | 99 | 40 | 13% | 23% | 5% | 60% |
| Oscarville | 16 | 10 | 20% | 20% | 10% | 50% |
| Bethel | 2,087 | 283 | 26% | 7% | 1% | 66% |
| Kwethluk | 165 | 70 | 23% | 16% | 11% | 50% |
| Akiachak | 152 | 80 | 14% | 8% | 6% | 73% |
| Akiak | 80 | 25 | 4% | 28% | 4% | 64% |
| Tuluksak | 86 | 36 | 33% | 3% | 11% | 53% |
| Lower Kuskokwim | 2,166 | 764 | 20% | 12% | 5% | 63% |
| Lower Kalskag | 79 | 30 | 17% | 20% | 10% | 53% |
| Upper Kalskag | 67 | 28 | 18% | 14% | 0% | 68% |
| Aniak | 182 | 104 | 41% | 19% | 7% | 33% |
| Chuathbaluk | 31 | 15 | 20% | 0% | 7% | 73% |
| Middle Kuskokwim | 359 | 177 | 32% | 17% | 6% | 45% |
| Crooked Creek | 38 | 13 | 38% | 31% | 8% | 23% |
| Red Devil | 13 | 9 | 22% | 11% | 11% | 56% |
| Sleetmute | 37 | 15 | 27% | 13% | 0% | 60% |
| Stony River | 16 | 9 | 11% | 22% | 0% | 67% |
| Lime Village | 15 | – | – | – | – | – |
| McGrath | 136 | 16 | 38% | 0% | 0% | 63% |
| Takotna | 23 | 2 | 100% | 0% | 0% | 0% |
| Nikolai | 33 | 4 | 25% | 25% | 0% | 50% |
| Telida | 2 | – | – | – | – | – |
| Upper Kuskokwim | 313 | 68 | 31% | 15% | 3% | 51% |
| Kuskokwim River[a] | 2,928 | 1,047 | 23% | 13% | 5% | 59% |
| Quinhagak | 155 | 64 | 16% | 11% | 3% | 70% |
| Goodnews Bay | 71 | 24 | 13% | 4% | 13% | 71% |
| Platinum | 17 | 12 | 25% | 17% | 0% | 58% |
| S. Kuskokwim Bay | 243 | 100 | 16% | 10% | 5% | 69% |
| Survey Total | 3,171 | 1,147 | 22% | 13% | 5% | 60% |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed. The percentage is estimated by dividing the total number of fish harvested by the total responders said were needed.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 33.–Percentage of estimated coho salmon subsistence needs met, for households that subsistence fished, Kuskokwim Area, 2011.

| Community | *N* | *n* | 25% needs met | 50% needs met | 75% needs met | 100% needs met |
|---|---|---|---|---|---|---|
| Kongiganak | 90 | 23 | 22% | 9% | 0% | 70% |
| N. Kuskokwim Bay | 90 | 23 | 22% | 9% | 0% | 70% |
| Tuntutuliak | 85 | 17 | 47% | 6% | 0% | 47% |
| Eek | 87 | 18 | 39% | 6% | 6% | 50% |
| Kasigluk | 108 | 17 | 24% | 6% | 6% | 65% |
| Nunapitchuk | 118 | 13 | 62% | 0% | 8% | 31% |
| Atmautluak | 60 | 13 | 38% | 8% | 8% | 46% |
| Napakiak | 93 | 25 | 24% | 8% | 4% | 64% |
| Napaskiak | 99 | 27 | 59% | 7% | 4% | 30% |
| Oscarville | 16 | 6 | 0% | 17% | 17% | 67% |
| Bethel | 2,087 | 294 | 30% | 5% | 2% | 63% |
| Kwethluk | 165 | 53 | 40% | 13% | 6% | 42% |
| Akiachak | 152 | 41 | 10% | 7% | 0% | 83% |
| Akiak | 80 | 19 | 32% | 16% | 11% | 42% |
| Tuluksak | 86 | 24 | 58% | 8% | 0% | 33% |
| Lower Kuskokwim | 2,166 | 567 | 33% | 7% | 3% | 57% |
| Lower Kalskag | 79 | 14 | 36% | 14% | 0% | 50% |
| Upper Kalskag | 67 | 27 | 26% | 22% | 0% | 52% |
| Aniak | 182 | 105 | 43% | 19% | 3% | 35% |
| Chuathbaluk | 31 | 15 | 33% | 7% | 0% | 60% |
| Middle Kuskokwim | 359 | 161 | 39% | 18% | 2% | 42% |
| Crooked Creek | 38 | 15 | 33% | 13% | 0% | 53% |
| Red Devil | 13 | 4 | 25% | 25% | 0% | 50% |
| Sleetmute | 37 | 7 | 29% | 43% | 0% | 29% |
| Stony River | 16 | 6 | 0% | 17% | 0% | 83% |
| Lime Village | 15 | – | – | – | – | – |
| McGrath | 136 | 22 | 36% | 14% | 9% | 41% |
| Takotna | 23 | 4 | 75% | 0% | 0% | 25% |
| Nikolai | 33 | 9 | 78% | 0% | 11% | 11% |
| Telida | 2 | – | – | – | – | – |
| Upper Kuskokwim | 313 | 67 | 39% | 15% | 4% | 42% |
| Kuskokwim River[a] | 2,928 | 818 | 34% | 10% | 3% | 53% |
| Quinhagak | 155 | 64 | 14% | 8% | 3% | 75% |
| Goodnews Bay | 71 | 20 | 30% | 5% | 0% | 65% |
| Platinum | 17 | 11 | 45% | 9% | 0% | 45% |
| S. Kuskokwim Bay | 243 | 95 | 21% | 7% | 2% | 69% |
| Survey Total | 3,171 | 913 | 33% | 9% | 3% | 55% |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed. The percentage is estimated by dividing the total number of fish harvested by the total responders said were needed.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 34.–The estimated number of salmon needed for subsistence compared to the estimated number of salmon harvested for subsistence, by species and by subregion, Kuskokwim Area, 2011.

| | Number of Salmon | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Chinook | | Chum | | Sockeye | | Coho | |
| | Low Estimate | High Estimate | Low Estimate | High Estimate | Low Estimate | High Estimate | Low Estimate | High Estimate |
| N. Kuskokwim Bay | | | | | | | | |
| Needed | 1,469 | 2,529 | 2,602 | 3,844 | 1,356 | 2,394 | 473 | 673 |
| Harvested | 884 | 1,532 | 2,046 | 3,572 | 850 | 1,682 | 322 | 904 |
| Lower Kuskokwim | | | | | | | | |
| Needed | 74,512 | 78,842 | 45,854 | 58,682 | 47,972 | 55,550 | 31,689 | 39,643 |
| Harvested | 48,853 | 57,431 | 35,104 | 47,620 | 32,565 | 38,729 | 20,807 | 28,025 |
| Middle Kuskokwim | | | | | | | | |
| Needed | 8,482 | 9,934 | 9,152 | 12,830 | 4,270 | 5,080 | 5,165 | 6,793 |
| Harvested | 5,204 | 6,106 | 5,735 | 6,901 | 2,901 | 3,515 | 3,329 | 4,683 |
| Upper Kuskokwim | | | | | | | | |
| Needed | 3,480 | 5,184 | 3,175 | 5,093 | 2,854 | 5,242 | 1,388 | 6,578 |
| Harvested | 1,761 | 2,723 | 2,695 | 3,957 | 1,733 | 3,037 | 675 | 4,405 |
| S. Kuskokwim Bay | | | | | | | | |
| Needed | 3,720 | 4,996 | 1,898 | 2,616 | 3,509 | 4,725 | 2,011 | 2,721 |
| Harvested | 2,978 | 3,990 | 1,394 | 1,954 | 2,589 | 3,499 | 1,466 | 2,076 |
| Total Kuskokwim Area | | | | | | | | |
| Needed | 94,265 | 107,411 | 66,120 | 79,664 | 62,410 | 70,542 | 43,936 | 53,594 |
| Harvested | 61,352 | 70,112 | 49,121 | 61,859 | 42,326 | 48,774 | 29,207 | 37,485 |

*Note*: Low and "High estimates" are based on the lower and upper confidence intervals associated with point estimates. Estimates of salmon needed based on respondents' assessment of normal consumption and should not be confused with the process by which amounts reasonably necessary for subsistence is determined.

Table 35.–Percentage of estimated Chinook salmon subsistence needs met, for households that subsistence fished, Kuskokwim Area, 2012.

| Community | *N* | *n* | 25% needs met | 50% needs met | 75% needs met | 100% needs met |
|---|---|---|---|---|---|---|
| Kongiganak | 90 | – | – | – | – | – |
| N. Kuskokwim Bay | 90 | – | – | – | – | – |
| Tuntutuliak | 90 | 44 | 59% | 25% | 11% | 5% |
| Eek | 86 | 36 | 50% | 19% | 11% | 19% |
| Kasigluk | 104 | 41 | 83% | 10% | 0% | 7% |
| Nunapitchuk | 111 | 49 | 76% | 20% | 4% | 0% |
| Atmautluak | 61 | 29 | 83% | 0% | 0% | 17% |
| Napakiak | 99 | 37 | 78% | 14% | 0% | 8% |
| Napaskiak | 97 | 30 | 73% | 13% | 7% | 7% |
| Oscarville | 14 | 10 | 90% | 10% | 0% | 0% |
| Bethel | 2,128 | 264 | 69% | 15% | 3% | 14% |
| Kwethluk | 164 | 64 | 55% | 25% | 11% | 9% |
| Akiachak | 157 | 48 | 42% | 27% | 17% | 15% |
| Akiak | 79 | 10 | 40% | 20% | 20% | 20% |
| Tuluksak | 89 | 42 | 67% | 21% | 0% | 12% |
| Lower Kuskokwim | 2,191 | 704 | 66% | 17% | 5% | 11% |
| Lower Kalskag | 79 | 26 | 73% | 19% | 0% | 8% |
| Upper Kalskag | 62 | 23 | 57% | 35% | 4% | 4% |
| Aniak | 187 | 125 | 65% | 21% | 7% | 7% |
| Chuathbaluk | 33 | 16 | 81% | 13% | 0% | 6% |
| Middle Kuskokwim | 361 | 190 | 66% | 22% | 5% | 7% |
| Crooked Creek | 37 | 25 | 84% | 12% | 0% | 4% |
| Red Devil | 13 | 6 | 50% | 0% | 0% | 50% |
| Sleetmute | 40 | 28 | 61% | 14% | 11% | 14% |
| Stony River | 16 | 3 | 100% | 0% | 0% | 0% |
| Lime Village | 14 | 5 | 60% | 40% | 0% | 0% |
| McGrath | 136 | 17 | 59% | 18% | 0% | 24% |
| Takotna | 23 | – | – | – | – | – |
| Nikolai | 34 | 23 | 43% | 9% | 0% | 48% |
| Telida | 2 | – | – | – | – | – |
| Upper Kuskokwim | 315 | 107 | 63% | 13% | 3% | 21% |
| Kuskokwim River[*] | 2,957 | 1,001 | 66% | 18% | 5% | 11% |
| Quinhagak | 162 | 69 | 30% | 30% | 12% | 28% |
| Goodnews Bay | 68 | 23 | 39% | 17% | 13% | 30% |
| Platinum | 19 | 12 | 58% | 33% | 0% | 8% |
| S. Kuskokwim Bay | 249 | 104 | 36% | 28% | 11% | 26% |
| Survey Total | 3,206 | 1,105 | 63% | 19% | 6% | 13% |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed. The percentage is estimated by dividing the total number of fish harvested by the total responders said were needed.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 36.–Percentage of estimated chum salmon subsistence needs met, for households that subsistence fished, Kuskokwim Area, 2012.

| Community | *N* | *n* | 25% needs met | 50% needs met | 75% needs met | 100% needs met |
|---|---|---|---|---|---|---|
| Kongiganak | 90 | – | – | – | – | – |
| N. Kuskokwim Bay | 90 | – | – | – | – | – |
| Tuntutuliak | 90 | 38 | 26% | 11% | 16% | 47% |
| Eek | 86 | 26 | 23% | 27% | 8% | 42% |
| Kasigluk | 104 | 35 | 20% | 14% | 9% | 57% |
| Nunapitchuk | 111 | 40 | 23% | 20% | 13% | 45% |
| Atmautluak | 61 | 26 | 19% | 8% | 0% | 73% |
| Napakiak | 99 | 30 | 7% | 27% | 17% | 50% |
| Napaskiak | 97 | 27 | 22% | 4% | 26% | 48% |
| Oscarville | 14 | 8 | 25% | 0% | 38% | 38% |
| Bethel | 2,128 | 152 | 32% | 11% | 5% | 52% |
| Kwethluk | 164 | 54 | 33% | 15% | 7% | 44% |
| Akiachak | 157 | 41 | 10% | 22% | 20% | 49% |
| Akiak | 79 | 5 | 40% | 0% | 0% | 60% |
| Tuluksak | 89 | 39 | 18% | 21% | 10% | 51% |
| Lower Kuskokwim | 2,191 | 521 | 24% | 15% | 11% | 50% |
| Lower Kalskag | 79 | 22 | 27% | 5% | 0% | 68% |
| Upper Kalskag | 62 | 16 | 13% | 6% | 0% | 81% |
| Aniak | 187 | 53 | 38% | 13% | 8% | 42% |
| Chuathbaluk | 33 | 13 | 23% | 0% | 0% | 77% |
| Middle Kuskokwim | 361 | 104 | 30% | 9% | 4% | 58% |
| Crooked Creek | 37 | 20 | 45% | 15% | 0% | 40% |
| Red Devil | 13 | 5 | 60% | 20% | 0% | 20% |
| Sleetmute | 40 | 13 | 38% | 8% | 8% | 46% |
| Stony River | 16 | 1 | 0% | 0% | 0% | 100% |
| Lime Village | 14 | 3 | 0% | 0% | 0% | 100% |
| McGrath | 136 | 9 | 22% | 22% | 0% | 56% |
| Takotna | 23 | – | – | – | – | – |
| Nikolai | 34 | 12 | 42% | 0% | 0% | 58% |
| Telida | 2 | – | – | – | – | – |
| Upper Kuskokwim | 315 | 63 | 38% | 11% | 2% | 49% |
| Kuskokwim River[a] | 2,957 | 688 | 26% | 13% | 9% | 51% |
| Quinhagak | 162 | 48 | 33% | 10% | 4% | 52% |
| Goodnews Bay | 68 | 14 | 21% | 7% | 0% | 71% |
| Platinum | 19 | 9 | 22% | 22% | 0% | 56% |
| S. Kuskokwim Bay | 249 | 71 | 30% | 11% | 3% | 56% |
| Survey Total | 3,206 | 759 | 27% | 13% | 8% | 52% |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed. The percentage is estimated by dividing the total number of fish harvested by the total responders said were needed.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 37.–Percentage of estimated sockeye salmon subsistence needs met, for households that subsistence fished, Kuskokwim Area, 2012.

| Community | *N* | *n* | 25% needs met | 50% needs met | 75% needs met | 100% needs met |
|---|---|---|---|---|---|---|
| Kongiganak | 90 | – | – | – | – | – |
| N. Kuskokwim Bay | 90 | – | – | – | – | – |
| Tuntutuliak | 90 | 40 | 43% | 15% | 10% | 33% |
| Eek | 86 | 33 | 24% | 21% | 12% | 42% |
| Kasigluk | 104 | 37 | 38% | 22% | 3% | 38% |
| Nunapitchuk | 111 | 41 | 27% | 32% | 15% | 27% |
| Atmautluak | 61 | 23 | 26% | 22% | 9% | 43% |
| Napakiak | 99 | 34 | 18% | 24% | 12% | 47% |
| Napaskiak | 97 | 29 | 41% | 14% | 17% | 28% |
| Oscarville | 14 | 9 | 22% | 0% | 33% | 44% |
| Bethel | 2,128 | 218 | 45% | 14% | 6% | 35% |
| Kwethluk | 164 | 53 | 26% | 19% | 13% | 42% |
| Akiachak | 157 | 41 | 20% | 39% | 7% | 34% |
| Akiak | 79 | 9 | 44% | 11% | 11% | 33% |
| Tuluksak | 89 | 37 | 30% | 27% | 8% | 35% |
| Lower Kuskokwim | 2,191 | 604 | 35% | 20% | 9% | 36% |
| Lower Kalskag | 79 | 22 | 36% | 23% | 5% | 36% |
| Upper Kalskag | 62 | 19 | 21% | 32% | 11% | 37% |
| Aniak | 187 | 103 | 53% | 12% | 9% | 26% |
| Chuathbaluk | 33 | 13 | 38% | 15% | 15% | 31% |
| Middle Kuskokwim | 361 | 157 | 46% | 16% | 9% | 29% |
| Crooked Creek | 37 | 24 | 75% | 13% | 4% | 8% |
| Red Devil | 13 | 7 | 14% | 0% | 0% | 86% |
| Sleetmute | 40 | 28 | 50% | 21% | 4% | 25% |
| Stony River | 16 | 3 | 100% | 0% | 0% | 0% |
| Lime Village | 14 | 5 | 20% | 20% | 0% | 60% |
| McGrath | 136 | 6 | 33% | 17% | 17% | 33% |
| Takotna | 23 | – | – | – | – | – |
| Nikolai | 34 | – | – | – | – | – |
| Telida | 2 | – | – | – | – | – |
| Upper Kuskokwim | 315 | 73 | 53% | 15% | 4% | 27% |
| Kuskokwim River[a] | 2,957 | 834 | 39% | 18% | 9% | 34% |
| Quinhagak | 162 | 60 | 33% | 13% | 13% | 40% |
| Goodnews Bay | 68 | 22 | 23% | 5% | 18% | 55% |
| Platinum | 19 | 14 | 43% | 14% | 29% | 14% |
| S. Kuskokwim Bay | 249 | 96 | 32% | 11% | 17% | 40% |
| Survey Total | 3,206 | 930 | 38% | 18% | 9% | 35% |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed. The percentage is estimated by dividing the total number of fish harvested by the total responders said were needed.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 38.–Percentage of estimated coho salmon subsistence needs met, for households that subsistence fished, Kuskokwim Area, 2012.

