Fishery Data Series No. 17-39

Subsistence and Personal Use Salmon Harvests in the Alaska Portion of the Yukon River Drainage, 2015

by

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October 2017

Alaska Department of Fish and Game **Divisions of Sport Fish and Commercial Fisheries**

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, χ^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

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SUBSISTENCE AND PERSONAL USE SALMON HARVESTS IN THE ALASKA PORTION OF THE YUKON RIVER DRAINAGE, 2015

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ABSTRACT

This annual report contains estimates of subsistence and personal use salmon harvests within the Alaska portion of the Yukon River drainage. Most Yukon Area communities have no regulatory requirements to report their subsistence salmon harvest. For these remote communities, the Alaska Department of Fish and Game used a voluntary survey program. Harvest information was collected through postseason household interviews, follow-up telephone interviews, postal questionnaires, and harvest calendars. Stratified random sampling techniques were used to select households to be surveyed. In 2015, a total of 1,187 households were surveyed in 33 communities. Data from surveyed households were expanded to estimate the total harvest including that of unsurveyed households. In more accessible portions of the Yukon Area, fishermen are required to document their harvest on a subsistence or personal use permit. In 2015, 418 subsistence and personal use permits were issued, of which 99% were returned. Of these returned permits, 202 reported fishing. This report also documents subsistence salmon given to households from various test fishery projects. The total subsistence and personal use harvest throughout the Yukon Area was estimated to be 7,582 Chinook *Oncorhynchus tshawytscha*, 83,787 summer chum *O. keta*, 86,680 fall chum *O. keta*, and 18,252 coho *O. kisutch* salmon. The primary fishing gear types used were drift gillnets (41%), set gillnets (39%), dip nets and other gear types (15%), and fish wheels (5%). Approximately 1,795 households owned 5,175 dogs and 176 households fed an estimated 64,945 salmon to dogs.

Key words: Chinook *Oncorhynchus tshawytscha*, chum *O. keta*, and coho salmon *O. kisutch*, northern pike *Esox lucius*, inconnu *Stenodus leucichthys*, whitefish *Coregonus* spp., harvest, personal use, subsistence, Tanana River, Yukon River

INTRODUCTION

Since 1961, the Alaska Department of Fish and Game (ADF&G) has collected information on subsistence salmon harvests in the Alaska portion of the Yukon River drainage (Yukon Area). Annual subsistence harvest estimates provide a record of harvest over time that can be used to observe trends. Annual documentation of the subsistence salmon harvest is used in conjunction with commercial, sport and personal use harvests, and escapement estimates to calculate total run size. Harvest and escapement information, combined with age composition data, is used to construct brood tables, estimate the number of returning offspring per spawner for some stocks, and contribute to forecasts or preseason outlooks for fisheries management.

Yukon Area communities have long traditions of harvesting salmon for subsistence use and fishing activities are usually based from a fish camp or a home community within the drainage. Extended family groups, representing 2 or more households, often work together to harvest, cut, and preserve salmon for subsistence use. Some households from Yukon River tributary communities, such as Shageluk and Venetie, may operate or share in the operation of fish camps along the mainstem Yukon River (Figure 1). Subsistence salmon harvested for human consumption are commonly dried, smoked, canned, or frozen. Subsistence salmon fishing activities in the Yukon Area typically begin in late May and continue through early October. Salmon fishing in May and October is highly dependent upon river ice conditions.

The average rural population in the Yukon Area has remained stable and the number of people in 2015 was nearly equal to the most recent 5-year (2010–2014) average of approximately 22,300 people (Hunsinger 2016). Excluding the Fairbanks North Star Borough (FNSB; approximately 98,650 people), the most recent census indicates the population of rural Yukon Area residents within the Denali Borough, Southeast Fairbanks, Yukon-Koyukuk, and Kusilvak Census Areas was approximately 22,370 people in 2015 (Hunsinger 2016).

Subsistence and personal use fishermen in the Yukon Area primarily use drift gillnets, set gillnets, and fish wheels to harvest salmon. Set gillnets are used to harvest salmon throughout the Yukon Area, whereas drift gillnets are only allowed from the mouth of the Yukon River to

approximately 18 miles below the community of Galena (River Mile 530). State regulations (Alaska Administrative Code (AAC): 5 AAC 01.220 and 5 AAC 77.717 Lawful Gear) were based on traditional practices. Under federal regulation 100.27 (i) (3) (XV) (C) drift gillnets were allowed in federal waters of Subdistricts 4-B and 4-C (near the communities of Galena and Ruby) during weekly subsistence openings from June 10 to July 14 (Estensen et al. 2017). Although fish wheels are a legal gear type for subsistence fishing throughout the drainage, they are essentially used only in the Upper Yukon Area where river conditions and fishing locations are more suitable.

Subsistence fishermen are not required to have a fishing permit in most of the Yukon Area; however, permits are required for subsistence or personal use fishing in parts of the Koyukuk, Tanana and upper Yukon rivers that are accessible by road (Figure 1). Where permits are not required, voluntary household surveys are conducted in each community in order to estimate the subsistence harvest. In contrast, fishermen in areas where permits are required must submit their harvest records annually.

Personal use fishing permits and a resident sport fish license are required to fish within the Fairbanks nonsubsistence area established in 1992 (Figure 2). Nonsubsistence areas are defined as areas where subsistence is not a principal characteristic of the economy, culture, and way of life (Alaska Statute 16.05.258(c)). Since 1995, personal use fishing has been open in nonsubsistence areas to all Alaska residents regardless of where they reside. The Fairbanks nonsubsistence area personal use fishery has a limit of 750 Chinook and 5,000 chum salmon taken through August 15 and 5,200 chum and coho salmon combined when taken after August 16.

In some parts of the Yukon Area, commercial fishing occurs alongside subsistence fishing and local fishermen participate in both. Commercial fishermen are required to have a valid limited entry commercial fishing permit to participate in commercial fisheries, whereas any Alaska state resident may participate in subsistence salmon fisheries. Income from commercial fishing is often used by households to help buy items associated with subsistence harvesting activities, including fuel and fishing equipment. Salmon harvested during subsistence openings cannot be legally bought or sold, but commercially harvested salmon may be retained for subsistence use. Fisheries managers required harvesters to report Chinook salmon retained for subsistence use from commercial catches on their fish tickets. In some areas, subsistence fishing periods are separated from commercial fishing by closures before, during, and after commercial periods, whereas in other areas, subsistence and commercial fishing occur concurrently. Alaska state law dictates that subsistence is the highest priority use of salmon and a primary consideration in fishery management actions. As such, commercial, sport, and personal use harvests all have lower priority than subsistence fishing.

Subsistence-caught salmon are primarily used for human consumption; however, salmon fed to dogs make up a large proportion of the total number of salmon harvested for subsistence (Holder and Hamner 1991; Borba and Hamner 2001; Jallen et al. 2012). During the active fishing season, households throughout the Yukon Area feed scraps from salmon processing to dogs. Harvesting salmon for primary consumption by sled dogs is more common in the Upper Yukon Area (Districts 4–6; Figure 1), where larger numbers of sled dogs are used for recreation, transportation, and as haul animals. The practice of keeping sled dogs is less common in the Lower Yukon Area (Districts 1–3); therefore, relatively few whole salmon are fed to dogs in this area. Information collected about dogs throughout the history of the household survey project has

not been categorized by whether dogs were used for transportation or were kept as pets. Salmon utilized for dog food were found to account for 25% to 92% of all fish species fed to sled dogs among 6 Yukon River communities (Andersen and Scott 2010). However, because Chinook salmon are so prized for human use, the Alaska Board of Fish adopted a regulation in 2001 stating that only Chinook salmon under 16 inches in length or unfit for human consumption may be fed to dogs (5 AAC 01.240(d)). Most of the subsistence salmon used for dog food are summer chum salmon, which are dried, and fall chum and coho salmon, which are often "cribbed" (frozen in the open air). The average number of salmon fed to dogs has declined (Holder and Hamner 1991; Borba and Hamner 2001; Jallen et al. 2012). Reasons for this decline include poor chum salmon runs from 1998 to 2002, a reduction in carcasses left over from roe fisheries, the steep rise in cost of equipment (boat, motor, nets, fuel) needed to harvest fish for dog food, and less reliance on dogs as haul animals.

The 2015 subsistence salmon harvest survey and permit programs collected quantitative information on salmon harvest by species. The primary method of estimating Yukon Area subsistence harvest was the annual door to door postseason salmon harvest survey. Minor changes to the survey project have been made over time including the removal of questions about the number of salmon needed for subsistence. In addition to salmon harvests, other information collected included gear types used to harvest salmon, harvest distribution, nonsalmon species harvest, number of dogs, and number of salmon fed to dogs. Qualitative information was also collected from households about salmon health and quality, subsistence fishing success, and fishery concerns. This report documents the estimated subsistence and personal use salmon and nonsalmon fish harvests within the Alaska portion of the Yukon River drainage during the 2015 season.

STUDY AREA

The study area comprised the entire Yukon Area, which includes all waters of Alaska within the Yukon River drainage and all coastal waters of Alaska from Point Romanof southward to the Naskonat Peninsula (Figure 1). Postseason harvest interviews were conducted in 33 communities located off the road system. Harvests from the road accessible communities on the Yukon and Koyukuk rivers and all communities along the Tanana River were documented through permits and excluded from the household surveys. The Yukon Area includes all waters of Alaska within the Yukon River drainage and all coastal waters of Alaska from Point Romanof southward to the Naskonat Peninsula (Figure 1). The Lower Yukon Area consists of coastal waters and the Yukon River drainage from its mouth upstream to Old Paradise Village (river mile 301) comprising management Districts 1–3. The Upper Yukon Area consists of the Yukon River drainage upstream of Old Paradise Village to the Canada border (river mile 1,224) comprising management Districts 4–6. The Upper Yukon Area also includes 3 large tributaries where harvests occur: Koyukuk, Tanana, and Porcupine rivers. The Coastal District includes the remainder of coastal Yukon Area waters not included in District 1 and encompasses the communities of Scammon Bay and Hooper Bay (Figure 1). The harvest from Coastal District communities may contain fish not necessarily Yukon River bound (Kerkvliet 1986). Two communities within the Yukon Area, Chevak and Arctic Village, are not included in this harvest survey based on their distance from the Yukon River proper and their very low historic harvests of salmon. In this report, the difference between the designations "Yukon River" and "Yukon Area" is that the Yukon Area includes the Coastal District. Yukon River totals apply to data

considered for the U.S./Canada border passage objectives and do not include salmon harvested from the Coastal District.

The Yukon River drainage supports 5 species of Pacific salmon: Chinook (*Oncorhynchus tshawytscha*), chum (*O. keta*), coho (*O. kisutch*), pink (*O. gorbuscha*), and sockeye (*O. nerka*) salmon. The majority of subsistence and personal use harvests are made up of Chinook, chum, and coho salmon. The chum salmon return consists of 2 temporally and genetically distinct stocks: summer chum and fall chum salmon. Chinook and summer chum salmon enter the Yukon River first, and are later followed by fall chum and coho salmon. Pink salmon are much more abundant in even-numbered years and typically only present and available for harvest in the coastal, lower, and middle Yukon River up to the community of Anvik (river mile 315). Sockeye salmon are available in small numbers in the Yukon River with an average subsistence harvest of less than 400 fish per year (Jallen et al. 2017).

Many nonsalmon fish species are also present in the Yukon River. Some of those important for subsistence use include whitefish (*Coregonus* spp. and *Prosopium cylindraceum*), sheefish (*Stenodus leucichthys*), burbot (*Lota lota*), northern pike (*Esox lucius*), Alaska blackfish (*Dallia pectoralis*), Arctic grayling (*Thymallus arcticus*), Arctic lamprey (*Lethenteron camtschaticum*), saffron cod (tomcod, *Eleginus gracilis*), and Pacific herring (*Clupea pallasii*).

OBJECTIVES

The objectives of the study are as follows:

1. Update community household lists to provide the basis for stratified random sampling of fishing and nonfishing households sufficient to support community harvest estimates, and estimate the number of people in each surveyed community.
2. Estimate the number of salmon and nonsalmon fish species harvested for subsistence in the Yukon Area, by community, using household surveys, harvest documented on subsistence and personal use permits, commercial fisheries reports of salmon caught but not sold, and records of salmon given to communities from test fishery projects.
3. Estimate the number of salmon harvested from each fishing community, district, and subdistrict in the Yukon Area.
4. Document gear types used by subsistence and personal use fishermen and estimate the percentage of Chinook salmon harvested by gear types in surveyed communities.
5. Document the number of dogs and salmon fed to dogs within Yukon Area communities.
6. Document household comments and concerns conveyed by subsistence users during household surveys.

METHODS

The total number of salmon harvested in subsistence and personal use fisheries was estimated using information collected from household surveys, subsistence and personal use permits, test fishery data supplied by projects, harvest calendars, and postcards. Total subsistence and personal use harvest includes fish harvested for direct personal or family use, fish distributed to households from various test fishery projects, and fish caught in commercial fisheries and retained for household use. In surveyed communities, information was collected from selected households and expanded to estimate the harvest of the entire community. For communities in

permit areas, harvest totals reported on returned permits were summed but not expanded to account for any harvest associated with unreturned permits.

HOUSEHOLD SUBSISTENCE SURVEYS

Participation in the survey interviews was voluntary and household harvest information was kept confidential. Surveys interviews were conducted in the Coastal District and Lower Yukon Area through Anvik in September and in Kaltag and upriver communities in October (Figure 1). Communities were surveyed roughly in order, from downriver to upriver, after most households finished harvesting salmon for subsistence. To maintain consistency in administration of the survey, household survey interviews were primarily conducted by the same 2 ADF&G technicians throughout the season.

Survey Design

The household harvest survey methodology was based on a stratified random sample design (Cochran 1977). In this design, a household within the community was the primary sampling unit. A household generally consists of 1 or more people living together in a dwelling and sharing the same phone or mailing address. Multiple generations living in 1 dwelling were considered 1 household. Individuals living in detached but physically related structures were considered part of a household if they participated as a unit in harvesting, processing, and distributing resources and shared contact information.

The database of Yukon Area households was updated using information from the previous years' surveys. Community census lists, telephone directories, news items, and other sources of information were also used to maintain the database. Households that lived outside of the survey areas but traveled to the Yukon River to fish in or near a surveyed community were included on the household list in the community nearest their fishing location. For example, a household that lived in Anchorage most of the year, but traveled to Emmonak to fish in the summer would be included on the Emmonak household list and their information would also be used to produce harvest estimates for that community.

Households were stratified into 5 harvest groups based on the level of harvest, which was determined by the total number of salmon harvested annually by each household in the most recent 2 of the previous 5 years. Total salmon harvest included Chinook, summer chum, fall chum, and coho salmon, but did not include pink salmon. When 2 recent years of harvest data were unavailable, such as from new households or households that had not previously participated in the survey, the household's harvest group designation remained the same as the previous year or the household was classified as unknown. The harvest groups and survey coverages (i.e. percentages of households selected to be surveyed within the group) were as follows:

1. Unknown: Unknown harvest level; survey coverage 100%.
2. Do not fish: Households that do not harvest salmon; survey coverage 30%.
3. Light harvester: Harvest of 1–100 total salmon; survey coverage 30%.
4. Medium harvester: Harvest of 101–500 total salmon; survey coverage 100%.
5. Heavy harvester: Harvest of more than 500 total salmon; survey coverage 100%.

If subsistence restrictions were in place during the previous 5 years, a household may have been unable to harvest as many salmon as usual. Restrictions were in place during at least part of the 2012–2014 fishing seasons, and this was taken into account when assigning household to groups

for the 2015 survey. As a result, households may have been moved from the unknown group or a lower harvest group to a higher harvest group, but were not downgraded to a lower harvest group based on their 2012–2014 harvest data. The household database was updated in May with harvest group changes in order to generate the mailing list for subsistence calendars sent out prior to the fishing season.

To improve the precision of harvest estimates in the communities of Emmonak, Holy Cross, Pilot Station, and Tanana, sampling rates in the light harvester and do not fish groups were increased to 50% of households in those groups. When any harvest group contained 5 or fewer households, all households in that group were included in the survey (i.e., 100% coverage). In communities with less than 40 households, all households were included in the survey (100% coverage).

Fishing households included all households that participated in subsistence salmon fishing activities. Frequently, 2 or more households fished together at a fish camp or as a group where 1 household operated fishing gear, and the other household processed fish (cutting and drying). Each of these households was considered to be a "fishing" household. The number of fish harvested by each household was recorded as the number of fish that household took home from the group catch. In cases where fishing households distributed fish to nonfishing households that did not participate in the group, the receiving households were not considered fishing households.

Survey Questionnaire

To maintain comparability of data between years, the subsistence survey questions have generally remained consistent from year to year (Figure 3). The total number of salmon harvested was derived by asking households about group harvests, harvest area, and salmon that the household kept. Salmon retained from commercial fishing were included in subsistence harvest totals for each household. If a household harvested Chinook salmon, they were asked what gear types were used to harvest those fish. If a household lost part of its subsistence catch and could not use the fish for human consumption the surveyor verified these fish were included in the harvest total. If a household was able to feed the lost fish to dogs, these fish were also included in a household's total subsistence use amounts.

To determine the distribution of salmon within a community and to help cross reference responses from related households, the survey included questions to address group harvests and shared harvest. Households were asked about the number of salmon received from a test fishery project to help clarify that these fish were received but not harvested by subsistence fishermen themselves.

Households were also asked about dogs and the number of salmon harvested for dog food. They were asked about their harvest of pink salmon, and about their harvest of nonsalmon species throughout the previous 12 months. For example, Arctic lamprey harvested from October to December of 2014 were reported by households during the survey interviews in September 2015.

In 2015, minor changes were made to the survey forms. For example, households in the middle and upper Yukon Area were not asked about harvest of marine species such as tomcod or Pacific herring. Households in all the surveyed communities were asked for additional information about whitefish species. Large whitefish were broken out into broad and humpback whitefish (*Coregonus nasus* and *C. pidschian*). Small whitefish species including Bering cisco, least cisco

and round whitefish (*Coregonus laurettae*, *Coregonus sardinella*, and *Prosopium cylindraceum*) were still grouped together. Households in the Coastal District and District 1 were asked about their harvest of Pacific herring and their harvest of herring roe or roe on kelp. Fish that were reported as smelt in response to the herring question were entered as herring.

Survey Implementation

Household survey interviews were conducted in September and October when the majority of salmon fishing activities had ended but while fishermen could still easily recall their harvest numbers. Surveyors attempted to contact all selected households and noted households that were unavailable during the community visit for follow-up contacts later by phone or letter.

Before conducting the interviews, surveyors were trained in interviewing techniques, which included learning the local names of salmon species and various approaches to obtain the number of fish harvested. The surveyors were also briefed on current fishery issues and management actions related to the subsistence and commercial salmon fishing season. Surveyors were trained to ask questions consistently and foster a cooperative atmosphere so that interviewed household members were able to recall as accurately as possible their household harvest and use of salmon and share any fishery related knowledge and concerns pertinent to the survey outcome. After the interview was completed, survey participants were given a small token of appreciation (printed glass cleaning cloth) for participating in the survey.

After the household interviews were conducted, survey forms were edited for clarity and completion. When fishermen reported amounts in alternative terms, such as the number of 5-gallon buckets, quart sized bags, gunny sacks, or pounds, a conversion sheet based on local approximate measures was used to estimate number of fish harvested. Follow-up calls were occasionally made for further clarification or to reconcile information among households that harvested or shared salmon with each other.

Subsistence Assistants (residents with local knowledge) were employed by the Yukon River Drainage Fisheries Association (YRDFA) to assist with reviewing and updating the household list and community maps and to guide surveyors within the communities. In a few cases, Subsistence Assistants served as translators, but they did not conduct interviews or record data. When assistants were unavailable, surveyors worked with other sources of local information such as tribal administrators or school principals to aid in community navigation. In some communities, an additional assistant was hired to work with each surveyor and serve as an alternate if the first assistant was unavailable for the entire visit.

Joint Surveys

Staff from the postseason survey coordinated with a Division of Subsistence research team that conducted field research documenting patterns and trends in salmon fishing among the Yukon River communities of Alakanuk, Galena, Marshall, and Nulato. In these communities, surveyors from Division of Subsistence administered the Division of Commercial Fisheries' postseason survey as part of a larger survey questionnaire. In cases where households were unable to be contacted by the Division of Subsistence research team during initial survey visits, staff from Division of Commercial Fisheries contacted households by phone or letter to administer the post season survey.

DATA ANALYSIS AND ESTIMATION METHODS

Denote that:

i = individual household,

j = harvest group (j = 1 … 5)

k = community,

l = harvest location, and

m = harvest gear.

Survey responses are denoted by:

y_{ijkl} = the number of salmon (Chinook, chum, coho, and pink) harvested by a sampled household (i) in a harvest group (j) of a community (k), at a location (l);

y_{ijkm} = the number of Chinook salmon harvested by the sampled household (i) in the harvest group (j) of the community (k) with a fishing gear (m);

y_{ijk} = response of a sampled household (i) in the harvest group (j) of the community (k);

n_{jk} = the number of sampled households in the harvest group (j) of the community (k); and

N_{jk} = the total number of households in the harvest group (j) of the community (k).

Community population and total harvest estimates

Simple means and expansions were used to estimate human and dog populations in each community, including the number of people and number of dogs. Harvest totals for the community by species, in subsistence and commercial fisheries, and use of salmon harvested (kept for household use, given away, or fed to dogs), were also estimated with these methods. When the number of surveyed households in a harvest group was greater than or equal to 10 or the proportion of surveyed households was greater than 0.2, mean response of a harvest group of a community ($\bar{y}_{jk}$) was calculated as:

$$\bar{y}_{jk} = \frac{\sum_i y_{ijk}}{n_{jk}} \ . \tag{1}$$

Its standard error (SE_{jk}) was calculated as:

$$SE_{jk} = \sqrt{\frac{s_{jk}^2}{n_{jk}}\left(\frac{N_{jk} - n_{jk}}{N_{jk}}\right)} \text{ where } s_{jk}^2 = \hat{V}(y_{jk}) = \frac{\sum_j \left(y_{ijk} - \bar{y}_{jk}\right)^2}{n_{jk} - 1} \ . \tag{2}$$

Estimate of total response of the community ($\hat{Y}_k$) was calculated as:

$$\hat{Y}_k = \sum_{j=1}^{5} N_{jk}\bar{y}_{jk} \ ; \tag{3}$$

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

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

When the estimation criteria for the equation (1) was not met, response of a harvest group of a community ($\bar{y}_{jk}$) was treated as missing. In this case, harvest of the missing harvest group was assumed to be an average harvest of the rest of the harvest groups.

In this case, the total response of the community ($\hat{Y}_k$) was calculated as:

$$\hat{Y}_k = \frac{N_k}{\sum_{j=1} N_{jk}} \sum_{j=1} N_{jk} \bar{y}_{jk} \ ; \quad (5)$$

where N_k is the total number of households in a surveyed community.

Its 95% confidence interval (95%CI$_k$) was calculated as:

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

Because estimates of the responses in each community were independent and mutually exclusive, the estimate of survey wide total ($\hat{Y}$) was calculated as:

$$\hat{Y} = \sum_{k=1}^{5} \hat{Y}_k \ , \quad (7)$$

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

$$95\%\mathrm{CI} = t_{(0.025, df=n-1)} \cdot \sqrt{\hat{V}(Y)} \text{ where } \hat{V}(Y) = \sum_{k=1} \hat{V}(Y_k) \ . \quad (8)$$

Salmon harvest by location

Salmon harvests were also estimated by location (district, subdistrict, or tributary where the fish were caught). The proportion of salmon harvested at a fishing location (l) by harvest group (j) in community (k) was estimated as:

$$\hat{p}_{jkl} = \frac{\sum_i y_{ijkl}}{\sum_i \sum_l y_{ijkl}} . \quad (9)$$

The number of salmon harvested at a fishing location by all harvest groups in a community was calculated as:

$$\hat{Y}_{kl} = \sum_j N_{jk} \bar{y}_{jk} \hat{p}_{jkl} . \quad (10)$$

Finally, the total number of salmon harvested at the fishing location was estimated by summing harvests at that location across communities:

$$\hat{Y}_l = \sum_k \hat{Y}_{kl} \ . \tag{11}$$

Household characteristics: Subsistence fishing, dog ownership, and use of salmon to feed dogs

Within each community, the number of households who a) subsistence fished, b) owned dogs, or c) fed salmon to their dogs was estimated by expanding the proportion of households with those characteristics in each harvest group. Denoting that $n_{kj(s)}$ is the number of sampled households in harvest group (j) in the community (k) with characteristic (s) (i.e. subsistence fished, owned dogs or fed salmon to dogs), the proportion of households with each characteristic ($\hat{p}_{jk(s)}$) was calculated as:

$$\hat{p}_{jk(s)} = \frac{n_{jk(s)}}{n_{jk}} \ . \tag{12}$$

Estimated number of households with each characteristic in the community ($\hat{N}_{k(s)}$) was calculated as:

$$\hat{N}_{k(s)} = \sum_{j=1}^{5} N_{jk} \hat{p}_{jk(s)} \ . \tag{13}$$

Its 95% confidence interval (95%CI$_k$) was calculated as:

$$95\%\mathrm{CI}_k = t_{(0.025,df=n-1)} \cdot \sqrt{\hat{V}(\hat{N}_{k(s)})} \ \text{ where } \hat{V}(\hat{N}_{k(s)}) = \sum_{j=1}^{5} N_{jk}^2 \left(\frac{N_{jk} - n_{jk}}{N_{jk}} \right) \left(\frac{\hat{p}_{jk(s)}(1-\hat{p}_{jk(s)})}{n_{jk}-1} \right) \tag{14}$$

The estimated number of households in the survey wide total ($\hat{T}_{(s)}$) with each characteristic was calculated as:

$$\hat{N}_{(s)} = \sum_k \hat{N}_k \ , \tag{15}$$

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

$$95\%\mathrm{CI} = t_{(0.025,df=n-1)} \cdot \sqrt{\hat{V}(\hat{N}_{(s)})} \ \text{ where } \hat{V}(\hat{N}_{(s)}) = \sum_{k=1} \hat{V}(\hat{N}_{k(s)}) \ . \tag{16}$$

Primary gear type usage by community

Information about primary gear types used in subsistence fishing was used to estimate the proportion of households within each community using specific gear types. Denoting that $n_{jkm(s)}$ is the number of sampled households that used a primary fishing gear in a harvest group in a community, the proportion of subsistence fishing households in a harvest group in a community using a gear type (m) was calculated as:

$$\hat{q}_{jkm} = \frac{n_{jkm(s)}}{n_{jk(s)}} \ . \tag{17}$$

Applying primary gear type proportion $\hat{q}_{jkm}$ to the proportion of fishing households ($\hat{p}_{jk}$) multiplied by the total number of fishing households in the harvest group and community (N_{jk}) and summing across harvest groups, provides an estimated number of households using that gear type. The proportion of fishing households in the community using each primary gear type ($\hat{P}_{km}$) is then obtained by dividing by the sum of all households using all gear types:

$$\hat{P}_{km} = \frac{\sum_{j} N_{jk}\hat{p}_{jk}\hat{q}_{jkm}}{\sum_{m}\sum_{j} N_{jk}\hat{p}_{jk}\hat{q}_{jkm}} \ . \tag{18}$$

Chinook salmon harvest by gear type

The harvest of Chinook salmon, specifically, was estimated by gear type within each community. The proportion harvested with each gear type was estimated by dividing the sum of Chinook salmon harvest (y) by individuals (i) within a harvest group (j) and community (k) using gear type (m) by the total Chinook harvest within the harvest group and community:

$$\hat{p}_{jkm} = \frac{\sum_{i} y_{ijkm}}{\sum_{i}\sum_{m} y_{ijkm}} . \tag{19}$$

The variance of this proportion was calculated as:

$$V(\hat{p}_{jkm}) = \frac{\hat{p}_{jkm}\cdot(1-\hat{p}_{jkm})}{\sum_{i}\sum_{m} y_{ijkm} - 1} \ . \tag{20}$$

Denoting that $\bar{y}_{jk}$ is mean harvest within harvest group and community, the mean number of Chinook salmon harvested by fishing gear (m) in that group was calculated as:

$$\hat{\bar{y}}_{jkm} = \bar{y}_{jk}\hat{p}_{jkm} \ . \tag{21}$$

Its variance was calculated as:

$$V(\hat{\bar{y}}_{jkm}) = (\bar{y}_{jk})^2 V(\hat{p}_{jkm}) + (\hat{p}_{jkm})^2 V(y_{jk}) - V(\hat{p}_{jkm})V(y_{jk}) \ . \tag{22}$$

The total number Chinook salmon harvested by each gear type in the community ($\hat{Y}_{km}$) was estimated by multiplying average harvest by total households using that gear type in the harvest group, and summing across all harvest groups in the community:

$$\hat{Y}_{km} = \sum_{j=1}^{5} N_{jk}\hat{\bar{y}}_{jkm} \ . \tag{23}$$

A 95% confidence interval (95%CI$_k$) for the gear-specific Chinook salmon harvest was estimated as:

$$95\%\mathrm{CI}_k = t_{(0.025, df=n_k-1)}\cdot\sqrt{\hat{V}(Y_{km})} \ \text{ where } \ \hat{V}(Y_{km}) = \sum_{j=1}^{5} N_{jk}^2\left(\frac{N_{jk}-n_{jk}}{N_{jk}}\right)\left(\frac{V(\hat{\bar{y}}_{jkm})}{n_{jk}}\right) . \tag{24}$$

Unexpanded totals

Reported harvests of Alaska blackfish, Arctic char, Arctic grayling, Arctic lamprey, burbot, Pacific herring, and tomcod/saffron cod were not expanded because of limited harvest information. Harvest groups stratified for salmon were not adequate to estimate species captured with different harvest methods and at different times of year.

PERMIT PROGRAM

Households wanting to subsistence fish in the Tanana River drainage (District 6) or where the Yukon River is accessible by the Alaska Highway road system (portions of District 5 and upper Subdistrict 4-A in the Koyukuk River drainage), are required to obtain subsistence or personal use fishing permits. Permits were issued at the ADF&G offices in Fairbanks, Delta Junction, and Tok. For residents of communities outside the Fairbanks area, subsistence permit applications were mailed with a postage paid return envelope, and permits were mailed to all fishermen who returned their permits from the previous year. Department representatives also visited communities to issue permits, and permits were issued by ADF&G staff stationed at the sonar project near Eagle. In 2015, permit issuing trips were conducted in the communities of Central, Circle, Delta Junction, Dot Lake, Manley Hot Springs, Minto, Nenana, Northway, Tanacross, and Tok (Figure 1).

Permit holders were required to record their daily fish harvest on the permit and return it to ADF&G within 10 days of the expiration date (October 15 for salmon and December 31 for nonsalmon permits and Kantishna River salmon permits). Harvests on permits were summed but not expanded and attempts were made to get a return rate above 95%. Households that did not report their harvest by the expiration date were mailed up to 2 reminder letters. Official state news releases and newspaper advertisements were published as reminders of permit due dates. Further, households that did not respond to the reminder letters were contacted by telephone. Follow-up phone calls were made as needed to fishermen postseason to clarify harvest, gear types and locations of harvest by species. Households that were issued and fished permits in more than 1 permit area were only included once in overall fishing household totals. The number of fishing households did not include households issued permits for the harvest of northern pike in the Tolovana River. The community of Stevens Village was surveyed as part of the annual household harvest survey area (Figure 1) and its permit information was used to supplement data collected from that community in the household harvest survey.

Commercially harvested salmon reported as caught but not sold on fish tickets but not recorded on subsistence or personal use permits were added to permit harvest totals in the community where the harvest occurred. Information about dogs and salmon fed to dogs was collected from subsistence permits, but not from personal use permits.

Fishermen who obtained permits for the upper portion of Subdistrict 5-D were asked to note on their permits how many salmon were harvested above and below the sonar project operated near Eagle (Figure 1). This distinction is necessary because harvest above the sonar must be subtracted from the sonar estimate to determine U.S./Canada border passage of Chinook and fall chum salmon.

SUBSISTENCE HARVEST CALENDARS AND POSTCARDS

Prior to the salmon fishing season, subsistence harvest calendars were distributed to households in surveyed communities in the Yukon Area. Calendars were also sent to previously identified households that did not live in surveyed communities and fished outside of permit areas. Information printed in an accompanying letter and on each calendar encouraged fishermen to record their harvest daily to improve accuracy of harvest reports and provide information on harvest timing.