| Community | *N* | *n* | 25% needs met | 50% needs met | 75% needs met | 100% needs met |
|---|---|---|---|---|---|---|
| Kongiganak | 90 | – | – | – | – | – |
| N. Kuskokwim Bay | 90 | – | – | – | – | – |
| Tuntutuliak | 90 | 28 | 54% | 14% | 0% | 32% |
| Eek | 86 | 27 | 48% | 7% | 4% | 41% |
| Kasigluk | 104 | 26 | 69% | 12% | 4% | 15% |
| Nunapitchuk | 111 | 32 | 63% | 16% | 6% | 16% |
| Atmautluak | 61 | 19 | 58% | 11% | 5% | 26% |
| Napakiak | 99 | 29 | 52% | 17% | 7% | 24% |
| Napaskiak | 97 | 24 | 79% | 4% | 4% | 13% |
| Oscarville | 14 | 6 | 83% | 0% | 0% | 17% |
| Bethel | 2,128 | 197 | 41% | 12% | 10% | 38% |
| Kwethluk | 164 | 54 | 57% | 13% | 2% | 28% |
| Akiachak | 157 | 35 | 54% | 14% | 3% | 29% |
| Akiak | 79 | 8 | 50% | 25% | 13% | 13% |
| Tuluksak | 89 | 30 | 67% | 10% | 0% | 23% |
| Lower Kuskokwim | 2,191 | 515 | 52% | 12% | 6% | 30% |
| Lower Kalskag | 79 | 19 | 42% | 21% | 5% | 32% |
| Upper Kalskag | 62 | 19 | 42% | 21% | 0% | 37% |
| Aniak | 187 | 112 | 60% | 11% | 6% | 23% |
| Chuathbaluk | 33 | 15 | 53% | 13% | 7% | 27% |
| Middle Kuskokwim | 361 | 165 | 55% | 13% | 5% | 26% |
| Crooked Creek | 37 | 23 | 57% | 17% | 4% | 22% |
| Red Devil | 13 | 7 | 43% | 14% | 0% | 43% |
| Sleetmute | 40 | 19 | 63% | 0% | 16% | 21% |
| Stony River | 16 | 3 | 67% | 33% | 0% | 0% |
| Lime Village | 14 | 4 | 0% | 25% | 0% | 75% |
| McGrath | 136 | 15 | 13% | 20% | 7% | 60% |
| Takotna | 23 | – | – | – | – | – |
| Nikolai | 34 | 14 | 57% | 0% | 0% | 43% |
| Telida | 2 | – | – | – | – | – |
| Upper Kuskokwim | 315 | 85 | 47% | 12% | 6% | 35% |
| Kuskokwim River[*] | 2,957 | 765 | 52% | 12% | 6% | 29% |
| Quinhagak | 162 | 63 | 38% | 27% | 6% | 29% |
| Goodnews Bay | 68 | 25 | 36% | 16% | 8% | 40% |
| Platinum | 19 | 12 | 58% | 8% | 0% | 33% |
| S. Kuskokwim Bay | 249 | 100 | 40% | 22% | 6% | 32% |
| Survey Total | 3,206 | 865 | 51% | 13% | 6% | 30% |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed. The percentage is estimated by dividing the total number of fish harvested by the total responders said were needed.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 39.–The estimated number of salmon needed for subsistence compared to the estimated number of salmon harvested for subsistence, by species and by subregion, Kuskokwim Area, 2012.

| | Number of Salmon | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Chinook | | Chum | | Sockeye | | Coho | |
| | Low Estimate | High Estimate | Low Estimate | High Estimate | Low Estimate | High Estimate | Low Estimate | High Estimate |
| N. Kuskokwim Bay | | | | | | | | |
| Needed | NA | NA | NA | NA | NA | NA | NA | NA |
| Harvested | 289 | 853 | 1,713 | 2,089 | 1,038 | 1,384 | 262 | 654 |
| Lower Kuskokwim | | | | | | | | |
| Needed | 66,777 | 78,921 | 64,903 | 64,903 | 55,578 | 66,742 | 30,285 | 36,961 |
| Harvested | 16,991 | 20,555 | 52,819 | 68,857 | 35,968 | 43,660 | 14,750 | 22,676 |
| Middle Kuskokwim | | | | | | | | |
| Needed | 9,165 | 12,565 | 11,940 | 20,308 | 5,821 | 9,593 | 6,332 | 9,712 |
| Harvested | 1,873 | 2,361 | 9,507 | 13,847 | 2,941 | 3,725 | 3,588 | 6,434 |
| Upper Kuskokwim | | | | | | | | |
| Needed | 2,111 | 2,593 | 4,513 | 5,887 | 2,785 | 4,371 | 2,777 | 4,559 |
| Harvested | 891 | 1,241 | 4,515 | 5,679 | 2,147 | 3,599 | 2,951 | 5,355 |
| S. Kuskokwim Bay | | | | | | | | |
| Needed | 4,992 | 6,532 | 2,383 | 3,963 | 4,502 | 6,132 | 3,665 | 5,183 |
| Harvested | 2,303 | 3,315 | 1,975 | 2,823 | 2,921 | 3,849 | 1,564 | 2,208 |
| Total Kuskokwim Area | | | | | | | | |
| Needed | 85,478 | 98,180 | 88,026 | 102,792 | 71,824 | 83,818 | 45,825 | 53,651 |
| Harvested | 23,439 | 27,233 | 73,571 | 90,253 | 46,652 | 54,580 | 25,826 | 34,616 |

*Note*: Low and "High estimates" are based on the lower and upper confidence intervals associated with point estimates. Estimates of salmon needed based on respondents' assessment of normal consumption and should not be confused with the process by which amounts reasonably necessary for subsistence is determined.

Table 40.–Number of non-salmon fish reported as harvested (unexpanded), including those caught in the winter prior to the survey season, Kuskokwim Area, 2011.

| Community | *N* | *n* | humpback white fish | broadwhite fish | cisco (spp.) | sheefish | burbot | blackfish | smelt | pike | herring | grayling | char | rainbow |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kongiganak | 90 | 47 | 15 | 87 | 324 | 10 | 3 | 700 | 165 | 280 | 2,783 | 0 | 0 | 0 |
| N. Kuskokwim Bay | 92 | 47 | 15 | 87 | 324 | 10 | 3 | 700 | 165 | 280 | 2,783 | 0 | 0 | 0 |
| Tuntutuliak | 85 | 58 | 826 | 995 | 25 | 46 | 233 | 10,786 | 1,575 | 1,261 | 0 | 0 | 0 | 0 |
| Eek | 87 | 46 | 345 | 275 | 580 | 43 | 459 | 2,260 | 62 | 1,046 | 0 | 49 | 18 | 9 |
| Kasigluk | 108 | 65 | 2,721 | 3,667 | 115 | 19 | 376 | 15,815 | 125 | 2,046 | 0 | 0 | 0 | 0 |
| Nunapitchuk | 118 | 67 | 2,213 | 3,889 | 1 | 30 | 132 | 9,490 | 2,695 | 3,607 | 0 | 0 | 0 | 0 |
| Atmautluak | 60 | 33 | 1,035 | 1,643 | 2 | 66 | 113 | 5,930 | 1,675 | 1,056 | 130 | 0 | 0 | 0 |
| Napakiak | 93 | 51 | 675 | 150 | 22 | 33 | 101 | 5,480 | 5,955 | 2,759 | 0 | 0 | 8 | 8 |
| Napaskiak | 99 | 58 | 948 | 328 | 0 | 83 | 232 | 980 | 1,125 | 1,897 | 0 | 0 | 2 | 0 |
| Oscarville | 16 | 13 | 215 | 100 | 10 | 13 | 163 | 1,260 | 2,000 | 594 | 0 | 0 | 0 | 10 |
| Bethel | 2,087 | 435 | 2,289 | 973 | 580 | 326 | 1,166 | 3,504 | 7,246 | 4,619 | 0 | 175 | 159 | 70 |
| Kwethluk | 165 | 97 | 1,052 | 374 | 251 | 130 | 578 | 57,947 | 11,802 | 1,194 | 870 | 95 | 138 | 173 |
| Akiachak | 152 | 99 | 1,733 | 468 | 65 | 462 | 1,351 | 16,100 | 12,000 | 2,444 | 750 | 23 | 28 | 41 |
| Akiak | 80 | 38 | 357 | 226 | 0 | 180 | 298 | 14,000 | 4,825 | 411 | 0 | 4 | 51 | 34 |
| Tuluksak | 86 | 53 | 275 | 436 | 17 | 446 | 205 | 2,730 | 7,937 | 752 | 0 | 60 | 22 | 25 |
| Lower Kuskokwim | 2,166 | 1,113 | 14,684 | 13,524 | 1,668 | 1,877 | 5,407 | 146,282 | 59,022 | 23,686 | 1,750 | 406 | 426 | 370 |
| Lower Kalskag | 79 | 47 | 559 | 132 | 123 | 163 | 15 | 490 | 4,092 | 110 | 0 | 11 | 10 | 0 |
| Upper Kalskag | 67 | 39 | 235 | 163 | 48 | 56 | 116 | 910 | 2,360 | 71 | 0 | 0 | 2 | 8 |
| Aniak | 182 | 168 | 456 | 209 | 38 | 259 | 47 | 100 | 1,185 | 185 | 0 | 89 | 49 | 129 |
| Chuathbaluk | 31 | 29 | 257 | 99 | 175 | 123 | 150 | 0 | 415 | 70 | 0 | 111 | 27 | 2 |
| Middle Kuskokwim | 359 | 283 | 1,507 | 603 | 384 | 601 | 328 | 1,500 | 8,052 | 436 | 0 | 211 | 88 | 139 |
| Crooked Creek | 38 | 22 | 32 | 0 | 25 | 143 | 34 | 0 | 0 | 0 | 0 | 23 | 2 | 0 |
| Red Devil | 13 | 13 | 105 | 9 | 129 | 52 | 11 | 0 | 0 | 43 | 0 | 344 | 16 | 1 |
| Sleetmute | 37 | 29 | 87 | 21 | 20 | 26 | 2 | 0 | 0 | 79 | 0 | 17 | 0 | 0 |
| Stony River | 16 | 13 | 55 | 5 | 5 | 30 | 200 | 0 | 0 | 3 | 0 | 12 | 0 | 1 |
| Lime Village | 15 | 1 | – | – | – | – | – | – | – | 1 | – | 1 | – | – |
| McGrath | 136 | 47 | 102 | 114 | 0 | 143 | 5 | 76 | 1 | 87 | 0 | 195 | 1 | 0 |
| Takotna | 23 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | 0 | 60 | 0 | 0 |
| Nikolai | 33 | 32 | 30 | 30 | 85 | 85 | 2 | 0 | 0 | 77 | 0 | 71 | 8 | 0 |
| Telida | 2 | 0 | – | – | – | – | – | – | – | – | – | – | – | – |
| Upper Kuskokwim | 313 | 174 | 411 | 179 | 264 | 479 | 254 | 76 | 1 | 343 | 0 | 723 | 27 | 2 |

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Table 40.–Page 2 of 2.

| Community | *N* | *n* | humpback white fish | broad white fish | cisco (spp) | sheefish | burbot | blackfish | smelt | pike | herring | grayling | char | rainbow |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kuskokwim River[a] | 2,930 | 1,617 | 16,617 | 14,393 | 2,640 | 2,967 | 5,992 | 148,558 | 67,240 | 24,745 | 4,533 | 1,340 | 541 | 511 |
| Quinhagak | 155 | 97 | 0 | 0 | 505 | 0 | 68 | 2,970 | 5,915 | 398 | 2,650 | 167 | 3,333 | 76 |
| Goodnews Bay | 71 | 33 | 50 | 50 | 373 | 2 | 2 | 910 | 510 | 10 | 2,337 | 24 | 942 | 27 |
| Platinum | 17 | 16 | 0 | 0 | 55 | 0 | 0 | 0 | 460 | 0 | 93 | 21 | 606 | 37 |
| S. Kuskokwim Bay | 243 | 146 | 50 | 50 | 933 | 2 | 70 | 3,880 | 6,885 | 408 | 5,080 | 212 | 4,881 | 140 |
| Survey Total | 3,173 | 1,763 | 16,667 | 14,443 | 3,573 | 2,969 | 6,062 | 152,438 | 74,125 | 25,153 | 9,613 | 1,552 | 5,422 | 651 |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 41.–Estimated (expanded) harvest of humpback and broad whitefish, including those caught in previous winter, Kuskokwim Area, 2011.

| | | | Humpback whitefish | | Broad whitefish | |
|---|---|---|---|---|---|---|
| Community | *N* | *n* | total | CI (95%) | total | CI (95%) |
| Kongiganak | 90 | 47 | 37 | 46 | 167 | 138 |
| N. Kuskokwim Bay | 90 | 47 | 37 | 46 | 167 | 138 |
| Tuntutuliak | 85 | 54 | 966 | 151 | 1,342 | 264 |
| Eek | 87 | 44 | 725 | 327 | 547 | 358 |
| Kasigluk | 108 | 62 | 5,026 | 1,359 | 6,448 | 1,370 |
| Nunapitchuk | 118 | 65 | 3,736 | 996 | 5,863 | 981 |
| Atmautluak | 60 | 30 | 2,124 | 712 | 3,140 | 811 |
| Napakiak | 93 | 49 | 1,327 | 667 | 331 | 231 |
| Napaskiak | 99 | 50 | 1,978 | 1,188 | 590 | 355 |
| Oscarville | 16 | 12 | 250 | 15 | 114 | 0 |
| Bethel | 2,087 | 432 | 11,058 | 6,507 | 4,778 | 3,141 |
| Kwethluk | 165 | 86 | 1,845 | 508 | 658 | 183 |
| Akiachak | 152 | 89 | 2,500 | 1,042 | 644 | 149 |
| Akiak | 80 | 32 | 796 | 304 | 383 | 184 |
| Tuluksak | 86 | 47 | 519 | 166 | 855 | 292 |
| Lower Kuskokwim | 3,236 | 1,052 | 32,849 | 6,981 | 25,693 | 3,702 |
| Lower Kalskag | 79 | 46 | 1,144 | 723 | 265 | 177 |
| Upper Kalskag | 67 | 39 | 426 | 176 | 320 | 187 |
| Aniak | 182 | 166 | 500 | 77 | 231 | 55 |
| Chuathbaluk | 31 | 29 | 259 | 8 | 99 | 0 |
| Middle Kuskokwim | 359 | 280 | 2,329 | 732 | 915 | 257 |
| Crooked Creek | 38 | 22 | 48 | 40 | 0 | 0 |
| Red Devil | 13 | 13 | 105 | 0 | 9 | 0 |
| Sleetmute | 37 | 28 | 136 | 66 | 32 | 35 |
| Stony River | 16 | 13 | 88 | 28 | 8 | 9 |
| Lime Village | 15 | 0 | – | – | – | – |
| McGrath | 136 | 44 | 43 | 34 | 170 | 177 |
| Takotna | 23 | 16 | 0 | 0 | 0 | 0 |
| Nikolai | 33 | 27 | 38 | 23 | 38 | 16 |
| Telida | 2 | 0 | – | – | – | – |
| Upper Kuskokwim | 313 | 163 | 458 | 88 | 256 | 178 |
| Kuskokwim River[a] | 3,998 | 1,542 | 35,673 | 7,017 | 27,030 | 3,717 |
| Quinhagak | 155 | 89 | 0 | 0 | 0 | 0 |
| Goodnews Bay | 71 | 21 | 95 | 114 | 95 | 114 |
| Platinum | 17 | 16 | 0 | 0 | 0 | 0 |
| S. Kuskokwim Bay | 243 | 126 | 95 | 109 | 95 | 109 |
| Survey Total | 4,241 | 1,668 | 35,768 | 7,017 | 27,125 | 3,718 |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed, CI (95%) is 95% confidence interval.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 42.–Number of non-salmon fish reported as harvested (unexpanded), including those caught in the winter prior to the survey season, Kuskokwim Area, 2012.

| Community | *N* | *n* | humpback white fish | broad whitefish | cisco | sheefish | burbot | blackfish | smelt | pike | herring | grayling | char | rainbow |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kongiganak | 90 | 0 | – | – | – | – | – | – | – | – | – | – | – | – |
| N. Kuskokwim Bay | 92 | 0 | – | – | – | – | – | – | – | – | – | – | – | – |
| Tuntutuliak | 90 | 49 | 1,443 | 1,448 | 60 | 76 | 741 | 8,260 | 175 | 1,294 | 0 | 28 | 75 | 4 |
| Eek | 86 | 45 | 506 | 260 | 255 | 53 | 412 | 3,491 | 0 | 944 | 0 | 69 | 11 | 7 |
| Kasigluk | 104 | 51 | 961 | 2,487 | 0 | 21 | 134 | 5,250 | 1,325 | 1,563 | 0 | 0 | 0 | 0 |
| Nunapitchuk | 111 | 58 | 4,298 | 3,930 | 34 | 94 | 333 | 13,930 | 1,000 | 3,257 | 0 | 0 | 1 | 1 |
| Atmautluak | 61 | 34 | 1,359 | 1,705 | 0 | 174 | 186 | 3,450 | 1,150 | 922 | 0 | 0 | 0 | 3 |
| Napakiak | 99 | 45 | 619 | 315 | 2 | 11 | 255 | 4,690 | 2,310 | 1,509 | 0 | 0 | 1 | 0 |
| Napaskiak | 97 | 41 | 404 | 299 | 64 | 68 | 117 | 1,539 | 7,375 | 930 | 0 | 0 | 2 | 0 |
| Oscarville | 14 | 13 | 260 | 161 | 20 | 22 | 84 | 2,310 | 1,025 | 199 | 0 | 0 | 0 | 0 |
| Bethel | 2,128 | 437 | 1,042 | 2,715 | 198 | 197 | 379 | 76,296 | 18,136 | 1,663 | 190 | 109 | 12 | 23 |
| Kwethluk | 164 | 80 | 741 | 645 | 52 | 91 | 237 | 410 | 5,975 | 685 | 0 | 113 | 159 | 53 |
| Akiachak | 157 | 68 | 719 | 458 | 130 | 288 | 424 | 17,010 | 6,975 | 820 | 0 | 0 | 2 | 7 |
| Akiak | 79 | 11 | 30 | 28 | 0 | 16 | 85 | 2,100 | 50 | 74 | 0 | 0 | 0 | 5 |
| Tuluksak | 89 | 52 | 930 | 375 | 41 | 115 | 311 | 7,350 | 6,675 | 471 | 0 | 18 | 8 | 6 |
| Lower Kuskokwim | 2,191 | 984 | 13,312 | 14,826 | 856 | 1,226 | 3,698 | 146,086 | 52,171 | 14,331 | 190 | 337 | 271 | 109 |
| Lower Kalskag | 79 | 39 | 466 | 134 | 289 | 37 | 104 | 590 | 1,895 | 217 | 0 | 3 | 3 | 6 |
| Upper Kalskag | 62 | 29 | 274 | 139 | 25 | 75 | 15 | 420 | 2,125 | 43 | 0 | 2 | 4 | 3 |
| Aniak | 187 | 152 | 473 | 6,474 | 12,333 | 187 | 61 | 103 | 2,825 | 83 | 0 | 74 | 121 | 77 |
| Chuathbaluk | 33 | 27 | 167 | 27 | 0 | 35 | 1,017 | 0 | 400 | 8 | 0 | 156 | 12 | 2 |
| Middle Kuskokwim | 361 | 247 | 1,380 | 6,774 | 12,647 | 334 | 1,197 | 1,113 | 7,245 | 351 | 0 | 235 | 140 | 88 |
| Crooked Creek | 37 | 31 | 74 | 88 | 1 | 136 | 6 | 0 | 0 | 12 | 0 | 109 | 26 | 0 |
| Red Devil | 13 | 10 | 56 | 50 | 80 | 34 | 12 | 0 | 0 | 91 | 0 | 222 | 76 | 1 |
| Sleetmute | 40 | 34 | 70 | 164 | 60 | 233 | 12 | 0 | 0 | 68 | 0 | 378 | 7 | 3 |
| Stony River | 16 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Lime Village | 14 | 10 | 5 | 55 | 50 | 0 | 2 | 0 | 0 | 44 | 0 | 100 | 0 | 0 |
| McGrath | 136 | 41 | 25 | 32 | 5 | 96 | 1 | 350 | 0 | 83 | 0 | 65 | 1 | 1 |
| Takotna | 23 | 0 | – | – | – | – | – | – | – | – | – | – | – | – |
| Nikolai | 34 | 28 | 15 | 637 | 453 | 50 | 1 | 0 | 0 | 147 | 0 | 56 | 6 | 0 |
| Telida | 2 | 0 | – | – | – | – | – | – | – | – | – | – | – | – |
| Upper Kuskokwim | 315 | 157 | 245 | 1,026 | 649 | 549 | 34 | 350 | 0 | 445 | 0 | 930 | 116 | 5 |

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Table 42.–Page 2 of 2.

| Community | *N* | *n* | humpback white fish | broad white fish | cisco | sheefish | burbot | blackfish | smelt | pike | herring | grayling | char | rainbow |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kuskokwim River[a] | 2,959 | 1,388 | 14,937 | 22,626 | 14,152 | 2,109 | 4,929 | 147,549 | 59,416 | 15,127 | 190 | 1,502 | 527 | 202 |
| Quinhagak | 162 | 76 | 136 | 75 | 801 | 0 | 32 | 630 | 6,610 | 276 | 498 | 155 | 3,346 | 150 |
| Goodnews Bay | 68 | 35 | 0 | 0 | 214 | 0 | 0 | 0 | 885 | 0 | 1,370 | 7 | 696 | 22 |
| Platinum | 19 | 15 | 0 | 5 | 177 | 0 | 0 | 0 | 506 | 0 | 600 | 19 | 1,725 | 4 |
| S. Kuskokwim Bay | 249 | 126 | 136 | 80 | 1,192 | 0 | 32 | 630 | 8,001 | 276 | 2,468 | 181 | 5,767 | 176 |
| Survey Total | 3,208 | 1,514 | 15,073 | 22,706 | 15,344 | 2,109 | 4,961 | 148,179 | 67,417 | 15,403 | 2,658 | 1,683 | 6,294 | 378 |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.

Table 43.–Estimated (expanded) harvest of humpback and broad whitefish, including those caught in previous winter, Kuskokwim Area, 2012.

| | | | Humpback whitefish | | Broad whitefish | |
|---|---|---|---|---|---|---|
| Community | *N* | *n* | total | CI (95%) | total | CI (95%) |
| Kongiganak | 90 | 0 | – | – | – | – |
| N. Kuskokwim Bay | 90 | 0 | – | – | – | – |
| Tuntutuliak | 90 | 47 | 2,595 | 1,184 | 2,589 | 1,006 |
| Eek | 86 | 44 | 830 | 466 | 419 | 191 |
| Kasigluk | 104 | 46 | 1,864 | 691 | 4,670 | 1,278 |
| Nunapitchuk | 111 | 56 | 10,646 | 9,568 | 7,885 | 3,240 |
| Atmautluak | 61 | 30 | 3,715 | 1,231 | 4,349 | 1,581 |
| Napakiak | 99 | 43 | 1,432 | 927 | 699 | 366 |
| Napaskiak | 97 | 39 | 1,074 | 719 | 750 | 492 |
| Oscarville | 14 | 12 | 327 | 188 | 182 | 50 |
| Bethel | 2,128 | 416 | 5,330 | 2,383 | 13,989 | 12,922 |
| Kwethluk | 164 | 74 | 1,651 | 663 | 1,525 | 1,173 |
| Akiachak | 157 | 66 | 2,049 | 882 | 1,283 | 514 |
| Akiak | 79 | 10 | – | – | 0 | – |
| Tuluksak | 89 | 48 | 1,438 | 306 | 693 | 277 |
| Lower Kuskokwim | 3,279 | 931 | 32,950 | 9,976 | 39,034 | 13,543 |
| Lower Kalskag | 79 | 37 | 1,152 | 1,135 | 302 | 142 |
| Upper Kalskag | 62 | 28 | 516 | 224 | 349 | 167 |
| Aniak | 187 | 146 | 606 | 276 | 8,125 | 6,705 |
| Chuathbaluk | 33 | 26 | 214 | 133 | 32 | 12 |
| Middle Kuskokwim | 361 | 237 | 2,488 | 1,165 | 8,809 | 6,688 |
| Crooked Creek | 37 | 29 | 92 | 40 | 111 | 43 |
| Red Devil | 13 | 9 | 78 | 83 | 64 | 41 |
| Sleetmute | 40 | 34 | 70 | 0 | 165 | 3 |
| Stony River | 16 | 3 | – | – | – | – |
| Lime Village | 14 | 9 | 8 | 9 | 87 | 89 |
| McGrath | 136 | 40 | 68 | 106 | 87 | 64 |
| Takotna | 23 | 0 | – | – | – | – |
| Nikolai | 34 | 24 | 23 | 20 | 975 | 1,124 |
| Telida | 2 | 0 | – | – | – | – |
| Upper Kuskokwim | 315 | 148 | 338 | 134 | 1,490 | 1,082 |
| Kuskokwim River[a] | 4,045 | 1,316 | 35,776 | 10,040 | 49,332 | 15,125 |
| Quinhagak | 162 | 73 | 368 | 408 | 212 | 256 |
| Goodnews Bay | 68 | 33 | 0 | 0 | 0 | 0 |
| Platinum | 19 | 15 | 0 | 0 | 7 | 8 |
| S. Kuskokwim Bay | 249 | 121 | 368 | 405 | 218 | 255 |
| Survey Total | 4,294 | 1,437 | 36,144 | 10,047 | 49,550 | 15,126 |

*Note*: Dashes indicate data is unavailable. Headings defined as: *N* = the total number of households, *n* = the number of households surveyed, CI (95%) is 95% confidence interval.

[a] Kuskokwim River total includes the Lower, Middle, Upper Kuskokwim areas and North Kuskokwim Bay.


Figure 1.–Kuskokwim Management Area showing communities.

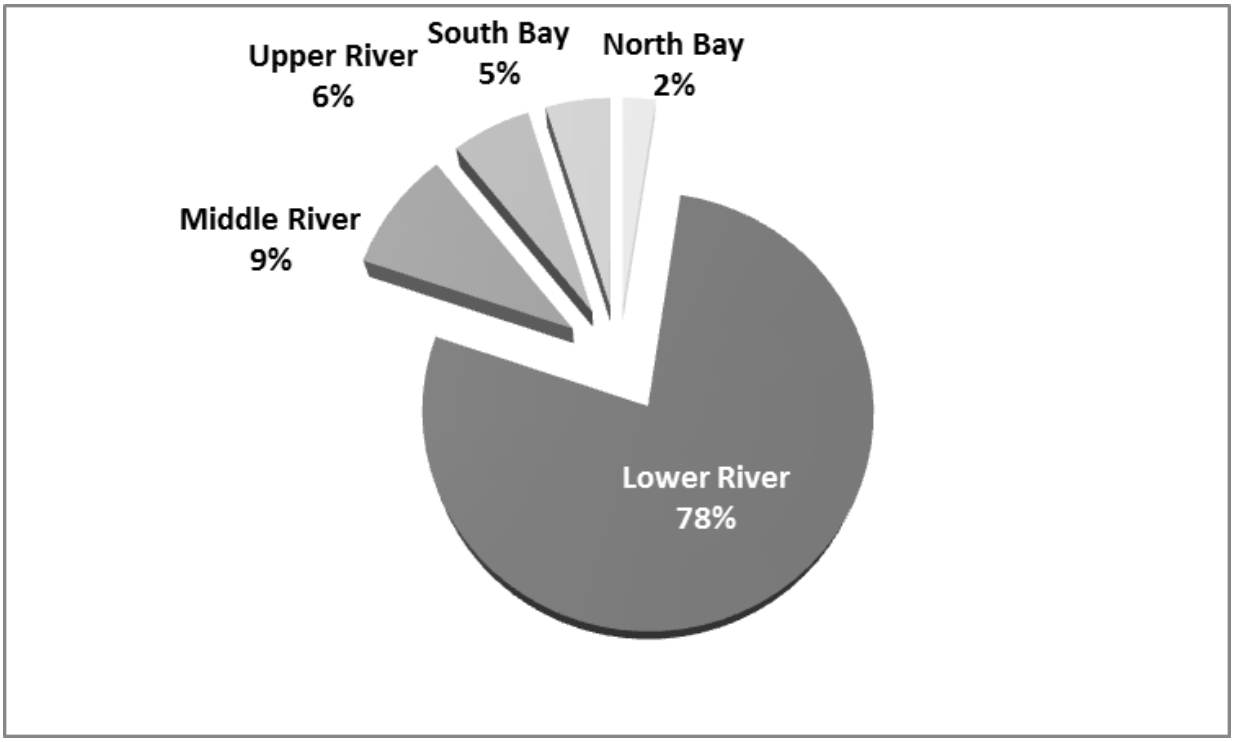



Figure 2.–Average percentage of subsistence salmon harvested in the Kuskokwim River by subarea, 2000–2009.

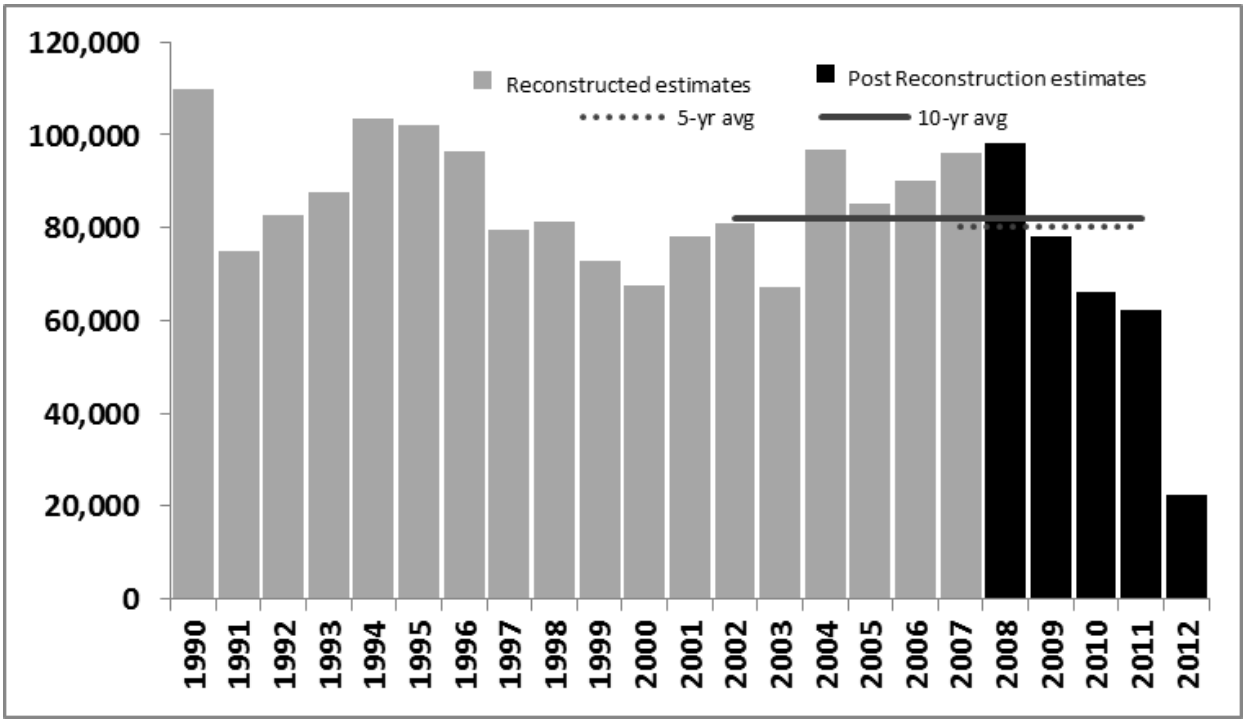



Figure 3.–Historical subsistence harvest estimates of Chinook salmon in the Kuskokwim River.