In May 2015, 1,768 calendars (1,135 to Lower Yukon Area and 633 to Upper Yukon Area) were mailed to all households except those in the do not fish harvest group. Calendars were also mailed to households with a history of subsistence fishing in the community of Rampart. Extra calendars were available upon request. Prior to surveyor visits to each community, fliers were sent to post offices, stores, schools, or city offices to remind fishermen to have their harvest calendars available during the household surveys. Each household that returned a properly completed 2015 harvest calendar before January 1, 2016, became eligible to win one of sixty $50 lottery prizes.

To collect additional information on the harvest of Arctic lamprey, 808 postcards were mailed to every household in the communities of Anvik, Grayling, Holy Cross, Marshall, Mountain Village, Pilot Station, Pitkas Point, Russian Mission, Shageluk, and St. Marys in November, 2014. Households were asked to record their subsistence and commercial Arctic lamprey harvests from October to December of 2014 (Figure 4), because the fishery usually occurs after salmon fishing has concluded. To avoid double counting Arctic lamprey harvest, postcards were compared to survey interview responses.

RESULTS

OVERALL ESTIMATION OF HARVEST

An estimated total of 7,582 Chinook, 83,787 summer chum, 86,680 fall chum, and 18,252 coho salmon were harvested for subsistence and personal use by 1,343 households in the Yukon Area (Table 1). These totals include salmon provided by test fishery projects to households for subsistence use, consisting of 1,046 Chinook, 3,819 summer chum, 2,477 fall chum, and 894 coho salmon (Appendix A5). Chinook salmon accounted for 4% of the total subsistence salmon harvest (excluding pink salmon). Summer chum accounted for 43% of the total, fall chum 44%, and coho salmon 9% (Table 1; Figure 5).

By far the largest share (99%) of the combined subsistence and personal use harvest was from subsistence harvests. The estimated number of salmon caught in subsistence fisheries only (i.e., excluding personal use harvest), was 195,851 fish consisting of 7,577 Chinook, 83,567 summer chum, 86,600 fall chum, and 18,107 coho salmon (Table 1; Figure 5; Appendices B1–B4). The number of salmon harvested in nonsubsistence personal use salmon fisheries was 5 Chinook, 220 summer chum, 80 fall chum, and 145 coho salmon (Table 1; Appendix B11).

A third of the salmon harvested for subsistence in the Yukon Area were fed to dogs (not including pink or sockeye salmon). An estimated total of 64,945 summer chum, fall chum, and coho salmon were utilized for dog food (Table 2; Appendix B12). Households in surveyed communities and households that obtained subsistence permits owned approximately 5,175 dogs and approximately 176 households reported feeding subsistence-caught salmon to their dogs (Table 2). The number of salmon fed to dogs from surveyed communities includes an estimated

total of 701 salmon that were retained from commercial fisheries, but does not include 337 pink salmon that were also fed to dogs (Table 2).

SUBSISTENCE SURVEYS

Prior to the survey season, a total of 1,616 households were selected from the 2,771 households identified within the 33 communities to be surveyed. Included were 31 households that traveled to the Yukon River to fish in or near surveyed communities but were not present in the communities during the fall visits, representing about 1% of the total number of households.

Division of Commercial Fisheries surveyors traveled to 27 of the 33 Yukon Area communities between September 3 and October 24. The communities of Alatna, Beaver, Bettles, Birch Creek, Chalkyitsik, and Stevens Village were surveyed by phone and letter to reduce travel costs, justified by their small size and low historic harvest. Surveyors worked with a local resident over the phone to update community information. During visits to the remaining communities, surveyors updated household lists to remove households whose members had moved, combined with another household or were deceased and to add new households. The updated database contained a total of 2,723 households (Table 3).

In the updated database, a total of 1,494 selected households remained (Table 3). Of these 1,156 households were interviewed in person, by phone or by mail, including 34 households that were interviewed by Subsistence Division staff in the communities of Alakanuk, Galena, Marshall and Nulato. An additional 31 unselected households from 15 communities were interviewed in person or by phone including new households, households requesting an interview, and households misidentified as selected. The number of additional interviews from unselected households was small and not statistically significant in regards to the stratified household selection; therefore, their responses were included in the analysis. In total, information was collected from 1,187 households (80% of total number selected and 43% of the total identified households in the survey area; Table 3). Within the stratified harvest groups designated for 100% survey coverage, 82% of medium and 72% of heavy harvest group households were interviewed. A total of 88% of selected households from the light harvest group were surveyed. Overall, 42% of the households that do not fish were selected to be surveyed and 78% of these selected households were contacted. The lowest success rate (66%) occurred in the unknown group; this was the second largest group designated for 100% survey coverage (Table 3).

Based on responses to the survey questions, an estimated 1,206 households participated in the subsistence fishery in 2015 (Table 4). An estimated 40% of unknown households and 10% of households in the does not harvest salmon group harvested salmon. Of the harvester groups, an estimated 60% of light harvester households and 80% of both medium and heavy harvester households subsistence fished for salmon (Table 4).

Households in the light harvest group harvested nearly half (45%) of the Chinook salmon harvest and medium harvesters took the largest percentage (39%) of summer chum salmon for subsistence (Appendices A1 and A2). Heavy harvesters represented a very small number of the households in the drainage (36 of 2,723 households; Table 3); however they took nearly half of fall chum (43%) and over a third of coho salmon (36%) for subsistence (Appendices A3 and A4).

Households did not always harvest fish in the district where their community is located. Therefore, estimated harvest totals from districts do not always equal totals from communities in

that district. Districts from which the greatest numbers of each salmon species were harvested were: District 1 with a harvest of 1,822 Chinook salmon and 26,615 summer chum salmon, and District 5 with 24,915 fall chum and 2,434 coho salmon (not including tributaries; Tables 5–8). Most communities harvested salmon from 1 or 2 districts, subdistricts or tributaries but households in Shageluk, Galena, and Fort Yukon harvested salmon from more than 2 districts to take advantage of harvest opportunities for different salmon stocks (Tables 6–8). Salmon harvested from tributary areas (not including the Tanana River) made up 5–10% of the total Yukon Area harvest of each salmon species. The largest tributary harvest was from the Koyukuk River with a total of 9,329 salmon. Harvests from the Tanana River confluence area (Subdistricts 4-C and 5-A) were estimated to be 283 Chinook, 1,041 summer chum, 1,773 fall chum, and 607 coho salmon (Tables 5–8).

In addition to subsistence fishing, some households were able to receive salmon or supplement their subsistence harvests through other means. At least 10 surveyed communities (Nunam Iqua, Alakanuk, Emmonak, Kotlik, Mountain Village, St. Mary's, Pilot Station, Anvik, Grayling, Galena, and Fort Yukon) received salmon from test fishery projects which were added to community harvest estimates (Appendix A5). Salmon caught in test fisheries made up over 19% of the total Chinook salmon subsistence harvest in surveyed communities. Summer chum, fall chum, and coho salmon from test fisheries made up from 5% to 10% of subsistence harvest of each species from surveyed communities (Table 1; Appendix A5). Households in some portions of the Yukon Area also had the opportunity to retain commercially harvested salmon for subsistence; these fish are included in subsistence estimates.

Primary gear types used to harvest salmon in surveyed communities consisted of drift gillnets (45%), set gillnets (35%), fish wheels (4%), and other gear (16%) including dip nets, beach seines, and hook and line (Table 1). In 2015, all 309 households that harvested Chinook salmon provided information about gear used; an estimated 43% of subsistence-caught Chinook salmon were harvested by set gillnets, 42% by drift gillnets, 8% by dip nets or other gear types, and 7% by fish wheels (Appendix B14). Most communities (19) used more than 1 gear type to harvest Chinook salmon; 9 communities used only 1 gear type, and 5 communities did not provide gear information or harvest Chinook salmon (Appendix B14).

The estimated subsistence harvest of other fish species in Yukon Area surveyed communities included 2,645 pink salmon, 40,643 large whitefish, 39,097 small whitefish, 20,109 northern pike, and 12,828 sheefish (Table 9). Of the large whitefish harvested, broad whitefish comprised 61% of the estimated number of large whitefish and humpback whitefish made up the remaining 39% (Table 9). Coastal District and District 1 accounted for 99% of the estimated pink salmon subsistence harvest. The majority of each species, except large whitefish, was harvested in the Lower Yukon (Coastal District through District 3).

Nonsalmon species with unexpanded totals included species only available in parts of the drainage such marine based species (Pacific herring, and tomcod). Totals for Pacific herring also included the number of 'smelt' reported by households. Although other species such as Alaska blackfish, burbot, and Arctic grayling are widely distributed they are not evenly harvested (Table 10). In the Coastal District and District 1, 44 interviewed households also reported the harvest of 456 gallons of herring roe.

Households also reported harvesting 42,237 Arctic lamprey primarily in Districts 2–4, between the communities of Marshall and Grayling (Figure 4; Table 10). This total includes lamprey

harvest reported during survey interviews (36,399 Arctic lamprey reported by 99 households) and on postcards (19,449 Arctic lamprey reported by 53 households). A total of 123 households returned postcards; however, some households did not fish for Arctic lamprey or had no harvest information. Arctic lamprey reported on both surveys and postcards were not double counted. Many fishermen provided comments that the Arctic lamprey harvested were large and of good quality, and that they got enough. Several households said the run timing was a month later than usual.

At the end of each household survey interview surveyors asked if the household had any comments about the fishing season or management actions. The most numerous comments were related to personal circumstances that affected an individual household's fishing effort such as health problems, work schedules, and time conflicts with other activities. The next largest group of comments addressed difficulties harvesting salmon due to management actions and poor run dynamics. Of the households that mentioned using dip nets, most were opposed to the gear type, due to difficulty of use, inefficiency, or lack of supply. Households in favor of dip nets mentioned they were fun to use, or they appreciated the fishing opportunity. Some households were concerned about conserving Chinook salmon and approved of the conservative management actions, or wanted more protections for Chinook salmon. Issues with equipment and expenses were mentioned by some households and a few households were in favor of management actions taken in 2015 such as openings for dip nets. River conditions and poor weather impacted a small number of households. The 2015 fire season was particularly active in portions of Districts 4 and 5, and some households were involved in firefighting activities during the summer instead of fishing.

SUBSISTENCE PERMITS

In areas that require subsistence fishing permits in upper Subdistrict 4-A (Koyukuk River drainage), District 5 (Yukon River) and District 6 (Tanana River), 352 (99%) of the total subsistence permits issued were returned and 175 households reported participating in salmon and nonsalmon subsistence fisheries (Tables 11 and 12). In 2015, the number of permits issued included 38 for the Tanana River upstream of Subdistrict 6-C and 120 for the pike fishery in the Tolovana River. The timing and distribution of fishing effort by district and by day based on harvest recorded on salmon permits (Figure 6, bottom panel) showed most of the fishing effort occurred late July through September. The majority of the fishing effort targeted fall chum and coho salmon in the Upper Yukon Area districts.

The 2015 subsistence permit harvest information was based on permits returned by March 7, 2016 (Tables 11 and 12). Total subsistence harvests of 1,148 Chinook, 817 summer chum, 30,979 fall chum, and 7,817 coho salmon were reported. The total harvest of other fish species included: 3,491 whitefish, 165 sheefish, 23 burbot, 890 northern pike, 35 longnose suckers, and 130 Arctic grayling (Tables 11 and 12; Appendices B6–B10).

Additionally, salmon were obtained and utilized from test fisheries and commercial harvests in subsistence permit areas; tickets from the commercial fishery in District 6 included 84 Chinook, 18 summer chum, 72 fall chum, and 185 coho salmon recorded as "Not sold/Personal use". These salmon were added to the community harvests from Fairbanks, Manley, and Nenana (Table 1). Nineteen Chinook salmon were distributed to the community of Eagle from the drift gillnet test fishery conducted as part of the sonar project. Forty Chinook salmon were distributed to the Tanana Chiefs Council in Fairbanks from the Lower Yukon test fishery project in

Emmonak. These fish were included in the harvest totals for the community they were donated to (Table 1; Appendix A5).

The total number of salmon fed to dogs represented 74% of total subsistence harvests of summer chum, fall chum, and coho salmon from permits. In permit areas where reporting information about dogs and salmon fed to dogs is required, 77 households indicated they fed 29,259 salmon to dogs (Tables 1 and 2). Dog-related information is not required on Tolovana River area pike permits.

The 109 households that reported gear types on their permits for subsistence salmon included 83 households (76%) using set gillnets, 25 (23%) households using fish wheels, and 1 (<1%) household using other gear types (dip net; Table 1). This does not include households that fished in the Tolovana River pike fishery and primarily used jigging gear, but does include 7 households that fished more than 1 permit.

PERSONAL USE

In 2015, all 64 of the personal use permits that were issued were returned (Table 11). Thirteen households were issued both subsistence and personal use permits, and 10 households were issued both types of personal use permits (salmon and nonsalmon). Harvest was reported on 28 personal use fishing permits, 15 of which were issued for salmon and 13 were issued for nonsalmon species. Personal use permit holders reported harvesting 5 Chinook, 220 summer chum, 80 fall chum, and 145 coho salmon; and 280 whitefish, 1 sheefish, 1 northern pike, 323 longnose suckers, and 1 Arctic grayling (Tables 11 and 12; Appendix B11). The majority (79%) of households with personal use permits used set gillnets as their primary gear. The remaining 6 households (21%) used fyke nets and dip nets (Table 1).

CALENDARS

In 2015, households returned 251 subsistence harvest calendars (approximately 14% of total issued). A total of 200 calendars (80% of those returned) documented salmon harvest information. The remaining households that returned harvest calendars in 2015 indicated they did not fish or returned a blank calendar (20%). The greatest number of households that reported fishing on a single day in a district was 16 households in District 2 (Figure 6 top panel). The number of days during the fishing season when more than 1 household reported harvest ranged from 86 days in District 4 to 26 days in the District 3. Fishing effort in the Lower Yukon Area occurred mainly in the summer season. Reported harvests in District 4 occurred mainly in August during the fall season and households in District 5 reported much lower but more consistent fishing effort throughout the summer and fall seasons.

DISCUSSION

The 2015 Chinook salmon harvest in the Yukon River was the second lowest recorded in the previous 25 years of the subsistence survey project. Although the passage of Chinook salmon across the U.S./Canada border exceeded the interim management escapement goal range (JTC 2016), this escapement was accomplished in part by eliminating commercial harvest and drastically reducing subsistence fishing opportunity for Chinook salmon. Closures on the first pulse of Chinook salmon remained in place until the majority of the run had passed (JTC 2016). Subsistence fishing closures occurred in several districts that are normally open 7 days a week; including the northern portion of the Coastal District, the Innoko River, Koyukuk River, and

Subdistrict 5-D (the upper most part of the Yukon River drainage in Alaska). The Koyukuk and Innoko rivers were closed or were restricted to 6 inch or smaller mesh during the Chinook salmon run. Long districts and subdistricts were subdivided to enable more precise management actions and reduce fishing pressure on Chinook salmon, specifically through management of the Coastal District as 2 sections (Southern and Northern), division of Subdistrict 4-A into lower and upper areas, and division of Subdistrict 5-D into 3 areas (lower, middle, and upper). Subdistricts 5-A, 5-B and 5-C are usually managed as a unit and have the same openings and closures; however an opening for fish wheels and 6-inch or smaller mesh occurred in Subdistrict 5-A only where primarily only Tanana River (non-Canadian) stocks were present.

To further protect Chinook salmon, additional live release gear restrictions were implemented and included limiting fishermen to dip nets, beach seines, or continuously manned fish wheels during the Chinook salmon run to target summer chum salmon and nonsalmon species for subsistence. Less than 1% of Chinook salmon were harvested by gear types other than gillnets or fish wheels from 2010 to 2012. By comparison, from 2013 to 2015, 8% to 14% of Chinook salmon respectively were harvested by other gear types (Appendix B14). Retention of Chinook salmon from selective gear types was not allowed in 2015 (Estensen et al. 2017) and it is unclear if these fish were unable to be released to the water alive, or were harvested illegally.

In 2015 the runs of summer chum, fall chum, and coho salmon were abundant enough to meet escapement goals and allow for subsistence and commercial fishing. However, to protect Chinook salmon, subsistence fishermen were restricted by fishing time and/or gear during the summer season. At the beginning of the fall season subsistence fishing restrictions were relaxed back to the regulatory schedule in each area (JTC 2016) or open 24 hours a day, 7 days a week. Commercial fishermen from the Coastal District and Districts 1–3 had the opportunity to retain salmon for subsistence use from commercial openings. The estimated number of salmon retained from commercial fisheries consisted of 753 Chinook, 2,798 summer chum, 824 fall chum and 278 coho salmon, which represented just over 2.5% of the total subsistence harvest (Table 1). Chinook salmon were only allowed to be retained from commercial periods late in the summer season when gillnet gear was used. Information about salmon retained from commercial harvests was sometimes difficult to obtain if the household member who processed but did not catch the fish was interviewed. The respondent may not have known whether fish were harvested from commercial or subsistence openings. The number of Chinook salmon estimated from survey responses as retained from commercial fisheries (753 fish) was less than the 3,471 Chinook salmon reported on fish tickets.[1] Other salmon species retained from commercial harvests were not recorded on fish tickets.

Overall, the 2015 Yukon Area subsistence salmon harvest (Chinook, chum, and coho salmon) was approximately 17% below the 2010–2014 average, and 21% under the 2005–2009 average (Figure 5). These harvest averages include years with fishing restrictions, such as the closures during the Chinook salmon run in 2008 and 2009 and 2011–2014 (Figures 5 and 7–10). Pink salmon are typically less abundant in the Yukon Area in odd numbered years; however the total harvest of 2,645 pink salmon in 2015 was above the odd years average and was the largest odd year harvest since 2005 (Figure 11; Appendix B5).

[1] OceanAK, integrated data system for the Alaska Department of Fish and Game, accessed 2/22/2016.

SALMON SURVEY AND AMOUNTS NECESSARY FOR SUBSISTENCE

In 2015, only the summer chum and pink salmon harvests were within their respective ANS ranges (Figures 8 and 11). The subsistence harvest of Chinook salmon was far below its ANS range and fall chum and coho salmon harvests fell just below their respective ranges (Figures 7, 9, and 10). The applicable Yukon Area ANS ranges are as follows: 45,500–66,704 Chinook, 83,500–142,192 summer chum, 89,500–167,900 fall chum, 20,500–51,980 coho salmon, and 2,100–9,700 pink salmon (Figures 7–11). The ANS ranges provide 1 index of the extent to which reasonable opportunity was provided in the subsistence fishery. Personal use harvests are not included.

Due to restrictions on Chinook salmon harvest in times of conservation, some households may have shifted to other subsistence foods such as other fish species or non-fish resources. In 2015 Chinook salmon represented nearly 4% of the total number of salmon harvested, which was double the percentage of salmon harvested in 2014, but still the second lowest percent of salmon harvest ever estimated by this project. From 2005 to 2014 harvests of summer chum and fall chum as a percentage of the overall harvest have increased, although the percentage of summer chum salmon in the total harvest in 2015, similar to previous years, remained at 43% (2005–2014; Figure 5). Coho salmon has remained at a steady and low percent of annual harvest between 5% and 10% from 2005 through 2015 (Figure 5).

A large component of the annual subsistence harvest has traditionally consisted of salmon (summer chum, fall chum, and coho salmon) fed to dogs. Failure to meet ANS levels may be in part due to shifts in the use of subsistence salmon harvests and an overall reduction in the number of salmon fed to dogs. The BOF derived ANS levels in 2001 at a time when many more salmon were harvested for dog food. Subsistence harvest information from the 10 years prior to the establishment of the ANS levels (1990–1999), included an average of 202,400 chum and coho salmon fed to dogs annually (Borba and Hamner 2001). A large number of the additional fish that used to be fed to dogs were probably carcasses generated from large commercial salmon roe fisheries that no longer occur (Estensen et al. 2012; Estensen et al. 2017). By comparison, in 2010–2014 an average of 82,046 chum and coho salmon were fed to dogs annually (Appendix B12).

NONSALMON SPECIES

Although harvest of nonsalmon fish species was probably underestimated by this project, there are few or no other annually available sources of information about these species in the Yukon Area. Information collected during the survey project on nonsalmon species helps document where harvests of nonsalmon species are occurring and which species are important to communities in the Yukon Area.

Information about Pacific herring has been collected in the past on the surveys as a comment or as a separately conducted mail-out survey (Estensen et al. 2012); beginning in 2012 households in the Coastal District and Districts 1–2 were asked about herring as part of the survey interviews. Reports from households in Districts 1 and 2 indicate that the harvest of Pacific herring is not limited to coastal residents. In 2015, households were also asked about the amount of herring roe they harvested and over 10% of contacted households in 6 communities reported harvesting roe (Hooper Bay, Scammon Bay, Alakanuk, Emmonak, Kotlik, and Mountain Village; Table 10).

PROJECT AND REPORT

The 2015 survey project progressed similarly to previous years. The household interviews were conducted by returning surveyors with solid experience in the Yukon Area and project methodology. As occurs each year, travel to communities was affected by weather, flight delays, and community events such as funerals. Although many of the interviewed households generally reacted positively to the surveyors and were willing to answer all questions, some households were antagonistic toward the surveyors and expressed their frustrations with fisheries management actions. Further public outreach efforts may be warranted to encourage participation in the survey interviews and convey the importance of collecting subsistence harvest information. The timeline of the report is affected by the 2 main sources of data collected (surveys and permits); surveys are collected and entered by January of the next year. The additional efforts to encourage permit returns were successfully implemented in 2015 and the data collection was completed by mid-February with 99% compliance. The non-responding permit holders were reported to the State Troopers.

Several communities were surveyed primarily by phone in 2015 to reduce surveyor travel and overtime costs; however, phone surveys were less successful due to reduced chances to contact households with changed or no phone numbers. If time and travel costs allow, 1 or more of the smaller communities that were not interviewed in person in 2015 should be visited in subsequent years to update household lists and contact information. Harvest information from calendars could replace or supplement in-person surveys; however, on average only 16% of subsistence calendars were returned per year. To encourage returns additional monetary incentives were offered in 2012–2015; however, no significant improvement in returns was gained and only 14% of calendars were returned in 2015. Further efforts such as education and outreach, and additional reminders or incentives may increase the return rate.

Surveyors occasionally interviewed households who traveled outside the Yukon Area to fish in other parts of the state such as Bristol Bay or the Copper River; these fish were not included in harvest estimates. In 2015, surveyors heard from several fishermen that had traveled to the Norton Sound Area during the summer season and harvested at least 64 Chinook and 335 summer chum salmon. These fish may be from Yukon Area stocks, and efforts should be made in future years to make note of this harvest and ensure these fish are being accounted for in either Yukon Area or Norton Sound Area subsistence estimates. Edits should be made to the Coastal District and District 1 survey form and additional maps supplied to help surveyors identify harvest from this area in 2016.

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REFERENCES CITED

Andersen, D. B., and C. L. Scott. 2010. An update on the use of subsistence-caught fish to feed sled dogs in the Yukon River drainage, Alaska. Final report to the U.S. Fish and Wildlife Service for Fisheries Resource Monitoring Project 08-250, Anchorage.

Borba, B. M., and H. H. Hamner. 2001. Subsistence and personal use salmon harvest estimates, Yukon Area, 2000. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Informational Report 3A01-27, Anchorage.

Busher, W. H., T. Hamazaki, and D. M. Jallen. 2009. Subsistence and personal use salmon harvests in the Alaska portion of the Yukon River, 2008. Alaska Department of Fish and Game, Fishery Data Series No. 09-73, Anchorage.

Cochran, W. G. 1977. Sampling techniques, third edition. John Wily and Sons, New York.

Estensen, J. L., S. Hayes, S. Buckelew, D. Green, and D. J. Bergstrom. 2012. Annual management report for the Yukon and Northern Areas, 2010. Alaska Department of Fish and Game, Fishery Management Report No. 12-23, Anchorage.

Estensen, J. L., S. N. Schmidt, S. Garcia, C. M. Gleason, B. M. Borba, D. M. Jallen, A. J. Padilla, and K. M. Hilton. 2017. Annual management report Yukon Area, 2015. Alaska Department of Fish and Game, Fishery Management Report No. 17-12, Anchorage.

Holder, R. R., and H. H. Hamner. 1991. Preliminary estimates of subsistence salmon harvest in the Yukon River Drainage, 1990. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3F91-20, Anchorage.

Hunsinger, E. 2016. Labor department releases State, Borough and Place 2015 population estimates. State of Alaska Department of Labor and Workforce Development, News Release No. 16-01. Available from: http://labor.alaska.gov/news/2016/news16-01.pdf (Accessed March 2016).

Jallen, D. M., S. D. Ayers, and T. Hamazaki. 2012. Subsistence and personal use salmon harvests in the Alaska portion of the Yukon River, 2010. Alaska Department of Fish and Game, Fishery Data Series No. 12-18, Anchorage.

Jallen, D. M., S. K. S. Decker, and T. Hamazaki. 2017. Subsistence and personal use salmon harvests in the Alaska portion of the Yukon River drainage, 2013. Alaska Department of Fish and Game, Fishery Data Series No. 17-08, Anchorage.

JTC (Joint Technical Committee of the Yukon River US/Canada Panel). 2016. Yukon River salmon 2015 season summary and 2016 season outlook. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A16-01, Anchorage.

Kerkvliet, C. M. 1986. 1986 Hooper Bay salmon tagging study. Bering Sea Fishermen's association, Anchorage, Alaska.

TABLES AND FIGURES

Table 1.–Subsistence and personal use salmon harvest estimates, including commercially related and test fishery harvests provided for subsistence use, Yukon Area, 2015.

Community	Number of fishing households [b]	Estimated salmon harvest				Primary gear used [a]			
		Chinook	Summer chum	Fall chum	Coho	Set gillnet	Drift gillnet	Fish wheels	Other
Hooper Bay	112	534	11,870	79	95	111	0	0	1
Scammon Bay	84	432	8,598	119	79	75	1	0	8
Coastal District total	196	966	20,468	198	174	186	1	0	9
Nunam Iqua [c]	25	210	2,239	210	229	12	2	0	11
Alakanuk [c]	83	436	4,469	1,067	581	23	37	0	23
Emmonak [c]	102	612	9,973	3,244	852	10	66	0	26
Kotlik [c]	97	661	4,960	1,356	438	21	74	0	2
District 1 subtotal	307	1,919	21,641	5,877	2,100	66	179	0	62
Mountain Village [c]	104	370	6,063	1,398	723	12	60	0	32
Pitkas Point	18	44	1,225	172	72	0	8	0	10
St. Marys [c]	87	261	8,216	1,611	391	4	57	0	26
Pilot Station [c]	60	382	4,702	1,346	305	2	47	0	11
Marshall	50	128	4,351	1,731	1,511	0	32	0	18
District 2 subtotal	319	1,185	24,557	6,258	3,002	18	204	0	97
Russian Mission	53	365	2,626	449	154	8	29	0	16
Holy Cross	22	68	421	763	246	5	16	0	1
Shageluk	8	14	80	176	28	7	1	0	0
District 3 subtotal	83	447	3,127	1,388	428	20	46	0	17
Lower Yukon River total	709	3,551	49,325	13,523	5,530	104	429	0	176
Anvik [c]	14	58	777	680	46	4	8	0	2
Grayling [c]	25	22	509	1,184	212	12	12	0	1
Kaltag	25	119	216	1,255	18	0	25	0	0
Nulato	32	33	6	2,248	48	0	29	0	3
Koyukuk	22	26	0	2,838	416	3	17	2	0
Galena [c]	41	372	1,059	2,542	654	10	26	5	0
Ruby	13	68	88	713	185	12	0	1	0
District 4 Yukon River subtotal	172	698	2,655	11,460	1,579	41	117	8	6
Huslia	20	34	3,110	736	294	17	0	0	3
Hughes	2	4	1,499	490	16	2	0	0	0
Allakaket	20	35	2,455	524	40	20	0	0	0
Alatna	2	0	58	64	12	2	0	0	0
Bettles	0	0	0	0	0	0	0	0	0
Koyukuk River subtotal	44	73	7,122	1,814	362	41	0	0	3
District 4 subtotal	216	771	9,777	13,274	1,941	82	117	8	9

-continued-

Table 1.–Page 2 of 3.

Community	Number of fishing households [b]	Estimated salmon harvest				Primary gear used [a]			
		Chinook	Summer chum	Fall chum	Coho	Set gillnet	Drift gillnet	Fish wheels	Other
Tanana	28	141	3,162	19,627	2,434	7	0	21	0
Rampart [d]	3	1	0	186	2	3	0	0	0
Fairbanks NSB [c, d]	18	263	575	2,454	0	17	0	1	0
Stevens Village	0	0	0	0	0	0	0	0	0
Birch Creek	0	0	0	0	0	0	0	0	0
Beaver	5	69	0	76	0	3	0	2	0
Fort Yukon [c]	38	480	0	6,257	2	25	0	13	0
Circle [d]	10	129	0	1,652	0	5	0	5	0
Central [d]	3	56	0	0	0	3	0	0	0
Eagle [c, d, e]	15	395	0	17,185	0	9	0	6	0
Other District 5 [d, f]	6	7	8	229	0	6	0	0	0
District 5 Yukon River subtotal	126	1,541	3,745	47,666	2,438	78	0	48	0
Venetie	12	308	0	2,423	24	12	0	0	0
Chalkyitsik	2	0	0	171	0	2	0	0	0
Chandalar and Black Rivers subtotal	14	308	0	2,594	24	14	0	0	0
District 5 subtotal	140	1,849	3,745	50,260	2,462	92	0	48	0
Manley [c, d]	8	121	9	1,697	1,263	7	0	1	0
Minto [d]	6	23	0	140	270	3	0	3	0
Nenana [d]	15	263	60	3,151	2,712	10	0	5	0
Healy [d]	1	0	0	830	647	1	0	0	0
Fairbanks North Star Borough (FNSB) [d]	32	38	392	3,576	3,253	27	0	4	1
Other District 6 [d, g]	20	0	11	31	0	14	0	0	6
District 6 Tanana River subtotal	82	445	472	9,425	8,145	62	0	13	7
Upper Yukon River total	438	3,065	13,994	72,959	12,548	236	117	69	16
Alaska, Yukon River total [h]	1,147	6,616	63,319	86,482	18,078	340	546	69	192
Alaska, Yukon Area total	1,343	7,582	83,787	86,680	18,252	526	547	69	201
AK, Yukon Area percentages of the total	-	4%	43%	44%	9%	39%	41%	5%	15%
Select subtotals included in the communities above:									
Survey community subtotal	1,206	5,299	78,913	53,072	9,211	421	547	44	194
Retained from commercial fisheries [i]	-	753	2,798	824	278	-	-	-	-
Subsistence permit subtotal	109	1,148	817	30,979	7,817	88	0	25	1
Test fishery subtotal	-	1,046	3,819	2,477	894	-	-	-	-
District 6 commercial retained [j]	-	84	18	72	185	-	-	-	-
Subsistence harvests subtotal	1,315	7,577	83,567	86,600	18,107	504	547	69	195
Personal Use permit subtotals	28	5	220	80	145	22	0	0	6

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[a] Other gear types included dip nets and beach seines. An estimated total of 186 surveyed and subsistence permit households used dip nets and 9 households used beach seines as their primary gear.

[b] Includes 7 households that fished more than 1 permit in District 5 or District 6 permit areas. Does not include households that fished with a Tolovana River pike permit.

[c] Includes salmon distributed from test fishery projects.

[d] Permit data from permits returned by March 7, 2016. Includes additional late permits entered January 13, 2017.

[e] Permit holders harvested 341 Chinook and 12,540 fall chum salmon above the mainstem Yukon River sonar project located near the community of Eagle.

[f] "Other District 5" includes residents of Anchorage, Manley, Nenana, Tok, and Wasilla who fished in a Yukon River permit required area.

[g] "Other District 6" includes residents of Anchorage, Delta Junction, Dot Lake, Eagle River, Northway, Tanacross, and Tok who fished in the Tanana River.

[h] Total excluding Coastal District is used to assess objectives under the Yukon River Salmon Agreement.

[i] Estimated number of salmon retained from commercial fisheries and used for subsistence in surveyed communities. These salmon are included in subsistence harvest estimates.

[i] Number of salmon retained from commercial fisheries and used for subsistence in District 6. These salmon were added to permit harvest totals from District 6 communities.

Table 2.–Household and dog information from surveys and permit information by community of residence, Yukon Area, 2015.