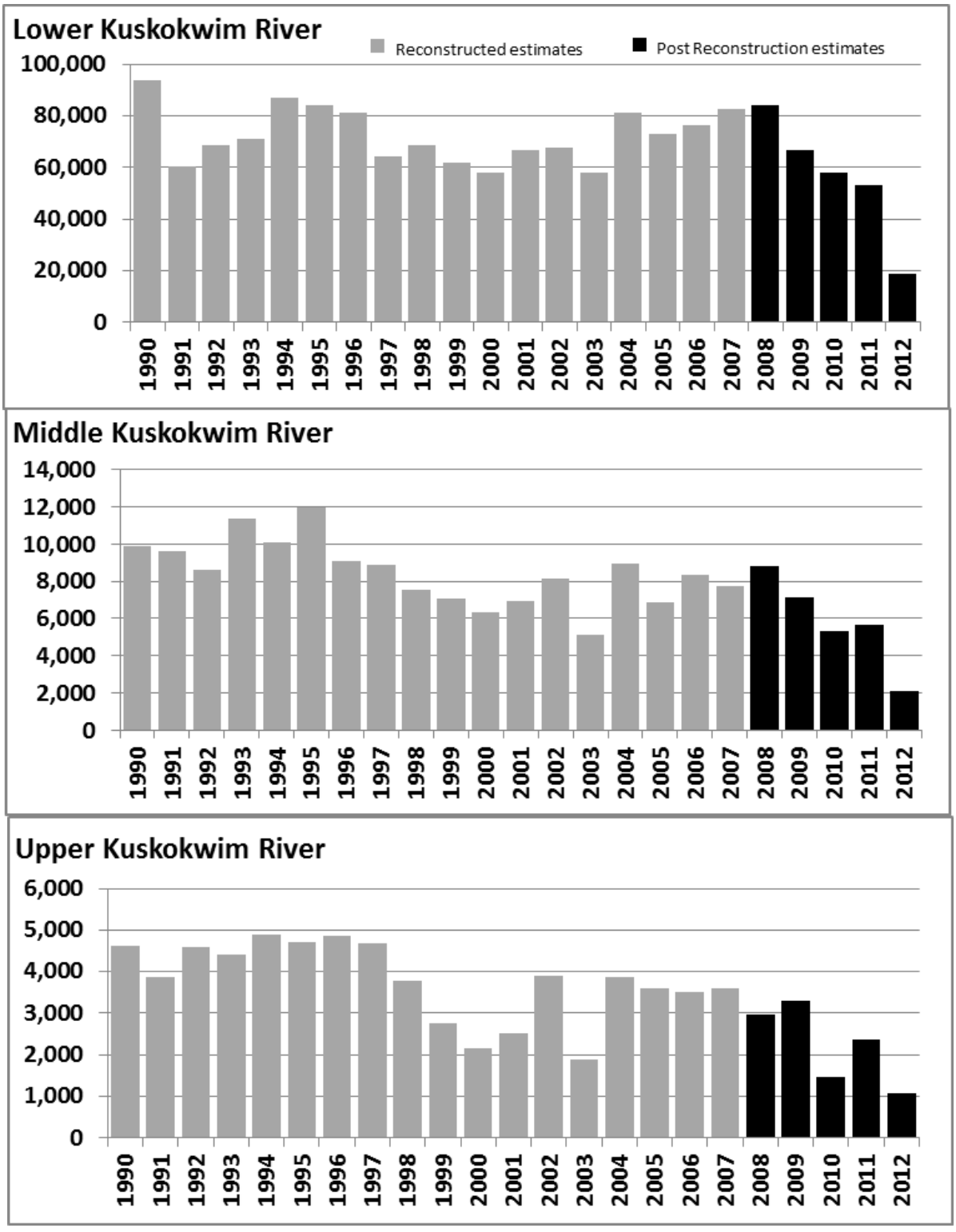



Figure 4.–Historical subsistence harvest estimates of Chinook salmon in the Kuskokwim River by subarea.

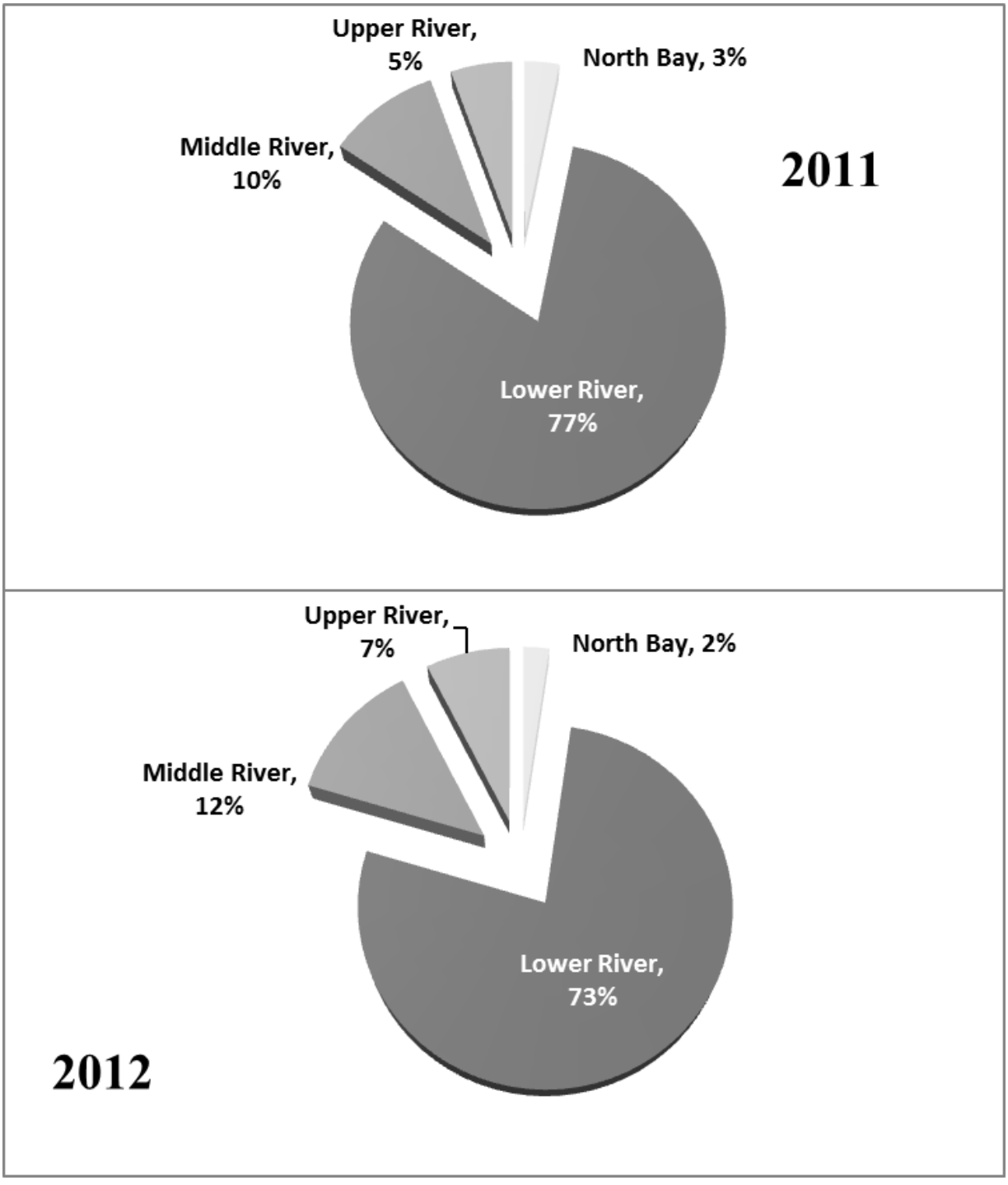



Figure 5.–Percentage of total salmon harvest (all species) from 4 subareas of the Kuskokwim River.

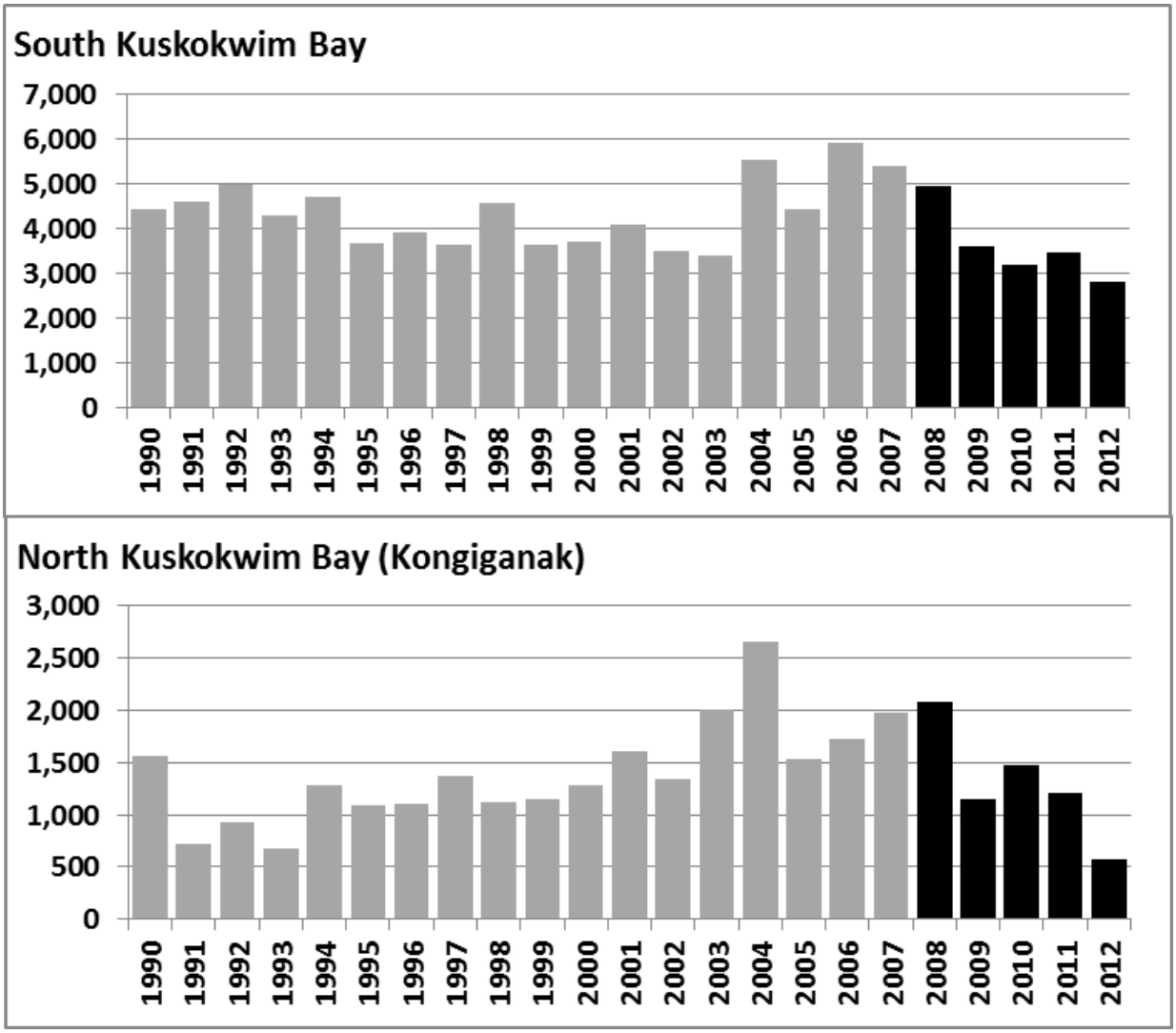



Figure 6.–Historical subsistence harvest estimates of Chinook salmon in the Kuskokwim Bay by subarea.

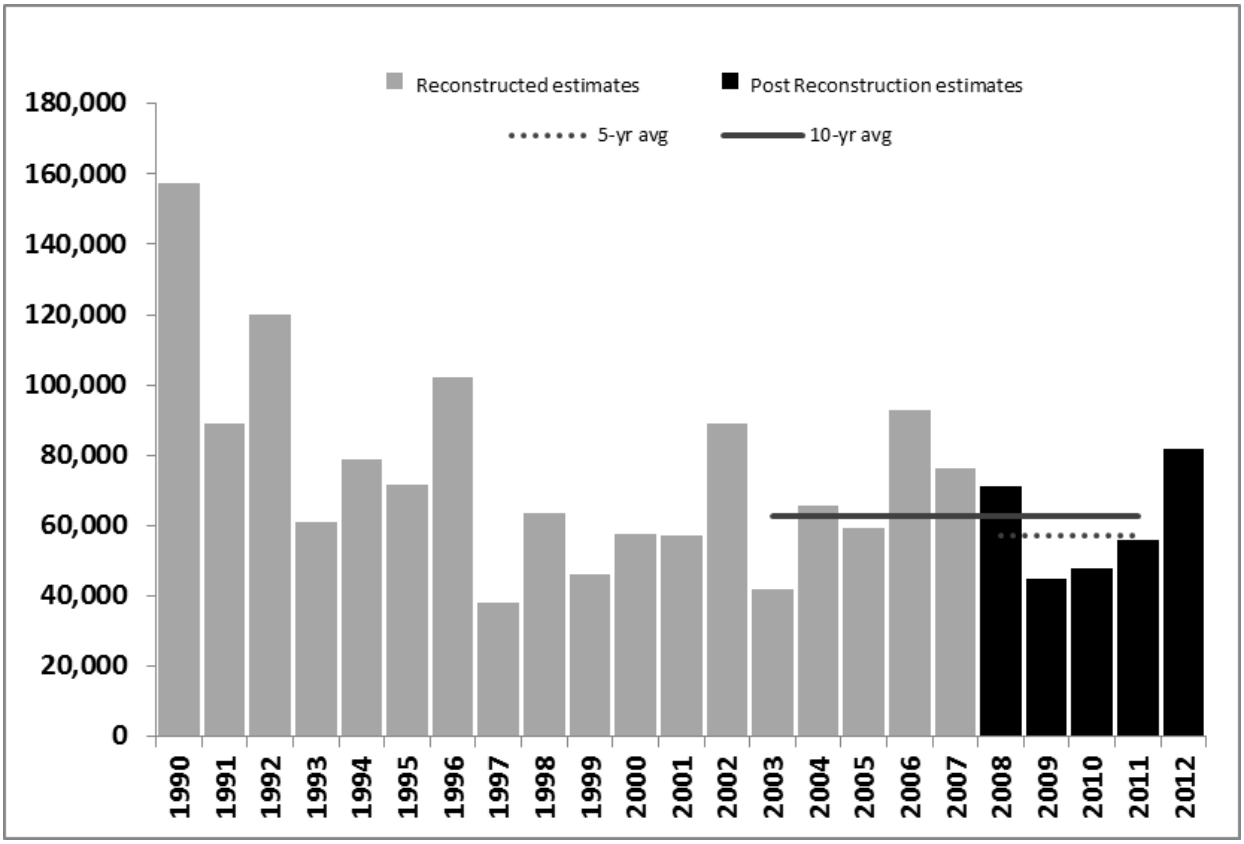



Figure 7.–Historical subsistence harvest estimates of chum salmon in the Kuskokwim Area (Kuskokwim River and Bay).

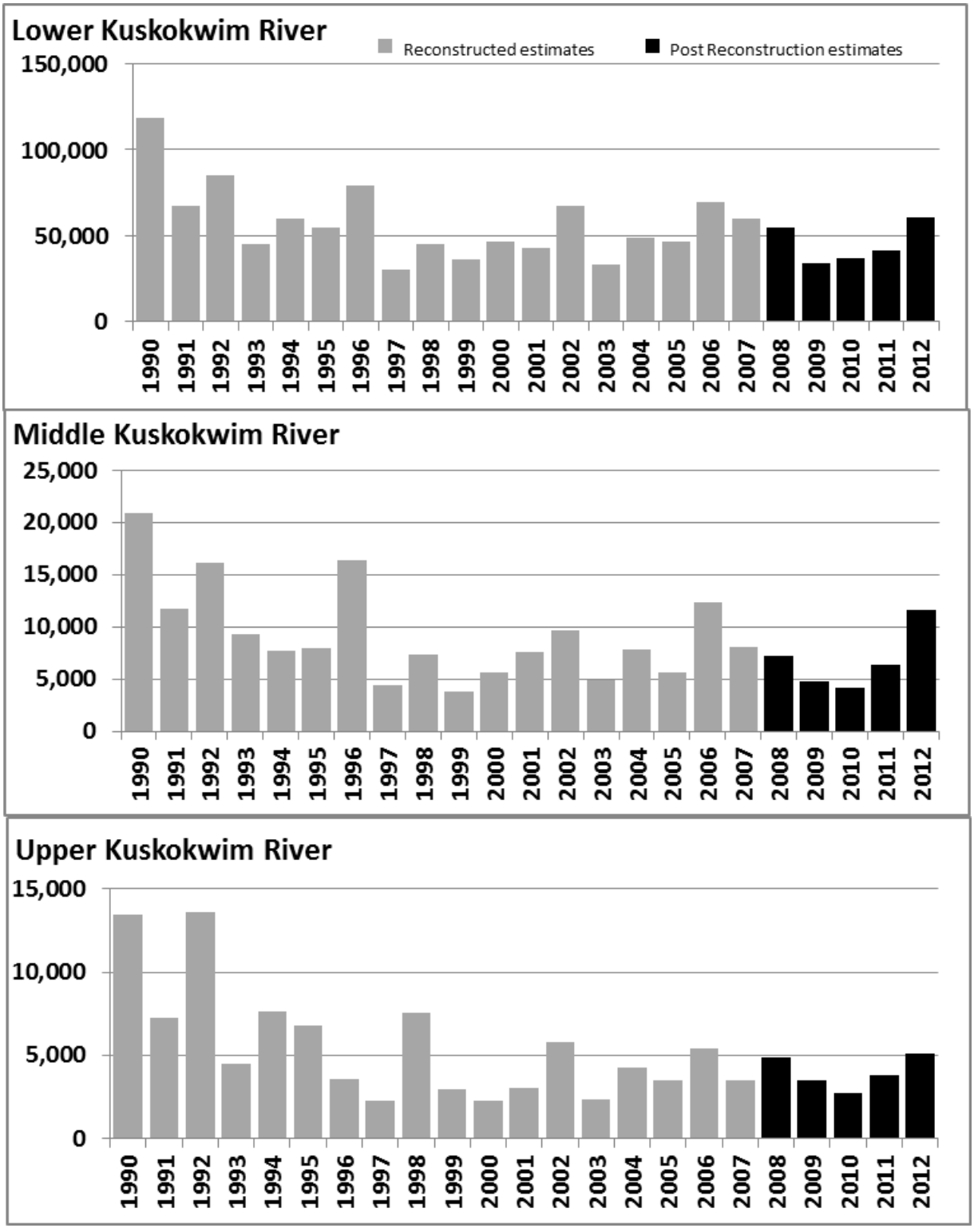



Figure 8.–Historical subsistence harvest estimates of chum salmon in the Kuskokwim River by subarea.

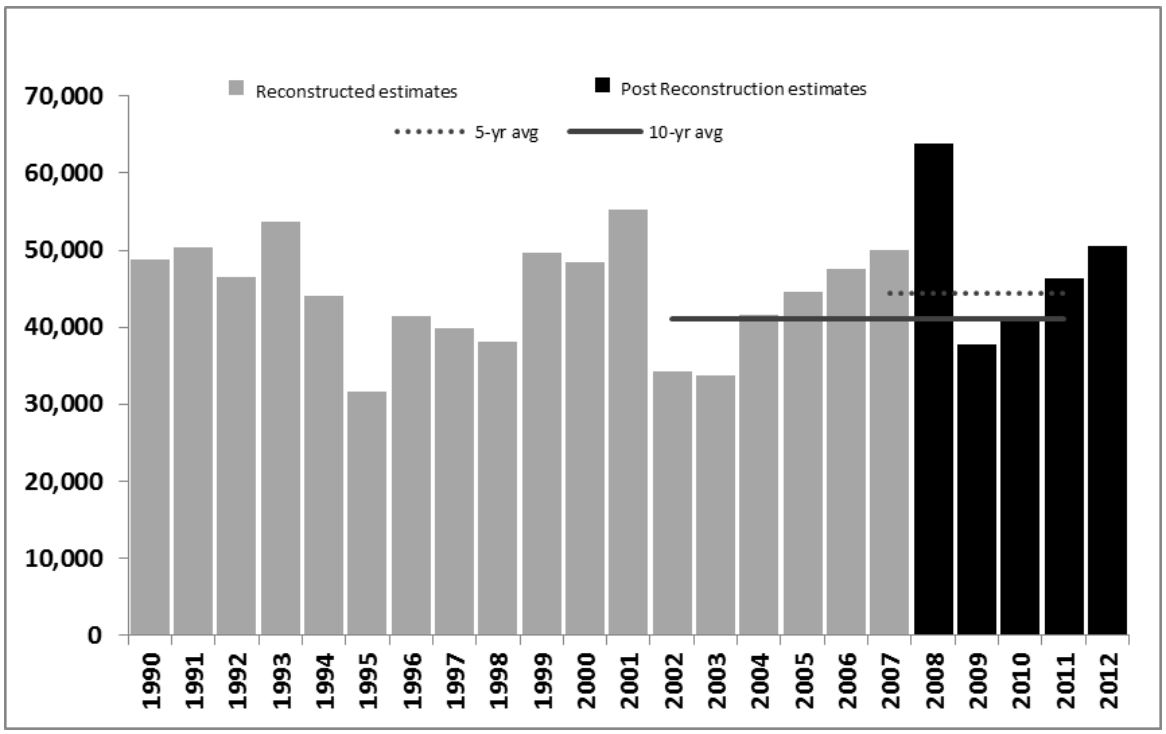



Figure 9.–Historical subsistence harvest estimates of sockeye salmon in the Kuskokwim Area.

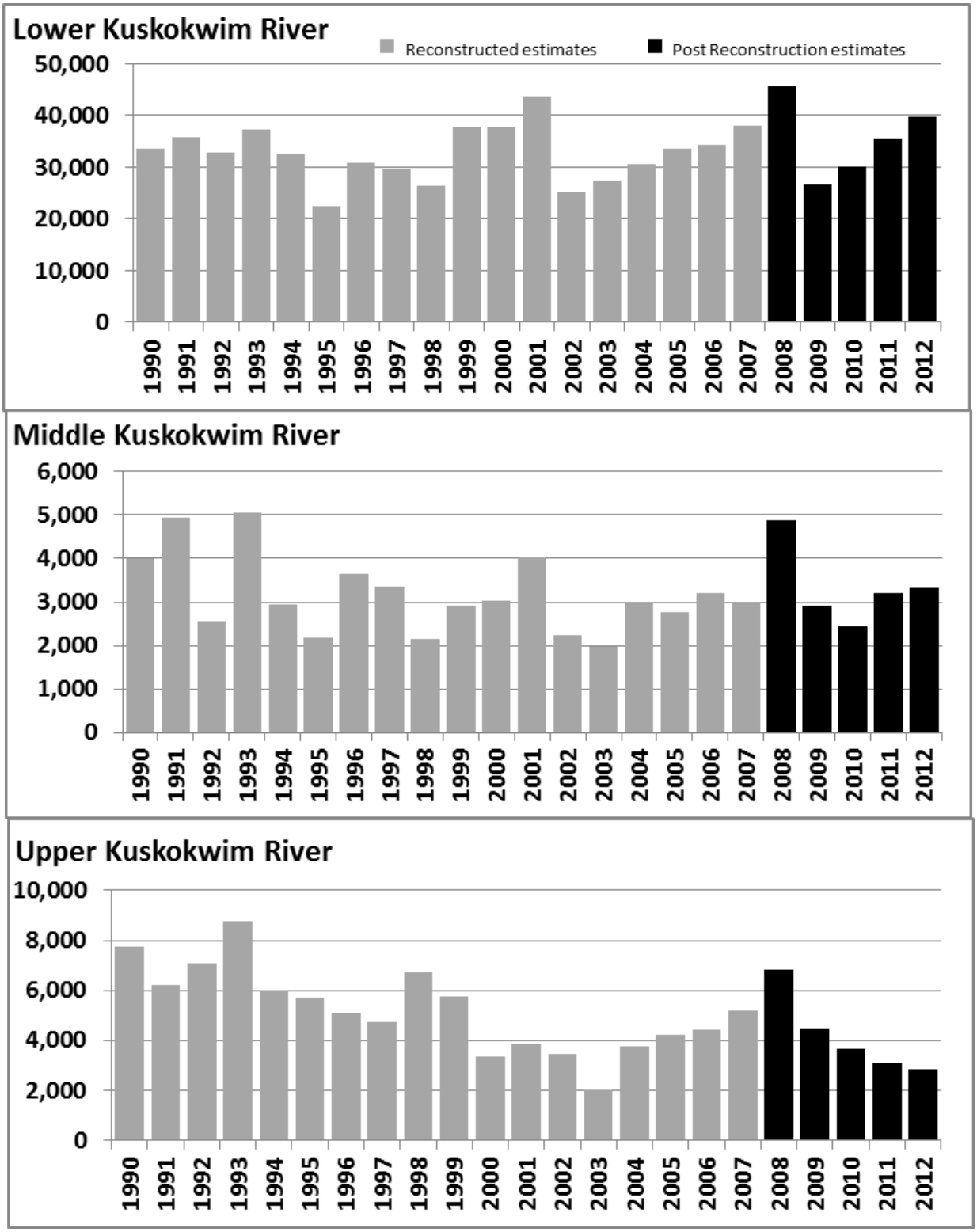



Figure 10.–Historical subsistence harvest estimates of sockeye salmon in the Kuskokwim River by subarea.

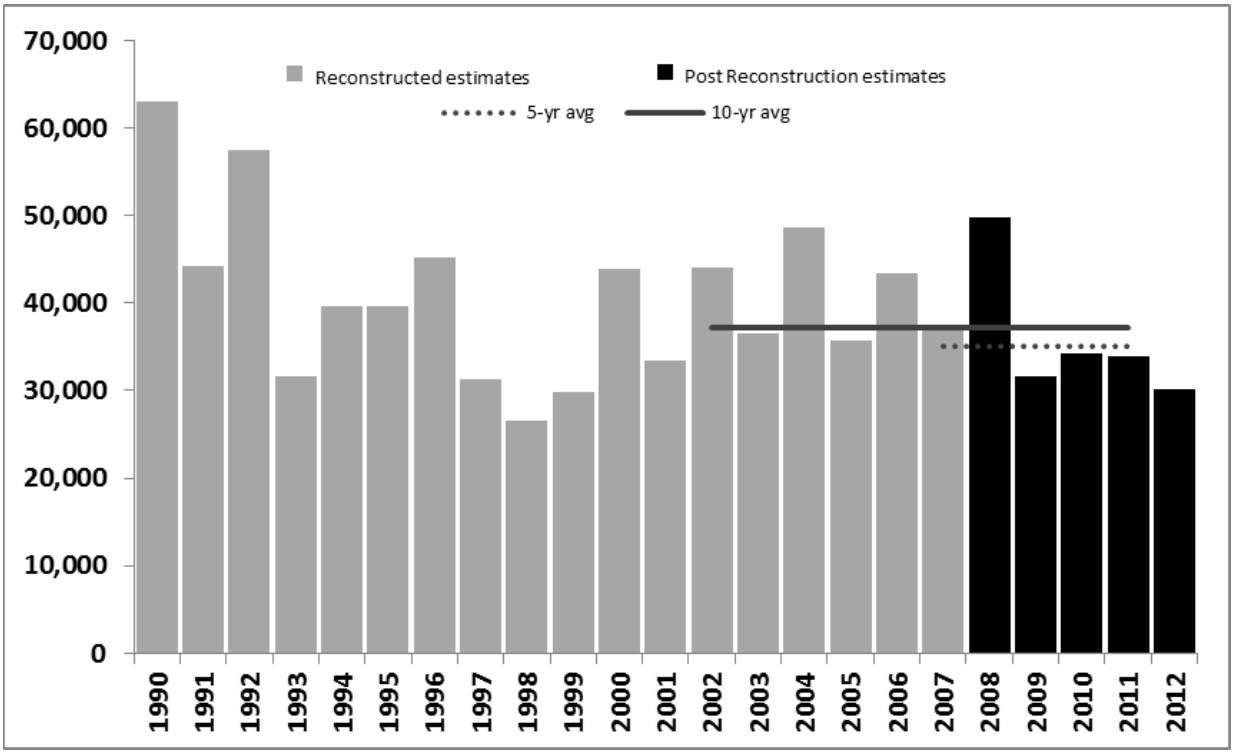



Figure 11.–Historical subsistence harvest estimates of coho salmon in the Kuskokwim Area.

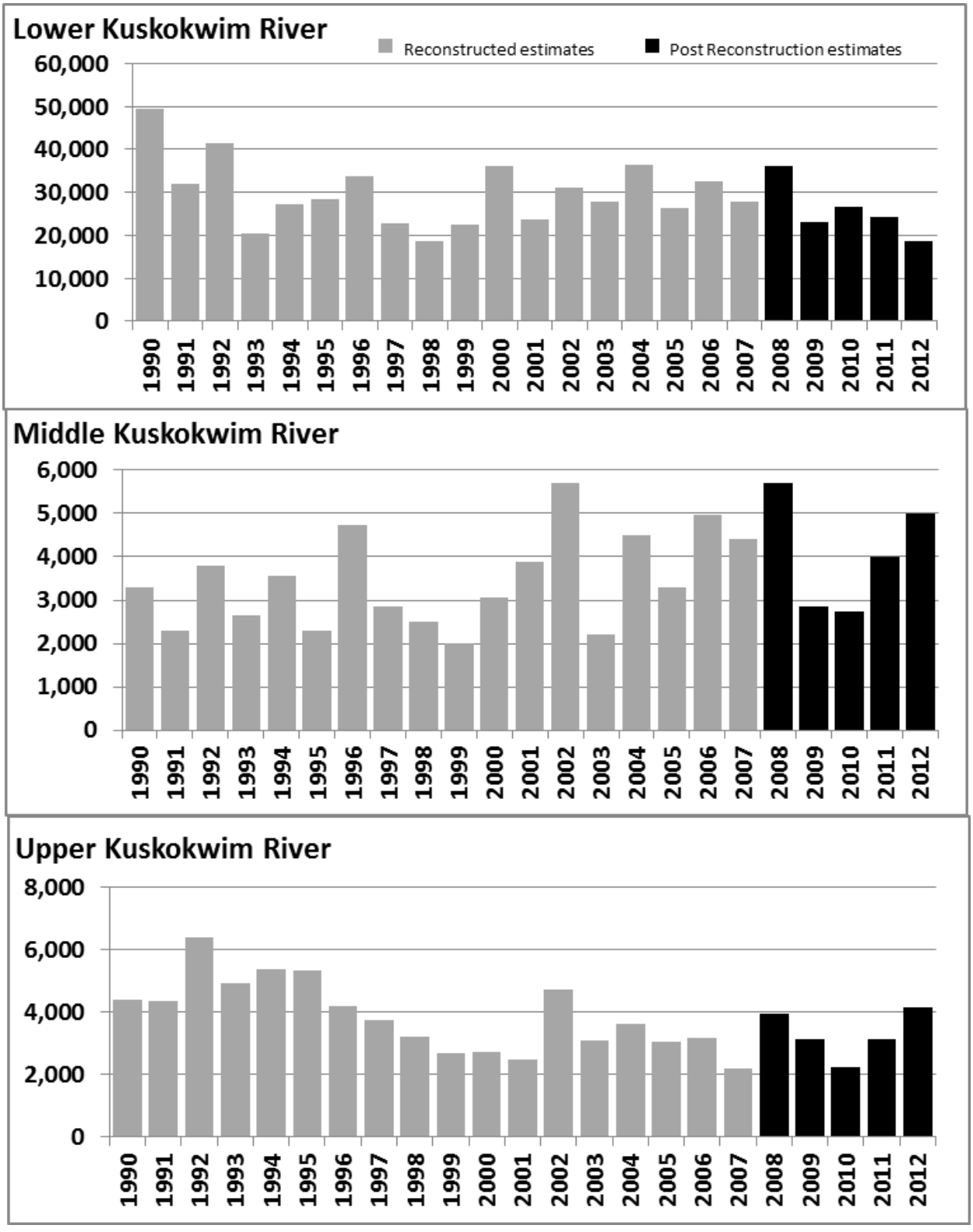
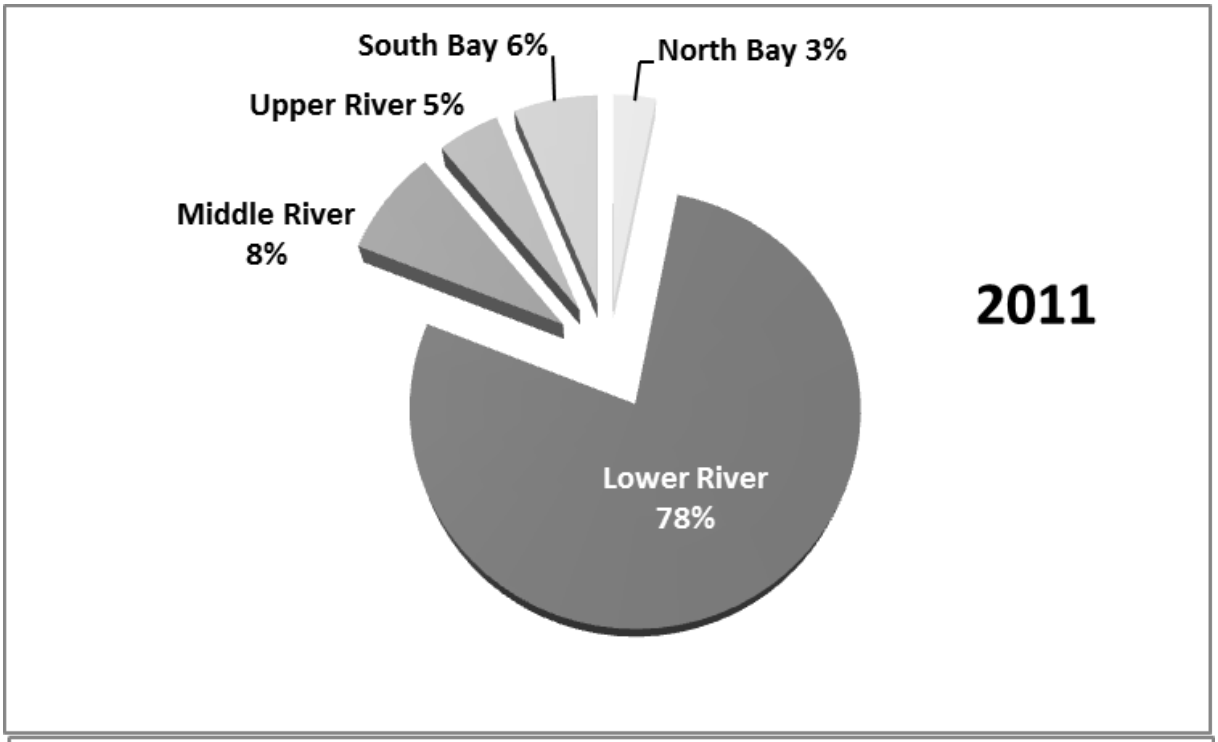