	Households		Households with dogs		Number of dogs		Households feeding fish		Summer chum salmon		Fall chum salmon		Coho salmon		Total salmon [a]
Community	Total	*n*	Est total	CI 95%	Est total	CI 95%	Est total	CI 95%	Est total	CI 95%	Est total	CI 95%	Est total	CI 95%	Est total
Hooper Bay	222	90	144	70	291	56	1	8	0	0	0	0	0	0	0
Scammon Bay	119	49	73	42	120	33	0	0	0	0	0	0	0	0	0
Coastal District	341	139	217	81	411	65	1	8	0	0	0	0	0	0	0
Nunam Iqua	42	22	35	11	116	35	2	5	14	15 [a]	0	0	0	0	14
Alakanuk	142	56	99	42	181	48	0	0	0	0	0	0	0	0	0
Emmonak	189	94	116	46	236	61	0	0	0	0	0	0	0	0	0
Kotlik	124	54	84	37	123	22	5	24	33	23 [a]	0	0	0	0	33
District 1	497	226	334	73	656	86	7	24	47	22	0	0	0	0	47
Mountain Village	170	60	107	53	249	90	7	30	12	14	15	17	0	0	27
Pitkas Point	33	22	18	7	54	22	1	3	0	0	0	0	28	28	28
St. Marys	135	54	59	43	100	36	0	0	0	0	0	0	0	0	0
Pilot Station	121	56	55	36	86	31	4	18	4	3	0	0	0	0	4
Marshall	105	36	79	35	263	92	4	10	482	539 [a]	229	274 [a]	622	726 [a]	1,333
District 2	564	228	318	83	752	136	16	36	498	117	244	37	650	697	1,392
Russian Mission	76	31	56	30	177	59	1	0	8	0	0	0	0	0	8
Holy Cross	64	33	29	21	52	24	0	0	0	0	0	0	0	0	0
Shageluk	25	17	18	7	40	9	1	3	27	24	0	0	0	0	27
District 3	165	81	103	36	269	63	2	2	35	22	0	0	0	0	35
Anvik	32	23	22	7	50	8	3	4	307	210	0	0	0	0	307
Grayling	54	23	34	23	91	28	2	3	61	40	11	7	0	0	72
Kaltag	54	19	30	24	47	27	0	0	0	0	0	0	0	0	0
Nulato	80	37	41	28	101	35	1	4	0	0	11	12	0	0	11
Koyukuk	45	11	24	31	42	34	0	0	0	0	0	0	0	0	0
Galena	146	49	77	55	159	53	5	25	49	82	50	33	0	0	99
Ruby	64	22	46	32	96	17	3	3	47	37	667	46	150	0	864
Huslia	87	33	65	34	203	46	9	25	2,065	1,118	544	179	271	109	2,880
Hughes	33	29	20	6	70	4	2	0	725	0	440	0	16	0	1,181
Allakaket	54	16	41	25	189	79	10	0	1,715	567	315	567	0	0	2,030
Alatna	7	4	7	0	21	35	4	0	0	0	29	0	0	0	29
Bettles	28	10	20	12	26	10	0	0	0	0	0	0	0	0	0
District 4	684	276	427	90	1,095	119	39	35	4,969	1,222	2,067	555	437	105	7,473

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Table 2.–Page 2 of 2.

Community	Households		Households with dogs		Number of dogs		Households feeding fish		Summer chum salmon		Fall chum salmon		Coho salmon		Total salmon [a]
	Total	*n*	Est total	CI 95%	Est total	CI 95%	Est total	CI 95%	Est total	CI 95%	Est total	CI 95%	Est total	CI 95%	Est total
Tanana	96	38	53	34	372	99	10	6	2,299	1,039	16,365	5,642	2,565	1,135	21,229
Stevens Village	8	1	0	0	0		0	0	0		0		0		0
Birch Creek	13	6	5	7	14	3	0	0	0	0	0	0	0	0	0
Beaver	25	16	9	7	13	4	1	5	0	0	26	31	0	0	26
Fort Yukon	223	69	117	77	296	64	12	42	0	0	3,910	1,561	2	2	3,912
Venetie	74	23	46	36	182	79	9	13	0	0	1,493	917	0	0	1,493
Chalkyitsik	33	19	16	10	33	20	2	0	0	0	79	96	0	0	79
District 5	472	172	246	91	910	139	34	45	2,299	1,013	21,873	5,940	2,567	1,106	26,739
Survey totals	2,723	1,122	1,645	190	4,093	258	99	72	7,848	1,585	24,184	5,931	3,654	1,305	35,686

Subsistence permits	Permits [b]		Households with dogs	Number of dogs	Households feeding fish	Information about salmon fed to dogs by species is not collected on permits						Total salmon
	Issued	Returned										
Circle	18	17	14	175	10	–	–	–	–	–	–	1,074
Eagle	22	22	16	196	15	–	–	–	–	–	–	16,873
Rampart	4	4	3	9	3	–	–	–	–	–	–	143
Other District 5 [c]	7	7	3	6	2	–	–	–	–	–	–	0
District 5 permit subtotal	51	50	36	386	30	–	–	–	–	–	–	18,090
Fairbanks (FNSB)	174	174	43	396	21	–	–	–	–	–	–	7,631
Healy	3	3	2	24	2	–	–	–	–	–	–	1,477
Manley	12	12	9	57	4	–	–	–	–	–	–	1,513
Minto	32	32	15	60	4	–	–	–	–	–	–	200
Nenana	36	35	20	120	14	–	–	–	–	–	–	318
Other District 6 [c]	46	46	25	39	2	–	–	–	–	–	–	30
District 6 permit subtotal	303	302	114	696	47	–	–	–	–	–	–	11,169
Subsistence permit subtotal	354	352	150	1,082	77	–	–	–	–	–	–	29,259
District 5 survey and permit total	–	–	282	1,296	64							44,829
Total survey and permit	–	–	1,795	5,175	176	–	–	–	–	–	–	64,945

Note: Four households reported feeding an additional 337 pink salmon to dogs. The number of households contacted in surveyed communities is (*n*). Permits returned as of March 7, 2016. Does not include permits from Stevens Village, Tolovana River, or Personal Use fishery.

[a] Includes salmon retained from commercial harvests and fed to dogs consisting of 411 summer chum, 204 fall chum, and 86 coho salmon.

[b] Includes 14 households that were issued more than 1 subsistence permit.

[c] Households from other communities including Anchorage, Central, Delta Junction, Dot Lake, FNSB (Ester, Fairbanks, North Pole, Salcha, Two Rivers), Northway, Tanacross, Tanana, Tok, and Wasilla.

Table 3.–Estimated total number of households in surveyed communities, by harvest level, with community and district totals, Yukon Area, 2015.

	Unknown				Does not harvest				Light harvester				Medium harvester				Heavy harvester				Total households				Total people		
Community	*N*	*S*	*n*	*%S*	*N*	*S*	*n*	*%S*	*N*	*S*	*n*	*%S*	*N*	*S*	*n*	*%S*	*N*	*S*	*n*	*%S*	*N*	*S*	*n*	*%S*	*np*	Total	CI
Hooper Bay	21	17	17	100	69	22	19	86	77	24	16	67	55	55	45	82	–	–	–	–	222	118	97	82	84	1,053	181
Scammon Bay	17	13	11	85	32	10	8	80	44	13	11	85	26	26	22	85	–	–	–	–	119	62	52	84	51	626	108
Coastal District	38	30	28	93	101	32	27	84	121	37	27	73	81	81	67	83	–	–	–	–	341	180	149	83	135	1,679	209
Nunam Iqua	9	0	0	0	7	7	5	71	11	11	9	82	15	15	12	80	–	–	–	–	42	33	26	79	25	195	18
Alakanuk	14	9	9	100	39	11	11	100	48	14	14	100	41	41	27	66	–	–	–	–	142	75	61	81	55	680	71
Emmonak	29	17	8	47	60	32	29	91	51	24	17	71	48	48	41	85	1	1	–	–	189	122	95	78	91	906	101
Kotlik	13	1	2	200	25	9	8	89	51	15	15	100	35	35	30	86	–	–	–	–	124	60	55	92	54	651	92
District 1	65	27	19	70	131	59	53	90	161	64	55	86	139	139	110	79	1	1	–	–	497	290	237	82	225	2,432	153
Mountain Village	23	15	9	60	46	14	10	71	61	17	15	88	40	40	28	70	–	–	–	–	170	86	62	72	58	802	99
Pitkas Point	7	4	2	50	3	3	3	100	14	14	12	86	9	9	8	89	–	–	–	–	33	30	25	83	21	122	23
St. Marys	16	13	9	69	26	8	5	62	54	18	17	94	38	38	29	76	1	1	–	–	135	78	60	77	50	494	84
Pilot Station	13	10	9	90	35	16	12	75	53	27	22	81	20	20	20	100	–	–	–	–	121	73	63	86	57	587	69
Marshall	17	9	7	78	21	7	4	57	43	13	12	92	23	23	14	61	1	1	–	–	105	53	37	70	36	454	79
District 2	76	51	36	71	131	48	34	71	225	89	78	88	130	130	99	76	2	2	–	–	564	320	247	77	222	2,459	165
Russian Mission	6	6	3	50	16	6	5	83	43	13	12	92	11	11	11	100	–	–	–	–	76	36	31	86	31	433	62
Holy Cross	13	9	4	44	17	9	7	78	20	10	11	110	14	14	13	93	–	–	–	–	64	42	34	83	31	182	28
Shageluk	3	2	0	0	13	13	11	85	6	6	6	100	2	2	2	100	1	1	1	100	25	24	20	83	15	71	13
District 3	22	17	7	41	46	28	23	82	69	29	29	100	27	27	26	96	1	1	1	100	165	102	85	84	77	686	68
Anvik	4	1	0	0	9	8	7	88	12	12	11	92	7	7	6	86	–	–	–	–	32	28	24	86	23	74	8
Grayling	7	3	2	67	7	3	3	100	30	9	9	100	10	10	9	90	–	–	–	–	54	25	23	92	23	185	42
Kaltag	6	6	2	33	9	3	2	67	33	10	9	90	6	6	6	100	–	–	–	–	54	25	19	76	18	143	28
Nulato	10	7	6	86	14	5	5	100	45	15	18	120	11	11	9	82	–	–	–	–	80	38	38	100	37	212	34
Koyukuk	4	2	0	0	14	5	4	80	21	6	3	50	4	4	3	75	2	2	1	50	45	19	11	58	10	95	38
Galena	9	7	5	71	64	19	16	84	62	19	19	100	9	9	8	89	2	2	2	100	146	56	50	89	48	342	55
Ruby	2	2	1	50	42	14	9	64	12	4	4	100	7	7	7	100	1	1	1	100	64	28	22	79	22	151	37
Huslia	9	7	5	71	51	16	14	88	15	5	5	100	9	9	8	89	3	3	3	100	87	40	35	88	32	272	54
Hughes	3	1	2	200	19	19	17	89	8	8	8	100	2	2	2	100	1	1	1	100	33	31	30	97	29	95	8
Allakaket	7	2	2	100	32	9	8	89	10	3	2	67	3	3	3	100	2	2	1	50	54	19	16	84	16	142	41
Alatna	3	2	1	50	1	1	0	0	3	3	3	100	–	–	0	0	–	–	–	–	7	6	4	67	3	16	10
Bettles	10	6	1	17	18	18	9	50	–	–	0	0	–	–	0	0	–	–	–	–	28	24	10	42	10	36	5
District 4	74	46	27	59	280	120	94	78	251	94	91	97	68	68	61	90	11	11	9	82	684	339	282	83	271	1,763	114

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Table 3.–Page 2 of 2.

	Unknown				Does not harvest				Light harvester				Medium harvester				Heavy harvester				Total households				Total people		
Community	*N*	*S*	*n*	*%S*	*N*	*S*	*n*	*%S*	*N*	*S*	*n*	*%S*	*N*	*S*	*n*	*%S*	*N*	*S*	*n*	*%S*	*N*	*S*	*n*	*%S*	*np*	Total	CI
Tanana	12	7	5	71	32	17	8	47	33	17	13	76	8	8	6	75	11	11	10	91	96	60	42	70	40	231	34
Stevens Village	–	–	0	0	2	2	0	0	3	3	1	33	2	2	0	0	1	1	–	–	8	8	1	12	1	8	0
Birch Creek	2	1	1	100	8	8	4	50	3	3	2	67	–	–	0	0	–	–	–	–	13	12	7	58	7	24	13
Beaver	3	3	1	33	7	7	5	71	13	13	10	77	2	2	2	100	–	–	–	–	25	25	18	72	16	65	8
Fort Yukon	32	25	14	56	126	36	29	81	40	13	12	92	16	16	15	94	9	9	6	67	223	99	76	77	68	575	84
Venetie	12	8	5	62	45	14	11	79	12	4	4	100	5	5	4	80	–	–	–	–	74	31	24	77	24	188	44
Chalkyitsik	8	3	0	0	22	22	17	77	3	3	2	67	–	–	0	0	–	–	–	–	33	28	19	68	19	76	10
District 5	69	47	26	55	242	106	74	70	107	56	44	79	33	33	27	82	21	21	16	76	472	263	187	71	175	1,167	101
Survey totals	344	218	143	66	931	393	305	78	934	369	324	88	478	478	390	82	36	36	26	72	2,723	1,494	1,187	80	1,105	10,186	347

Note: Total number of households (*N*), the sample size (*S*), the number of households contacted (*n*), and the percent of the sampled households that were contacted (*%S*) in each harvest group in surveyed communities. Households contacted (*n*) may include some households not pre-selected resulting in a household contacted percentage (*%S*) greater than 100%. Dashes indicate indefinable values. In most communities a smaller number of households (*np*) provided information about the number of people in their households. Estimated total number of people includes a 95% confidence interval (CI).

Table 4.–Estimated number of subsistence fishing households in surveyed communities, by harvest level, with community and district totals, Yukon Area, 2015.

	Unknown				Does not harvest salmon				Light harvester				Medium harvester				Heavy harvester				Combined Total		Combined Est.	Combined CI
Community	*N*	*n*	PF	SE	*N*	*n*	PF	SE	*N*	*n*	PF	SE	*N*	*n*	PF	SE	*N*	*n*	PF	SE	*N*	*n*	total	95%
Hooper Bay	21	15	0.6	0.1	69	17	0.2	0.1	77	16	0.6	0.1	55	45	0.7	0.1	–	–	–	–	222	93	112	62
Scammon Bay	17	10	0.4	0.2	32	8	0.5	0.2	44	11	0.8	0.1	26	22	1.0	0.0	–	–	–	–	119	51	84	37
Coastal District	38	25	0.5	0.2	101	25	0.3	0.2	121	27	0.7	0.2	81	67	0.8	0.1	–	–	–	–	341	144	196	72
Nunam Iqua	9	0	0.0	0.0	7	5	0.2	0.2	11	8	0.5	0.2	15	12	0.8	0.1	–	–	–	–	42	25	25	10
Alakanuk	14	9	0.3	0.2	39	11	0.3	0.1	48	13	0.8	0.1	41	25	0.8	0.1	–	–	–	–	142	58	83	41
Emmonak	29	8	0.8	0.2	60	29	0.1	0.1	51	16	0.6	0.1	48	41	0.8	0.1	1	0	0.0	0.0	189	94	102	43
Kotlik	13	2	0.5	0.0	25	8	0.6	0.2	51	14	0.9	0.1	35	30	0.9	0.1	–	–	–	–	124	54	97	33
District 1	65	19	0.6	0.2	131	53	0.3	0.1	161	51	0.7	0.2	139	108	0.8	0.1	1	0	0.0	0.0	497	231	307	68
Mountain Village	23	9	0.4	0.2	46	10	0.2	0.1	61	14	0.8	0.1	40	27	0.9	0.1	–	–	–	–	170	60	104	50
Pitkas Point	7	2	0.0	0.0	3	2	0.5	0.0	14	11	0.6	0.2	9	8	0.9	0.1	–	–	–	–	33	23	18	6
St. Marys	16	8	0.8	0.2	26	5	0.2	0.2	54	16	0.7	0.1	38	26	0.8	0.1	1	0	0.0	0.0	135	55	87	41
Pilot Station	13	9	0.3	0.2	35	11	0.0	0.0	53	22	0.8	0.1	20	19	0.7	0.1	–	–	–	–	121	61	60	25
Marshall	17	7	0.3	0.2	21	4	0.2	0.2	43	12	0.5	0.2	23	14	0.8	0.1	1	0	0.0	0.0	105	37	50	38
District 2	76	35	0.4	0.1	131	32	0.2	0.2	225	75	0.7	0.1	130	94	0.8	0.1	2	0	0.0	0.0	564	236	319	78
Russian Mission	6	3	0.7	0.3	16	5	0.2	0.2	43	12	0.8	0.1	11	11	0.9	0.1	–	–	–	–	76	31	53	28
Holy Cross	13	4	0.5	0.3	17	7	0.1	0.1	20	10	0.3	0.2	14	13	0.5	0.1	–	–	–	–	64	34	22	19
Shageluk	3	0	0.0	0.0	13	9	0.1	0.1	6	5	0.6	0.2	2	1	1.0	0.0	1	1	0.0	0.0	25	16	8	6
District 3	22	7	0.6	0.3	46	21	0.2	0.2	69	27	0.7	0.2	27	25	0.7	0.1	1	1	0.0	0.0	165	81	83	34
Anvik	4	0	0.0	0.0	9	6	0.0	0.0	12	11	0.6	0.2	7	6	0.7	0.2	–	–	–	–	32	23	14	4
Grayling	7	2	0.0	0.0	7	3	0.3	0.3	30	9	0.4	0.2	10	9	0.9	0.1	–	–	–	–	54	23	25	23
Kaltag	6	2	0.5	0.0	9	2	0.0	0.0	33	9	0.6	0.2	6	6	0.7	0.2	–	–	–	–	54	19	25	25
Nulato	10	6	0.3	0.2	14	5	0.2	0.2	45	18	0.4	0.1	11	9	0.8	0.1	–	–	–	–	80	38	32	27
Koyukuk	4	0	0.0	0.0	14	4	0.5	0.3	21	3	0.3	0.3	4	3	1.0	0.0	2	1	1.0	0.0	45	11	22	31
Galena	9	4	0.2	0.2	64	16	0.1	0.1	62	19	0.5	0.1	9	8	0.4	0.2	2	2	1.0	0.0	146	49	41	46
Ruby	2	1	1.0	0.0	42	9	0.0	0.0	12	4	0.5	0.3	7	7	0.6	0.2	1	1	1.0	0.0	64	22	13	11
Huslia	9	5	0.0	0.0	51	14	0.2	0.1	15	5	0.2	0.2	9	8	0.5	0.2	3	3	0.7	0.3	87	35	20	32
Hughes	3	2	0.0	0.0	19	17	0.0	0.0	8	8	0.0	0.0	2	2	0.5	0.0	1	1	1.0	0.0	33	30	2	0
Allakaket	7	2	0.5	0.0	32	8	0.2	0.2	10	2	0.5	0.0	3	3	0.3	0.3	2	1	1.0	0.0	54	16	20	24
Alatna	3	1	0.0	0.0	1	0	0.0	0.0	3	3	0.7	0.3	–	–	–	–	0	0	0.0	0.0	7	4	2	0
Bettles	10	1	0.0	0.0	18	9	0.0	0.0	–	–	–	–	–	–	–	–	0	0	0.0	0.0	28	10	0	0
District 4	74	26	0.2	0.1	280	93	0.1	0.1	251	91	0.4	0.1	68	61	0.6	0.0	11	9	0.9	0.0	684	280	216	78

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Table 4.–Page 2 of 2.

	Unknown				Does not harvest salmon				Light harvester				Medium harvester				Heavy harvester				Combined			
																					Total		Est.	CI
Community	*N*	*n*	PF	SE	*N*	*n*	PF	SE	*N*	*n*	PF	SE	*N*	*n*	PF	SE	*N*	*n*	PF	SE	*N*	*n*	total	95%
Tanana	12	5	0	0	32	8	0.1	0.1	33	13	0.4	0.1	8	6	0.5	0.2	11	10	0.7	0.2	96	42	28	28
Stevens Village	–	–	–	–	2	0	0.0	0.0	3	1	0	0	2	0	0.0	0.0	1	0	0.0	0.0	8	1	0	0
Birch Creek	2	1	0.0	0.0	8	4	0.0	0.0	3	2	0	0	–	–	–	–	–	–	–	–	13	7	0	0
Beaver	3	1	0.0	0.0	7	5	0.0	0.0	13	9	0.2	0.1	2	1	1.0	0.0	–	–	–	–	25	16	5	6
Fort Yukon	32	11	0.4	0.2	126	28	0.0	0.0	40	12	0	0	16	14	0.8	0.1	9	6	1.0	0.0	223	71	38	47
Venetie	12	5	0.2	0.2	45	10	0.0	0.0	12	4	0.5	0.3	5	4	0.8	0.2	–	–	–	–	74	23	12	14
Chalkyitsik	8	0	0.0	0.0	22	17	0.1	0.1	3	2	0	0	–	–	–	–	–	–	–	–	33	19	2	7
District 5	69	23	0.2	0.2	242	72	0.0	0.1	107	43	0.2	0.1	33	25	0.7	0.1	21	16	0.8	0.1	472	179	85	56
Survey totals	344	135	0.4	0.1	931	296	0.1	0.1	934	314	0.6	0.1	478	380	0.8	0.0	36	26	0.8	0.0	2,723	1,151	1,206	161

Note: The number of fishing households was estimated from the total number of households (*N*), the number of households contacted (*n*), the proportion of households that fished (PF), and the standard error (SE) for each harvest group in each community. Estimated total number of fishing households includes a 95% confidence interval (CI 95%). Dashes indicate indefinable values.

Table 5.–Estimated subsistence harvest including commercially related (not including test fish) of Chinook salmon by fishing location in surveyed communities, Yukon Area, 2015.

Community	Coastal District	Districts			Subdistricts [a]								River drainages					Total by community [b]
		1	2	3	4A	4B	4C	5A	5B	5C	5D–down	5D–up	Innoko	Koyukuk	Chandalar	Porcupine	Black	
Hooper Bay	463	71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	534
Scammon Bay	180	252	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	432
Coastal District	643	323	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	966
Nunam Iqua	0	160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	160
Alakanuk	0	336	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	336
Emmonak	0	291	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	291
Kotlik [c]	0	511	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	511
District 1	0	1,298	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,298
Mountain Village	0	118	192	0	0	0	0	0	0	0	0	0	0	0	0	0	0	310
Pitkas Point	0	0	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44
St. Marys	0	31	170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	201
Pilot Station	0	52	292	0	0	0	0	0	0	0	0	0	0	0	0	0	0	344
Marshall	0	0	128	0	0	0	0	0	0	0	0	0	0	0	0	0	0	128
District 2	0	201	826	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,027
Russian Mission	0	0	220	145	0	0	0	0	0	0	0	0	0	0	0	0	0	365
Holy Cross	0	0	0	68	0	0	0	0	0	0	0	0	0	0	0	0	0	68
Shageluk	0	0	0	0	0	0	0	0	0	0	0	0	14	0	0	0	0	14
District 3	0	0	220	213	0	0	0	0	0	0	0	0	14	0	0	0	0	447
Anvik	0	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	50
Grayling	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	14
Kaltag	0	0	0	0	119	0	0	0	0	0	0	0	0	0	0	0	0	119
Nulato	0	0	0	0	33	0	0	0	0	0	0	0	0	0	0	0	0	33
Koyukuk	0	0	0	0	26	0	0	0	0	0	0	0	0	0	0	0	0	26
Galena	0	0	0	0	99	141	126	0	0	0	0	0	0	0	0	0	0	366
Ruby	0	0	0	0	0	0	68	0	0	0	0	0	0	0	0	0	0	68
Huslia	0	0	0	0	0	0	0	0	0	0	0	0	0	34	0	0	0	34
Hughes	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4
Allakaket	0	0	0	0	0	0	0	0	0	0	0	0	0	35	0	0	0	35
Alatna	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bettles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 4	0	0	0	0	341	141	194	0	0	0	0	0	0	73	0	0	0	749

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Table 5.–Page 2 of 2.

Community	Coastal District	Districts 1	2	3	Subdistricts [a] 4A	4B	4C	5A	5B	5C	5D–down	5D–up	River drainages Innoko	Koyukuk	Chandalar	Porcupine	Black	Total by community [b]
Tanana	0	0	0	0	0	0	0	89	52	0	0	0	0	0	0	0	0	141
Stevens Village	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Birch Creek	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beaver	0	0	0	0	0	0	0	0	0	0	69	0	0	0	0	0	0	69
Fort Yukon	0	0	0	0	0	0	0	0	0	0	115	166	0	0	0	0	0	281
Venetie	0	0	0	0	0	0	0	0	0	0	135	0	0	0	173	0	0	308
Chalkyitsik	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 5	0	0	0	0	0	0	0	89	52	0	319	166	0	0	173	0	0	799
Survey totals	643	1,822	1,046	213	341	141	194	89	52	0	319	166	14	73	173	0	0	5,286

Note: Commercially related fish are salmon harvested during commercial fishing that were not sold, but retained and used for subsistence purposes.

[a] Harvest in Subdistrict 5-D near Ft. Yukon is divided according to whether harvest occurred downriver (5D-down) or upriver (5D-up) of the confluence of the Porcupine River with the Yukon River.

[b] Totals may not add in both directions due to decimal rounding.

[c] Several households reported harvest from the Norton Sound area outside of District 1. Salmon harvested from outside the Yukon Area are not included in harvest totals or estimates.

Table 6.–Estimated subsistence harvest including commercially related (not including test fish) of summer chum salmon by fishing location in surveyed communities, Yukon Area, 2015.

Community	Coastal District	Districts			Subdistricts [a]								River drainages					Total by community [b]
		1	2	3	4A	4B	4C	5A	5B	5C	5D–down	5D–up	Innoko	Koyukuk	Chandalar	Porcupine	Black	
Hooper Bay	9,236	2,634	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11,870
Scammon Bay	6,364	2,234	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8,598
Coastal District	15,600	4,868	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20,468
Nunam Iqua	0	2,120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,120
Alakanuk	0	4,174	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,174
Emmonak	0	8,024	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8,024
Kotlik [c]	0	4,369	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,369
District 1	0	18,687	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18,687
Mountain Village	0	2,380	3,683	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6,063
Pitkas Point	0	0	1,225	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,225
St. Marys	0	653	7,563	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8,216
Pilot Station	0	27	3,810	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,837
Marshall	0	0	4,351	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,351
District 2	0	3,060	20,632	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23,692
Russian Mission	0	0	257	2,369	0	0	0	0	0	0	0	0	0	0	0	0	0	2,626
Holy Cross	0	0	0	421	0	0	0	0	0	0	0	0	0	0	0	0	0	421
Shageluk	0	0	0	0	0	0	0	0	0	0	0	0	80	0	0	0	0	80
District 3	0	0	257	2,790	0	0	0	0	0	0	0	0	80	0	0	0	0	3,127
Anvik	0	0	0	0	777	0	0	0	0	0	0	0	0	0	0	0	0	777
Grayling	0	0	0	0	509	0	0	0	0	0	0	0	0	0	0	0	0	509
Kaltag	0	0	0	0	216	0	0	0	0	0	0	0	0	0	0	0	0	216
Nulato	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
Koyukuk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Galena	0	0	0	0	559	500	0	0	0	0	0	0	0	0	0	0	0	1,059
Ruby	0	0	0	0	0	0	88	0	0	0	0	0	0	0	0	0	0	88
Huslia	0	0	0	0	0	0	0	0	0	0	0	0	0	3,110	0	0	0	3,110
Hughes	0	0	0	0	0	0	0	0	0	0	0	0	0	1,499	0	0	0	1,499
Allakaket	0	0	0	0	0	0	0	0	0	0	0	0	0	2,455	0	0	0	2,455
Alatna	0	0	0	0	0	0	0	0	0	0	0	0	0	58	0	0	0	58
Bettles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 4	0	0	0	0	2,067	500	88	0	0	0	0	0	0	7,122	0	0	0	9,777

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Table 6.–Page 2 of 2.

Community	Coastal District	Districts			Subdistricts [a]								River drainages					Total by community [b]
		1	2	3	4A	4B	4C	5A	5B	5C	5D–down	5D–up	Innoko	Koyukuk	Chandalar	Porcupine	Black	
Tanana	0	0	0	0	0	0	0	953	2,209	0	0	0	0	0	0	0	0	3,162
Stevens Village	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Birch Creek	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beaver	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Yukon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Venetie	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chalkyitsik	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 5	0	0	0	0	0	0	0	953	2,209	0	0	0	0	0	0	0	0	3,162
Survey totals	15,600	26,615	20,889	2,790	2,067	500	88	953	2,209	0	0	0	80	7,122	0	0	0	78,913

Note: Commercially related fish are salmon harvested during commercial fishing that were not sold, but retained and used for subsistence purposes.

[a] Harvest in Subdistrict 5-D near Ft. Yukon is divided according to whether harvest occurred downriver (5D-down) or upriver (5D-up) of the confluence of the Porcupine River with the Yukon River.

[b] Totals may not add in both directions due to decimal rounding.

[c] Several households reported harvest from the Norton Sound area outside of District 1. Salmon harvested from outside the Yukon Area are not included in harvest totals or estimates.

Table 7.–Estimated subsistence harvest including commercially related (not including test fish) of fall chum salmon by fishing location in surveyed communities, Yukon Area, 2015.

	Coastal	Districts			Subdistricts [a]								River drainages					Total by
Community	District	1	2	3	4A	4B	4C	5A	5B	5C	5D–down	5D–up	Innoko	Koyukuk	Chandalar	Porcupine	Black	community [b]
Hooper Bay	79	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	79
Scammon Bay	93	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	119
Coastal District	172	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	198
Nunam Iqua	0	210	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	210
Alakanuk	0	858	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	858
Emmonak	0	2,272	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,272
Kotlik	0	1,147	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,147
District 1	0	4,487	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,487
Mountain Village	0	467	496	0	0	0	0	0	0	0	0	0	0	0	0	0	0	963
Pitkas Point	0	143	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	172
St. Marys	0	1,044	567	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,611
Pilot Station	0	0	739	0	0	0	0	0	0	0	0	0	0	0	0	0	0	739
Marshall	0	0	1,731	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,731
District 2	0	1,654	3,562	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,216
Russian Mission	0	0	361	88	0	0	0	0	0	0	0	0	0	0	0	0	0	449
Holy Cross	0	0	0	763	0	0	0	0	0	0	0	0	0	0	0	0	0	763
Shageluk	0	0	0	47	63	0	0	0	0	0	0	0	66	0	0	0	0	176
District 3	0	0	361	898	63	0	0	0	0	0	0	0	66	0	0	0	0	1,388
Anvik	0	0	0	0	680	0	0	0	0	0	0	0	0	0	0	0	0	680
Grayling	0	0	0	0	1,184	0	0	0	0	0	0	0	0	0	0	0	0	1,184
Kaltag	0	0	0	0	978	0	277	0	0	0	0	0	0	0	0	0	0	1,255
Nulato	0	0	0	0	2,248	0	0	0	0	0	0	0	0	0	0	0	0	2,248
Koyukuk	0	0	0	0	2,656	182	0	0	0	0	0	0	0	0	0	0	0	2,838
Galena	0	0	0	0	381	1,054	1,107	0	0	0	0	0	0	0	0	0	0	2,542
Ruby	0	0	0	0	0	324	389	0	0	0	0	0	0	0	0	0	0	713
Huslia	0	0	0	0	42	0	0	0	0	0	0	0	0	694	0	0	0	736
Hughes	0	0	0	0	0	0	0	0	0	0	0	0	0	490	0	0	0	490
Allakaket	0	0	0	0	0	0	0	0	0	0	0	0	0	524	0	0	0	524
Alatna	0	0	0	0	0	0	0	0	0	0	0	0	0	64	0	0	0	64
Bettles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 4	0	0	0	0	8,169	1,560	1,773	0	0	0	0	0	0	1,772	0	0	0	13,274

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Table 7.–Page 2 of 2.

Community	Coastal District	Districts 1	2	3	Subdistricts [a] 4A	4B	4C	5A	5B	5C	5D–down	5D–up	River drainages Innoko	Koyukuk	Chandalar	Porcupine	Black	Total by community [b]
Tanana	0	0	0	0	0	0	0	0	19,627	0	0	0	0	0	0	0	0	19,627
Stevens Village	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Birch Creek	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beaver	0	0	0	0	0	0	0	0	0	0	76	0	0	0	0	0	0	76
Fort Yukon	0	0	0	0	0	0	0	0	0	0	2,311	2,647	0	0	0	1,254	0	6,212
Venetie	0	0	0	0	0	0	0	0	0	0	254	0	0	0	2,169	0	0	2,423
Chalkyitsik	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	171	171
District 5	0	0	0	0	0	0	0	0	19,627	0	2,641	2,647	0	0	2,169	1,254	171	28,509
Survey totals	172	6,167	3,923	898	8,232	1,560	1,773	0	19,627	0	2,641	2,647	66	1,772	2,169	1,254	171	53,072

Note: Commercially related fish are salmon harvested during commercial fishing that were not sold, but retained and used for subsistence purposes.

[a] Harvest in Subdistrict 5-D near Ft. Yukon is divided according to whether harvest occurred downriver (5D-down) or upriver (5D-up) of the confluence of the Porcupine River with the Yukon River.

[b] Totals may not add in both directions due to decimal rounding.

Table 8.–Estimated subsistence harvest including commercially related (not including test fish) of coho salmon by fishing location in surveyed communities, Yukon Area, 2015.

Community	Coastal District	Districts			Subdistricts [a]								River drainages					Total by community [b]
		1	2	3	4A	4B	4C	5A	5B	5C	5D–down	5D–up	Innoko	Koyukuk	Chandalar	Porcupine	Black	
Hooper Bay	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	95
Scammon Bay	51	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	79
Coastal District	146	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	174
Nunam Iqua	0	229	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	229
Alakanuk	0	521	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	521
Emmonak	0	554	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	554
Kotlik	0	398	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	398
District 1	0	1,702	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,702
Mountain Village	0	71	298	0	0	0	0	0	0	0	0	0	0	0	0	0	0	369
Pitkas Point	0	60	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72
St. Marys	0	0	391	0	0	0	0	0	0	0	0	0	0	0	0	0	0	391
Pilot Station	0	0	163	0	0	0	0	0	0	0	0	0	0	0	0	0	0	163
Marshall	0	0	1,511	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,511
District 2	0	131	2,375	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,506
Russian Mission	0	0	0	154	0	0	0	0	0	0	0	0	0	0	0	0	0	154
Holy Cross	0	0	0	246	0	0	0	0	0	0	0	0	0	0	0	0	0	246
Shageluk	0	0	0	0	0	0	0	0	0	0	0	0	28	0	0	0	0	28
District 3	0	0	0	400	0	0	0	0	0	0	0	0	28	0	0	0	0	428
Anvik	0	0	0	0	46	0	0	0	0	0	0	0	0	0	0	0	0	46
Grayling	0	0	0	0	212	0	0	0	0	0	0	0	0	0	0	0	0	212
Kaltag	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	18
Nulato	0	0	0	0	48	0	0	0	0	0	0	0	0	0	0	0	0	48
Koyukuk	0	0	0	0	401	15	0	0	0	0	0	0	0	0	0	0	0	416
Galena	0	0	0	0	41	102	511	0	0	0	0	0	0	0	0	0	0	654
Ruby	0	0	0	0	0	89	96	0	0	0	0	0	0	0	0	0	0	185
Huslia	0	0	0	0	0	0	0	0	0	0	0	0	0	294	0	0	0	294
Hughes	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	16
Allakaket	0	0	0	0	0	0	0	0	0	0	0	0	0	40	0	0	0	40
Alatna	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	12
Bettles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 4	0	0	0	0	766	206	607	0	0	0	0	0	0	362	0	0	0	1,941

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Table 8.–Page 2 of 2.

Community	Coastal District	Districts			Subdistricts [a]								River drainages					Total by community [b]
		1	2	3	4A	4B	4C	5A	5B	5C	5D–down	5D–up	Innoko	Koyukuk	Chandalar	Porcupine	Black	
Tanana	0	0	0	0	0	0	0	0	2,434	0	0	0	0	0	0	0	0	2,434
Stevens Village	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Birch Creek	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beaver	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Yukon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Venetie	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	0	0	24
Chalkyitsik	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 5	0	0	0	0	0	0	0	0	2,434	0	0	0	0	0	24	2	0	2,460
Survey totals	146	1,861	2,375	400	766	206	607	0	2,434	0	0	0	28	362	24	2	0	9,211

Note: Commercially related fish are salmon harvested during commercial fishing that were not sold, but retained and used for subsistence purposes.

[a] Harvest in Subdistrict 5D near Ft. Yukon is divided according to whether harvest occurred downriver (5D-down) or upriver (5D-up) of the confluence of the Porcupine River with the Yukon River.

[b] Totals may not add in both directions due to decimal rounding.

Table 9.–Estimated subsistence harvest of pink salmon, whitefish, northern pike, and sheefish by surveyed communities, Yukon Area, 2015.

			Estimated subsistence harvest										Total	
			Pink salmon		Large whitefish [a]		Small whitefish [a]		Northern pike		Sheefish		est.	Percent
Community	Total households	Households contacted [b]	Est. total	CI 95%	Est. total	CI 95%	Est. total	CI 95%	Est. total	CI 95%	Est. total	CI 95%	fish harvest	broad whitefish [c]
Hooper Bay	222	92	451	218	406	160	3,581	1,073	389	254	20	8	4,847	38%
Scammon Bay	119	51	1,414	496	3,823	3,320	1,607	793	1,443	476	172	105	8,459	61%
Coastal District	341	143	1,865	534	4,229	3,272	5,188	1,323	1,832	532	192	104	13,306	59%
Nunam Iqua	42	24	352	239	841	325	1,808	692	47	28	1,025	395	4,073	43%
Alakanuk	142	58	15	18	1,744	1,317	5,822	3,738	1,023	554	1,372	482	9,976	77%
Emmonak	189	94	7	12	1,508	771	4,730	1,999	582	137	1,470	698	8,297	90%
Kotlik	124	54	14	8	579	456	2,550	779	1,883	1,082	1,448	454	6,474	92%
District 1	497	230	388	229	4,672	1,600	14,910	4,296	3,535	1,203	5,315	1,023	28,820	77%
Mountain Village	170	60	57	85	1,331	452	1,597	649	1,818	583	901	421	5,704	78%
Pitkas Point	33	23	288	194	644	331	149	128	356	220	223	123	1,660	77%
St. Marys	135	55	18	18	1,636	908	301	300	1,007	880	313	145	3,275	59%
Pilot Station	121	60	0	0	1,258	389	75	38	277	132	172	57	1,782	45%
Marshall	105	37	0	0	3,911	1,708	1,559	1,402	5,725	2,363	746	369	11,941	75%
District 2	564	235	363	204	8,780	1,997	3,681	1,537	9,183	2,531	2,355	581	24,362	68%
Russian Mission	76	31	0	0	1,117	661	274	346	1,305	305	310	137	3,006	69%
Holy Cross	64	33	0	0	810	356	23	17	42	21	43	41	918	85%
Shageluk	25	17	0	0	222	87	0	0	64	43	54	33	340	57%
District 3	165	81	0	0	2,149	737	297	337	1,411	301	407	143	4,264	74%
Anvik	32	23	0	0	292	103	0	0	81	31	70	16	443	82%
Grayling	54	23	0	0	259	105	0	0	27	11	238	171	524	87%
Kaltag	54	19	0	0	182	69	0	0	30	26	122	118	334	100%
Nulato	80	38	0	0	480	237	150	235	21	24	438	193	1,089	73%
Koyukuk	45	11	0	0	369	191	0	0	55	0	152	62	576	59%
Galena	146	49	16	27	1,239	476	171	37	221	49	324	132	1,971	51%
Ruby	64	22	0	0	394	144	100	0	9	0	127	149	630	47%
Huslia	87	35	0	0	1,181	264	225	99	1,275	638	356	71	3,037	86%
Hughes	33	30	0	0	3,520	0	8,430	0	137	0	96	27	12,183	29%
Allakaket	54	16	0	0	1,468	114	219	29	204	7	630	714	2,521	82%
Alatna	7	4	0	0	87	63	35	87	18	9	21	17	161	28%
Bettles	28	10	0	0	0	0	0	0	10	0	0	0	10	–
District 4	684	280	16	27	9,471	647	9,330	255	2,088	619	2,574	748	23,479	56%

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Table 9.–Page 2 of 2.

Community	Total households	Households contacted [b]	Estimated subsistence harvest: Pink salmon Est. total	Pink salmon CI 95%	Large whitefish [a] Est. total	Large whitefish CI 95%	Small whitefish [a] Est. total	Small whitefish CI 95%	Northern pike Est. total	Northern pike CI 95%	Sheefish Est. total	Sheefish CI 95%	Total est. fish harvest	Percent broad whitefish [c]
Tanana	96	42	13	7	9,819	2,414	4,867	1,361	837	336	1,630	459	17,166	58%
Stevens Village	8	1	0	0	0	0	0	0	0	0	0	0	0	–
Birch Creek	13	7	0	0	630	0	0	0	360	0	12	0	1,002	0%
Beaver	25	16	0	0	18	3	0	0	81	20	8	0	107	50%
Fort Yukon	223	70	0	0	776	487	776	422	604	461	320	139	2,476	13%
Venetie	74	23	0	0	90	152	45	76	57	78	12	15	204	0%
Chalkyitsik	33	19	0	0	9	9	3	3	121	86	3	3	136	100%
District 5	472	178	13	7	11,342	2,408	5,691	1,393	2,060	573	1,985	469	21,091	51%
Survey totals	2,723	1,147	2,645	1,356	40,643	4,869	39,097	4,945	20,109	2,976	12,828	1,474	115,322	61%

Note: Estimates include a plus or minus 95% confidence interval (CI 95%). Dashes indicate indefinable values. No pink salmon were reported as distributed from test fishery projects in 2015.

[a] Large whitefish are considered to be 4 pounds or larger and small whitefish are considered to be less than 4 pounds.

[b] The number of households contacted per species may vary. The number of households indicated is the greatest number of households contacted in each community for any species.

[c] Households were asked to categorize their harvest of large whitefish as either broad whitefish or humpback whitefish. The estimated remaining percent were humpback whitefish.

Table 10.–Reported subsistence harvest of other fish species by surveyed communities, Yukon Area, 2015.

Community	Total households	Households contacted [a]	Reported harvest of miscellaneous fish species (not expanded)					
			Alaska blackfish	Arctic grayling	Arctic lamprey [b]	Burbot	Pacific herring	Tomcod
Hooper Bay [c]	222	92	3,695	0	0	78	4,879	1,629
Scammon Bay [c]	119	51	31,920	25	0	23	16,388	1,502
Coastal District	341	143	35,615	25	0	101	21,267	3,131
Nunam Iqua	42	24	2,870	0	0	162	0	315
Alakanuk [c]	142	58	7,260	0	0	153	64	156
Emmonak [c]	189	94	14,213	0	0	125	250	620
Kotlik [c]	124	54	2,999	10	0	58	2,930	235
District 1	497	230	27,342	10	0	498	3,244	1,326
Mountain Village [c, d]	170	60	4,171	235	7,285	407	80	240
Pitkas Point [d]	33	23	3,920	13	3,741	67	0	0
St. Marys [d]	135	55	6,260	17	4,067	95	0	0
Pilot Station [d]	121	60	9,177	67	7,817	74	0	0
Marshall [d]	105	37	620	41	9,130	730	0	0
District 2	564	235	24,148	373	32,040	1,373	80	240
Russian Mission [d]	76	31	6,828	8	6,715	320	0	0
Holy Cross	64	33	0	0	0	18	0	0
Shageluk	25	17	0	0	0	6	0	0
District 3	165	81	6,828	8	6,715	344	0	0
Anvik [d]	32	23	0	56	1,680	45	0	0
Grayling [d]	54	23	0	47	1,802	2	0	0
Kaltag	54	19	0	25	0	20	0	0
Nulato	80	38	3	375	0	6	0	0
Koyukuk	45	11	0	10	0	6	0	0
Galena	146	49	850	4	0	62	0	0
Ruby	64	22	0	0	0	4	0	0
Huslia	87	35	2,800	15	0	12	0	0
Hughes	33	30	0	96	0	35	0	0
Allakaket	54	16	0	25	0	800	0	0
Alatna	7	4	0	20	0	1	0	0
Bettles	28	10	0	2	0	0	0	0
District 4	684	280	3,653	675	3,482	993	0	0

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Table 10.–Page 2 of 2.

Community	Total households	Households contacted [a]	Reported harvest of miscellaneous fish species (not expanded)					
			Alaska blackfish	Arctic grayling	Arctic lamprey [b]	Burbot	Pacific herring	Tomcod
Tanana	96	42	0	37	0	35	0	0
Stevens Village	8	1	0	0	0	0	0	0
Birch Creek	13	7	0	0	0	0	0	0
Beaver	25	16	0	0	0	0	0	0
Fort Yukon	223	69	0	30	0	15	0	0
Venetie	74	23	0	668	0	0	0	0
Chalkyitsik	33	19	0	6	0	5	0	0
District 5	472	177	0	741	0	55	0	0
Survey totals	873	346	97,586	1,832	42,237	3,364	24,591	4,697

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

[b] Arctic lamprey harvest occurred during 2014.

[c] A total of 44 households reported harvesting 456 gallons of herring roe. Some households reported a number of ‘smelt’ as herring harvest.

[d] Includes Arctic lamprey harvest reported on postcards and on surveys. Surveys were conducted in September of 2015 prior to lamprey fishing that occurs in November and December. Postcards were mailed to all 808 households in 10 communities in November of 2014.

Table 11.–Reported subsistence and personal use fish harvested under the authority of a permit, listed by permit area, Yukon Area, 2015.

Permit fishing area	Permit [a] Type	Issued [b]	Returned	Percent returned	Number of permits returned that fished [c]	Reported harvest: Chinook	Summer chum	Fall chum	Coho	White–fish	Shee–fish	Burbot	Northern pike	Longnose sucker	Arctic grayling
Koyukuk Middle and South Fork Rivers	SF	1	1	100%	1	0	0	0	0	4	0	0	0	0	32
Yukon River Rampart Area	SR	17	17	100%	8	73	104	629	2	66	36	3	4	0	0
Yukon River near Haul Road Bridge [d]	SY	39	39	100%	16	158	479	2,199	0	281	85	5	51	0	0
Yukon River near	SE	30	29	97%	17	220	0	6,338	0	69	11	4	19	0	31
Circle and Eagle	SEU [e]	19	19	100%	13	341	0	12,540	0	67	11	2	2	7	33
Tanana River Subdistrict 6–A	SA	17	17	100%	9	136	9	1,656	1,151	12	2	0	3	0	0
Tanana River Subdistrict 6–B	SB	71	71	100%	30	220	225	7,457	6,652	880	17	6	28	13	0
Tanana River Upstream of Subdistrict 6–C	SU	38	38	100%	14	0	0	33	1	2,064	1	2	16	12	33
Kantishna River Subdistrict 6–A	SK	2	2	100%	1	0	0	127	11	0	0	1	2	3	1
Tolovana River Pike Subdistrict 6–B	ST	120	119	99%	66	0	0	0	0	48	2	0	765	0	0
Subsistence permit subtotals		354	352	99%	175	1,148	817	30,979	7,817	3,491	165	23	890	35	130

-continued-

Table 11.–Page 2 of 2.

Personal use permit fishing area	Permit [a] Type	Issued [b]	Returned	Percent returned	Number of permits returned that fished [c]	Reported harvest Chinook	Summer chum	Fall chum	Coho	White–fish	Shee–fish	Burbot	Northern pike	Longnose sucker	Arctic grayling
Tanana River salmon Subdistrict 6–C	PC	42	42	100%	15	5	220	80	145	26	1	0	1	1	0
Tanana River whitefish upstream of Subdistrict 6–C	PW	22	22	100%	13	0	0	0	0	254	0	0	0	322	1
Personal Use permit subtotals		64	64	100%	28	5	220	80	145	280	1	0	1	323	1
All permit totals		418	416	99.5%	202	1,153	1,037	31,059	7,962	3,771	166	23	891	358	131

Note: Permit Type is the first letter in the code used on permits that refers to the fishery type (S = subsistence or P = personal use), and the second letter of the code refers to a particular fishing area or species targeted. Does not include salmon retained from test fishery projects or commercial fisheries.

[a] Permits returned as of March 7, 2016. Includes additional late permits entered January 13, 2017.

[b] Includes 33 households that were issued permits for more than 1 area.

[c] Includes 7 households that "fished" in 2 different permit areas.

[d] Includes permits issued to residents from Stevens Village. No harvest was reported on permits from Stevens Village.

[e] Harvest occurring in the portion of the river between the mainstem Yukon River sonar project located near the community of Eagle and the U.S./Canada border.

Table 12.–Reported subsistence and personal use fish harvested under the authority of a permit, listed by fishery, by community of residence, and by drainage, Yukon Area, 2015.

Subsistence permit community	Harvest by drainage	Permits Issued [a]	Permits Returned	Percent returned	Number of permits fished [b]	Reported harvest Chinook	Summer chum	Fall chum	Coho	Whitefish	Sheefish	Burbot	Northern pike	Longnose sucker	Arctic grayling
Central	Yukon River	6	6	100%	3	56	0	0	0	1	0	1	0	0	0
Circle	Yukon River	18	17	94%	10	129	0	1,652	0	38	5	1	6	0	0
Eagle	Yukon River	22	22	100%	15	376	0	17,185	0	97	17	4	15	7	64
Fairbanks (FNSB) [c]	Yukon River	44	44	100%	18	223	575	2,454	0	302	120	6	54	0	0
	Tanana River	23	23	100%	11	29	183	3,465	3,035	575	9	4	13	6	0
	Tolovana River	107	107	100%	61	0	0	0	0	0	0	0	567	0	0
	FNSB subtotal	174	174	100%	90	252	758	5,919	3,035	877	129	10	634	6	0
Healy	Tolovana River	1	1	100%	1	0	0	0	0	0	0	0	15	0	0
	Tanana River	1	1	100%	1	0	0	830	647	165	0	2	5	0	0
	Kantishna River	1	1	100%	0	0	0	0	0	0	0	0	0	0	0
	Healy subtotal	3	3	100%	2	0	0	830	647	165	0	2	20	0	0
Manley	Yukon River	1	1	100%	1	2	0	157	0	0	1	0	0	0	0
	Tanana River	11	11	100%	8	121	9	1,656	1,151	12	1	0	2	0	0
	Manley subtotal	12	12	100%	9	123	9	1,813	1,151	12	2	0	2	0	0
Minto	Yukon River	1	1	100%	0	0	0	0	0	0	0	0	0	0	0
	Tanana River	22	22	100%	6	23	0	140	270	38	1	0	9	0	0
	Tolovana River	9	9	100%	2	0	0	0	0	48	2	0	172	0	0
	Minto subtotal	32	32	100%	7	23	0	140	270	86	3	0	181	0	0
Nenana	Yukon River	1	1	100%	1	5	4	0	0	0	0	0	0	0	0
	Tolovana River	1	0	0%	0	0	0	0	0	0	0	0	0	0	0
	Tanana River	33	33	100%	14	183	42	3,024	2,701	383	8	0	2	7	0
	Kantishna River	1	1	100%	1	0	0	127	11	0	0	1	2	3	1
	Nenana subtotal	36	35	97%	16	188	46	3,151	2,712	383	8	1	4	10	1

-continued-

Table 12.–Page 2 of 2.

Subsistence permit community	Harvest by drainage	Permits Issued [a]	Permits Returned	Percent returned	Number of permits fished [b]	Reported harvest: Chinook	Summer chum	Fall chum	Coho	Whitefish	Shee–fish	Burbot	Northern pike	Longnose sucker	Arctic grayling
Rampart	Yukon River	4	4	100%	3	1	0	186	2	17	0	2	0	0	0
Stevens Village	Yukon River	1	1	100%	0	0	0	0	0	0	0	0	0	0	0
Upper Tanana	Yukon River	2	2	100%	1	0	0	27	0	0	0	0	0	0	0
Villages (UTV) [d]	Tanana River	34	34	100%	12	0	0	31	0	1,718	1	2	16	12	33
	Tolovana River	1	1	100%	1	0	0	0	0	0	0	0	10	0	0
	UTV subtotal	37	37	100%	14	0	0	58	0	1,718	1	2	26	12	33
Other	Yukon River	5	5	100%	2	0	4	45	0	28	0	0	1	0	0
Subsistence [e]	Tanana River	2	2	100%	1	0	0	0	0	65	0	0	0	0	0
	Tolovana River	1	1	100%	1	0	0	0	0	0	0	0	1	0	0
	Koyukuk River	1	1	100%	1	0	0	0	0	4	0	0	0	0	32
	Other subtotal	9	9	100%	5	0	4	45	0	97	0	0	2	0	32
Subsistence permit subtotals		354	352	99%	174	1,148	817	30,979	7,817	3,491	165	23	890	35	130
Personal Use permit community															
Fairbanks (FNSB) [c]	Tanana River	56	56	100%	21	5	209	80	145	69	1	0	1	7	0
Other Personal Use [f]	Tanana River	8	8	100%	7	0	11	0	0	211	0	0	0	316	1
Personal Use permit subtotals		64	64	100%	28	5	220	80	145	280	1	0	1	323	1
All permit totals		418	416	99.5%	202	1,153	1,037	31,059	7,962	3,771	166	23	891	358	131

Note: Does not include salmon from test fishery projects or salmon retained from commercial fisheries. Information is from permits returned as of March 7, 2016. Includes additional late permits entered January 13, 2017.

[a] Includes 33 households that were issued permits for more than 1 area.

[b] Includes 7 households that fished in more than 1 permit area.

[c] Fairbanks North Star Borough (FNSB) includes residents from the communities of Ester, Fairbanks, North Pole, Salcha, and Two Rivers.

[d] Upper Tanana Villages (UTV) include residents from the communities of Delta Junction, Dot Lake, Northway, Tanacross, and Tok.

[e] "Other Subsistence" represents residents from Anchorage, Eagle River, Tanana, Wasilla, and Wiseman who were issued a subsistence fishing permit for Yukon, Tanana, Tolovana, and upper Koyukuk rivers.

[f] “Other Personal Use” includes residents from Anchorage, Delta Junction, and Nenana who were issued a personal use permit.

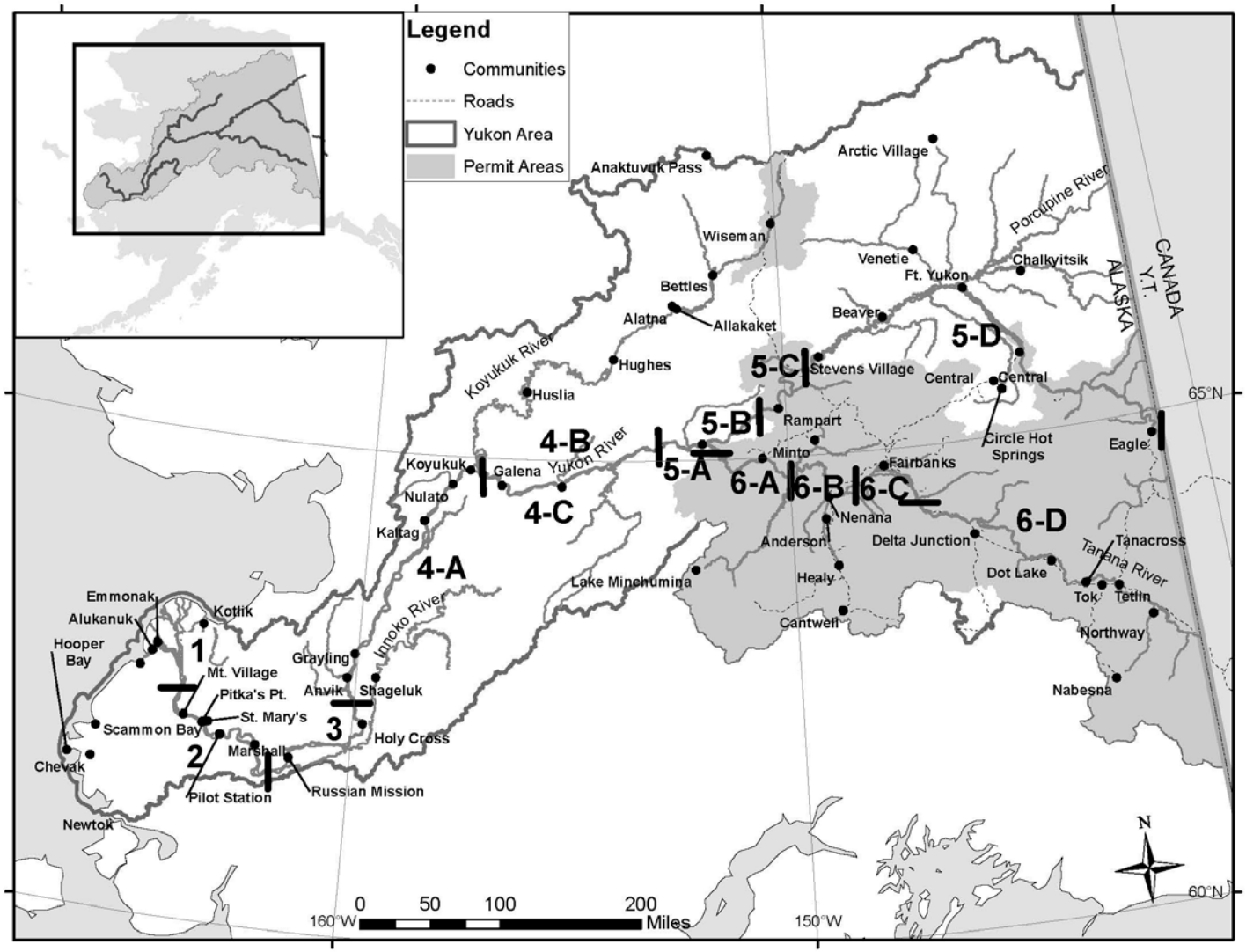


Figure 1.–Map of Alaska portion of the Yukon River drainage showing communities and subsistence and personal use permit areas.

Note: Subsistence and personal use permit areas are shaded.

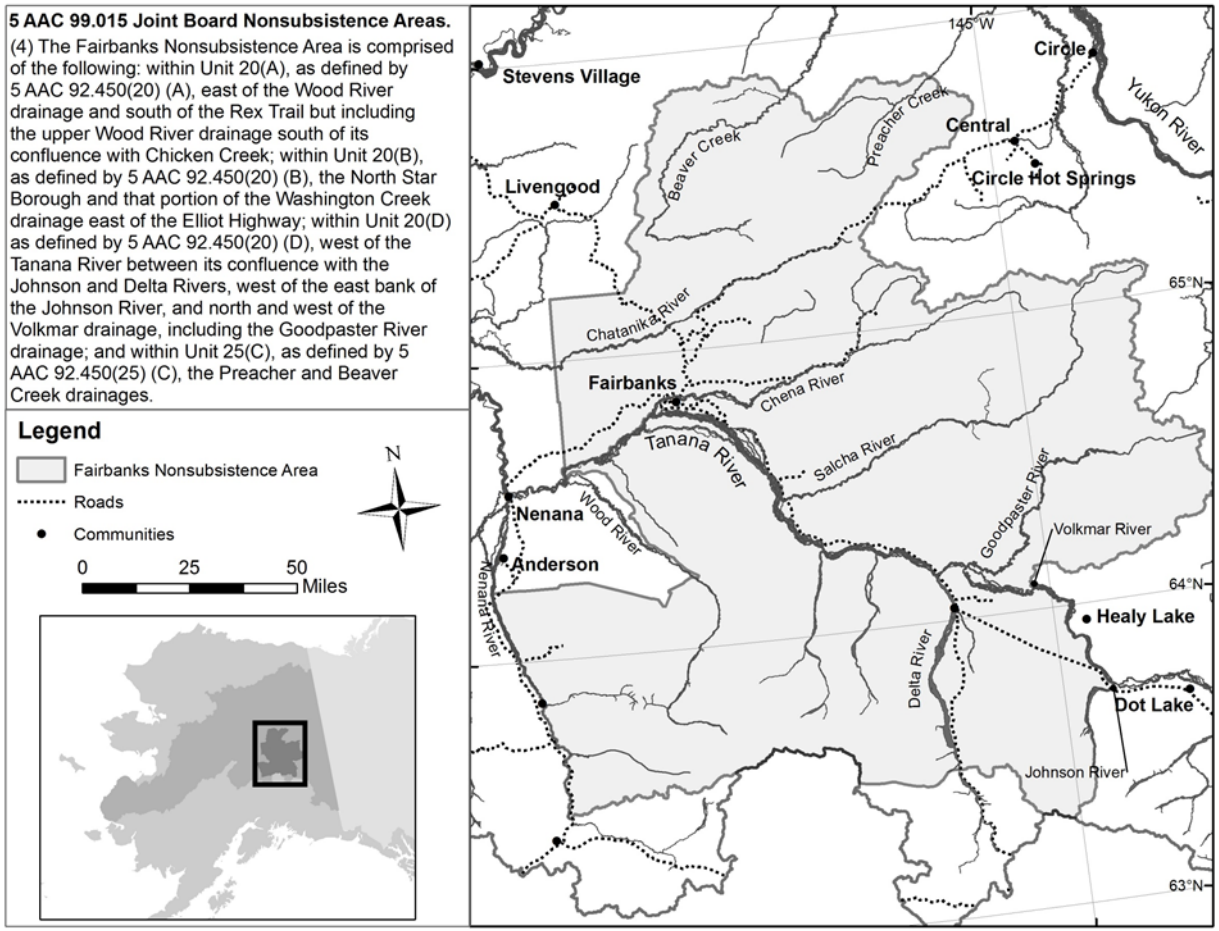
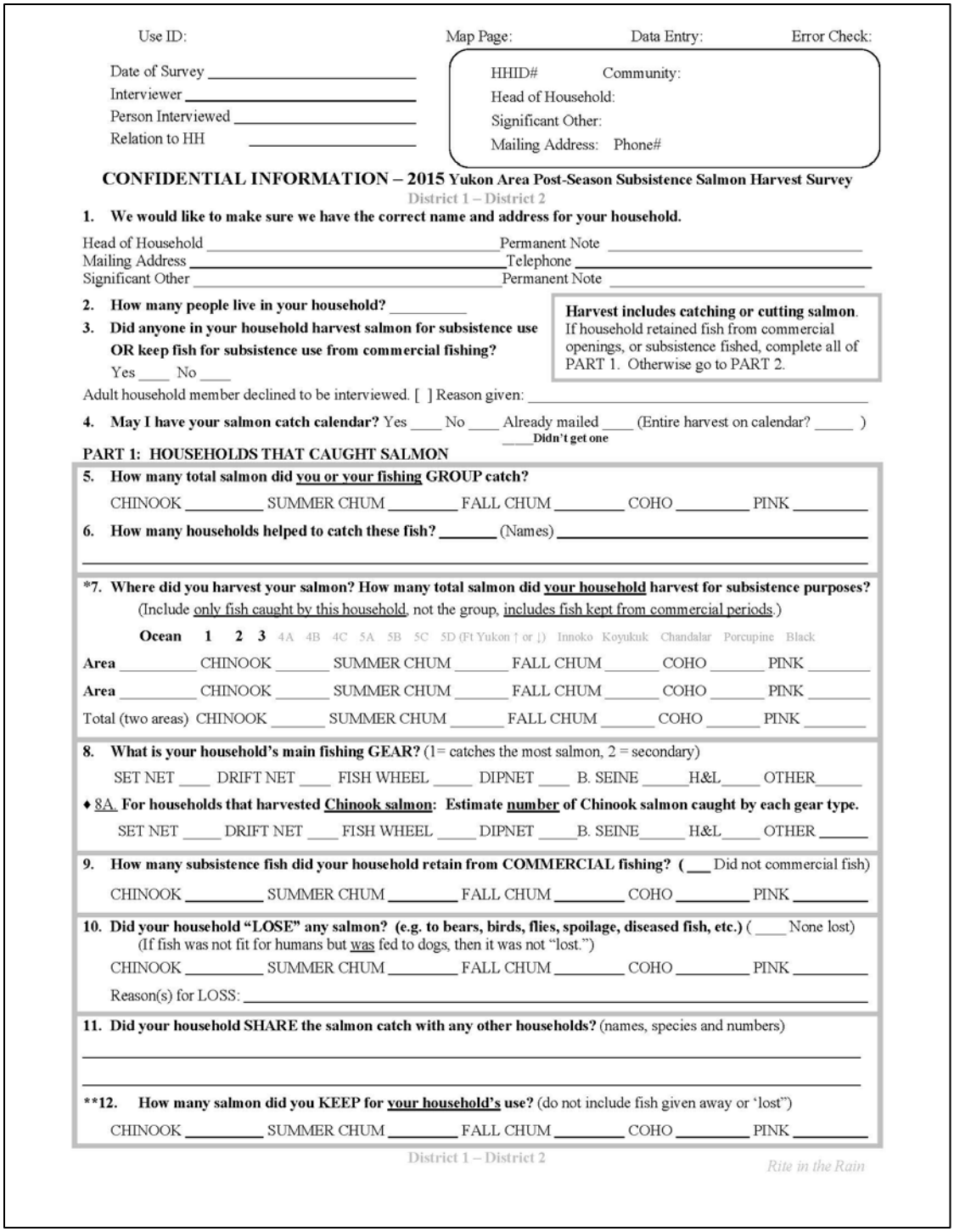


Figure 2.–Map of the Fairbanks Nonsubsistence Area.