Figure 12.–Historical subsistence harvest estimates of coho salmon in the Kuskokwim River by subarea.



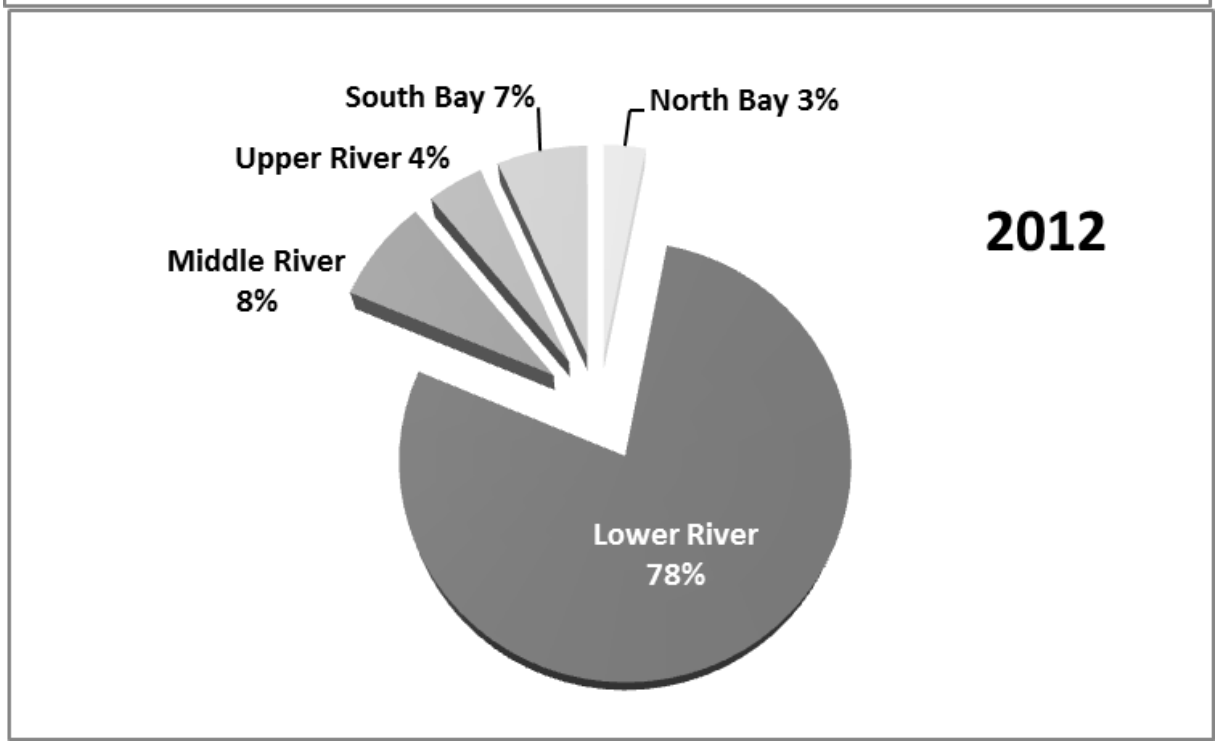




Figure 13.–Percentage of the surveyed portion of Kuskokwim Area population residing in each subarea.

# APPENDIX A: HISTORICAL SALMON HARVEST ESTIMATES 2002–2012

Appendix A1.–Estimated number of Chinook salmon harvested in the Kuskokwim area, 2002 to 2012.

| Community | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 5-yr avg[a] | 10-yr avg[a] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kongiganak | 1,349 | 2,003 | 2,663 | 1,536 | ***1,729*** | 1,984 | 2,086 | 1,148 | 1,470 | 1,208 | ***571*** | 1,579 | 1,718 |
| North Kuskokwim Bay | 1,349 | 2,003 | 2,663 | 1,536 | 1,729 | 1,984 | 2,086 | 1,148 | 1,470 | 1,208 | 571 | 1,579 | 1,718 |
| Tuntutuliak | 3,907 | 2,657 | 3,912 | 4,545 | 4,469 | ***4,614*** | 4,341 | 3,067 | 3,205 | 3,032 | 1,123 | 3,652 | 3,775 |
| Eek | 2,514 | 2,075 | 2,954 | ***3,133*** | ***2,700*** | ***2,635*** | 2,877 | 1,812 | 1,761 | 1,378 | 1,004 | 2,093 | 2,384 |
| Kasigluk | ***4,470*** | 4,212 | ***7,859*** | ***4,488*** | ***4,304*** | ***5,350*** | 2,928 | 2,341 | 3,020 | 2,823 | 552 | 3,292 | 4,180 |
| Nunapitchuk | 4,503 | 3,179 | 4,921 | 4,103 | 4,121 | ***4,661*** | 4,296 | 3,320 | 2,548 | 3,559 | 845 | 3,677 | 3,921 |
| Atmautluak | 1,479 | 547 | 2,153 | ***1,927*** | 1,422 | ***1,890*** | 1,737 | 1,581 | 1,091 | 1,236 | 234 | 1,507 | 1,506 |
| Napakiak | 2,702 | 2,438 | 2,839 | 3,060 | 5,125 | 3,245 | 2,165 | 2,335 | 1,640 | 1,963 | 457 | 2,270 | 2,751 |
| Napaskiak | 3,922 | 3,390 | 4,058 | 4,485 | 5,877 | 6,392 | 4,425 | 5,170 | 4,313 | 3,360 | 1,108 | 4,732 | 4,539 |
| Oscarville | 1,115 | 1,153 | 1,325 | 1,069 | 1,052 | 1,360 | 1,351 | 754 | 618 | 694 | 51 | 955 | 1,049 |
| Bethel | 22,892 | 24,584 | 29,443 | 28,293 | 27,805 | 30,422 | 35,205 | 26,302 | 24,973 | 25,093 | 7,321 | 28,399 | 27,501 |
| Kwethluk | 6,880 | 4,206 | 7,157 | 6,089 | 7,258 | 6,466 | 8,209 | 6,409 | 4,445 | 2,467 | 1,709 | 5,599 | 5,959 |
| Akiachak | 6,946 | 2,493 | 7,131 | 5,411 | 5,561 | 7,621 | 9,509 | 7,078 | 4,470 | 3,852 | 2,862 | 6,506 | 6,007 |
| Akiak | 3,390 | 3,905 | 3,775 | 3,860 | 4,423 | 4,297 | 3,784 | 3,247 | 3,625 | 2,455 | ***856*** | 3,482 | 3,676 |
| Tuluksak | 2,860 | 3,286 | 3,766 | 2,655 | ***2,372*** | 3,886 | 3,374 | 3,212 | 2,110 | 1,230 | 651 | 2,762 | 2,875 |
| Lower Kuskokwim | 67,580 | 58,125 | 81,293 | 73,118 | 76,488 | 82,839 | 84,201 | 66,628 | 57,819 | 53,142 | 18,773 | 68,926 | 70,123 |
| Lower Kalskag | 1,535 | 1,556 | 1,991 | 1,417 | 3,494 | 1,937 | 2,442 | 2,525 | 1,030 | 1,260 | 459 | 1,839 | 1,919 |
| Upper Kalskag | 1,545 | 1,328 | 2,498 | 2,533 | 1,569 | 1,383 | 2,368 | 1,696 | 1,500 | 1,772 | 562 | 1,744 | 1,819 |
| Aniak | 4,576 | 1,837 | 3,022 | 1,977 | 2,412 | 3,417 | 3,252 | 2,062 | 2,212 | 2,214 | 993 | 2,631 | 2,698 |
| Chuathbaluk | 505 | 405 | 1,460 | 913 | ***887*** | 1,007 | 772 | 877 | 551 | 409 | 103 | 723 | 779 |
| Middle Kuskokwim | 8,161 | 5,126 | 8,971 | 6,840 | 8,362 | 7,744 | 8,834 | 7,160 | 5,293 | 5,655 | 2,117 | 6,937 | 7,215 |
| Crooked Creek | 859 | 582 | 946 | 948 | ***736*** | 734 | 573 | 608 | 240 | 402 | 124 | 511 | 663 |
| Red Devil | 293 | 31 | 156 | 181 | 232 | 301 | 177 | 258 | 33 | 186 | 225 | 191 | 185 |
| Sleetmute | 604 | 600 | 906 | 522 | 750 | 861 | 668 | 723 | 272 | 242 | 132 | 553 | 615 |
| Stony River | 415 | 118 | ***688*** | ***325*** | ***278*** | 561 | 699 | 704 | 189 | 134 | ***212*** | 457 | 411 |
| Lime Village | 206 | 34 | ***69*** | ***176*** | ***125*** | ***120*** | ***57*** | ***100*** | ***81*** | ***120*** | 29 | 96 | 109 |
| McGrath | 970 | 395 | ***587*** | 882 | 689 | 495 | 619 | 593 | 257 | 829 | 68 | 559 | 632 |
| Takotna | ***10*** | 0 | ***16*** | 9 | ***0*** | ***12*** | ***4*** | ***11*** | 0 | 0 | ***0*** | 5 | 6 |
| Nikolai | 535 | 120 | 493 | 553 | 696 | 504 | 184 | 298 | 402 | 450 | 276 | 368 | 423 |
| Telida | – | – | – | – | – | – | – | – | – | – | – | | |
| Upper Kuskokwim | 3,892 | 1,880 | 3,861 | 3,596 | 3,506 | 3,588 | 2,982 | 3,295 | 1,474 | 2,363 | 1,066 | 2,740 | 3,044 |
| Kuskokwim River[b] | 80,982 | 67,134 | 96,788 | 85,090 | 90,085 | 96,155 | 98,103 | 78,231 | 66,056 | 62,368 | 22,527 | 80,183 | 82,099 |
| Quinhagak | 2,649 | 2,563 | 4,563 | 3,505 | 5,163 | 4,686 | 3,923 | 2,976 | 2,692 | 2,588 | 2,396 | 3,373 | 3,531 |
| Goodnews Bay | 723 | 807 | 863 | 869 | ***713*** | 647 | 1,012 | 585 | 480 | 834 | 389 | 712 | 753 |
| Platinum | 154 | 45 | 122 | 74 | ***45*** | 66 | 42 | 61 | 14 | 62 | 24 | 49 | 69 |
| South Kuskokwim Bay | 3,526 | 3,415 | 5,548 | 4,448 | 5,921 | 5,399 | 4,977 | 3,622 | 3,186 | 3,484 | 2,809 | 4,134 | 4,353 |
| Total Estimated Harvest | 84,508 | 70,549 | 102,336 | 89,538 | 96,006 | 101,554 | 103,080 | 81,853 | 69,242 | 65,852 | 25,336 | 84,316 | 86,452 |

*Note*: Dashes indicate harvest was not estimated, Bold indicates Bayesian estimates.

[a] Five and ten year averages do not include the current year.

[b] Kuskokwim River total includes the Lower, Middle and Upper Kuskokwim areas and North Kuskokwim Bay.

Appendix A2.–Estimated number of chum salmon harvested in the Kuskokwim area, 2002 to 2012

| Community | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 5–yr | 10–yr |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kongiganak | 3,247 | 897 | 2,958 | 1,960 | 2,420 | ***2,158*** | 1,592 | 1,307 | 2,513 | 2,809 | ***1,901*** | 2,076 | 2,186 |
| North Kuskokwim Bay | 3,247 | 897 | 2,958 | 1,960 | 2,420 | 2,158 | 1,592 | 1,307 | 2,513 | 2,809 | 1,901 | 2,076 | 2,186 |
| Tuntutuliak | 4,150 | 1,288 | 2,546 | 3,568 | 4,024 | 3,350 | ***4,416*** | 3,330 | 2,439 | 1,865 | 2,614 | 3,080 | 3,098 |
| Eek | 1,228 | 578 | 688 | **877** | ***1,256*** | ***803*** | ***761*** | 696 | 721 | 486 | 1,552 | 693 | 809 |
| Kasigluk | ***5,783*** | ***2,733*** | 5,064 | ***3,413*** | ***4,958*** | ***4,292*** | ***1,677*** | 1,648 | 2,403 | 2,029 | 3,261 | 2,410 | 3,400 |
| Nunapitchuk | 8,002 | 2,865 | 5,053 | 4,167 | 5,150 | **6,619** | ***4,726*** | 3,468 | 3,223 | 4,257 | 5,312 | 4,459 | 4,753 |
| Atmautluak | 2,514 | 849 | 2,271 | 1,940 | ***2,664*** | 2,193 | *2,207* | 1,673 | 1,406 | 1,864 | 2,701 | 1,869 | 1,958 |
| Napakiak | 3,421 | 1,560 | 2,328 | 3,238 | 8,143 | 3,628 | 1,811 | 1,679 | 1,766 | 1,546 | 1,711 | 2,086 | 2,912 |
| Napaskiak | 4,010 | 2,061 | 2,705 | 2,205 | 4,323 | 3,032 | 2,638 | 1,410 | 3,110 | 1,783 | 3,216 | 2,395 | 2,728 |
| Oscarville | 1,319 | 804 | 828 | 686 | 1,151 | 932 | 836 | 534 | 352 | 402 | 599 | 611 | 784 |
| Bethel | 17,731 | 11,452 | 13,448 | 14,273 | 20,953 | 16,540 | 18,660 | 10,480 | 10,986 | 15,324 | 26,872 | 14,398 | 14,985 |
| Kwethluk | 8,019 | 2,294 | 4,288 | 4,328 | 6,328 | 6,291 | 5,935 | 3,331 | 3,082 | 3,484 | 3,849 | 4,425 | 4,738 |
| Akiachak | 5,173 | 2,650 | 3,880 | 2,428 | 4,333 | 4,782 | 4,043 | 2,844 | 2,856 | 3,205 | 4,150 | 3,546 | 3,619 |
| Akiak | 2,571 | 2,928 | 3,499 | 3,528 | 3,095 | 4,141 | 3,184 | 1,350 | 1,163 | 2,421 | ***2,416*** | 2,452 | 2,788 |
| Tuluksak | 3,719 | 894 | 2,433 | 2,183 | 3,094 | ***3,204*** | 4,005 | 1,570 | 3,249 | 2,697 | 2,585 | 2,945 | 2,705 |
| Lower Kuskokwim | 67,640 | 32,956 | 49,031 | 46,834 | 69,472 | 59,807 | 54,899 | 34,013 | 36,756 | 41,363 | 60,838 | 45,368 | 49,277 |
| Lower Kalskag | 1,445 | 1,087 | 1,316 | 997 | 4,703 | 1,997 | 2,030 | 930 | 691 | 1,643 | 3,284 | 1,458 | 1,684 |
| Upper Kalskag | 2,460 | 516 | 1,656 | 1,201 | 2,469 | 294 | 1,829 | 329 | 393 | 1,599 | 1,930 | 889 | 1,275 |
| Aniak | 4,367 | 820 | 2,535 | 2,952 | 3,722 | 4,108 | 2,839 | 2,626 | 2,538 | 2,391 | 5,667 | 2,900 | 2,890 |
| Chuathbaluk | 1,458 | 2,502 | 2,352 | 530 | 1,451 | ***1,741*** | 593 | 937 | 535 | 686 | 796 | 898 | 1,278 |
| Middle Kuskokwim River | 9,730 | 4,925 | 7,859 | 5,680 | 12,345 | 8,140 | 7,291 | 4,822 | 4,157 | 6,319 | 11,677 | 6,146 | 7,127 |
| Crooked Creek | 1,417 | 750 | 1,583 | 1,064 | 1,513 | ***853*** | 930 | 519 | 539 | 862 | 610 | 741 | 1,003 |
| Red Devil | 384 | 63 | 135 | 214 | 41 | 186 | 188 | 244 | 122 | 434 | 516 | 235 | 201 |
| Sleetmute | 1,293 | 468 | 1,054 | 422 | 1,475 | 818 | 358 | 388 | 524 | 689 | 1,004 | 555 | 749 |
| Stony River | 696 | 361 | 754 | ***523*** | ***727*** | ***535*** | 1,470 | 771 | 338 | 516 | ***619*** | 726 | 669 |
| Lime Village | ***817*** | 110 | 199 | ***609*** | ***320*** | ***437*** | ***495*** | ***430*** | ***277*** | ***504*** | 419 | 429 | 420 |
| McGrath | 969 | 513 | 290 | ***525*** | 999 | 464 | 1,352 | 841 | 482 | 476 | 885 | 723 | 691 |
| Takotna | 1 | ***0*** | 0 | *5* | 0 | ***1*** | ***4*** | ***0*** | ***0*** | 0 | ***0*** | 1 | 1 |
| Nikolai | 187 | 124 | 277 | 178 | 308 | 204 | 54 | 300 | 440 | 349 | 1,044 | 269 | 242 |
| Telida | – | – | – | – | – | – | – | – | – | – | . | | |
| Upper Kuskokwim River | 5,764 | 2,389 | 4,292 | 3,540 | 5,384 | 3,498 | 4,851 | 3,493 | 2,722 | 3,830 | 5,097 | 3,679 | 3,976 |
| Kuskokwim River[b] | 86,381 | 41,167 | 64,140 | 58,013 | 89,620 | 73,603 | 68,633 | 43,635 | 46,148 | 54,321 | 79,513 | 57,268 | 62,566 |
| Quinhagak | 2,011 | 559 | 1,383 | 994 | 2,754 | 2,249 | 1,795 | 1,297 | 1,376 | 1,255 | 2,001 | 1,594 | 1,567 |
| Goodnews Bay | 349 | 200 | 240 | 192 | 555 | *307* | 643 | 141 | 324 | 349 | 322 | 353 | 330 |
| Platinum | 95 | 19 | 42 | 21 | 108 | *28* | 106 | 28 | 37 | 70 | 76 | 54 | 55 |
| South Kuskokwim Bay | 2,455 | 778 | 1,665 | 1,207 | 3,417 | 2,584 | 2,544 | 1,466 | 1,737 | 1,674 | 2,399 | 2,001 | 1,953 |
| Total Estimated Harvest | 88,836 | 41,945 | 65,805 | 59,220 | 93,037 | 76,187 | 71,177 | 45,101 | 47,885 | 55,995 | 81,912 | 59,269 | 64,519 |

*Note*: Dashes indicate harvest was not estimated, Bold indicates Bayesian estimates.

[a] Five and ten year averages do not include the current year.

[b] Kuskokwim River total includes the Lower, Middle and Upper Kuskokwim areas and North Kuskokwim Bay.

Appendix A3.–Estimated number of sockeye salmon harvested in the Kuskokwim area, 2002 to 2012.

| Community | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 5–yr avg[a] | 10–yr avg[a] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kongiganak | 1,347 | 929 | 1,809 | 1,103 | 1,464 | ***1,083*** | 1,347 | 830 | 1,842 | 1,266 | ***1,211*** | 1,274 | 1,302 |
| North Kuskokwim Bay | 1,347 | 929 | 1,809 | 1,103 | 1,464 | 1,083 | 1,347 | 830 | 1,842 | 1,266 | 1,211 | 1,274 | 1,302 |
| Tuntutuliak | 1,045 | 1,148 | 1,620 | 2,145 | 1,834 | 1,763 | ***2,418*** | 932 | 2,068 | 1,274 | 1,516 | 1,691 | 1,625 |
| Eek | 759 | 586 | 567 | 1,033 | ***673*** | ***663*** | ***739*** | 1,019 | 1,241 | 664 | 1,490 | 865 | 794 |
| Kasigluk | ***1,537*** | ***1,683*** | 1,668 | ***1,273*** | ***1,926*** | ***1,635*** | ***1,230*** | 945 | 1,448 | 1,269 | 1,451 | 1,305 | 1,461 |
| Nunapitchuk | 1,500 | 1,714 | 1,659 | 1,821 | 1,871 | 2,147 | ***2,331*** | 1,484 | 1,902 | 2,223 | 2,396 | 2,017 | 1,865 |
| Atmautluak | 1,150 | 679 | 1,103 | 1,444 | ***1,011*** | 1,041 | ***1,381*** | 628 | 735 | 827 | 1,623 | 922 | 1,000 |
| Napakiak | 1,688 | 1,453 | 1,351 | 2,122 | 1,845 | 1,962 | 1,625 | 917 | 1,187 | 1,351 | 1,141 | 1,408 | 1,550 |
| Napaskiak | 1,296 | 1,643 | 1,148 | 1,344 | 1,784 | 1,738 | 2,505 | 1,523 | 1,979 | 1,587 | 2,065 | 1,866 | 1,655 |
| Oscarville | 400 | 806 | 436 | 278 | 778 | 712 | 677 | 334 | 250 | 228 | 323 | 440 | 490 |
| Bethel | 8,850 | 12,198 | 11,679 | 14,297 | 12,816 | 13,902 | 18,016 | 11,329 | 10,662 | 16,946 | 18,282 | 14,171 | 13,070 |
| Kwethluk | 2,100 | 1,903 | 3,302 | 2,457 | 2,770 | 3,536 | 5,097 | 2,183 | 2,571 | 2,357 | 2,884 | 3,149 | 2,828 |
| Akiachak | 2,507 | 1,607 | 3,109 | 2,372 | 2,661 | 3,269 | 4,731 | 2,408 | 2,433 | 2,647 | 3,443 | 3,098 | 2,774 |
| Akiak | 1,214 | 995 | 1,258 | 1,920 | 2,000 | 3,695 | 2,644 | 1,290 | 1,161 | 2,576 | ***1,820*** | 2,273 | 1,875 |
| Tuluksak | 1,205 | 875 | 1,670 | 987 | 2,247 | ***2,021*** | 2,276 | 1,691 | 2,534 | 1,699 | 1,380 | 2,044 | 1,720 |
| Lower Kuskokwim | 25,251 | 27,290 | 30,570 | 33,493 | 34,215 | 38,084 | 45,670 | 26,683 | 30,171 | 35,648 | 39,814 | 35,251 | 32,708 |
| Lower Kalskag | 347 | 515 | 775 | 439 | 1,434 | 780 | 1,736 | 1,044 | 507 | 802 | 891 | 974 | 838 |
| Upper Kalskag | 508 | 431 | 686 | 945 | 563 | 417 | 996 | 369 | 465 | 938 | 770 | 637 | 632 |
| Aniak | 1,059 | 756 | 996 | 1,015 | 692 | 1,261 | 1,796 | 941 | 1,055 | 1,168 | 1,375 | 1,244 | 1,074 |
| Chuathbaluk | 313 | 274 | 526 | 369 | 508 | ***523*** | 363 | 564 | 403 | 300 | 297 | 431 | 414 |
| Middle Kuskokwim | 2,227 | 1,976 | 2,983 | 2,768 | 3,197 | 2,981 | 4,891 | 2,918 | 2,430 | 3,208 | 3,333 | 3,286 | 2,958 |
| Crooked Creek | 449 | 571 | 732 | 693 | 544 | ***604*** | 754 | 329 | 302 | 243 | 234 | 446 | 522 |
| Red Devil | 109 | 309 | 88 | 272 | 510 | 318 | 475 | 477 | 475 | 502 | 511 | 449 | 354 |
| Sleetmute | 706 | 504 | 980 | 673 | 1,181 | 1,303 | 1,111 | 707 | 1,024 | 693 | 715 | 968 | 888 |
| Stony River | 602 | 158 | 896 | ***709*** | ***853*** | ***1,085*** | 1,759 | 977 | 372 | 303 | ***398*** | 899 | 771 |
| Lime Village | ***1,176*** | 374 | 874 | ***1,377*** | ***1,182*** | ***1,495*** | ***1,315*** | ***967*** | ***796*** | ***745*** | 780 | 1,064 | 1,030 |
| McGrath | 407 | 112 | 194 | ***481*** | 149 | 375 | 1,392 | 984 | 622 | 630 | 233 | 801 | 535 |
| Takotna | 0 | ***2*** | 0 | ***1*** | 0 | ***1*** | ***2*** | ***3*** | ***4*** | 0 | ***2*** | 2 | 1 |
| Nikolai | 22 | 16 | 1 | 19 | 20 | 10 | 13 | 66 | 65 | 13 | 0 | 33 | 25 |
| Telida | – | – | – | – | – | – | – | – | – | – | – | | |
| Upper Kuskokwim | 3,471 | 2,046 | 3,765 | 4,225 | 4,439 | 5,192 | 6,821 | 4,510 | 3,660 | 3,129 | 2,873 | 4,662 | 4,126 |
| Kuskokwim River[b] | 32,296 | 32,241 | 39,127 | 41,589 | 43,315 | 47,339 | 58,729 | 34,941 | 38,103 | 43,251 | 47,231 | 44,472 | 41,093 |
| Quinhagak | 909 | 805 | 1,375 | 1,745 | 3,128 | 1,755 | 2,692 | 1,744 | 1,671 | 1,582 | 2,015 | 1,889 | 1,741 |
| Goodnews Bay | 855 | 705 | 873 | 1,213 | 995 | ***880*** | 2,225 | 908 | 1,093 | 1,328 | 1,197 | 1,287 | 1,107 |
| Platinum | 257 | 64 | 183 | 90 | 63 | ***118*** | 156 | 186 | 175 | 135 | 173 | 154 | 143 |
| South Kuskokwim Bay | 2,021 | 1,574 | 2,431 | 3,048 | 4,186 | 2,753 | 5,073 | 2,838 | 2,939 | 3,045 | 3,385 | 3,330 | 2,991 |
| Total Estimated Harvest | 34,317 | 33,815 | 41,558 | 44,637 | 47,501 | 50,092 | 63,802 | 37,779 | 41,042 | 46,296 | 50,616 | 47,802 | 44,084 |

*Note*: Dashes indicate harvest was not estimated, Bold indicates Bayesian estimates.

[a] Five and ten year averages do not include the current year.

[b] Kuskokwim River total includes the Lower, Middle and Upper Kuskokwim areas and North Kuskokwim Bay.

Appendix A4.–Estimated number of coho salmon harvested in the Kuskokwim area, 2002 to 2012

| Community | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 5-yr avg[a] | 10-yr avg[a] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kongiganak | 1,138 | 236 | 937 | 740 | 657 | 883 | ***551*** | 588 | 390 | 613 | ***458*** | 605 | 673 |
| North Kuskokwim Bay | 1,138 | 236 | 937 | 740 | 657 | 883 | 551 | 588 | 390 | 613 | 458 | 605 | 673 |
| Tuntutuliak | 1,239 | 2,092 | 1,189 | 1,074 | 948 | 703 | 1,495 | ***359*** | 698 | 250 | 565 | 701 | 1,005 |
| Eek | 821 | 747 | 1,018 | 378 | 652 | ***389*** | ***815*** | ***176*** | 315 | 280 | 612 | 395 | 559 |
| Kasigluk | 3,494 | ***1,505*** | ***5,034*** | 1,906 | ***3,008*** | ***2,826*** | ***917*** | ***628*** | 1,078 | 430 | 303 | 1,176 | 2,083 |
| Nunapitchuk | 821 | 627 | 555 | 807 | 692 | 1,752 | 483 | ***286*** | 195 | 407 | 319 | 625 | 662 |
| Atmautluak | 612 | 283 | 744 | 530 | 500 | ***424*** | 280 | ***68*** | 36 | 263 | 383 | 214 | 374 |
| Napakiak | 793 | 992 | 1,648 | 742 | 2,363 | 1,244 | 1,375 | 428 | 884 | 927 | 402 | 972 | 1,140 |
| Napaskiak | 717 | 983 | 655 | 602 | 1,640 | 639 | 816 | 755 | 1,015 | 471 | 269 | 739 | 829 |
| Oscarville | 161 | 19 | 304 | 60 | 175 | 180 | 62 | 67 | 12 | 43 | 38 | 73 | 108 |
| Bethel | 15,489 | 15,062 | 17,040 | 12,994 | 18,810 | 12,972 | 16,998 | 13,037 | 19,000 | 18,141 | 13,280 | 16,030 | 15,954 |
| Kwethluk | 2,706 | 1,787 | 3,430 | 3,048 | 1,245 | 1,624 | 6,867 | 4,044 | 1,527 | 1,097 | 1,013 | 3,032 | 2,738 |
| Akiachak | 1,690 | 1,627 | 2,397 | 1,817 | 1,714 | 2,355 | 4,132 | 1,593 | 1,181 | 1,440 | 714 | 2,140 | 1,995 |
| Akiak | 1,136 | 1,094 | 1,342 | 1,847 | 379 | 1,325 | 1,260 | 661 | 475 | 505 | ***433*** | 845 | 1,002 |
| Tuluksak | 1,349 | 921 | 1,007 | 484 | 498 | 1,401 | ***777*** | 857 | 337 | 163 | 341 | 707 | 779 |
| Lower Kuskokwim R | 31,028 | 27,739 | 36,363 | 26,289 | 32,624 | 27,835 | 36,277 | 22,959 | 26,753 | 24,417 | 18,672 | 27,648 | 29,228 |
| Lower Kalskag | 281 | 314 | 368 | 319 | 1,415 | 515 | 95 | 318 | 96 | 684 | 1,107 | 342 | 441 |
| Upper Kalskag | 1,069 | 462 | 1,500 | 594 | 1,799 | 381 | 2,063 | 181 | 93 | 998 | 360 | 743 | 914 |
| Aniak | 3,737 | 1,164 | 2,355 | 2,032 | 1,018 | 3,003 | 3,013 | 2,264 | 2,472 | 2,215 | 3,365 | 2,593 | 2,327 |
| Chuathbaluk | 610 | 259 | 284 | 346 | 727 | 498 | ***525*** | 96 | 76 | 109 | 179 | 261 | 353 |
| Middle Kuskokwim R | 5,697 | 2,199 | 4,507 | 3,291 | 4,959 | 4,397 | 5,696 | 2,859 | 2,737 | 4,006 | 5,011 | 3,939 | 4,035 |
| Crooked Creek | 440 | 375 | 713 | 312 | 401 | 392 | ***1,788*** | 283 | 87 | 297 | 149 | 569 | 509 |
| Red Devil | 499 | 351 | 65 | 331 | 171 | 193 | 452 | 126 | 88 | 130 | 238 | 198 | 241 |
| Sleetmute | 806 | 731 | 505 | 581 | 671 | 360 | 218 | 397 | 458 | 426 | 784 | 372 | 515 |
| Stony River | 662 | 214 | 679 | 534 | ***456*** | ***434*** | ***546*** | 634 | 201 | 333 | ***372*** | 430 | 469 |
| Lime Village | 706 | ***46*** | 231 | 383 | ***169*** | ***450*** | ***792*** | ***237*** | ***171*** | ***596*** | 117 | 449 | 378 |
| McGrath | 1,508 | 997 | 1,228 | 736 | ***894*** | 279 | 90 | 1,246 | 1,053 | 1,331 | 2,257 | 800 | 936 |
| Takotna | 25 | 10 | ***51*** | 10 | ***0*** | 9 | ***0*** | ***29*** | ***33*** | 3 | ***22*** | 15 | 17 |
| Nikolai | 93 | 361 | 171 | 171 | 407 | 102 | 53 | 203 | 135 | 20 | 214 | 103 | 172 |
| Telida | - | - | - | - | - | - | - | - | - | - | . | | |
| Upper Kuskokwim River | 4,739 | 3,085 | 3,643 | 3,058 | 3,169 | 2,217 | 3,939 | 3,155 | 2,226 | 3,136 | 4,153 | 2,935 | 3,237 |
| Kuskokwim River[b] | 42,602 | 33,259 | 45,450 | 33,378 | 41,408 | 35,332 | 46,463 | 29,561 | 32,106 | 32,172 | 28,294 | 35,127 | 37,173 |
| Quinhagak | 1,719 | 1,133 | 1,868 | 1,435 | 1,558 | 1,315 | 1,550 | 2,217 | 1,703 | 1,547 | 1,369 | 1,666 | 1,605 |
| Goodnews Bay | 548 | 198 | 1,228 | 1,542 | 634 | 605 | ***497*** | 961 | 268 | 319 | 259 | 530 | 680 |
| Platinum | 118 | 96 | 144 | 266 | 223 | 116 | ***102*** | 114 | 81 | 197 | 143 | 122 | 146 |
| South Kuskokwim Bay | 2,385 | 1,427 | 3,240 | 3,243 | 2,415 | 2,036 | 2,149 | 3,292 | 2,052 | 2,063 | 1,771 | 2318.3694 | 2430.1847 |
| Total Estimated Harvest | 44,987 | 34,686 | 48,690 | 36,621 | 43,823 | 37,368 | 48,612 | 32,853 | 34,158 | 34,235 | 30,065 | 37,445 | 39,603 |

*Note*: Dashes indicate harvest was not estimated, Bold indicates Bayesian estimates.