Note: Households must have a personal use permit and sport fish license to fish in the Nonsubsistence Area.



Use ID: Map Page: Data Entry: Error Check:

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

HHID# Community:
Head of Household:
Significant Other:
Mailing Address: Phone#

CONFIDENTIAL INFORMATION – 2015 Yukon Area Post-Season Subsistence Salmon Harvest Survey

District 1 – District 2

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

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

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 household retained fish from commercial openings, or subsistence fished, complete all of PART 1. Otherwise go to PART 2.

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

4. May I have your salmon catch calendar? Yes ____ No ____ Already mailed ____ (Entire harvest on calendar? _____)
____**Didn't get one**

PART 1: HOUSEHOLDS THAT CAUGHT SALMON

5. How many total salmon did you or your fishing GROUP catch?
CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____

6. How many households helped to catch these fish? _____ (Names) _____
_____

***7. Where did you harvest your salmon? How many total salmon did your household harvest for subsistence purposes?**
(Include only fish caught by this household, not the group, includes fish kept from commercial periods.)

Ocean 1 2 3 4A 4B 4C 5A 5B 5C 5D (Ft Yukon ↑ or ↓) Innoko Koyukuk Chandalar Porcupine Black

Area _____ CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____
Area _____ CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____
Total (two areas) CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____

8. What is your household's main fishing GEAR? (1= catches the most salmon, 2 = secondary)
SET NET ____ DRIFT NET ____ FISH WHEEL _____ DIPNET ____ B. SEINE _____H&L_____ OTHER_____

♦ 8A. **For households that harvested Chinook salmon: Estimate number of Chinook salmon caught by each gear type.**
SET NET _____ DRIFT NET ____ FISH WHEEL _____ DIPNET _____B. SEINE_____ H&L_____ OTHER _____

9. How many subsistence fish did your household retain from COMMERCIAL fishing? (___ Did not commercial fish)
CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____

10. Did your household "LOSE" any salmon? (e.g. to bears, birds, flies, spoilage, diseased fish, etc.) (____ None lost)
(If fish was not fit for humans but was fed to dogs, then it was not "lost.")
CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____
Reason(s) for LOSS: _____

11. Did your household SHARE the salmon catch with any other households? (names, species and numbers)
_____
_____

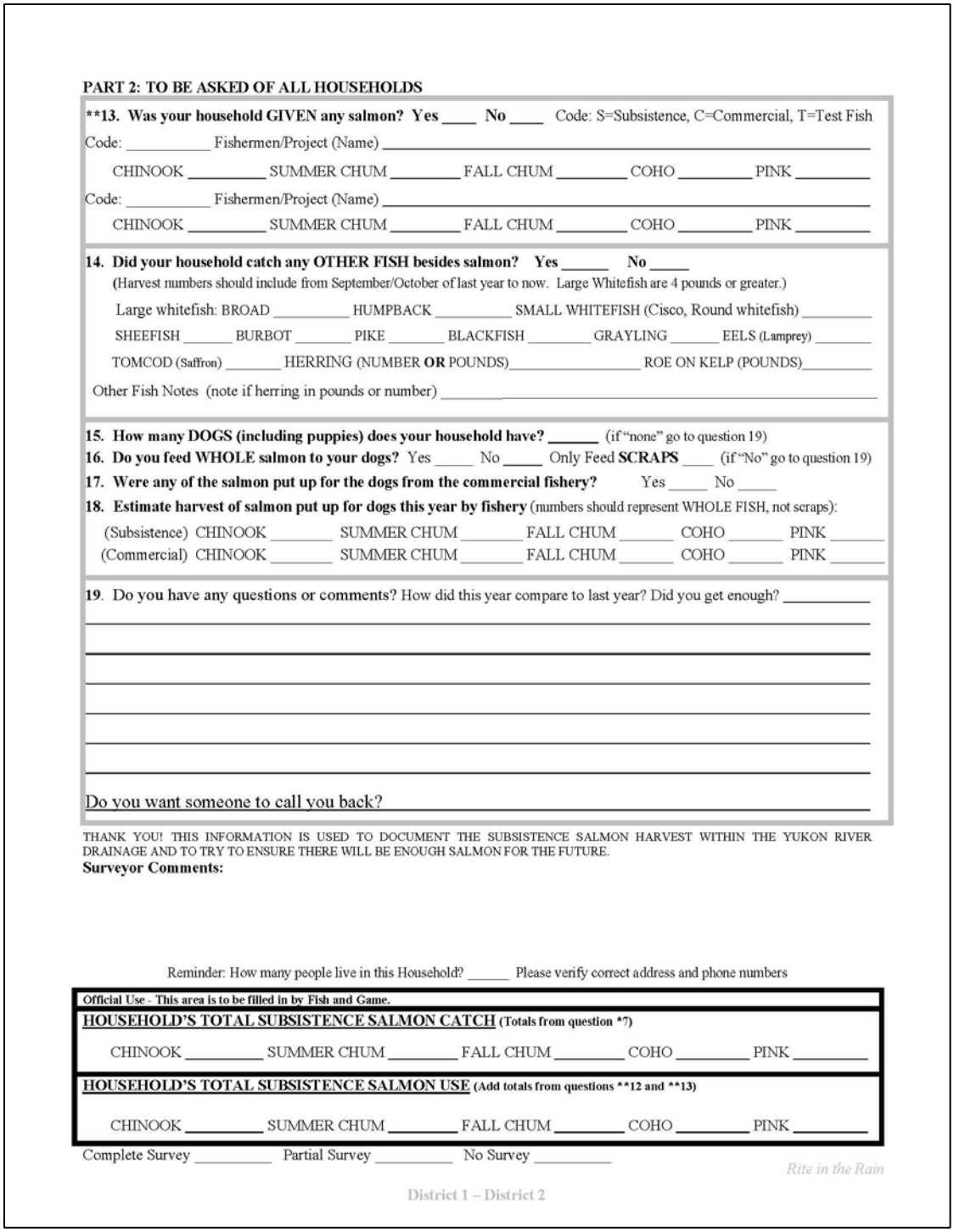
****12. How many salmon did you KEEP for your household's use?** (do not include fish given away or 'lost")
CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____

District 1 – District 2

Rite in the Rain

Figure 3.–Yukon Area postseason subsistence salmon harvest survey form, 2015.

Note: Area specific versions of the survey form were used throughout the drainage. Different versions highlighted specific fishing areas and other fish species local to the community.



PART 2: TO BE ASKED OF ALL HOUSEHOLDS

****13. Was your household GIVEN any salmon? Yes ____ No ____** Code: S=Subsistence, C=Commercial, T=Test Fish

Code: _____ Fishermen/Project (Name) _____

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

Code: _____ Fishermen/Project (Name) _____

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

14. Did your household catch any OTHER FISH besides salmon? Yes _____ No _____

(Harvest numbers should include from September/October of last year to now. Large Whitefish are 4 pounds or greater.)

Large whitefish: BROAD _____ HUMPBACK _____ SMALL WHITEFISH (Cisco, Round whitefish) _____

SHEEFISH _____ BURBOT _____ PIKE _____ BLACKFISH _____ GRAYLING _____ EELS (Lamprey) _____

TOMCOD (Saffron) _____ HERRING (NUMBER **OR** POUNDS)_____ ROE ON KELP (POUNDS)_____

Other Fish Notes (note if herring in pounds or number) _____

15. How many DOGS (including puppies) does your household have? _____ (if "none" go to question 19)

16. Do you feed WHOLE salmon to your dogs? Yes _____ No _____ Only Feed **SCRAPS** ____ (if "No" go to question 19)

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

18. Estimate harvest of salmon put up for dogs this year by fishery (numbers should represent WHOLE FISH, not scraps):

(Subsistence) CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____

(Commercial) CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____

19. Do you have any questions or comments? How did this year compare to last year? Did you get enough? _____

Do you want someone to call you back? _____

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

Surveyor Comments:

Reminder: How many people live in this Household? _____ Please verify correct address and phone numbers

Official Use - This area is to be filled in by Fish and Game.

HOUSEHOLD'S TOTAL SUBSISTENCE SALMON CATCH (Totals from question *7)

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

HOUSEHOLD'S TOTAL SUBSISTENCE SALMON USE (Add totals from questions **12 and **13)

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

Complete Survey _____ Partial Survey _____ No Survey _____

Rite in the Rain

District 1 – District 2

Figure 3.–Page 2 of 2.

2014 Yukon River
Lamprey Harvest Survey

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES, FAIRBANKS
Telephone (907) 459-7274, Fax (907) 459-7271

The Alaska Department of Fish and Game would like your help to better manage the lamprey fishery in the Yukon River. Please fill out and return this pre-paid postcard by 12/31/14 to help us understand the importance of lamprey harvests to your household. Thank you for your assistance.

1. DID ANYONE in your household fish for lamprey (eels) from September through December 2014? YES NO (please circle)

2. PLEASE ESTIMATE THE AMOUNT of lamprey caught for subsistence and date(s) of harvest:

_____ *POUNDS* _____ 5 gal. *BUCKETS* _____ Large / small *GUNNY SACKS*

DATES fished: _____

Fold Here

3. CIRCLE THE COMMUNITY NEAREST TO WHERE YOU FISHED:

MOUNTAIN VILLAGE	*PITKAS POINT*	*ST. MARYS*
PILOT STATION	*MARSHALL*	*RUSSIAN MISSION*
HOLY CROSS	*ANVIK*	*GRAYLING*

OTHER COMMUNITY _____

Have you noticed changes in lamprey abundance, migration timing, size, or quality? Were you able to get enough lamprey this year?

_____

_____

There is still time to mail in your Subsistence Catch Calendar! The cash prizes will be awarded in the first week of January.

Please fold and tape this card so the return mailing label is on the outside.

Figure 4.–Supplemental postcard mailed to lamprey harvesting communities.

Note: Arctic lamprey harvest survey postcards mailed in November 2014 to all households in the communities listed. Cards were also mailed to households in Shageluk (not listed). Surveys took place in these communities in September 2015, and households were asked about lamprey harvested in the winter of 2014.

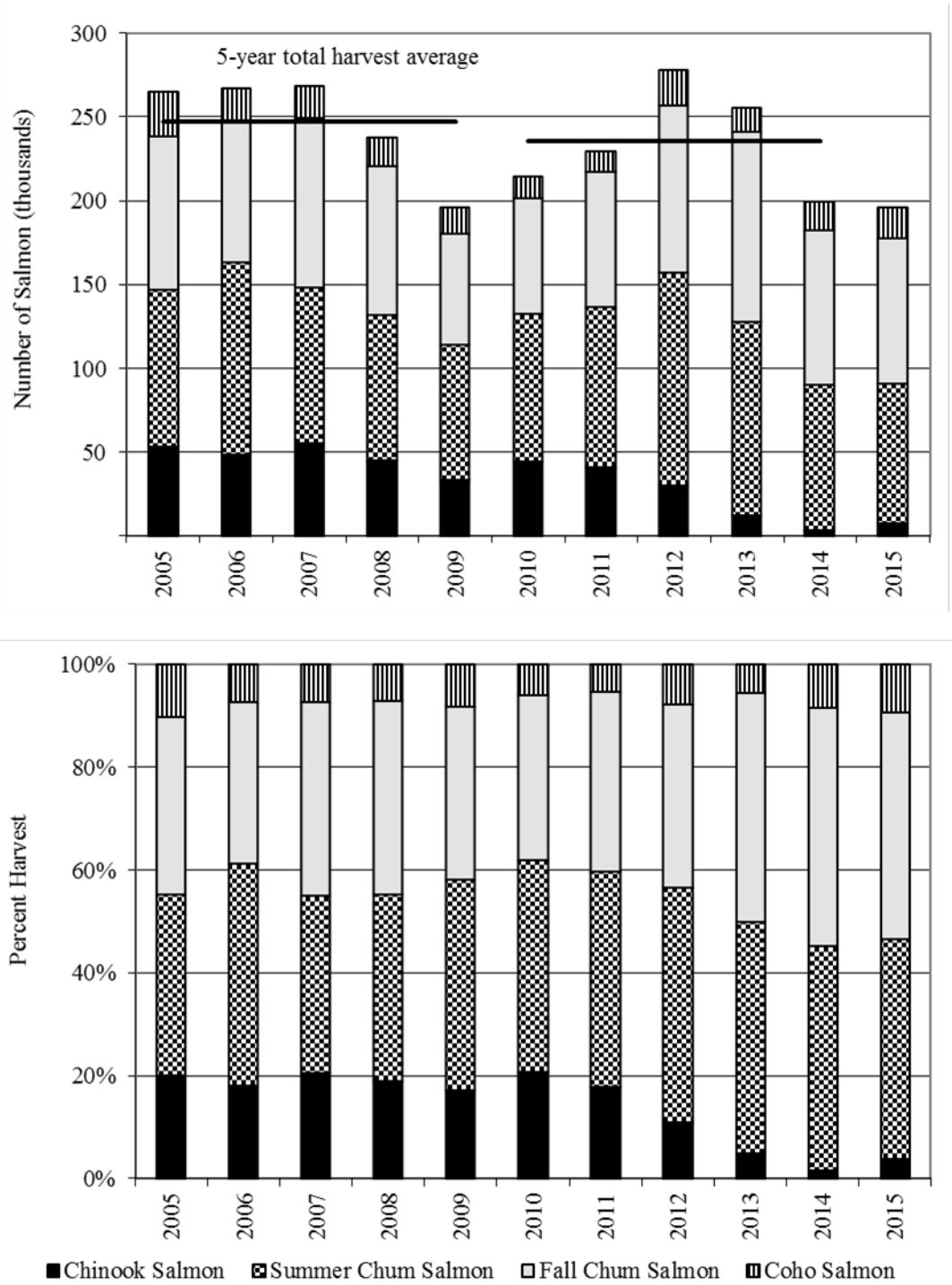


Figure 5.–Estimated total subsistence salmon harvest by species, Yukon Area, 2005–2015.

Note: Annual harvest of salmon species from 2005 through 2015 by number (top) and proportion (bottom). Totals include survey, permit, test fish and retained from commercial. Does not include salmon caught in the personal use fishery or summer chum, fall chum, and coho salmon carcasses retained from the commercial fishery and used for subsistence.

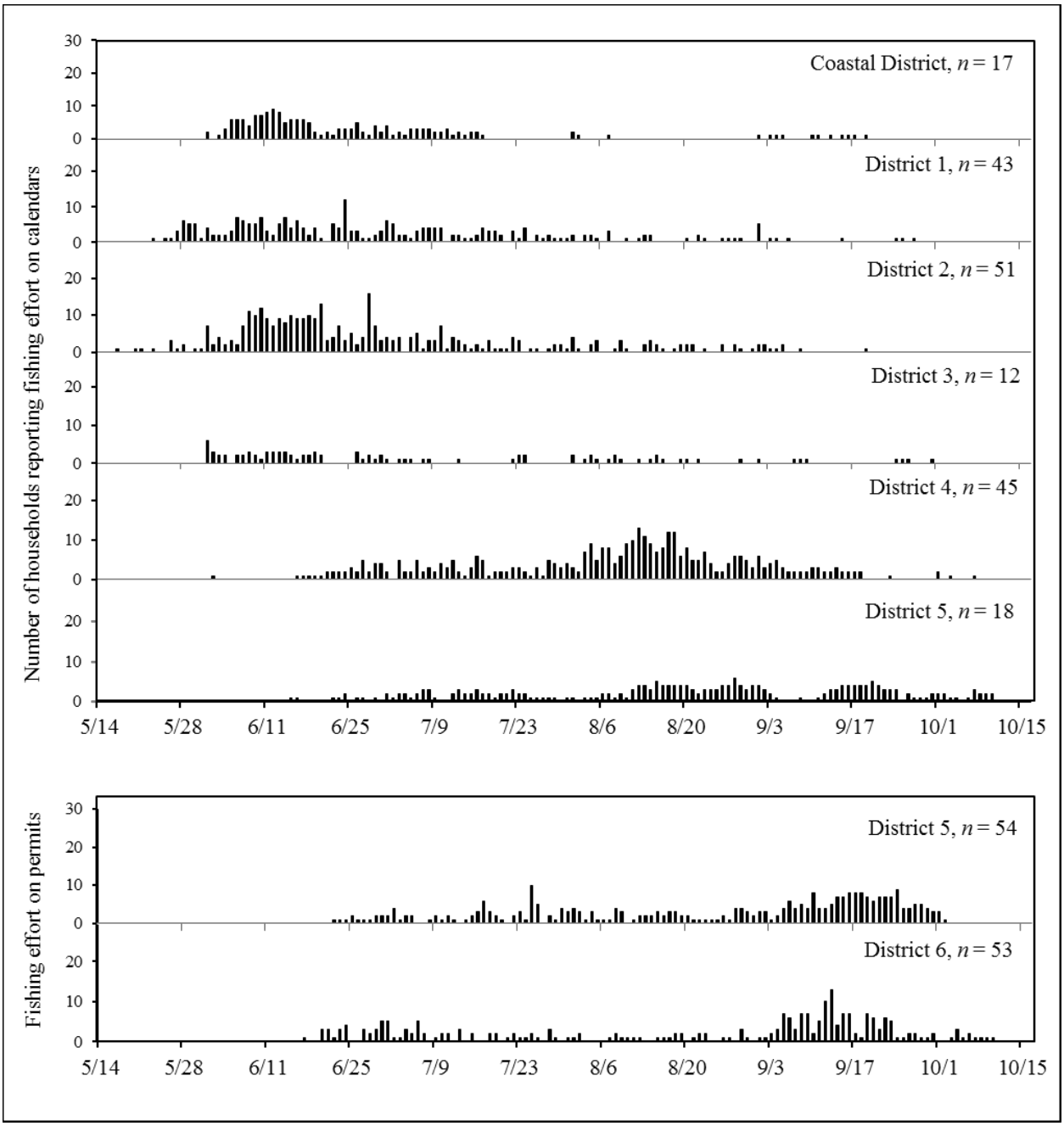


Figure 6.–Subsistence and personal use fishing effort, shown as number of households reporting harvest, by day and by district, in 2015.

Note: Top panel: fishing effort by day as recorded on harvest calendars. Bottom panel: fishing effort by day as recorded on permits. District 5 is represented in both panels because it includes both survey and permit communities. Bars represent the number of households in each district that recorded harvest by day on calendars or permits and (*n*) is the total number of calendar or permits that reported harvest. Does not include permits issued in District 6 primarily for the harvest of northern pike.

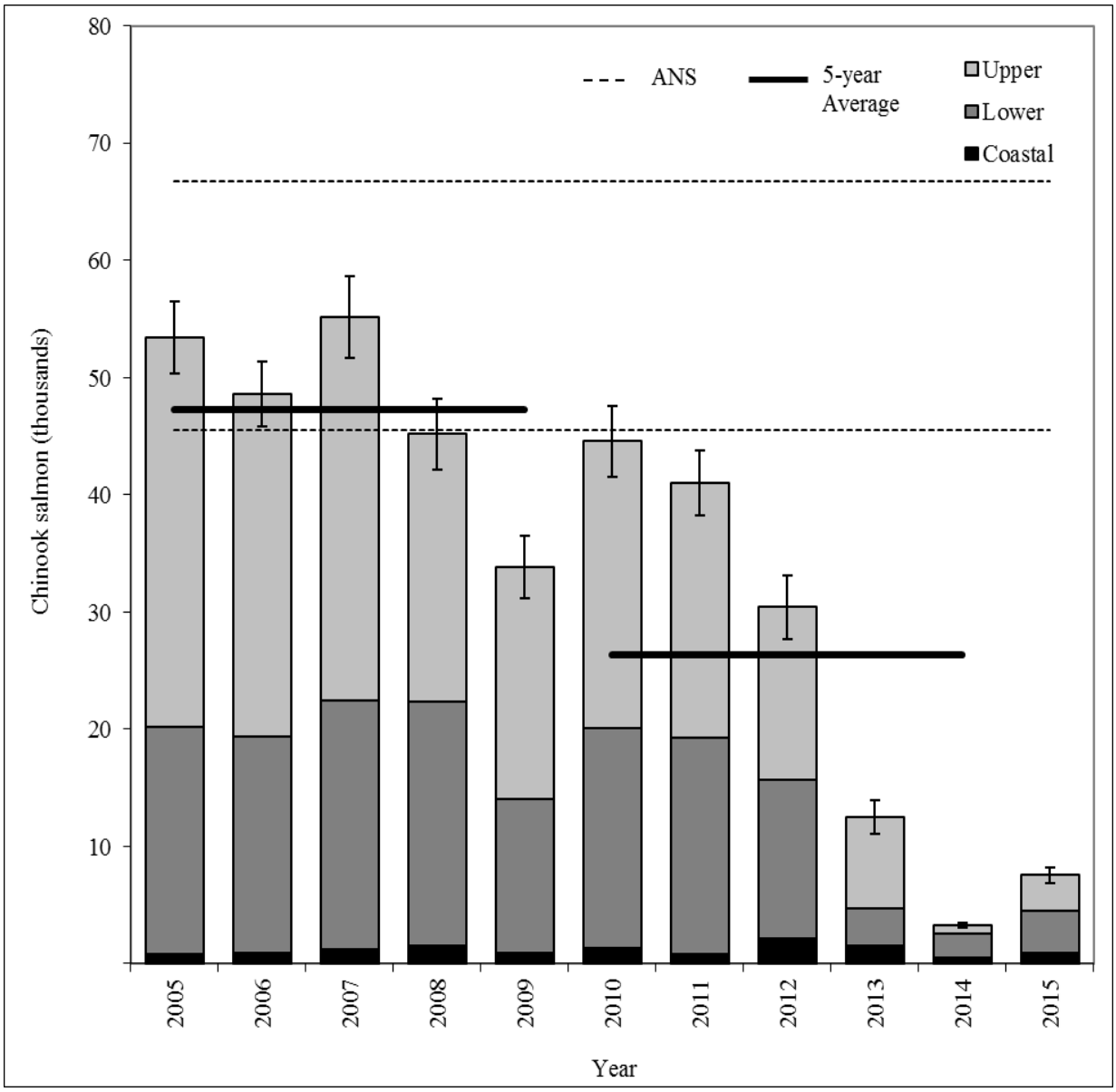


Figure 7.–Estimated Chinook salmon subsistence harvest, Yukon Area, 2005–2015.

Note: Harvest estimates and 95% confidence interval are provided. In 2001 the Alaska Board of Fisheries defined the Amount Necessary for Subsistence (ANS) as 45,500 to 66,704 Chinook salmon. ANS ranges and harvest amounts do not include salmon from the personal use fishery.

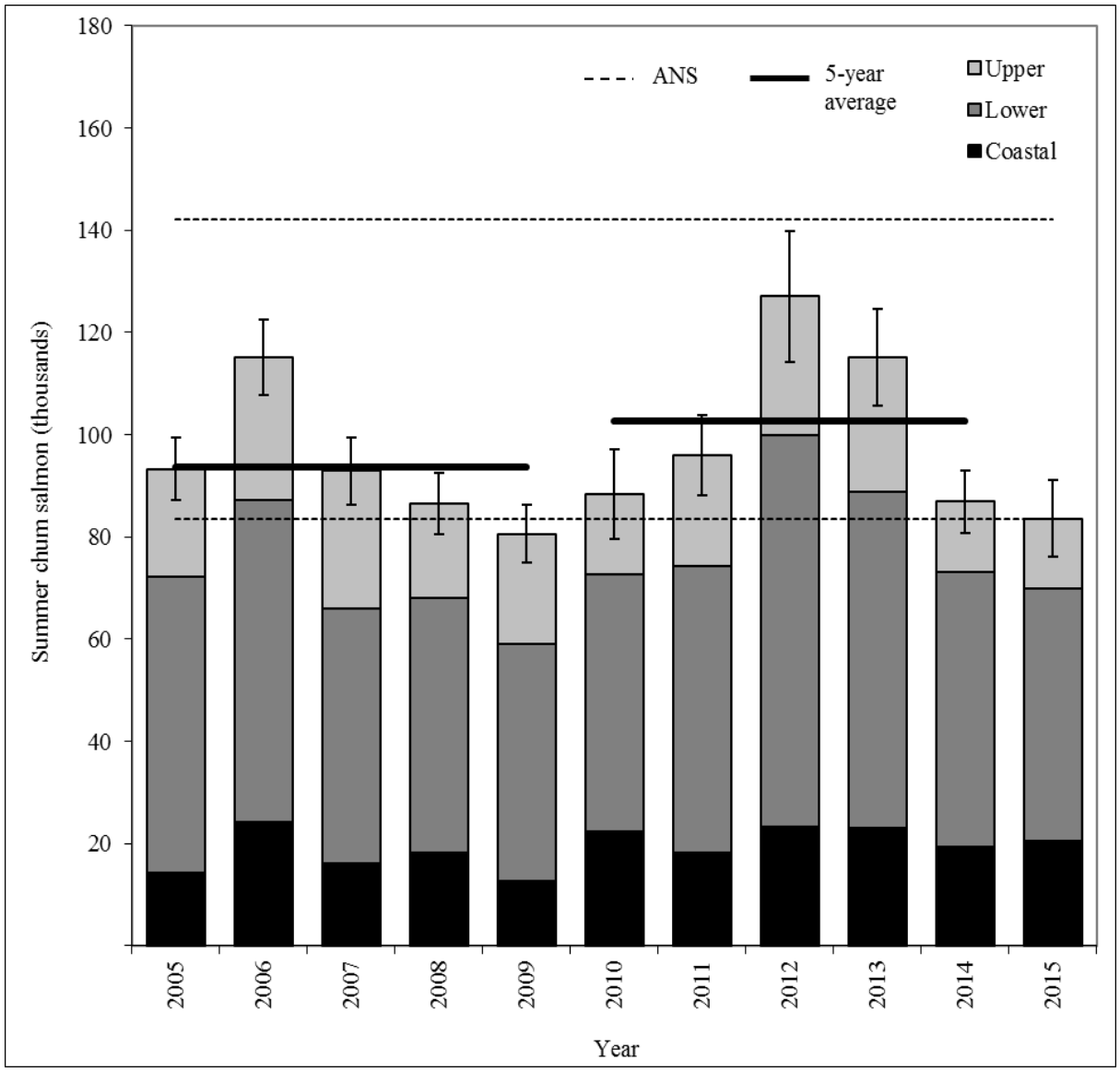


Figure 8.–Estimated summer chum salmon subsistence harvest, Yukon Area, 2005–2015.

Note: Harvest estimates and 95% confidence interval are provided. In 2001 the Alaska Board of Fisheries defined the Amount Necessary for Subsistence (ANS) as 83,500 to 142,192 summer chum salmon. ANS ranges and harvest amounts do not include salmon from the personal use fishery.

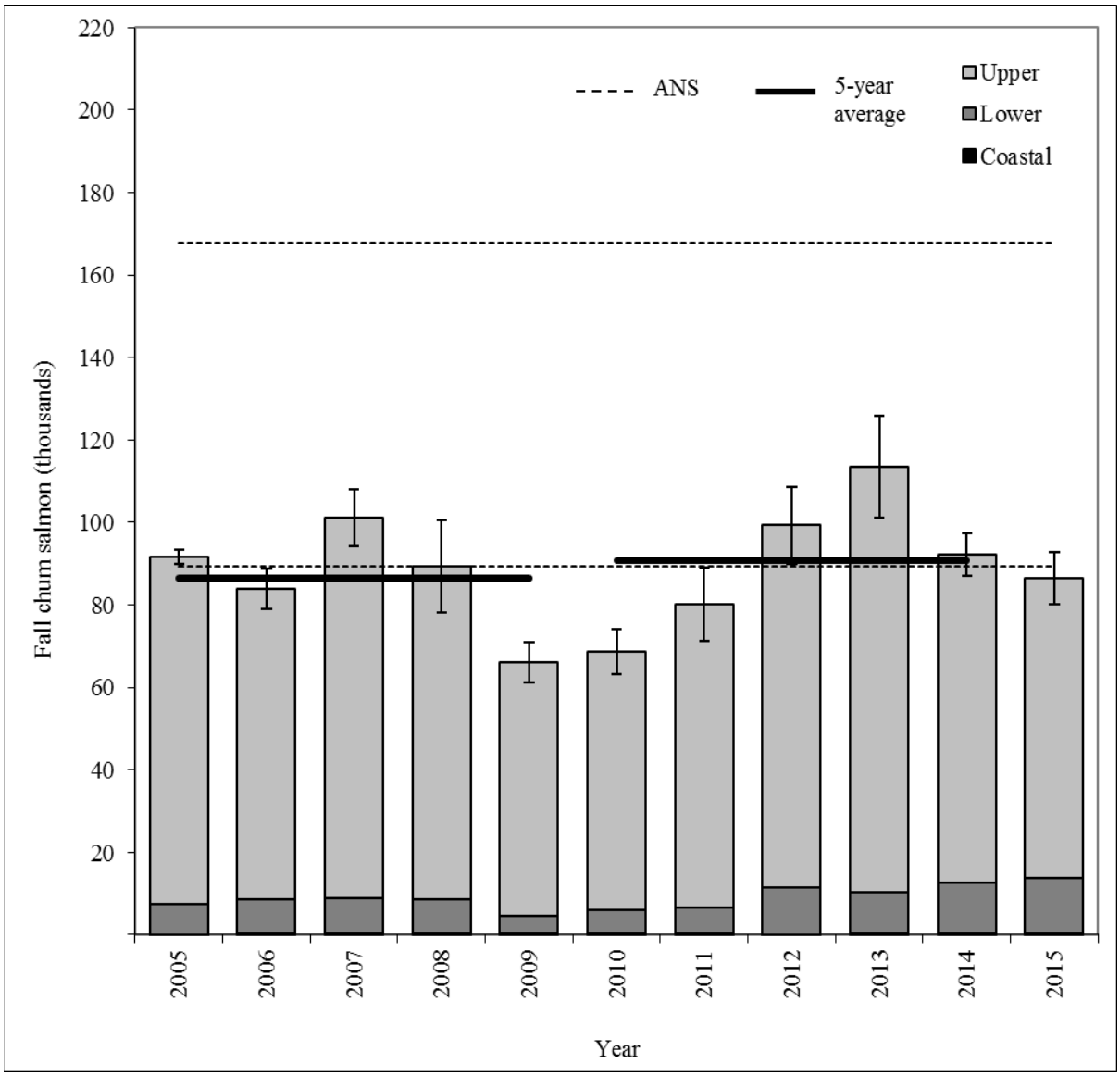


Figure 9.–Estimated fall chum salmon subsistence harvest, Yukon Area, 2005–2015.

Note: Harvest estimates and 95% confidence interval are provided. In 2001, the Alaska Board of Fisheries defined the Amount Necessary for Subsistence (ANS) as 89,500 to 167,900 fall chum salmon. Does not include fall chum salmon sold commercially for roe and carcasses returned to fishermen in District 6. ANS ranges and harvest amounts do not include salmon from the personal use fishery.

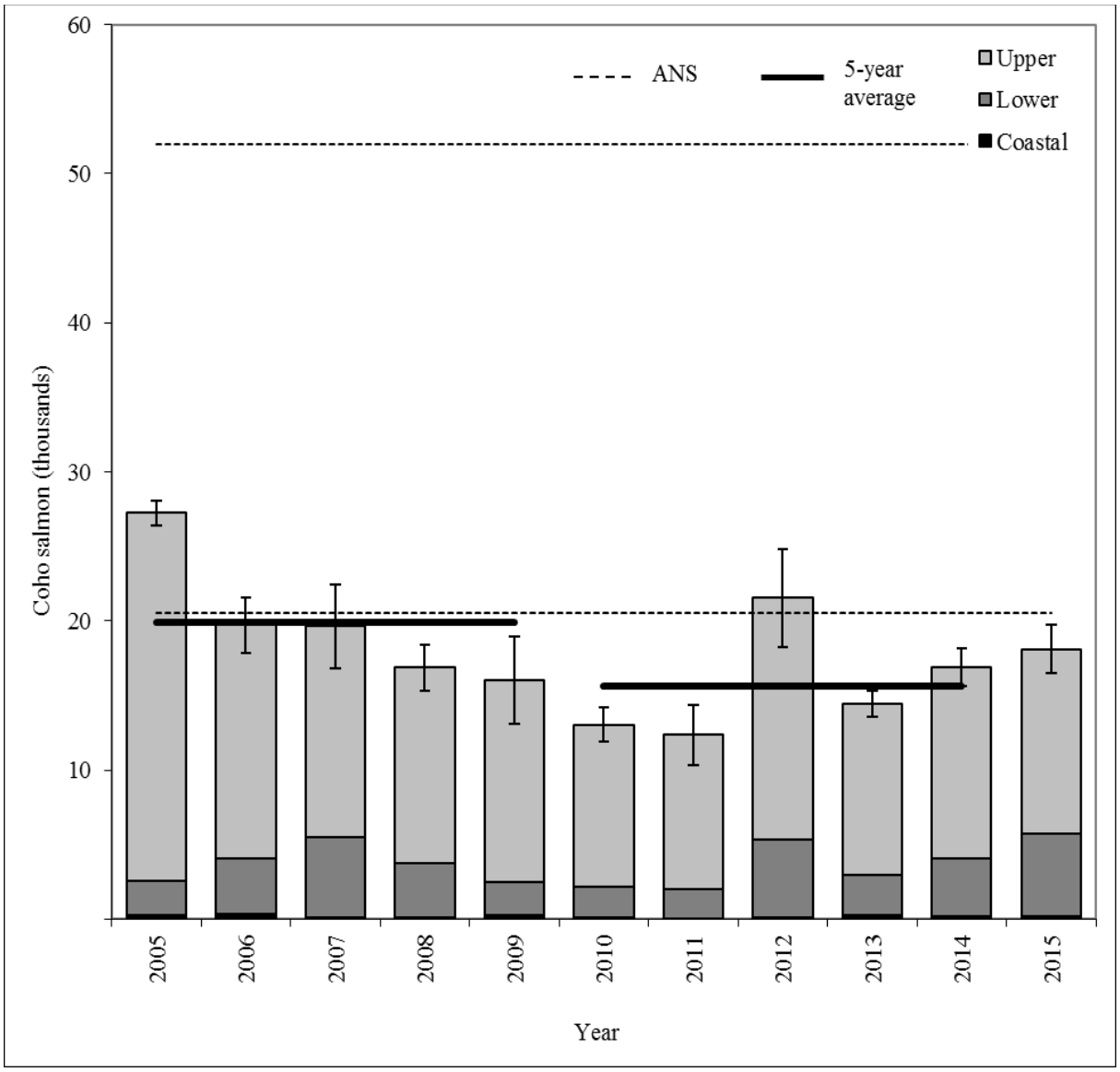


Figure 10.–Estimated coho salmon subsistence harvest, Yukon Area, 2005–2015.

Note: Harvest estimates and 95% confidence interval are provided. In 2001, the Alaska Board of Fisheries defined the Amount Necessary for Subsistence (ANS) as 20,500 to 51,980 coho salmon. Does not include carcasses returned to fishermen from coho salmon sold commercially for roe in District 6. ANS ranges and harvest amounts do not include salmon from the personal use fishery.

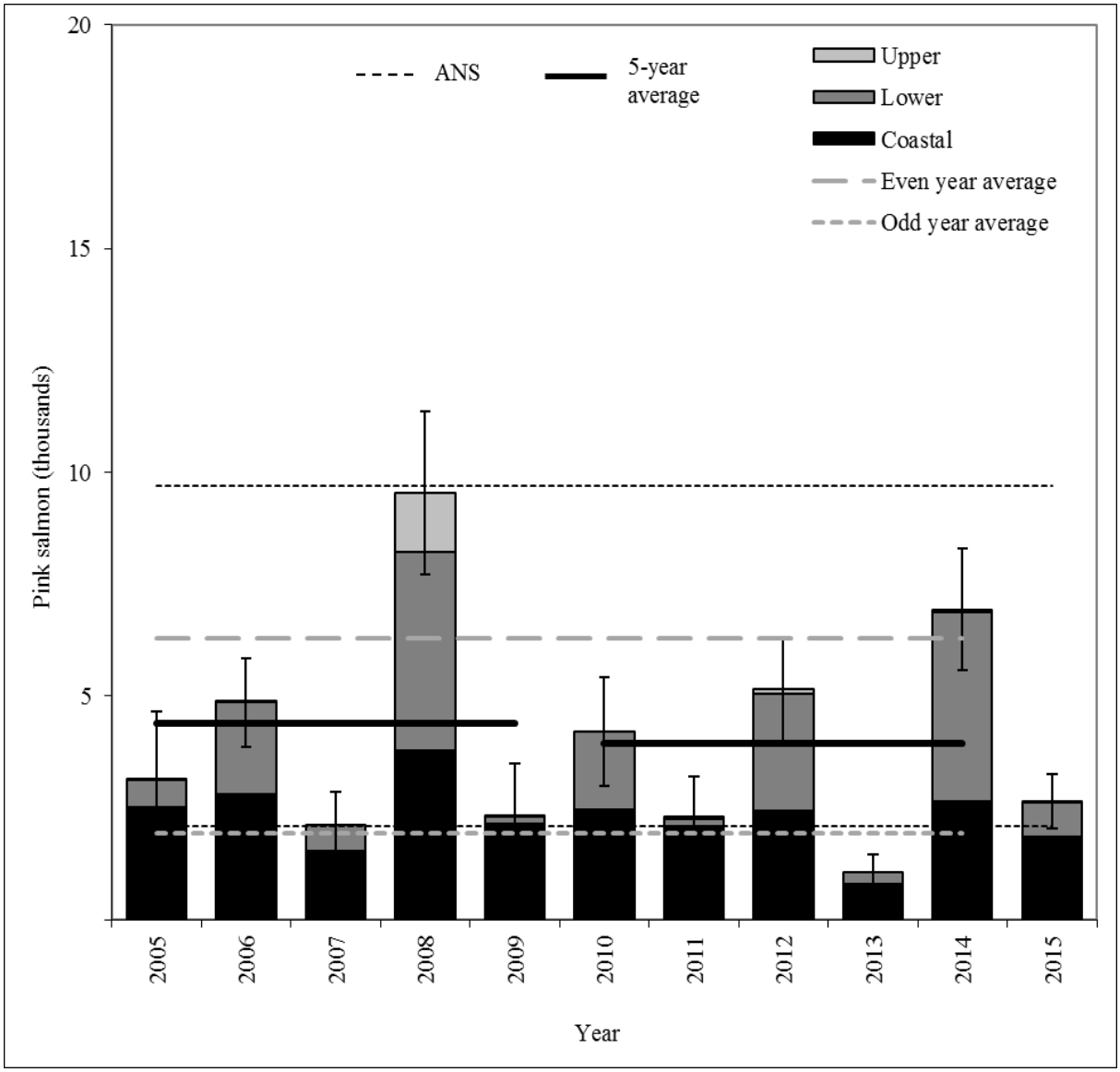


Figure 11.–Estimated pink salmon subsistence harvest, Yukon Area, 2005–2015.

Note: Harvest estimates and 95% confidence interval are provided. In 2013, the Alaska Board of Fisheries defined the Amount Necessary for Subsistence (ANS) as 2,100 to 9,700 pink salmon. Even and odd year averages were calculated from 2005–2014 harvest totals.

APPENDIX A. 2015 HARVEST INFORMATION

Appendix A1.–Estimated Chinook salmon subsistence harvest in surveyed communities, by harvest level, with community and district totals, Yukon Area, 2015.

	Unknown				Does not harvest salmon				Light harvester				Medium harvester				Heavy harvester				Combined Total		Est.	CI
Community	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	total	95%
Hooper Bay	21	14	4	1	69	17	1	0	77	16	2	1	55	45	5	1	–	–	–	–	222	92	534	147
Scammon Bay	17	10	2	2	32	8	1	1	44	11	3	1	26	22	9	1	–	–	–	–	119	51	432	109
Coastal District	38	24	3	1	101	25	1	0	121	27	2	1	81	67	6	0	–	–	–	–	341	143	966	182
Nunam Iqua	9	0	0	0	7	5	0	0	11	8	3	1	15	11	6	1	–	–	–	–	42	24	160	57
Alakanuk	14	9	0	0	39	11	2	1	48	13	4	2	41	25	2	1	–	–	–	–	142	58	336	213
Emmonak	29	8	0	0	60	29	0	0	51	16	2	1	48	41	4	0	1	0	0	0	189	94	291	115
Kotlik	13	2	1	1	25	8	0	0	51	14	4	1	35	30	8	1	–	–	–	–	124	54	511	130
District 1	65	19	1	0	131	53	1	0	161	51	3	1	139	107	4	0	1	0	0	0	497	230	1,298	277
Mountain Village	23	9	0	0	46	10	0	0	61	14	2	1	40	27	4	1	–	–	–	–	170	60	310	171
Pitkas Point	7	2	0	0	3	2	3	1	14	11	2	1	9	8	2	0	–	–	–	–	33	23	44	21
St. Marys	16	8	1	1	26	5	0	0	54	16	2	1	38	26	2	0	1	0	0	0	135	55	201	82
Pilot Station	13	9	0	0	35	11	0	0	53	21	5	1	20	19	5	1	–	–	–	–	121	60	344	137
Marshall	17	7	1	0	21	4	0	0	43	12	2	1	23	14	2	1	1	0	0	0	105	37	128	86
District 2	76	35	0	0	131	32	0	0	225	74	3	1	130	94	3	0	2	0	0	0	564	235	1,027	246
Russian Mission	6	3	4	1	16	5	1	1	43	12	7	3	11	11	1	0	–	–	–	–	76	31	365	279
Holy Cross	13	4	4	2	17	7	0	0	20	10	0	0	14	12	2	0	–	–	–	–	64	33	68	46
Shageluk	3	0	0	0	13	9	0	0	6	5	2	1	2	2	0	0	1	1	0	0	25	17	14	12
District 3	22	7	4	1	46	21	0	0	69	27	5	2	27	25	1	0	1	1	0	0	165	81	447	276
Anvik	4	0	0	0	9	6	0	0	12	11	1	0	7	6	5	2	–	–	–	–	32	23	50	25
Grayling	7	2	0	0	7	3	0	0	30	9	0	0	10	9	1	0	–	–	–	–	54	23	14	9
Kaltag	6	2	8	6	9	2	0	0	33	9	1	1	6	6	5	0	–	–	–	–	54	19	119	110
Nulato	10	6	0	0	14	5	0	0	45	17	0	0	11	9	3	1	–	–	–	–	80	37	33	24
Koyukuk	4	0	0	0	14	4	0	0	21	3	0	0	4	3	0	0	2	1	12	0	45	11	26	0
Galena	9	4	0	0	64	16	1	1	62	19	5	2	9	8	3	1	2	2	5	0	146	49	366	240
Ruby	2	1	1	0	42	9	0	0	12	4	3	2	7	7	5	0	1	1	0	0	64	22	68	56
Huslia	9	5	0	0	51	14	0	0	15	5	0	0	9	8	0	0	3	3	9	0	87	35	34	7
Hughes	3	2	0	0	19	17	0	0	8	8	0	0	2	2	0	0	1	1	4	0	33	30	4	0
Allakaket	7	2	2	2	32	8	0	0	10	2	1	1	3	3	1	0	2	1	0	0	54	16	35	35
Alatna	3	1	0	0	1	0	0	0	3	3	0	0	–	–	–	–	–	–	–	–	7	4	0	0
Bettles	10	1	0	0	18	9	0	0	–	–	–	–	–	–	–	–	–	–	–	–	28	10	0	0
District 4	74	26	1	1	280	93	0	0	251	90	2	1	68	61	3	0	11	9	6	0	684	279	749	267

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	Unknown				Does not harvest salmon				Light harvester				Medium harvester				Heavy harvester				Combined			
																					Total		Est.	CI
Community	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	total	95%
Tanana	12	5	0	0	32	8	0	0	33	13	1	1	8	6	1	1	11	10	8	2	96	42	141	60
Stevens Village	–	–	–	–	2	0	0	0	3	1	0	0	2	0	0	0	1	0	0	0	8	1	0	0
Birch Creek	2	1	0	0	8	4	0	0	3	2	0	0	–	–	–	–	–	–	–	–	13	7	0	0
Beaver	3	1	0	0	7	5	0	0	13	9	5	3	2	1	0	0	–	–	–	–	25	16	69	74
Fort Yukon	32	11	5	3	126	28	0	0	40	12	0	0	16	13	4	1	9	5	6	3	223	69	294	175
Venetie	12	5	8	6	45	10	0	0	12	4	17	13	5	4	3	1	–	–	–	–	74	23	308	349
Chalkyitsik	8	0	0	0	22	17	0	0	3	2	0	0	–	–	–	–	–	–	–	–	33	19	0	0
District 5	69	23	4	2	242	72	0	0	107	43	3	2	33	24	3	1	21	15	7	2	472	177	812	386
Survey totals	344	134	2	0	931	296	0	0	934	312	3	0	478	378	4	0	36	25	6	1	2,723	1,145	5,299	679

Note: The number of Chinook salmon harvested was estimated using the total number of households (*N*), the number of households contacted (*n*), the average number of salmon harvested by households (Mean), standard error (SE), and includes 95% confidence interval (CI 95%). Dashes indicate indefinable values.

Appendix A2.–Estimated summer chum salmon subsistence harvest in surveyed communities, by harvest level, with community and district totals, Yukon Area, 2015.

	Unknown				Does not harvest salmon				Light harvester				Medium harvester				Heavy harvester				Combined Total		Est.	CI
Community	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	total	95%
Hooper Bay	21	14	72	20	69	17	12	7	77	16	56	16	55	45	95	8	–	–	–	–	222	92	11,870	2,875
Scammon Bay	17	10	46	19	32	8	14	6	44	11	83	32	26	22	143	8	–	–	–	–	119	51	8,598	2,958
Coastal District	38	24	61	14	101	25	12	5	121	27	66	15	81	67	111	6	–	–	–	–	341	143	20,468	4,083
Nunam Iqua	9	0	0	0	7	5	1	0	11	8	17	5	15	11	98	10	–	–	–	–	42	24	2,120	418
Alakanuk	14	9	4	2	39	11	15	9	48	12	37	11	41	25	44	7	–	–	–	–	142	57	4,174	1,376
Emmonak	29	8	17	8	60	29	8	4	51	16	58	24	48	41	85	6	1	0	0	0	189	94	8,024	2,549
Kotlik	13	2	8	7	25	8	7	3	51	14	44	17	35	30	53	3	–	–	–	–	124	54	4,369	1,758
District 1	65	19	11	4	131	53	9	3	161	50	45	10	139	107	66	3	1	0	0	0	497	229	18,687	3,373
Mountain Village	23	9	16	11	46	10	7	5	61	14	38	10	40	27	77	7	–	–	–	–	170	60	6,063	1,525
Pitkas Point	7	2	0	0	3	2	30	17	14	11	41	12	9	8	62	6	–	–	–	–	33	23	1,225	377
St. Marys	16	8	24	9	26	5	12	11	54	16	80	33	38	26	83	11	1	0	0	0	135	55	8,216	3,755
Pilot Station	13	9	23	9	35	11	0	0	53	21	46	11	20	19	55	3	–	–	–	–	121	60	3,837	1,144
Marshall	17	7	21	15	21	4	41	37	43	12	36	18	23	14	68	15	1	0	0	0	105	37	4,351	2,406
District 2	76	35	19	5	131	32	12	7	225	74	50	9	130	94	73	5	2	0	0	0	564	235	23,692	4,770
Russian Mission	6	3	25	16	16	5	17	14	43	11	37	13	11	11	56	0	–	–	–	–	76	30	2,626	1,243
Holy Cross	13	4	18	9	17	7	0	0	20	10	0	0	14	12	14	3	–	–	–	–	64	33	421	239
Shageluk	3	0	0	0	13	9	2	1	6	5	8	3	2	2	1	0	1	1	0	0	25	17	80	55
District 3	22	7	20	8	46	21	6	5	69	26	24	8	27	25	30	1	1	1	0	0	165	80	3,127	1,235
Anvik	4	0	0	0	9	6	0	0	12	11	19	3	7	6	65	18	–	–	–	–	32	23	777	304
Grayling	7	2	0	0	7	3	0	0	30	9	6	5	10	9	34	3	–	–	–	–	54	23	509	296
Kaltag	6	2	0	0	9	2	0	0	33	9	3	2	6	6	21	0	–	–	–	–	54	19	216	164
Nulato	10	6	0	0	14	5	0	0	45	17	0	0	11	9	1	0	–	–	–	–	80	37	6	4
Koyukuk	4	0	0	0	14	4	0	0	21	3	0	0	4	3	0	0	2	1	0	0	45	11	0	0
Galena	9	4	0	0	64	16	0	0	62	19	11	8	9	8	0	0	2	2	200	0	146	49	1,059	963
Ruby	2	1	7	0	42	9	0	0	12	4	1	1	7	7	9	0	1	1	0	0	64	22	88	15
Huslia	9	5	0	0	51	14	16	10	15	5	0	0	9	8	172	32	3	3	250	0	87	35	3,110	1,205
Hughes	3	2	0	0	19	17	0	0	8	8	0	0	2	2	0	0	1	1	1,499	0	33	30	1,499	0
Allakaket	7	2	50	42	32	8	15	10	10	2	3	2	3	3	0	0	2	1	800	0	54	16	2,455	916
Alatna	3	1	0	0	1	0	0	0	3	3	17	0	–	–	–	–	–	–	–	–	7	4	58	0
Bettles	10	1	0	0	18	9	0	0	–	–	–	–	–	–	–	–	–	–	–	–	28	10	0	0
District 4	74	26	6	5	280	93	5	2	251	90	5	2	68	61	37	5	11	9	386	0	684	279	9,777	1,779

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	Unknown				Does not harvest salmon				Light harvester				Medium harvester				Heavy harvester				Combined			
																					Total		Est.	CI
Community	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	total	95%
Tanana	12	5	0	0	32	8	1	1	33	13	5	4	8	6	1	1	11	10	267	45	96	42	3,162	1,025
Stevens Village	–	–	–	–	2	0	0	0	3	1	0	0	2	0	0	0	1	0	0	0	8	1	0	0
Birch Creek	2	1	0	0	8	4	0	0	3	2	0	0	–	–	–	–	–	–	–	–	13	7	0	0
Beaver	3	1	0	0	7	5	0	0	13	9	0	0	2	1	0	0	–	–	–	–	25	16	0	0
Fort Yukon	32	11	0	0	126	28	0	0	40	12	0	0	16	13	0	0	9	5	0	0	223	69	0	0
Venetie	12	5	0	0	45	10	0	0	12	4	0	0	5	4	0	0	–	–	–	–	74	23	0	0
Chalkyitsik	8	0	0	0	22	17	0	0	3	2	0	0	–	–	–	–	–	–	–	–	33	19	0	0
District 5	69	23	0	0	242	72	0	0	107	43	2	1	33	24	0	0	21	15	147	25	472	177	3,162	1,003
Survey totals	344	134	16	3	931	296	6	1	934	310	31	4	478	378	65	2	36	25	225	15	2,723	1,143	78,913	7,476

Note: The number of summer chum salmon harvested was estimated using the total number of households (*N*), the number of households contacted (*n*), the average number of salmon harvested by households (Mean), standard error (SE), and includes 95% confidence interval (CI 95%). Dashes indicate indefinable values.

Appendix A3.–Estimated fall chum salmon subsistence harvest in surveyed communities, by harvest level, with community and district totals, Yukon Area, 2015.

	Unknown				Does not harvest salmon				Light harvester				Medium harvester				Heavy harvester				Combined			
																					Total		Est.	CI
Community	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	total	95%
Hooper Bay	21	14	0	0	69	17	0	0	77	16	0.2	0.2	55	45	1.2	0.4	–	–	–	–	222	92	79	49
Scammon Bay	17	10	0	0	32	8	0.1	0.1	44	11	0	0	26	22	4.4	1.3	–	–	–	–	119	51	119	70
Coastal District	38	24	0	0	101	25	0	0	121	27	0.1	0.1	81	67	2.2	0.5	–	–	–	–	341	143	198	85
Nunam Iqua	9	0	0	0	7	5	0	0	11	8	0.2	0.1	15	11	10.8	3.5	–	–	–	–	42	24	210	136
Alakanuk	14	9	0	0	39	11	1.5	0.9	48	12	3.7	2.3	41	25	15.2	4.3	–	–	–	–	142	57	858	423
Emmonak	29	8	22.8	18.6	60	29	0.1	0.1	51	16	11.2	5	48	41	21.3	2.4	1	0	0	0	189	94	2,272	1,215
Kotlik	13	2	0	0	25	8	0.5	0.4	51	14	5.3	2.6	35	30	24.7	4	–	–	–	–	124	54	1,147	387
District 1	65	19	11.8	9.6	131	53	0.6	0.3	161	50	6.3	1.9	139	107	19.2	1.9	1	0	0	0	497	229	4,487	1,337
Mountain Village	23	9	6.4	4.7	46	10	4	3.5	61	14	4.2	1.7	40	27	9.3	2	–	–	–	–	170	60	963	471
Pitkas Point	7	2	0	0	3	2	0	0	14	11	6.5	2.2	9	8	8.9	2	–	–	–	–	33	23	172	75
St. Marys	16	8	2.2	1.6	26	5	0	0	54	16	7.3	5.2	38	26	30.7	5.2	1	0	0	0	135	55	1,611	697
Pilot Station	13	9	23.8	8.5	35	11	0	0	53	21	6.9	3.7	20	19	3.2	0.5	–	–	–	–	121	60	739	451
Marshall	17	7	1.6	1.1	21	4	1.8	1.6	43	12	19.7	9.3	23	14	35	7.7	1	0	0	0	105	37	1,731	901
District 2	76	35	6.8	2.1	131	32	1.7	1.3	225	74	8.7	2.4	130	94	19.2	2.1	2	0	0	0	564	235	5,216	1,286
Russian Mission	6	3	10	7.1	16	5	0	0	43	11	5	2.8	11	11	15.8	0	–	–	–	–	76	30	449	260
Holy Cross	13	4	5	2.4	17	7	0	0	20	10	23.2	9.6	14	13	16.7	1.6	–	–	–	–	64	34	763	399
Shageluk	3	0	0	0	13	9	1.7	0.9	6	5	18	3.3	2	2	12.5	0	1	1	0	0	25	17	176	55
District 3	22	7	6.6	2.8	46	21	0.5	0.3	69	26	11.4	3.3	27	26	16	0.8	1	1	0	0	165	81	1,388	468
Anvik	4	0	0	0	9	6	0	0	12	11	9.6	1.3	7	6	68.5	20.1	–	–	–	–	32	23	680	336
Grayling	7	2	0	0	7	3	20	15.1	30	9	22.3	7.8	10	9	37.4	3.6	–	–	–	–	54	23	1,184	538
Kaltag	6	2	13	10.6	9	2	0	0	33	9	23	14.6	6	6	69.7	0	–	–	–	–	54	19	1,255	1,016
Nulato	10	6	31.8	13.6	14	5	3	2.4	45	17	23	8.5	11	9	77.6	11.3	–	–	–	–	80	37	2,248	867
Koyukuk	4	0	0	0	14	4	64	52.4	21	3	55.7	51.5	4	3	108	20.7	2	1	45	0	45	11	2,838	3,165
Galena	9	4	0.5	0.4	64	16	0.2	0.2	62	19	20.5	8.4	9	8	55.6	16.7	2	2	378	0	146	49	2,542	1,085
Ruby	2	1	20	0	42	9	0	0	12	4	12	6	7	7	11.3	0	1	1	450	0	64	22	713	149
Huslia	9	5	0	0	51	14	0	0	15	5	1	0.8	9	8	35.6	11.4	3	3	133	0	87	35	736	210
Hughes	3	2	0	0	19	17	0	0	8	8	0	0	2	2	0	0	1	1	490	0	33	30	490	0
Allakaket	7	2	50	42.3	32	8	0.8	0.6	10	2	15	13.4	3	3	0	0	2	1	0	0	54	16	524	690
Alatna	3	1	0	0	1	0	0	0	3	3	18.3	0	–	–	–	–	–	–	–	–	7	4	64	0
Bettles	10	1	0	0	18	9	0	0	–	–	–	–	–	–	–	–	–	–	–	–	28	10	0	0
District 4	74	26	12	5	280	93	4	2.7	251	90	21.4	5.5	68	61	50.8	4.1	11	9	199	0	684	279	13,274	3,406

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	Unknown				Does not harvest salmon				Light harvester				Medium harvester				Heavy harvester				Combined Total		Est.	CI
Community	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	total	95%
Tanana	12	5	0	0	32	8	0	0	33	13	47	27	8	6	145	40	11	10	1,539	178	96	42	19,627	4,377
Stevens Village	–	–	–	–	2	0	0	0	3	1	0	0	2	0	0	0	1	0	0	0	8	1	0	0
Birch Creek	2	1	0	0	8	4	0	0	3	2	0	0	–	–	–	–	–	–	–	–	13	7	0	0
Beaver	3	1	0	0	7	5	0	0	13	9	2	1	2	1	25	0	–	–	–	–	25	16	76	31
Fort Yukon	32	11	5	2	126	28	0	0	40	12	0	0	16	14	258	54	9	6	214	72	223	71	6,212	2,147
Venetie	12	5	70	54	45	10	0	0	12	4	40	20	5	4	221	59	–	–	–	–	74	23	2,423	1,547
Chalkyitsik	8	0	0	0	22	17	6	3	3	2	0	0	–	–	–	–	–	–	–	–	33	19	171	170
District 5	69	23	16	11	242	72	1	0	107	43	19	9	33	25	208	31	21	16	943	103	472	179	28,509	5,003
Survey totals	344	134	10	3	931	296	2	1	934	310	12	2	478	380	33	2	36	26	658	65	2,723	1,146	53,072	6,317

Note: The number of fall chum salmon harvested was estimated using the total number of households (*N*), the number of households contacted (*n*), the average number of salmon harvested by households (Mean), standard error (SE), and includes 95% confidence interval (CI 95%). Dashes indicate indefinable values.

Appendix A4.–Estimated coho salmon subsistence harvest in surveyed communities, by harvest level, with community and district totals, Yukon Area, 2015.

	Unknown				Does not harvest salmon				Light harvester				Medium harvester				Heavy harvester				Combined Total		Combined Est.	Combined CI
Community	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	total	95%
Hooper Bay	21	14	1	0	69	17	0	0	77	16	0	0	55	45	1	0	–	–	–	–	222	92	95	45
Scammon Bay	17	10	0	0	32	8	0	0	44	11	0	0	26	22	3	1	–	–	–	–	119	51	79	29
Coastal District	38	24	0	0	101	25	0	0	121	27	0	0	81	67	2	0	–	–	–	–	341	143	174	53
Nunam Iqua	9	0	0	0	7	5	0	0	11	8	0	0	15	11	12	3	–	–	–	–	42	24	229	106
Alakanuk	14	9	1	1	39	11	0	0	48	13	7	5	41	25	5	2	–	–	–	–	142	58	521	529
Emmonak	29	8	8	6	60	29	0	0	51	16	2	1	48	41	4	1	1	0	0	0	189	94	554	390
Kotlik	13	2	2	1	25	8	0	0	51	14	1	1	35	30	9	1	–	–	–	–	124	54	398	109
District 1	65	19	5	3	131	53	0	0	161	51	3	2	139	107	6	1	1	0	0	0	497	230	1,702	666
Mountain Village	23	9	6	4	46	10	0	0	61	14	2	1	40	27	4	1	–	–	–	–	170	60	369	255
Pitkas Point	7	2	0	0	3	2	0	0	14	11	2	1	9	8	5	1	–	–	–	–	33	23	72	31
St. Marys	16	8	3	2	26	5	0	0	54	16	5	4	38	26	2	1	1	0	0	0	135	55	391	434
Pilot Station	13	9	10	5	35	11	0	0	53	21	0	0	20	19	2	0	–	–	–	–	121	60	163	128
Marshall	17	7	1	0	21	4	4	4	43	12	16	8	23	14	30	13	1	0	0	0	105	37	1,511	927
District 2	76	35	4	2	131	32	1	1	225	74	5	2	130	94	8	2	2	0	0	0	564	235	2,506	1,036
Russian Mission	6	3	7	5	16	5	0	0	43	12	2	1	11	11	3	0	–	–	–	–	76	31	154	112
Holy Cross	13	4	0	0	17	7	10	8	20	10	4	3	14	13	1	0	–	–	–	–	64	34	246	283
Shageluk	3	0	0	0	13	9	0	0	6	5	0	0	2	2	13	0	1	1	0	0	25	17	28	0
District 3	22	7	2	2	46	21	4	3	69	27	2	1	27	26	2	0	1	1	0	0	165	82	428	298
Anvik	4	0	0	0	9	6	0	0	12	11	1	0	7	6	5	1	–	–	–	–	32	23	46	23
Grayling	7	2	0	0	7	3	0	0	30	9	4	4	10	9	8	2	–	–	–	–	54	23	212	233
Kaltag	6	2	0	0	9	2	0	0	33	9	1	1	6	6	0	0	–	–	–	–	54	19	18	33
Nulato	10	6	0	0	14	5	0	0	45	17	0	0	11	9	4	1	–	–	–	–	80	37	48	29
Koyukuk	4	0	0	0	14	4	0	0	21	3	17	15	4	3	7	2	2	1	0	0	45	11	416	783
Galena	9	4	0	0	64	16	1	1	62	19	3	2	9	8	9	2	2	2	143	0	146	49	654	271
Ruby	2	1	0	0	42	9	0	0	12	4	2	2	7	7	2	0	1	1	150	0	64	22	185	41
Huslia	9	5	0	0	51	14	1	0	15	5	0	0	9	8	19	6	3	3	33	0	87	35	294	122
Hughes	3	2	0	0	19	17	0	0	8	8	0	0	2	2	5	0	1	1	6	0	33	30	16	0
Allakaket	7	2	0	0	32	8	0	0	10	2	0	0	3	3	0	0	2	1	20	0	54	16	40	0
Alatna	3	1	0	0	1	0	0	0	3	3	3	0	–	–	–	–	–	–	–	–	7	4	12	0
Bettles	10	1	0	0	18	9	0	0	–	–	–	–	–	–	–	–	–	–	–	–	28	10	0	0
District 4	74	26	0	0	280	93	0	0	251	90	3	1	68	61	7	1	11	9	53	0	684	279	1,941	792

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	Unknown				Does not harvest salmon				Light harvester				Medium harvester				Heavy harvester				Combined			
																					Total		Est.	CI
Community	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	total	95%
Tanana	12	5	0	0	32	8	0	0	33	13	1	1	8	6	0	0	11	10	219	32	96	42	2,434	720
Stevens Village	–	–	–	–	2	0	0	0	3	1	0	0	2	0	0	0	1	0	0	0	8	1	0	0
Birch Creek	2	1	0	0	8	4	0	0	3	2	0	0	–	–	–	–	–	–	–	–	13	7	0	0
Beaver	3	1	0	0	7	5	0	0	13	9	0	0	2	1	0	0	–	–	–	–	25	16	0	0
Fort Yukon	32	11	0	0	126	28	0	0	40	12	0	0	16	14	0	0	9	6	0	0	223	71	2	2
Venetie	12	5	2	2	45	10	0	0	12	4	0	0	5	4	0	0	0	0	0	0	74	23	24	38
Chalkyitsik	8	0	0	0	22	17	0	0	3	2	0	0	0	0	0	0	0	0	0	0	33	19	0	0
District 5	69	23	0	0	242	72	0	0	107	43	0	0	33	25	0	0	21	16	120	18	472	179	2,460	705
Survey totals	344	134	2	1	931	296	0	0	934	312	3	1	478	380	5	1	36	26	93	11	2,723	1,148	9,211	1,646

Note: The number of coho salmon harvested was estimated using the total number of households (*N*), the number of households contacted (*n*), the average number of salmon harvested by households (Mean), standard error (SE), and includes 95% confidence interval (CI 95%). Dashes indicate indefinable values.

Appendix A5.–Estimated number of salmon provided to communities for subsistence use by test fishery programs, Yukon Area, 2015.