[a] Five and ten year averages do not include the current year.

[b] Kuskokwim River total includes the Lower, Middle and Upper Kuskokwim areas and North Kuskokwim Bay.

# APPENDIX B: SURVEY INSTRUMENT 2011 AND 2012

Appendix B1.–Kuskokwim Area postseason subsistence salmon harvest survey form, 2011.

Date of Survey _____
Person Interviewed _____
Relation to HH _____

HHID #

Community:

Interviewer

**2011 Kuskokwim Area Post-Season Subsistence Salmon Harvest Survey**

**CONFIDENTIAL INFORMATION**

1. **We would like to make sure we have the correct name and address for your household.**

Head of Household _____
Mailing Address _____ Telephone _____
Permanent Note _____
Significant Other _____

2. **How many people live in your household?** _____
3. **Did anyone in your household harvest salmon for subsistence use OR keep fish for subsistence use from commercial fishing?** Yes ____ No ____ ("Harvest" includes **catching or cutting** salmon)

IF YES, COMPLETE ALL OF PART I, otherwise go to PART II.

Adult household member declined to be interviewed. [ ] Reason given: _____

**PART I. HOUSEHOLDS THAT CAUGHT SALMON**

4. **May I have your salmon catch calendar?** Yes ____ No ____ Already sent in ____ (Are all fish harvested on calendar?)
5. **How many total salmon did you or your fishing group harvest this year?** (Group may include other households)

CHINOOK _____ SOCKEYE _____ CHUM _____ COHO _____ PINK _____

6. **How many households help catch these fish?** _____ (Names) _____

_____

7. **Where did you catch your salmon? How many salmon did YOUR HOUSEHOLD keep for subsistence purposes?**

(Include only fish caught by this household, not the group, includes fish kept from commercial periods.)

Kusko mouth up to include Bethel **( K1**) Above Bethel up to include Aniak ( **K2**) Above Jacksmith Bay up to mouth (**K4**)

Below Jacksmith Bay (**K 5**) Nelson Is. above Kolavinarak River **(N)** Nelson Is. below Kolav.River to Kusko mouth **(S)**

**Crooked Cr. ↓ Sleetmute ↓ Holitna** R. **Stony R. ↓ McGrath ↓ Above McGrath Other**_____

Area _____ CHINOOK _____ SOCKEYE _____ CHUM _____ COHO _____ PINK _____

Area _____ CHINOOK _____ SOCKEYE _____ CHUM _____ COHO _____ PINK _____

Total (two areas)CHINOOK _____ SOCKEYE _____ CHUM _____ COHO _____ PINK _____

**For fishers: You said you kept X number of salmon for you households (See #7). Is this how many you need, or would you usually like to catch more or less? If you did not meet your goals or needs, why do you think that is?**

CHINOOK_____ SOCKEYE_____ CHUM_____ COHO_____
WHY?_____ WHY?_____ WHY?_____ WHY?_____

8. **What is your household's primary type of salmon fishing gear?** (In order of importance: 1= primary, 2=secondary, etc)

SET NET _____ DRIFT NET _____ FISH WHEEL _____ HOOK & LINE _____ DIPNET_____ OTHER _____

9. **Did anyone in your household commercial fish this year? Yes_____ No _____**
**If yes,** how many salmon caught during commercial openings did your household keep for subsistence use?
CHINOOK _____ SOCKEYE _____ CHUM _____ COHO _____ PINK _____
10. **Did your household "lose" any salmon? (e.g. to bears, birds, flies, spoilage, diseased fish, etc.) Yes_____ No _____**

(If fish was not fit for humans but was fed to dogs, then it was not "lost.")

CHINOOK _____ SOCKEYE_____ CHUM _____ COHO _____ PINK _____

Reason(s) for loss:

-continued-

**11. Did your household give away any salmon to other households?** (names, species, and numbers) **Yes**_____ **No** _____

_____

**PART II. ALL HOUSEHOLDS**

**12. Did your household receive any salmon? Yes** ____ **No** ____ Code: S=Subsistence, C=Commercial, T=Test Fish

Code: _____ Fishermen/Project (Name) _____

CHINOOK _____ SOCKEYE _____ CHUM _____ COHO _____ PINK _____

Code: _____ Fishermen/Project (Name) _____

CHINOOK _____ SOCKEYE _____ CHUM _____ COHO _____ PINK _____

**13. HOUSEHOLDS THAT DID NOT FISH:**

How many salmon does your household usually like to receive? (Did you meet your needs?)

CHINOOK_____ If less, why? _____

SOCKEYE_____ If less, why? _____

CHUM _____ If less, why? _____

COHO_____ If less, why? _____

**14. Did your household catch any other fish besides salmon? Yes** _____ **No** _____

(Harvest numbers should include from September/October of last year to now.)

HUMPBACK WHITEFISH _____ BROAD WHITEFISH _____ CISCO_____SHEEFISH _____ LUSH _____

PIKE_____ BLACKFISH_____ GRAYLING _____ SMELT _____ CHAR _____ RAINBOW TROUT _____

HERRING _____

**15. How many dogs does your household have?** _____ (if zero go to question 18)

**16. Do you feed whole salmon to your dogs?** Yes _____ No _____ Only Feed Scraps ____ (if "No" go to question 18)

**17. How many whole salmon were put up for dogs this year by species** (numbers should represent whole fish, not scraps):

CHINOOK _____ SOCKEYE _____ CHUM _____ COHO _____ PINK _____

**18**. Additional Comments: _____

_____

_____

_____

THANK YOU! THIS INFORMATION IS USED TO DOCUMENT THE SUBSISTENCE SALMON HARVEST WITHIN THE KUSKOKWIM AREA AND TO TRY TO ENSURE THERE WILL BE ENOUGH SALMON FOR THE FUTURE.

**Surveyor Comments:**

**Official Use - This area is to be filled in by Surveyor.**

**HOUSEHOLD'S TOTAL SUBSISTENCE SALMON CATCH (Totals from question *7 or zeros if non-fisher)**

CHINOOK _____ SOCKEYE _____ CHUM _____ COHO _____ PINK _____

Complete Survey _____ Partial Survey _____ No Survey _____

Appendix B2.–Kuskokwim Area postseason subsistence salmon harvest form, 2012.

Date of Survey _____
Person Interviewed _____
Relation to HH _____
Interviewer _____

HHID #

Community:

**2012 Kuskokwim Area Post-Season Subsistence Salmon Harvest Survey**
**CONFIDENTIAL INFORMATION**

1. **We would like to make sure we have the correct name and address for your household.**

Head of Household _____ Significant Other _____
Mailing Address _____ Telephone _____
Permanent Note _____
_____

2. **How many people live in your household?** _____
3. **Did anyone in your household subsistence fish or commercial fish?** Yes ____ No ____

("Harvest" includes catching or cutting salmon) **IF YES**, COMPLETE ALL OF PART I. **IF NO**, go to PART II.

Adult household member declined to be interviewed. [ ] Reason given: _____

**PART I. HOUSEHOLDS THAT CAUGHT SALMON**

4. **Do you have a catch calendar to turn in?** Yes ____ No ____ Already sent in ____ (Are all fish harvested on calendar?)
5. **How many total salmon did you or your fishing group harvest this year?** (Group may include other households)

CHINOOK _____ SOCKEYE _____ CHUM _____ COHO _____ PINK _____

6. **How many households do you fish with?** _____ (Names) _____
_____
7. **Where did you go salmon fishing? How many (enter species) did YOUR HOUSEHOLD keep?**

(Only include fish caught by this household, **not the group**. Also include fish kept from commercial.)

Kusko mouth up to include Bethel (**K1**) Above Bethel up to include Aniak (**K2**) Above Jacksmith Bay up to mouth (**K4**)
Below Jacksmith Bay (**K 5**) Nelson Is. above Kolavinarak River (**N**) Nelson Is. below Kolav River to Kusko mouth (**S**)
**Crooked Cr. ↓ Sleetmute ↓ Holitna R. Stony R. ↓ McGrath ↓ Above McGrath Other**_____

Area _____ CHINOOK _____ SOCKEYE _____ CHUM _____ COHO _____ PINK _____
Area _____ CHINOOK _____ SOCKEYE _____ CHUM _____ COHO _____ PINK _____
Total (two areas)CHINOOK _____ SOCKEYE _____ CHUM _____ COHO _____ PINK _____

**You said you kept XXX number of (enter species) for you households (see above). Is this how many you needed, or would you usually like to catch more or less? If you did not meet your goals, why do you think that is?**

CHINOOK_____ SOCKEYE_____ CHUM_____ COHO_____
WHY?_____ WHY?_____ WHY?_____ WHY?_____

8. **What is your household's main type of salmon fishing gear?** (In order of importance: 1= primary, 2=secondary, etc)

SET NET _____ DRIFT NET _____ FISH WHEEL _____ HOOK & LINE _____ DIPNET_____ OTHER _____

9. **Did anyone in your household commercial fish this year? Yes_____ No _____**
**If yes,** did your household keep any (enter species) for subsistence use?
CHINOOK _____ SOCKEYE _____ CHUM _____ COHO _____ PINK _____
10. **Did your household "lose" any salmon? (example: bears, birds, weather, spoilage, diseased) Yes_____ No _____**

(If fish was not fit for humans but was fed to dogs, then it was not "lost." Report fish fed to dogs under question 17.)

CHINOOK _____ SOCKEYE_____ CHUM _____ COHO _____ PINK _____

Reason(s) for loss: _____
11. **Did your household give away any salmon?** (names, species, and numbers) **Yes_____ No _____**

_____

# APPENDIX C: FISH MEASURES

Appendix C1.–Approximate measurements used to convert reported amounts of fish harvest, Kuskokwim Area, 2008 to 2012.

| Amounts | Description |
|---|---|
| **Salmon** | |
| 1 king salmon = 5-8 lb. strips | dried and smoked king salmon |
| 1 **gal**. Ziploc = 5 lb. strips | dried and smoked king salmon |
| 1 **qt**. Ziploc = 2 lb. strips | dried and smoked king salmon |
| 6 gal. bucket = 4-5 kings | dried king salmon |
| 5 gal. "poke fish" = 25-30 chum | dried chum in seal oil |
| 30 gal. barrel = 150-180 chum | dried chum in seal oil |
| 1 gal. Ziploc = 2-3 chum | dried chum filets |
| 5 gal. bucket = 25 chum | chum filets, tightly packed |
| 1 dried chum = 2/3 lb. | summer chum salmon for dog food |
| 1 bundle = 50 dried chum | summer chum salmon for dog food |
| 300 dog salmon/dog/winter | feeding summer chum to a dog team |
| 1 dried chum = 1 1/4 to 1 1/3 lbs. | summer or fall chum |
| 1 pink salmon = 3 lb. | pink salmon |
| **Other fish** | |
| 1 small whitefish = 1 lb. | round whitefish, least, Bering, or arctic cisco, caught in whitefish net (4” or smaller mesh) or fish wheel |
| 1 large whitefish = 4 lb. | broad or humpback whitefish, caught in chum net (5” or larger mesh) or fish wheel |
| **125 smelt= 5 gal. bucket** | |
| 1 gunny sack = 50 to 100 lbs. (ask fisherman) | “tomcod”, whitefish, herring |
| 14 blackfish = 1 lb.<br>**350 blackfish = 5 gal. bucket** = 25 lb. | blackfish |
| 1 eel = 1/3 lb. | arctic lamprey |

# APPENDIX D: BETHEL SURVEY BIAS

Appendix D1.–Bethel survey bias 2011 and 2012.

In Bethel, the selection of survey households are based on random household selection, in which surveyors were intended to survey and collect data from selected households. Due to logistical difficulties in reaching all selected household, project leaders allowed for some opportunistic sampling as occurs in smaller Kuskokwim communities. Earlier subsistence investigations in Bethel suggested that there was no geographic bias associated with sampling (David Koster, Research Analyst, ADF&G, Anchorage; personal communication). In 2011 and 2012, the practice of taking opportunistic surveys in Bethel began to eclipse the adherence to sampling design, with opportunistic samples constituting 50% of total samples in each year.

The departure from the original sampling design prompted concern about sampling Bias. With similar numbers of selected and unselected households to draw on, it was possible to compare each group to determine whether a bias existed. To examine this potential biases, average catch per household was compared between selected and unselected households (Table D1). Unselected households appear to contain a higher proportion of light harvester or non-fishing households. A similar bias was identified through a similar sampling design flaw by ADF&G's subsistence division in Dillingham Alaska in 2010 (David Koster, Research Analyst, ADF&G, Anchorage; personal communication).

Except for chum salmon in 2009 and 2010 and pink salmon in 2009 and 2010, mean harvest of selected households were higher than that of unselected households. Consequently, data from the unselected households were not used for estimation of total Bethel harvest.

Consequence of not using all available data is reduction of sample size and increase of estimate CV. Consistently, except for Chinook salmon, CV estimates increased (Table D2). This increased CV, however, was considered acceptable.

Table D1.–Mean catch per household for unselected and selected households 2009–2011.

| | Selection | Chinook | Chum | Sockeye | Coho | Pink |
|---|---|---|---|---|---|---|
| 2009 | Unselected | 12.6 | 5.7 | 5.3 | 5.9 | 0.05 |
| | Selected | 13.7 | 4.8 | 6.0 | 7.1 | 0.02 |
| 2010 | Unselected | 11.9 | 6.1 | 5.1 | 8.9 | 0.03 |
| | Selected | 12.5 | 4.6 | 5.4 | 9.8 | 0.21 |
| 2011 | Unselected | 10.3 | 4.6 | 6.2 | 6.9 | 0.11 |
| | Selected | 12.0 | 7.3 | 8.1 | 8.7 | 0.09 |
| 2012 | Unselected | 3.0 | 8.5 | 7.4 | 4.5 | 0.05 |
| | Selected | 3.4 | 12.8 | 8.6 | 6.4 | 0.11 |

Table D2.–CV (%) of total harvest estimates between all data used and selected households 2009–2011.

| | Data | Chinook | Chum | Sockeye | Coho |
|---|---|---|---|---|---|
| 2009 | All | 6 | 9 | 7 | 9 |
| | Selected | 6 | 13 | 11 | 14 |
| 2010 | All | 3 | 8 | 7 | 6 |
| | Selected | 3 | 13 | 12 | 10 |
| 2011 | All | 6 | 7 | 5 | 7 |
| | Selected | 6 | 8 | 7 | 11 |
| 2012 | All | 23 | 4 | 5 | 10 |
| | Selected | 20 | 5 | 7 | 15 |