Yukon River test fishery sites	Community where fish were distributed	Chinook salmon	Summer chum salmon	Fall chum salmon	Coho salmon	Total Salmon
Lower Yukon Test Fish gillnet (LYTF)	Alakanuk	100	295	209	60	664
	Emmonak	321	1,949	972	298	3,540
	Kotlik	150	591	209	40	990
	Other [a]	232	119	435	354	1,140
LYTF project subtotal:		803	2,954	1,825	752	6,334
Pilot Station sonar test fish drift gillnet	Pilot Station	38	865	607	142	1,652
Fort Yukon test fish wheel	Fort Yukon	186	0	45	0	231
Eagle sonar test fish drift gillnet	Eagle [b]	19	0	0	0	19
Test fishery totals		1,046	3,819	2,477	894	8,236

Note: No pink salmon were reported as retained and distributed from test fishery projects in 2015.

[a] Chinook salmon donated from LYTF to Anvik (8 fish), Grayling (8 fish), Galena (6 fish), Nunam Iqua (50 fish), Mountain Village (60 fish), St. Marys (60 fish), and Fairbanks Tanana Chiefs Conference (40 fish). Summer chum salmon (119 fish) donated to Nunam Iqua.

[b] Coded wire tag mortalities.

APPENDIX B. HISTORICAL INFORMATION

Appendix B1.–Chinook salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fishery projects, and personal use harvest total for District 6, Yukon Area, 2005–2015.

Community	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2005–2009 Average	2010–2014 Average
Hooper Bay	157	376	430	388	183	584	252	1,090	1,210	455	534	307	718
Scammon Bay	691	507	768	1,104	722	716	517	1,014	332	108	432	758	537
Coastal District total	848	883	1,198	1,492	905	1,300	769	2,104	1,542	563	966	1,065	1,256
Nunam Iqua	338	371	907	163	200	404	250	195	12	62	210	396	185
Alakanuk	860	690	1,257	1,238	634	944	1,464	1,081	275	214	436	936	796
Emmonak	1,730	2,311	2,326	2,696	1,634	2,194	2,172	1,864	553	463	612	2,139	1,449
Kotlik	2,130	1,750	1,569	2,066	1,657	2,314	2,369	1,173	794	617	661	1,834	1,453
District 1 subtotal	5,058	5,122	6,059	6,163	4,125	5,856	6,255	4,313	1,634	1,356	1,919	5,305	3,883
Mountain Village	2,383	1,659	2,077	1,645	1,482	1,601	2,063	1,789	266	178	370	1,849	1,179
Pitkas Point	618	274	320	544	265	580	246	261	37	79	44	404	241
St. Marys	2,693	2,233	3,573	1,756	1,929	2,800	1,734	2,344	215	68	261	2,437	1,432
Pilot Station	1,658	1,976	2,028	1,597	1,258	1,585	1,340	1,078	258	163	382	1,703	885
Marshall	1,804	1,897	2,555	3,284	1,201	2,110	2,686	1,409	328	128	128	2,148	1,332
District 2 subtotal	9,156	8,039	10,553	8,826	6,135	8,676	8,069	6,881	1,104	616	1,185	8,542	5,069
Russian Mission	1,894	1,851	1,301	2,949	978	924	1,550	1,711	236	16	365	1,795	887
Holy Cross	2,817	3,165	2,902	2,509	1,745	3,098	2,231	576	204	0	68	2,628	1,222
Shageluk	420	358	448	397	201	277	353	75	4	32	14	365	148
District 3 subtotal	5,131	5,374	4,651	5,855	2,924	4,299	4,134	2,362	444	48	447	4,787	2,257
Lower Yukon River total	19,345	18,535	21,263	20,844	13,184	18,831	18,458	13,556	3,182	2,020	3,551	18,634	11,209
Anvik	1,206	958	1,321	1,433	796	1,069	1,052	435	121	0	58	1,143	535
Grayling	1,878	1,702	1,500	1,761	1,133	2,122	1,374	1,081	226	3	22	1,595	961
Kaltag	3,367	2,833	1,456	2,403	1,970	3,191	2,488	1,346	348	10	119	2,406	1,477
Nulato	2,749	2,707	2,431	1,250	1,551	2,989	1,538	1,955	602	0	33	2,138	1,417
Koyukuk	396	835	811	513	982	867	1,349	614	898	52	26	707	756
Galena	2,864	2,380	2,511	2,232	1,370	1,357	1,434	742	275	1	372	2,271	762
Ruby	1,193	304	1,594	637	542	1,102	482	1,316	357	6	68	854	653
District 4 subtotal	13,653	11,719	11,624	10,229	8,344	12,697	9,717	7,489	2,827	72	698	11,114	6,560
Huslia	207	258	146	255	969	65	121	165	62	38	34	367	90
Hughes	33	8	8	61	101	63	10	0	6	13	4	42	18
Allakaket	68	23	53	58	90	63	42	5	6	8	35	58	25
Alatna	0	14	0	16	10	0	3	0	0	0	0	8	1
Bettles	3	0	0	0	0	0	0	3	0	1	0	1	1
Koyukuk River subtotal	311	303	207	390	1,170	191	176	173	74	60	73	476	135
District 4 total (incl. Koyukuk R.)	13,964	12,022	11,831	10,619	9,514	12,888	9,893	7,662	2,901	132	771	11,590	6,695

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Community	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2005–2009 Average	2010–2014 Average
Tanana	3,729	3,794	5,498	3,981	2,950	3,215	2,936	2,100	1,200	88	141	3,990	1,908
Rampart	411	429	250	136	528	262	201	190	35	0	1	351	138
Fairbanks [a]	2,584	2,184	2,510	1,898	1,509	1,670	2,186	558	610	14	263	2,137	1,008
Stevens Village	1,570	1,245	610	753	405	469	415	330	239	0	0	917	291
Birch Creek	131	174	113	32	15	73	49	0	0	0	0	93	24
Beaver	957	830	1,244	546	516	198	356	71	107	0	69	819	146
Fort Yukon	3,591	3,144	4,076	1,991	846	1,683	2,472	2,141	1,561	93	480	2,730	1,590
Circle	1,283	694	1,057	519	372	324	297	280	157	0	129	785	212
Central	175	130	334	48	167	90	66	66	21	0	56	171	49
Eagle	2,566	2,303	1,999	1,068	446	867	728	167	175	76	395	1,676	403
Other [b]	315	330	472	362	541	779	777	477	125	0	7	404	432
District 5 subtotal	17,312	15,257	18,163	11,334	8,295	9,630	10,483	6,380	4,230	271	1,541	14,072	6,199
Venetie	59	667	1,002	292	622	767	10	86	311	12	308	528	237
Chalkyitsik	53	0	0	0	0	0	0	0	0	5	0	11	1
Chandalar/Black River subtotal	112	667	1,002	292	622	767	10	86	311	17	308	539	238
District 5 total (incl. Chandalar/Black R.)	17,424	15,924	19,165	11,626	8,917	10,397	10,493	6,466	4,541	288	1,849	14,611	6,437
Manley	289	361	333	106	345	337	287	174	165	92	121	287	211
Minto	35	31	82	12	0	43	61	99	60	0	23	32	53
Nenana	533	712	893	322	458	658	681	296	87	139	263	584	372
Fairbanks [c]	971	125	409	108	396	91	330	58	49	41	33	402	114
Other [d]	0	0	0	57	86	14	8	0	6	11	0	29	8
District 6 Tanana R. total	1,828	1,229	1,717	605	1,285	1,143	1,367	627	367	283	440	1,333	757
Upper Yukon River total	33,216	29,175	32,713	22,850	19,716	24,428	21,753	14,755	7,809	703	3,060	27,534	13,890
Yukon River total [e]	52,561	47,710	53,976	43,694	32,900	43,259	40,211	28,311	10,991	2,723	6,611	46,168	25,099
Yukon Area total	53,409	48,593	55,174	45,186	33,805	44,559	40,980	30,415	12,533	3,286	7,577	47,233	26,355
Personal Use (District 6) [f]	138	89	136	126	127	162	89	71	42	1	5	123	73
Yukon Area total with Personal Use	53,547	48,682	55,310	45,312	33,932	44,721	41,069	30,486	12,575	3,287	7,582	47,357	26,428

[a] Harvests by subsistence permit holders residing in Fairbanks who fished in District 5 near the Yukon River bridge crossing.

[b] Other permit holders who fished in District 5 but did not reside in the communities listed.

[c] Harvests by subsistence permit holders residing in Fairbanks who fished in the Tanana River.

[d] Other permit holders who fished in District 6 but did not reside in the communities listed.

[e] Does not include the Coastal District for use in assessing border passage objectives under the Yukon Salmon Agreement.

[f] Harvest from the personal use fishing area on the Tanana River near Fairbanks. Not included in communities or totals above.

Appendix B2.–Summer chum salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fishery projects, and personal use harvest total for District 6, Yukon Area, 2005–2015.

Community	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2005–2009 Average	2010–2014 Average
Hooper Bay	9,771	19,468	12,234	12,007	9,195	17,020	13,460	15,799	13,629	13,236	11870	12,535	14,629
Scammon Bay	4,586	4,703	3,887	6,113	3,602	5,405	4,845	7,442	9,506	6,068	8598	4,578	6,653
Coastal District total	14,357	24,171	16,121	18,120	12,797	22,425	18,305	23,241	23,135	19,304	20,468	17,113	21,282
Nunam Iqua	2,794	2,903	2,325	1,949	2,280	2,267	2,077	1,977	2,651	2,010	2239	2,450	2,196
Alakanuk	5,687	7,790	7,611	6,881	5,152	7,722	7,447	9,012	7,520	9,120	4469	6,624	8,164
Emmonak	12,594	11,899	9,256	9,646	9,038	10,918	12,468	15,829	8,209	7,143	9973	10,487	10,913
Kotlik	6,620	5,289	5,017	4,291	7,528	4,265	6,598	8,552	10,136	5,621	4960	5,749	7,034
District 1 subtotal	27,695	27,881	24,209	22,767	23,998	25,172	28,590	35,370	28,516	23,894	21,641	25,310	28,308
Mountain Village	8,861	13,119	8,104	7,559	7,204	7,071	9,355	9,031	11,861	7,059	6063	8,969	8,875
Pitkas Point	1,023	680	515	1,246	994	633	585	1,153	2,186	1,588	1225	892	1,229
St. Marys	6,877	7,394	8,107	6,451	5,831	7,443	6,760	10,763	9,167	5,570	8216	6,932	7,941
Pilot Station	4,333	6,070	3,711	6,012	4,888	6,196	4,182	5,716	5,299	5,728	4702	5,003	5,424
Marshall	3,183	4,392	3,070	3,023	2,172	2,395	3,810	5,903	3,986	6,189	4351	3,168	4,457
District 2 subtotal	24,277	31,655	23,507	24,291	21,089	23,738	24,692	32,566	32,499	26,134	24,557	24,964	27,926
Russian Mission	925	1,328	759	2,400	849	528	1,225	2,508	3,967	3,181	2626	1,252	2,282
Holy Cross	760	825	320	441	194	463	363	1,147	262	97	421	508	466
Shageluk	4,081	1,381	977	130	103	350	1,145	5,035	463	470	80	1,334	1,493
District 3 subtotal	5,766	3,534	2,056	2,971	1,146	1,341	2,733	8,690	4,692	3,748	3,127	3,095	4,241
Lower Yukon River total	57,738	63,070	49,772	50,029	46,233	50,251	56,015	76,626	65,707	53,776	49,325	53,368	60,475
Anvik	529	387	5,250	340	277	451	220	1,371	830	2,052	777	1,357	985
Grayling	783	644	641	660	1,429	1,612	838	2,616	618	1,617	509	831	1,460
Kaltag	680	159	109	916	50	102	163	186	67	954	216	383	294
Nulato	634	838	356	468	133	416	246	254	401	158	6	486	295
Koyukuk	537	394	995	1,104	1,378	352	890	828	4,459	300	0	882	1,366
Galena	1,013	1,205	571	758	1,718	1,702	3,414	718	179	377	1059	1,053	1,278
Ruby	967	1,714	416	655	603	1,971	775	3,891	681	29	88	871	1,469
District 4 subtotal	5,143	5,341	8,338	4,901	5,588	6,606	6,546	9,864	7,235	5,487	2,655	5,862	7,148
Huslia	2,433	1,122	3,243	4,377	2,554	1,349	3,166	7,306	3,241	2,325	3110	2,746	3,477
Hughes	2,230	3,254	1,213	944	1,723	878	954	428	829	889	1499	1,873	796
Allakaket	2,535	5,170	3,451	3,229	4,924	2,864	2,368	3,850	2,116	1,276	2455	3,862	2,495
Alatna	5	110	11	66	163	23	132	100	340	0	58	71	119
Bettles	4	0	0	0	6	0	0	7	0	4	0	2	2
Koyukuk River subtotal	7,207	9,656	7,918	8,616	9,370	5,114	6,620	11,691	6,526	4,494	7,122	8,553	6,889
District 4 total (incl. Koyukuk R.)	12,350	14,997	16,256	13,517	14,958	11,720	13,166	21,555	13,761	9,981	9,777	14,416	14,037

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Community	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2005–2009 Average	2010–2014 Average
Tanana	4,832	5,474	5,229	2,877	4,665	1,856	4,381	4,333	9,565	2,612	3162	4,615	4,549
Rampart	315	135	25	27	112	161	67	71	5	70	0	123	75
Fairbanks [a]	780	1,341	564	119	44	427	688	172	1,350	300	575	570	587
Stevens Village	442	972	254	163	6	28	43	188	50	0	0	367	62
Beaver	68	117	41	27	22	22	393	27	12	0	0	55	91
Fort Yukon	67	2,165	2,365	230	275	722	1,297	0	225	19	0	1,020	453
Circle	3	58	200	5	0	37	48	0	66	0	0	53	30
Central	5	2	0	0	2	0	0	0	0	0	0	2	0
Eagle	235	974	15	14	0	25	2	0	50	0	0	248	15
Other [b]	53	117	81	25	29	144	790	101	94	91	8	61	244
District 5 subtotal	6,800	11,355	8,774	3,487	5,155	3,422	7,709	4,892	11,417	3,092	3,745	7,114	6,106
Venetie	0	475	107	50	143	0	0	0	0	0	0	155	0
Chalkyitsik	0	0	0	0	0	133	0	0	0	16	0	0	30
Chandalar/Black River subtotal	0	475	107	50	143	133	0	0	0	16	0	155	30
District 5 total (incl. Chandalar/Black R.)	6,800	11,830	8,881	3,537	5,298	3,555	7,709	4,892	11,417	3,108	3,745	7,269	6,136
Manley	163	89	140	144	367	102	142	58	45	182	9	181	106
Minto	21	460	82	9	1	8	27	64	258	24	0	115	76
Nenana	1,771	388	1,419	753	506	83	471	370	642	275	60	967	368
Fairbanks [c]	45	73	255	94	372	183	185	114	143	237	183	168	172
Other [d]	14	0	0	311	7	46	0	72	6	13	0	66	27
District 6 Tanana R. total	2,014	1,010	1,896	1,311	1,253	422	825	678	1,094	731	252	1,497	750
Upper Yukon River total	21,164	27,837	27,033	18,365	21,509	15,697	21,700	27,125	26,272	13,820	13,774	23,182	20,923
Yukon River total [e]	78,902	90,907	76,805	68,394	67,742	65,948	77,715	103,751	91,979	67,596	63,099	76,550	81,398
Yukon Area total	93,259	115,078	92,926	86,514	80,539	88,373	96,020	126,992	115,114	86,900	83,567	93,663	102,680
Personal Use (District 6) [f]	152	262	184	138	308	319	439	321	138	235	220	209	290
Yukon Area total with Personal Use	93,411	115,340	93,110	86,652	80,847	88,692	96,459	127,313	115,252	87,135	83,787	93,872	102,970

[a] Harvests by subsistence permit holders residing in Fairbanks who fished in District 5 near the Yukon River bridge crossing.

[b] Other permit holders who fished in District 5 but did not reside in the communities listed.

[c] Harvests by subsistence permit holders residing in Fairbanks who fished in the Tanana River.

[d] Other permit holders who fished in District 6 but did not reside in the communities listed.

[e] Does not include the Coastal District for use in assessing objectives under the Yukon Salmon Agreement.

[f] Harvest from the personal use fishing area on the Tanana River near Fairbanks. Not included in communities or totals above.

Appendix B3.–Fall chum salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fishery projects, and personal use harvest total for District 6, Yukon Area, 2005–2015.

Community	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2005–2009 Average	2010–2014 Average
Hooper Bay	1	146	64	329	41	116	267	1	91	137	79	116	122
Scammon Bay	69	41	170	57	117	70	48	10	58	115	119	91	60
Coastal District total	70	187	234	386	158	186	315	11	149	252	198	207	183
Nunam Iqua	310	735	152	59	41	143	51	210	93	128	210	259	125
Alakanuk	627	624	1,348	423	116	860	881	449	328	593	1067	628	622
Emmonak	1,436	2,056	2,360	1,670	1,589	1,718	1,540	5,890	2,165	2,465	3,244	1,822	2,756
Kotlik	516	487	530	671	171	481	962	1,073	1,087	886	1,356	475	898
District 1 subtotal	2,889	3,902	4,390	2,823	1,917	3,202	3,434	7,622	3,673	4,072	5,877	3,184	4,401
Mountain Village	1,290	2,398	1,073	926	926	133	800	685	2,174	1,484	1,398	1,323	1,055
Pitkas Point	6	5	44	101	76	10	30	9	65	400	172	46	103
St. Marys	490	417	825	830	106	387	611	1,423	1,009	2,037	1,611	534	1,093
Pilot Station	838	785	741	917	265	833	575	1,031	777	796	1,346	709	802
Marshall	633	410	789	748	190	56	562	184	853	1,100	1,731	554	551
District 2 subtotal	3,257	4,015	3,472	3,522	1,563	1,419	2,578	3,332	4,878	5,817	6,258	3,166	3,605
Russian Mission	667	251	530	578	205	104	11	282	804	365	449	446	313
Holy Cross	582	224	248	920	627	21	94	339	855	1,840	763	520	630
Shageluk	55	5	147	323	105	1,200	249	16	105	252	176	127	364
District 3 subtotal	1,304	480	925	1,821	937	1,325	354	637	1,764	2,457	1,388	1,093	1,307
Lower Yukon River total	7,450	8,397	8,787	8,166	4,417	5,946	6,366	11,591	10,315	12,346	13,523	7,443	9,313
Anvik	497	118	429	317	176	169	202	569	763	1,028	680	307	546
Grayling	1,009	691	317	1,012	490	202	1,152	804	471	1,451	1,184	704	816
Kaltag	1,089	823	910	620	200	658	196	2,830	583	2,828	1,255	728	1,419
Nulato	421	751	1,345	729	552	1,049	652	2,729	2,995	3,839	2,248	760	2,253
Koyukuk	803	1,147	927	1,177	578	792	1,388	1,331	5,308	998	2,838	926	1,963
Galena	2,695	1,632	1,471	1,364	4,306	1,968	2,739	2,947	602	3,368	2,542	2,294	2,325
Ruby	559	227	1,959	657	134	1,026	592	4,408	2,505	972	713	707	1,901
District 4 subtotal	7,073	5,389	7,358	5,876	6,436	5,864	6,921	15,618	13,227	14,484	11,460	6,426	11,223
Huslia	1,614	313	272	64	86	403	183	1,909	722	579	736	470	759
Hughes	111	240	0	127	288	0	64	2	535	348	490	153	190
Allakaket	557	393	939	1,345	572	521	92	508	687	510	524	761	464
Alatna	0	0	7	0	0	0	0	18	20	15	64	1	11
Bettles	50	0	0	0	0	0	0	0	0	0	0	10	0
Koyukuk River subtotal	2,332	946	1,218	1,536	946	924	339	2,437	1,964	1,452	1,814	1,396	1,423
District 4 total (incl. Koyukuk R.)	9,405	6,335	8,576	7,412	7,382	6,788	7,260	18,055	15,191	15,936	13,274	7,822	12,646

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Community	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2005–2009 Average	2010–2014 Average
Tanana	20,545	23,167	21,596	17,478	19,595	14,984	21,728	20,465	31,546	14,131	19,627	20,476	20,571
Rampart	358	250	250	1,000	1,000	735	340	190	100	0	186	572	273
Fairbanks [a]	1,682	5,269	2,126	659	229	822	1,696	793	1,160	1,406	2,454	1,993	1,175
Stevens Village	246	50	199	643	770	2,706	911	277	840	6,700	0	382	2,287
Beaver	179	0	354	13	120	37	122	174	21	323	76	133	135
Ft. Yukon	8,088	5,178	8,264	14,252	2,829	6,006	7,188	12,659	16,453	8,025	6,257	7,722	10,066
Circle	918	664	1,286	3,198	110	927	299	161	1,397	1,277	1,652	1,235	812
Central	36	0	0	0	0	0	0	0	0	0	0	7	0
Eagle	17,356	16,801	18,676	15,269	10,941	15,008	17,455	18,731	18,871	17,450	17,185	15,809	17,503
Other [b]	117	44	46	3,183	71	120	208	443	121	222	229	692	223
District 5 subtotal	49,525	51,423	52,797	55,695	35,665	41,345	49,947	53,893	70,509	49,534	47,666	49,021	53,046
Venetie	1,801	520	721	1,563	2,373	2,989	1,938	295	5,340	1,538	2,423	1,396	2,420
Chalkyitsik	337	215	213	0	45	0	0	162	249	125	171	162	107
Chandalar/Black River subtotal	2,138	735	934	1,563	2,418	2,989	1,938	457	5,589	1,663	2,594	1,558	2,527
District 5 total (incl. Chandalar/Black R.)	51,663	52,158	53,731	57,258	38,083	44,334	51,885	54,350	76,098	51,197	50,260	50,579	55,573
Manley	2,985	3,374	3,419	2,490	4,126	2,696	2,333	2,164	1,539	2,579	1,697	3,279	2,262
Minto	600	242	155	28	0	70	1,500	2	593	472	140	205	527
Nenana	10,594	10,530	21,863	6,585	7,623	6,802	5,268	8,665	3,112	2,810	3,151	11,439	5,331
Fairbanks [c]	6,691	1,311	3,325	340	3,460	678	4,317	3,876	5,651	5,190	3,496	3,025	3,942
Other [d]	2,076	1,468	1,131	6,692	870	1,145	958	595	736	1,747	861	2,447	1,036
District 6 Tanana R. total	22,946	16,925	29,893	16,135	16,079	11,391	14,376	15,302	11,631	12,798	9,345	20,396	13,100
Upper Yukon River total	84,014	75,418	92,200	80,805	61,544	62,513	73,521	87,707	102,920	79,931	72,879	78,796	81,318
Yukon River total [e]	91,464	83,815	100,987	88,971	65,961	68,459	79,887	99,298	113,235	92,277	86,402	86,240	90,631
Yukon Area total	91,534	84,002	101,221	89,357	66,119	68,645	80,202	99,309	113,384	92,529	86,600	86,447	90,814
Personal Use (District 6) [f]	133	333	173	181	78	3,209	347	410	383	278	80	180	925
Yukon Area total with Personal Use	91,667	84,335	101,394	89,538	66,197	71,854	80,549	99,719	113,767	92,807	86,680	86,626	91,739

[a] Harvests by subsistence permit holders residing in Fairbanks who fished in District 5 near the Yukon River bridge crossing.

[b] Other permit holders who fished in District 5 but did not reside in the communities listed.

[c] Harvests by subsistence permit holders residing in Fairbanks who fished in the Tanana River.

[d] Other permits holders who fished in District 6 but did not reside in the communities listed.

[e] Does not include the Coastal District for use in use in assessing objectives under the Yukon Salmon Agreement.

[f] Harvest from the personal use fishing area on the Tanana River near Fairbanks. Not included in communities or totals above.

Appendix B4.–Coho salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fishery projects, and personal use harvest total for District 6, Yukon Area, 2005–2015.

Community	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2005–2009 Average	2010–2014 Average
Hooper Bay	0	175	26	66	24	45	0	7	73	118	95	58	49
Scammon Bay	279	160	84	50	222	79	55	86	214	86	79	159	104
Coastal District total	279	335	110	116	246	124	55	93	287	204	174	217	153
Nunam Iqua	241	392	92	24	71	73	23	18	83	153	229	164	70
Alakanuk	322	101	857	157	194	449	431	252	167	443	581	326	348
Emmonak	191	450	1,032	717	401	362	472	2,660	517	613	852	558	925
Kotlik	222	234	284	313	181	238	201	420	457	573	438	247	378
District 1 subtotal	976	1,177	2,265	1,211	847	1,122	1,127	3,350	1,224	1,782	2,100	1,295	1,721
Mountain Village	246	1,856	1,027	518	413	127	261	256	271	202	723	812	223
Pitkas Point	30	16	38	130	45	116	37	53	41	123	72	52	74
St. Marys	252	171	97	591	151	92	230	141	124	408	391	252	199
Pilot Station	241	225	263	268	203	189	145	329	136	568	305	240	273
Marshall	341	191	922	490	245	33	150	567	508	468	1511	438	345
District 2 subtotal	1,110	2,459	2,347	1,997	1,057	557	823	1,346	1,080	1,769	3,002	1,794	1,115
Russian Mission	133	19	259	372	96	300	0	319	152	124	154	176	179
Holy Cross	84	16	213	38	120	0	0	237	0	103	246	94	68
Shageluk	0	48	267	0	105	53	36	0	219	113	28	84	84
District 3 subtotal	217	83	739	410	321	353	36	556	371	340	428	354	331
Lower Yukon River total	2,303	3,719	5,351	3,618	2,225	2,032	1,986	5,252	2,675	3,891	5,530	3,443	3,167
Anvik	406	0	807	40	137	28	19	214	97	197	46	278	111
Grayling	234	224	271	25	318	132	119	26	34	403	212	214	143
Kaltag	307	106	204	45	40	0	258	928	306	514	18	140	401
Nulato	60	214	130	195	171	242	118	41	125	454	48	154	196
Koyukuk	37	330	189	84	198	254	137	62	3,267	50	416	168	754
Galena	607	137	425	558	2,353	549	1,013	276	170	718	654	816	545
Ruby	361	11	168	291	314	148	312	1,806	345	335	185	229	589
District 4 subtotal	2,012	1,022	2,194	1,238	3,531	1,353	1,976	3,353	4,344	2,671	1,579	1,999	2,739
Huslia	734	105	592	100	323	289	70	165	342	265	294	371	226
Hughes	20	150	100	0	89	0	13	0	18	17	16	72	10
Allakaket	205	25	66	152	43	88	13	38	236	109	40	98	97
Alatna	0	0	0	0	0	0	0	0	0	0	12	0	0
Bettles	0	0	0	0	0	0	0	0	0	0	0	0	0
Koyukuk River subtotal	959	280	758	252	455	377	96	203	596	391	362	541	333
District 4 total (incl. Koyukuk R.)	2,971	1,302	2,952	1,490	3,986	1,730	2,072	3,556	4,940	3,062	1,941	2,540	3,072

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Community	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2005–2009 Average	2010–2014 Average
Tanana	1,616	3,619	2,369	1,511	2,373	2,314	312	3,060	1,135	1,788	2,434	2,298	1,722
Rampart	10	0	50	0	0	24	0	0	0	0	2	12	5
Fairbanks [a]	10	79	26	7	13	2	2	0	0	0	0	27	1
Stevens Village	0	0	0	0	90	428	0	0	0	0	0	18	86
Beaver	0	0	354	6	0	1	0	2	0	2	0	72	1
Ft. Yukon	394	35	567	1,618	2	244	1,040	4	7	201	2	523	299
Circle	100	22	0	0	13	164	0	5	150	0	0	27	64
Central	1	0	0	0	0	0	0	0	0	0	0	0	0
Eagle	15	0	0	0	0	1	1	0	0	1	0	3	1
Other [b]	13	0	0	61	7	0	0	21	0	0	0	16	4
District 5 subtotal	2,159	3,755	3,366	3,203	2,498	3,178	1,355	3,092	1,292	1,992	2,438	2,996	2,182
Venetie	0	24	0	0	0	159	34	0	6	0	24	5	40
Chalkyitsik	0	0	0	0	0	267	0	0	0	38	0	0	61
Chandalar/Black River subtotal	0	24	0	0	0	426	34	0	6	38	24	5	101
District 5 total (incl. Chandalar/Black R.)	2,159	3,779	3,366	3,203	2,498	3,604	1,389	3,092	1,298	2,030	2,462	3,001	2,283
Manley	2,510	1,671	1,126	1,901	2,308	1,832	1,482	1,374	447	1,177	1,263	1,903	1,262
Minto	0	14	155	0	0	0	0	0	266	37	270	34	61
Nenana	12,395	7,032	4,487	2,775	3,475	2,313	3,304	5,904	1,762	2,138	2,712	6,033	3,084
Fairbanks [c]	3,032	745	609	230	577	212	1,109	1,502	2,576	3,689	3,108	1,039	1,818
Other [d]	1,601	1,109	1,468	3,522	691	1,198	947	760	206	870	647	1,678	796
District 6 Tanana R. total	19,538	10,571	7,845	8,428	7,051	5,555	6,842	9,540	5,257	7,911	8,000	10,687	7,021
Upper Yukon River total	24,668	15,652	14,163	13,121	13,535	10,889	10,303	16,188	11,495	13,003	12,403	16,228	12,376
Yukon River total [e]	26,971	19,371	19,514	16,739	15,760	12,921	12,289	21,440	14,170	16,894	17,933	19,671	15,543
Yukon Area total	27,250	19,706	19,624	16,855	16,006	13,045	12,344	21,533	14,457	17,098	18,107	19,888	15,695
Personal Use (District 6) [f]	107	279	135	50	70	1,062	232	100	109	174	145	128	335
Yukon Area total with Personal Use	27,357	19,985	19,759	16,905	16,076	14,107	12,576	21,633	14,566	17,272	18,252	20,016	16,031

[a] Harvests by subsistence permit holders residing in Fairbanks who fished in District 5 near the Yukon River bridge crossing.

[b] Other permit holders who fished in District 5 but did not reside in the communities listed.

[c] Harvests by subsistence permit holders residing in Fairbanks who fished in the Tanana River.

[d] Other permits holders who fished in District 6 but did not reside in the communities listed.

[e] Does not include the Coastal District for use in use in assessing objectives under the Yukon Salmon Agreement.

[f] Harvest from the personal use fishing area on the Tanana River near Fairbanks. Not included in communities or totals above.

Appendix B5.–Estimated pink salmon subsistence harvest by residents of surveyed communities, with community and district totals, Yukon Area, 2005–2015.

Community	2005 [a]	2006	2007	2008 [a]	2009 [a]	2010 [a]	2011 [a]	2012 [a]	2013	2014 [a]	2015	Estimated Total Even Years Average	Estimated Total Odd Years Average	Estimated Total All Years Average
Hooper Bay	860	1,433	113	1,013	957	219	210	1,101	302	712	451	896	488	692
Scammon Bay	1,645	1,381	1,435	2,766	1,186	2,245	1,888	1,343	507	1,923	1,414	1,932	1,332	1,632
Coastal District	2,505	2,814	1,548	3,779	2,143	2,464	2,098	2,444	809	2,635	1,865	2,827	1,821	2,324
Nunam Iqua	132	555	170	757	61	306	8	1,051	0	670	352	668	74	371
Alakanuk	49	115	32	494	24	151	13	174	92	970	15	381	42	211
Emmonak	54	225	51	641	5	206	0	199	0	588	7	372	22	197
Kotlik	155	219	129	1,161	42	124	32	195	23	1,064	14	553	76	314
District 1	390	1,114	382	3,053	132	787	53	1,619	115	3,292	388	1,973	214	1,094
Mountain Village	78	616	87	500	6	217	24	207	0	233	57	355	39	197
Pitkas Point	2	44	66	15	0	143	0	2	2	45	288	50	14	32
St. Mary's	144	236	32	367	5	543	1	643	0	614	18	481	36	259
Pilot Station	2	1	0	117	4	125	34	23	131	27	0	59	34	46
Marshall	6	3	0	26	0	21	66	5	7	1	0	11	16	14
District 2	232	900	185	1,025	15	1,049	125	880	140	920	363	955	139	547
Russian Mission	0	8	3	436	0	2	0	76	12	8	0	106	3	55
Holy Cross	0	17	0	20	0	0	0	0	0	0	0	7	0	4
Shageluk	0	0	0	0	9	0	9	24	0	3	0	5	4	5
District 3	0	25	3	456	9	2	9	100	12	11	0	119	7	63
Anvik	0	0	0	23	2	0	0	0	0	0	0	5	0	3
Grayling	3	0	0	200	0	0	40	0	0	39	0	48	9	28
Kaltag	4	0	0	383	0	0	0	0	0	0	0	77	1	39
Nulato	0	1	0	35	0	0	0	0	0	8	0	9	0	4
Koyukuk	0	0	0	67	0	0	0	0	0	0	0	13	0	7
Galena	0	0	0	31	0	0	0	3	0	6	16	8	0	4
Ruby	0	0	0	184	0	0	0	0	0	13	0	39	0	20
Huslia	0	0	0	100	0	0	0	101	0	0	0	40	0	20
Hughes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Allakaket	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alatna	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bettles	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 4	7	1	0	1,023	2	0	40	104	0	66	16	239	10	124

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Community	2005 [a]	2006	2007	2008 [a]	2009 [a]	2010 [a]	2011 [a]	2012 [a]	2013	2014 [a]	2015	Estimated Total Even Years Average	Estimated Total Odd Years Average	Estimated Total All Years Average
Tanana	0	0	0	80	0	0	0	3	0	8	13	18	0	9
Stevens Village	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Birch Creek	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beaver	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Yukon	0	0	0	196	0	0	0	0	0	0	0	39	0	20
Venetie	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chalkyitsik	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 5	0	0	0	276	0	0	0	3	0	8	13	57	0	29
Survey Totals	3,134	4,854	2,118	9,612	2,301	4,302	2,325	5,150	1,076	6,932	2,645	6,170	2,191	4,180
CI (95%)	1,521	990	739	1,818	1,184	1,209	918	918	918	1,356	612	–	–	–
Test fish [b]	2	0	0	83	1	103	34	216	0	120	0	104	7	56

Note: CI (95%) is the annual 95% confidence interval. Dashes indicate indefinable value.

[a] Includes test fish. Confidence intervals are calculated from subsistence estimates and do not include donations of test fish to communities. Pink salmon harvested and distributed from test fishery projects are not always recorded.

[a] Number of test fish added to community harvest estimates.

Appendix B6.– Subsistence harvests taken under authority of a permit in the Rampart Area and Yukon River Bridge Area of District 5, Yukon Area.

Year	Number of permits issued	Number of permits returned	Number reporting harvest	Reported harvest										
				Chinook	Summer chum	Fall chum	Coho	Whitefish	Sheefish	Burbot	Northern pike	Longnose sucker	Arctic grayling
Yukon River "Rampart Village Area" subsistence salmon fishery [a]														
2005	22	19	17	1,721	663	2,023	10	22	0	21	0	2	4
2006	19	19	16	1,083	647	318	0	177	0	6	11	10	30
2007	23	19	15	1,744	495	2,050	50	75	0	11	20	3	0
2008	18	18	15	1,049	43	1,000	0	20	0	0	0	0	0
2009	25	24	20	1,404	159	1,070	4	147	0	0	10	0	8
2010	28	27	22	1,344	304	1,235	24	162	1	5	20	0	1
2011	29	29	24	1,586	429	768	1	76	1	0	11	0	0
2012	32	31	28	575	197	1,161	21	395	2	13	7	11	0
2013	23	22	18	474	579	300	0	27	2	0	0	0	5
2014	18	18	9	11	240	797	0	398	60	0	6	0	0
2015	17	17	8	73	104	629	2	66	36	3	4	0	0
2005–2009 Average	20	18	15	1,306	376	1,077	11	74	0	6	7	3	7
2010–2014 Average	26	25	20	798	350	852	9	212	13	4	9	2	1
Yukon River "Bridge Area" subsistence fishery [b]														
2005	76	72	57	1,847	643	17	9	52	31	11	33	4	0
2006	68	66	53	1,952	1,063	4,855	79	69	10	6	6	0	4
2007	85	80	51	1,707	177	626	26	61	26	25	43	0	0
2008	73	69	45	1,456	130	705	7	192	71	61	57	0	0
2009	68	66	38	1,248	28	996	106	60	9	37	60	0	0
2010	85	81	43	1,300	448	422	2	67	9	0	12	0	0
2011	74	73	43	1,552	1,139	1,828	1	315	5	12	36	20	1
2012	63	61	26	629	147	259	0	75	35	3	19	0	0
2013	49	48	22	379	1,020	1,055	0	62	5	4	16	0	0
2014	42	42	20	3	221	798	0	142	16	2	27	0	0
2015	39	39	16	158	479	2,199	0	281	85	5	51	0	0
2005–2009 Average	75	71	51	1,845	328	1,049	66	150	31	27	39	2	1
2010–2014 Average	63	61	31	773	595	872	1	132	14	4	22	4	0

[a] That portion of the Yukon River drainage from Garnett Island to Hess Creek.

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

Appendix B7.–Subsistence harvests taken under authority of a permit in the Circle-Eagle Area of District 5, Yukon Area, 2005–2015.

Upper Yukon River "Circle–Eagle" Area subsistence salmon fishery [a, b]														
					Reported harvest									
Year		Number of permits issued	Number of permits returned	Number reporting harvest	Chinook	Summer chum	Fall chum	Coho	Whitefish	Sheefish	Burbot	Northern pike	Longnose sucker	Arctic grayling
2005		89	81	55	4,004	241	18,427	130	245	56	17	46	101	741
2006		85	82	59	3,208	1,034	17,960	22	191	50	23	55	83	384
2007		78	71	51	3,548	218	20,005	0	582	32	11	21	189	478
2008	[b]	96	87	50	1,808	19	18,876	0	198	34	10	16	78	368
2009	[b]	73	71	35	1,142	2	11,051	13	308	37	9	4	63	239
2010	[b]	93	89	56	1,415	62	15,955	165	254	58	17	41	40	156
2011	[b]	87	85	49	1,138	51	17,851	1	307	64	5	71	120	349
2012	[b]	68	66	32	545	0	18,896	5	232	63	5	5	7	44
2013	[b]	51	45	31	343	116	20,094	150	194	30	5	7	14	77
2014	[b]	39	37	21	63	0	18,760	1	189	125	3	4	2	49
2015	[b]	49	48	30	561	0	18,878	0	136	22	6	21	7	64
2005–2009 Average		85	79	50	2,669	290	15,473	47	318	38	15	27	127	525
2010–2014 Average		68	64	38	701	46	18,311	64	235	68	7	26	37	135

Subsistence salmon fishery above mainstem Yukon River sonar project near Eagle [c]														
					Reported harvest									
Year		Number of permits issued	Number of permits returned	Number reporting harvest	Chinook	Summer chum	Fall chum	Coho	Whitefish	Sheefish	Burbot	Northern pike	Longnose sucker	Arctic grayling
2008		26	25	18	815	6	11,755	0	51	16	0	4	0	18
2009		28	28	13	382	0	6,995	0	128	7	8	3	1	15
2010		26	26	20	604	17	11,415	1	106	25	7	1	8	12
2011		27	27	18	370	0	12,477	1	127	22	2	15	12	1
2012		26	24	13	91	0	11,681	0	166	44	1	2	7	16
2013		21	20	15	152	50	12,642	0	64	8	2	0	13	7
2014		15	15	11	55	0	13,575	1	102	109	2	2	2	47
2015		19	19	13	341	0	12,540	0	67	11	2	2	7	33
2010–2014 Average		23	22	15	254	13	12,358	1	113	42	3	4	8	17

[a] That portion of the Yukon River drainage from Twenty-Two Mile Slough, located downstream of the village of Circle, to the U.S./Canada Border.

[b] Includes harvest occurring between the Yukon River mainstem sonar site and the U.S./Canada border. The number of permits includes duplicate permits issued to households that fished above and below the sonar site.

[c] Harvest occurring between the Yukon River mainstem sonar site located near the community of Eagle and the U.S./Canada border.

Appendix B8.–Harvest from permits in Subdistrict 6-A of the Tanana River and the Kantishna River, Yukon Area, 2005–2015.

Subdistrict 6-A subsistence salmon fishery [a]													
	Number	Number	Number	Reported harvest									
Year	of permits issued	of permits returned	reporting harvest	Chinook	Summer chum	Fall chum	Coho	Whitefish	Sheefish	Burbot	Northern pike	Longnose sucker	Arctic grayling
2005	18	16	11	291	166	3,015	2,414	13	0	0	4	0	0
2006	19	19	15	362	85	3,355	1,546	12	1	1	0	0	0
2007	17	17	12	333	144	3,779	1,482	24	3	4	8	0	0
2008	34	32	17	115	146	2,583	1,987	96	1	1	71	0	0
2009	24	23	16	543	422	4,213	2,369	105	5	2	9	0	0
2010	22	22	11	360	106	3,094	1,963	69	6	0	3	0	0
2011	24	24	16	330	98	4,565	1,435	236	4	6	5	0	0
2012	23	22	11	228	58	2,166	1,374	77	2	14	5	0	2
2013	19	19	12	218	88	1,478	421	18	2	1	6	0	0
2014	22	22	16	104	179	3,450	1,420	100	3	1	1	0	0
2015	17	17	9	136	9	1,656	1,151	12	2	0	3	0	0
2005–2009 Average	22	21	14	329	193	3,389	1,960	50	2	2	18	0	0
2010–2014 Average	22	22	13	248	106	2,951	1,323	100	3	4	4	0	0

Kantishna River subsistence fishery [b]													
	Number	Number	Number	Reported harvest									
Year	of permits issued	of permits returned	reporting harvest	Chinook	Summer chum	Fall chum	Coho	Whitefish	Sheefish	Burbot	Northern pike	Longnose sucker	Arctic grayling
2005	6	6	4	133	2	1,302	245	58	0	0	41	7	0
2006	5	5	3	141	29	339	737	27	0	34	30	282	0
2007	5	5	2	0	0	0	639	0	0	0	37	0	0
2008	4	3	2	0	0	95	15	0	0	0	10	0	0
2009	4	4	3	0	0	436	311	57	0	32	21	71	0
2010	4	4	3	1	0	82	23	3	0	3	28	0	0
2011	6	5	3	1	49	698	105	28	1	9	33	28	0
2012	3	3	3	0	0	285	51	2	0	1	4	1	0
2013	3	3	2	0	0	314	144	13	0	0	0	0	0
2014	5	5	3	0	0	70	129	10	0	0	6	0	0
2015	2	2	1	0	0	127	11	0	0	1	2	3	1
2005–2009 Average	5	5	3	55	6	434	389	28	0	13	28	72	0
2010–2014 Average	4	4	3	0	10	290	90	11	0	3	14	6	0

[a] Portion of the Tanana River drainage from Yukon River confluence to the upstream edge of Kantishna River confluence.

[b] Kantishna River drainage upstream of Tanana River confluence.

Appendix B9.–Harvest from permits in Subdistrict 6-B and the Tolovana River drainage, Yukon Area, 2005–2015.

Subdistrict 6-B subsistence salmon fishery [a]

Year	Number of permits issued	Number of permits returned	Number reporting harvest	Reported harvest										
				Chinook	Summer chum	Fall chum	Coho	Whitefish	Sheefish	Burbot	Northern pike	Longnose sucker	Arctic grayling
2005	70	67	29	1,403	1,846	15,367	9,659	1,652	7	19	82	64	5
2006	78	76	42	423	885	13,047	7,897	763	12	26	88	21	4
2007	79	75	39	1,127	1,750	12,477	4,521	656	17	32	108	26	2
2008	73	71	35	486	854	7,815	4,009	403	0	4	121	21	11
2009	70	69	37	730	830	9,112	4,064	1,073	10	33	25	21	0
2010	93	85	32	583	316	7,625	3,429	543	46	6	18	34	1
2011	86	82	43	684	678	7,463	4,584	641	27	13	4	12	1
2012	85	79	39	375	436	10,428	6,674	550	37	16	62	44	12
2013	93	87	38	148	1,006	9,573	4,583	1,026	7	28	10	11	2
2014	81	78	38	168	533	8,381	5,977	1,241	8	15	64	28	16
2015	71	71	30	220	225	7,457	6,652	880	17	6	28	13	0
2005–2009 Average	74	72	36	834	1,233	11,564	6,030	909	9	23	85	31	4
2010–2014 Average	88	82	38	392	594	8,694	5,049	800	25	16	32	26	6

Tolovana River drainage subsistence fishery [b]

Year	Number of Permits Issued	Number of Permits Returned	Number Reporting Harvest	Reported Harvest									
				Chinook	Summer Chum	Fall Chum	Coho	Whitefish	Sheefish	Burbot	Northern pike	Longnose Sucker	Arctic Grayling
2005	79	69	31	1	0	0	0	304	58	0	386	30	0
2006	101	97	56	0	11	6	2	117	2	27	788	9	0
2007	118	109	55	12	2	1	0	137	4	1	1,837	0	0
2008	146	136	79	0	0	0	0	258	3	3	1,339	0	47
2009	112	107	52	0	1	0	0	202	14	6	563	0	0
2010	96	90	42	0	0	0	0	181	39	0	125	9	0
2011	70	69	27	0	0	0	0	36	0	70	110	0	0
2012	73	68	35	0	0	2	0	130	8	6	525	0	0
2013	78	65	45	0	0	60	42	15	1	3	231	9	0
2014	106	105	57	0	0	1	0	3	0	0	478	1	0
2015	120	119	66	0	0	0	0	48	2	0	765	0	0
2005–2009 Average	111	104	55	3	3	1	0	204	16	7	983	8	9
2010–2014 Average	85	79	41	0	0	13	8	73	10	16	294	4	0

[a] Portion of the Tanana River drainage from the mouth of the Kantishna River upstream to the mouth of the Wood River, including the Wood River drainage

[a] Includes the Tolovana River drainage outside of the Fairbanks nonsubsistence area.

Appendix B10.–Harvest from permits in the upper Tanana River drainage and Koyukuk River, Yukon Area, 2005–2015.

Year	Number of permits issued	Number of permits returned	Number reporting harvest	Reported harvest										
				Chinook	Summer chum	Fall chum	Coho	Whitefish	Sheefish	Burbot	Northern pike	Longnose sucker	Arctic grayling
Upper Tanana River drainage subsistence fishery [a]														
2005	29	24	13	0	0	15	0	1,235	0	2	47	61	25
2006	23	22	17	0	0	19	0	1,756	0	0	28	181	83
2007	34	33	17	0	0	41	5	1,786	0	15	19	24	35
2008	58	50	19	0	0	17	6	2,185	0	10	62	27	35
2009	42	40	17	0	0	84	0	2,035	0	0	44	35	98
2010	41	34	19	10	0	12	0	1,619	0	11	13	21	38
2011	41	39	23	0	0	0	0	3,181	0	24	58	78	79
2012	58	49	22	0	0	0	0	2,522	0	10	199	97	31
2013	52	41	15	0	0	0	0	1,314	0	20	130	170	98
2014	15	15	10	0	0	0	0	1,510	0	3	62	62	0
2015	38	38	14	0	0	33	1	2,064	1	2	16	12	33
2005–2009 Average	37	34	17	0	0	35	2	1,799	0	5	40	66	55
2010–2014 Average	41	36	18	2	0	2	0	2,029	0	14	92	86	49
Upper south and middle forks of the Koyukuk River subsistence fishery [b]														
2005	NA	NA	NA	0	0	0	0	6	0	1	0	22	22
2006	NA	NA	NA	0	0	0	0	0	0	0	0	0	1
2007	NA	NA	NA	0	0	0	0	5	0	0	0	1	10
2008	NA	NA	NA	0	0	0	0	10	0	0	0	15	27
2009	NA	NA	NA	0	0	0	0	4	0	0	0	13	18
2010	NA	NA	NA	0	0	0	0	8	0	0	0	0	0
2011	NA	NA	NA	0	0	0	0	25	0	0	1	20	45
2012	NA	NA	NA	0	0	0	0	11	0	0	1	3	15
2013	NA	NA	NA	0	0	0	0	8	0	6	0	25	25
2014	NA	NA	NA	0	0	0	0	9	0	3	0	8	18
2015	NA	NA	NA	0	0	0	0	4	0	0	0	0	32
2005–2009 Average	NA	NA	NA	0	0	0	0	5	0	0	0	10	16
2010–2014 Average	NA	NA	NA	0	0	0	0	12	0	2	0	11	21

Note: NA = data not available.

[a] That portion of the Tanana River drainage from the mouth of the Volkmar River, including the Volkmar River drainage, and the mouth of the Johnson River, including the Johnson River drainage, upstream to the Tanana River drainage headwaters.

[b] That portion of the South Fork of the Koyukuk River drainage upstream from the mouth of the Jim River and the Middle Fork of the Koyukuk River drainage upstream from the mouth of the North Fork River.

Appendix B11.–Harvests from personal use permit areas of the Tanana River, Yukon Area, 2005–2015.

Year	Number of permits issued	Number of permits returned	Number reporting harvest	Reported harvest									
				Chinook	Summer chum	Fall chum	Coho	Whitefish	Sheefish	Burbot	Northern pike	Longnose sucker	Arctic grayling
Subdistrict 6–C Personal Use salmon fishery [a]													
2005	63	59	27	138	152	133	107	3	3	3	1	0	0
2006	60	60	35	89	262	333	279	14	5	1	2	0	0
2007	65	63	32	136	184	173	135	4	1	0	1	0	0
2008	51	50	25	126	138	181	50	13	2	0	2	0	0
2009	57	57	22	127	308	71	65	2	1	0	0	1	0
2010	67	67	38	162	319	3,208	1,062	192	0	3	6	9	5
2011	67	64	33	89	439	347	232	20	1	1	0	0	0
2012	60	59	29	71	321	410	100	3	0	0	0	0	0
2013	53	52	29	42	138	363	124	24	1	0	0	0	3
2014	50	50	23	1	235	278	174	39	3	0	0	0	0
2015	42	42	15	5	220	80	145	26	1	0	1	1	0
2005–2009 Average	59	58	28	123	209	178	127	7	2	1	1	0	0
2010–2014 Average	59	58	30	73	290	921	338	56	1	1	1	2	2
Upper Tanana River Personal Use whitefish/sucker fishery [b]													
2005	10	10	5	0	0	0	0	81	0	4	1	403	3
2006	7	7	NA	0	0	0	0	273	0	3	0	184	1
2007	NA	NA	NA	0	0	0	0	0	0	0	0	0	0
2008	6	6	NA	0	0	0	0	28	0	0	0	157	0
2009	11	11	6	0	0	7	5	46	0	0	0	314	0
2010	8	6	NA	0	0	1	0	14	1	0	1	57	0
2011	7	7	5	0	0	0	0	42	0	0	0	142	0
2012	12	11	NA	0	0	0	0	19	0	0	0	233	0
2013	14	13	7	0	0	20	8	65	0	1	3	118	0
2014	21	21	10	0	0	0	0	106	0	0	0	270	0
2015	22	22	13	0	0	0	0	254	0	0	0	322	1
2005–2009 Average	7	7	4	0	0	1	1	86	0	1	0	212	1
2010–2014 Average	12	12	6	0	0	4	2	49	0	0	1	164	0

Note: NA = data not available.

[a] Portion of the Tanana River drainage from the upstream edge of the mouth of the Wood River, not including the Wood River drainage, to the upstream edge of the mouth of the Salcha River, including the Salcha River drainage.

[b] Portion of the Tanana River drainage from the upstream edge of the mouth of the Wood River, not including the Wood River drainage, to the mouth of the Volkmar River on the north bank of the Tanana River and upstream to the Johnson River on the south bank of the Tanana River. This permit is issued for the harvest of whitefish species and longnose suckers but requires reporting incidental fish harvests and live release of non-permitted species if gear allows.

Appendix B12.–Households with dogs, number of dogs, and salmon fed to dogs, as estimated in surveyed communities or reported in permit areas, 2010–2015.

Districts survey or permit and year	Number of households with dogs	Number of dogs	Summer chum salmon fed to dogs	Fall chum salmon fed to dogs	Coho salmon fed to dogs	Total salmon fed to dogs
2010						
Coastal District survey	207	410	118	0	0	118
District 1 survey	299	595	20	0	0	20
District 2 survey	284	494	27	0	104	131
District 3 survey	85	235	63	61	183	307
District 4 survey	379	990	6,111	2,551	595	9,257
District 5 survey	255	910	2,024	21,167	2,207	25,398
District 5 permit [a, b]	59	432	–	–	–	13,707
District 6 permit [b]	184	998	–	–	–	12,011
Totals	1,752	5,064	8,363	23,779	3,089	60,949
2011						
Coastal District survey	174	341	0	0	0	0
District 1 survey	264	502	85	0	0	85
District 2 survey	275	524	111	70	115	296
District 3 survey	112	280	528	9	0	537
District 4 survey	413	1,028	9,743	1,359	1,150	12,252
District 5 survey	272	1,282	6,798	32,224	1,156	40,178
District 5 permit [a, b]	55	363	–	–	–	15,759
District 6 permit [b]	162	1,033	–	–	–	15,140
Totals	1,727	5,353	17,265	33,662	2,421	84,247
2012						
Coastal District survey	181	397	524	0	0	524
District 1 survey	279	582	90	43	22	155
District 2 survey	211	508	396	5	51	452
District 3 survey	86	303	2,553	5	6	2,564
District 4 survey	440	2,037	19,719	6,680	84	26,483
District 5 survey	243	917	4,772	30,569	2,409	37,750
District 5 permit [a, b]	48	480	–	–	–	16,404
District 6 permit [b]	167	947	–	–	–	14,566
Totals	1,655	6,171	28,054	37,302	2,572	98,898
2013						
Coastal District survey	215	467	14	28	0	42
District 1 survey	308	567	489	0	0	489
District 2 survey	300	530	226	149	0	375
District 3 survey	82	185	103	0	0	103
District 4 survey	418	1,138	10,387	5,740	4,066	20,193
District 5 survey	271	984	7,671	45,510	191	53,372
District 5 permit [a, b]	64	406	–	–	–	17,663
District 6 permit [b]	112	730	–	–	–	7,210
Totals	1,770	5,007	18,890	51,427	4,257	99,447

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Districts survey or permit and year	Number of households with dogs	Number of dogs	Summer chum salmon fed to dogs	Fall chum salmon fed to dogs	Coho salmon fed to dogs	Total salmon fed to dogs
2014						
Coastal District survey	238	490	13	0	0	13
District 1 survey	269	550	1	8	12	21
District 2 survey	301	575	0	0	0	0
District 3 survey	85	292	10	100	0	110
District 4 survey	415	1,171	3,876	425	633	4,934
District 5 survey	308	1,154	1,205	27,685	1,301	30,191
District 5 permit [a, b]	31	260	–	–	–	15,704
District 6 permit [b]	112	896	–	–	–	15,715
Totals	1,759	5,388	5,105	28,218	1,946	66,688
2015						
Coastal District survey	217	411	0	0	0	0
District 1 survey	334	656	47	0	0	47
District 2 survey	318	752	498	244	650	1,392
District 3 survey	103	269	35	0	0	35
District 4 survey	427	1,095	4,969	2,067	437	7,473
District 5 survey	246	910	2,299	21,873	2,567	26,739
District 5 permit [a, b]	36	386	–	–	–	18,090
District 6 permit [b]	114	696	–	–	–	11,169
Totals	1,795	5,175	7,848	24,184	3,654	64,945
5–year average 2010–2014						
Coastal District survey	203	421	134	6	0	139
District 1 survey	284	559	137	10	7	154
District 2 survey	274	526	152	45	54	251
District 3 survey	90	259	651	35	38	724
District 4 survey	413	1,273	9,967	3,351	1,306	14,624
District 5 survey	270	1,049	4,494	31,431	1,453	37,378
District 5 permit [a, b]	51	388	–	–	–	15,847
District 6 permit [b]	147	921	–	–	–	12,928
Totals	1,733	5,397	15,535	34,878	2,857	82,046

Note: Harvest data from 1992–2009 are presented in earlier years of this annual report (Busher et al. 2009). The estimated number of salmon includes those retained from subsistence and commercial related harvests. Dashes indicate information was not collected. Permit areas only report combined salmon species (summer and fall chum and coho salmon) fed to dogs.

[a] Permit totals do not include the community of Stevens Village.

[b] Does not include duplicate information from households with more than 1 permit.

Appendix B13.–Estimated and reported subsistence and personal use harvest of miscellaneous fish species, Yukon Area, 2005–2015.

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	5–year average 2005–2009	5–year average 2010–2014
Survey estimates [a]													
Northern pike	29,799	28,133	25,947	16,053	8,061	14,086	14,270	18,450	11,264	14,852	20,109	21,599	14,584
Sheefish	13,764	12,745	13,203	10,154	7,861	9,231	10,139	17,094	15,553	12,583	12,828	11,545	12,920
Whitefish [b]	48,862	60,923	64,338	54,729	51,778	50,232	44,890	70,486	64,766	84,889	79,740	56,126	63,053
Survey reported [c]													
Alaska blackfish	259,874	218,695	131,712	110,356	47,320	68,873	87,064	62,731	63,235	92,080	97,586	153,591	74,797
Arctic grayling	1,258	1,145	2,296	857	667	1,571	1,273	2,674	1,435	1,772	1,832	1,245	1,745
Arctic lamprey [d]	38,115	2,092	12,584	803	9,083 [e]	13,611 [e]	10,574 [e]	1,657 [e]	2,608 [e]	19,888 [e]	42,237 [e]	12,535	9,668
Burbot	3,138	5,069	3,500	3,273	2,027	2,743	2,477	2,422	2,115	2,016	3,364	3,401	2,355
Herring [f]	–	–	–	–	–	–	–	10,449	9,082	17,164	24,591	–	12,232
Tomcod	4,988	13,652	7,121	6,391	2,709	3,978	6,797	4,023	5,221	10,020	4,697	6,972	6,008
Permit reported													
Arctic grayling	800	507	525	488	363	201	475	104	210	83	131	537	215
Burbot	78	127	99	89	119	45	140	68	68	27	23	102	70
Longnose suckers	694	770	243	298	518	170	420	396	347	371	358	505	341
Northern pike	641	1,008	2,094	1,678	736	267	329	827	403	648	891	1,231	495
Sheefish	155	80	83	111	76	160	103	147	48	215	166	101	135
Whitefish [b]	3,671	3,399	3,330	3,403	4,039	3,112	4,907	4,016	2,766	3,747	3,771	3,568	3,710
Total harvest of species from survey and permits communities in the Yukon Area													
Arctic grayling	2,058	1,652	2,821	1,345	1,030	1,772	1,748	2,778	1,645	1,855	1,963	1,781	1,960
Burbot	3,216	5,196	3,599	3,362	2,146	2,788	2,617	2,490	2,183	2,043	3,387	3,504	2,424
Northern pike	30,440	29,141	28,041	17,731	8,797	14,353	14,599	19,277	11,667	15,500	21,000	22,830	15,079
Sheefish	13,919	12,825	13,286	10,265	7,937	9,391	10,242	17,241	15,601	12,798	12,994	11,646	13,055
Whitefish [b]	52,533	64,322	67,668	58,132	55,817	53,344	49,797	74,502	67,532	88,636	83,511	59,694	66,762

Note: Dashes indicate information was not collected.

[a] Subsistence harvests of northern pike, sheefish, and whitefish from surveyed communities are estimated using methods developed for salmon harvest estimates.

[b] Includes various *Coregonus* species and round whitefish (*Prosopium cylindraceum*). Categories of large (greater than 4 pounds) and small (less than 4 pounds) whitefish are combined.

[c] Total number of each species reported by households in surveyed communities. Harvest totals for these species are not estimated.

[d] Harvest of Arctic lamprey reported in each year occurred from October-December of the previous year.

[e] Includes harvest of Arctic lamprey reported on postcards. Household surveys and postcards were compared to avoid double counting fish.

[f] Households in the Coastal District and District 1 were asked about their harvest herring starting in 2012. Reports of 'smelt' were included in herring totals.

Appendix B14.–Percentage of Chinook salmon harvested by gear type by community, 2010–2015.

	2010				2011				2012				2013				2014				2015				Average 2010–2014			
Community	SN	DN	FW	O	SN	DN	FW	O	SN	DN	FW	O	SN	DN	FW	O	SN	DN	FW	O	SN	DN	FW	O	SN	DN	FW	O
Hooper Bay	98	2	0	0	100	0	0	0	98	2	0	0	99	1	0	0	95	5	0	0	94	6	0	0	98	2	0	0
Scammon Bay	100	0	0	0	99	1	0	0	100	0	0	0	99	1	0	0	80	0	0	20	78	0	0	21	96	0	0	4
Coastal District	99	1	0	0	99	1	0	0	99	1	0	0	99	1	0	0	92	4	0	4	87	4	0	9	98	1	0	1
Nunam Iqua	97	3	0	0	98	2	0	0	100	0	0	0	100	0	0	0	44	0	0	56	70	6	0	24	88	1	0	11
Alakanuk	73	27	0	0	31	69	0	0	18	82	0	0	59	41	0	0	25	50	0	25	63	20	0	17	41	54	0	5
Emmonak	33	67	0	0	6	94	0	0	17	83	0	0	8	90	0	2	23	69	0	8	4	86	0	10	17	81	0	2
Kotlik	80	20	0	0	60	40	0	0	67	32	0	0	62	34	2	2	67	31	0	3	36	61	0	2	67	31	0	1
District 1	67	33	0	0	37	63	0	0	35	65	0	0	48	49	1	2	44	41	0	16	40	49	0	10	46	50	0	3
Mountain Village	5	95	0	0	8	92	0	0	18	82	0	0	19	81	0	0	24	44	0	33	13	47	0	40	15	79	0	7
Pitkas Point	0	100	0	0	0	100	0	0	0	100	0	0	8	92	0	0	21	60	0	19	0	50	0	50	6	90	0	4
St. Marys	14	86	0	0	0	100	0	0	1	99	0	0	0	90	0	10	24	68	0	9	16	59	0	24	8	88	0	4
Pilot Station	9	91	0	0	8	92	0	0	12	88	0	0	1	97	0	1	6	78	0	16	20	72	0	8	7	89	0	3
Marshalls	16	84	0	0	0	100	0	0	36	64	0	0	2	98	0	0	0	47	0	53	0	96	0	4	11	79	0	11
District 2	11	89	0	0	3	97	0	0	14	86	0	0	6	92	0	2	15	55	0	30	14	64	0	22	10	84	0	6
Russian Mission	36	64	0	0	15	85	0	0	8	92	0	0	8	92	0	0	100	0	0	0	2	98	0	0	33	67	0	0
Holy Cross	24	76	0	0	22	78	0	0	39	61	0	0	60	40	0	0	–	–	–	–	1	99	0	0	36	64	0	0
Shageluk	33	67	0	0	31	69	0	0	100	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0	73	27	0	0
District 3	27	73	0	0	20	80	0	0	18	82	0	0	32	68	0	0	100	0	0	0	5	95	0	0	40	60	0	0
Anvik	36	64	0	0	51	49	0	0	52	48	0	0	72	28	0	0	–	–	–	–	2	86	0	12	53	47	0	0
Grayling	1	99	0	0	35	65	0	0	13	87	0	0	41	59	0	0	0	100	0	0	7	93	0	0	18	82	0	0
Kaltag	0	100	0	0	0	100	0	0	6	94	0	0	0	100	0	0	0	100	0	0	0	100	0	0	1	99	0	0
Nulato	14	86	0	0	7	93	0	0	0	100	0	0	0	100	0	0	–	–	–	–	0	100	0	0	5	95	0	0
Koyukuk	7	93	0	0	10	90	0	0	35	65	0	0	62	38	0	0	0	100	0	0	50	50	0	0	23	77	0	0
Galena	32	61	7	0	57	43	0	0	73	27	0	0	6	94	0	0	0	0	100	0	52	48	0	0	33	45	21	0
Ruby	45	0	55	0	32	0	68	0	72	0	28	0	29	0	71	0	100	0	0	0	100	0	0	0	56	0	44	0
Huslia	100	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0
Hughes	100	0	0	0	100	0	0	0	–	–	–	–	100	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0
Allakaket	100	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0
Alatna	–	–	–	–	100	0	0	0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	100	0	0	0
Bettles	–	–	–	–	–	–	–	–	100	0	0	0	–	–	–	–	0	100	0	0	–	–	–	–	50	50	0	0
District 4	15	79	6	0	24	72	3	0	30	65	5	0	32	59	9	0	49	50	1	0	46	53	0	1	30	65	5	0

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	2010				2011				2012				2013				2014				2015				Average 2010–2014			
Community	SN	DN	FW	O	SN	DN	FW	O	SN	DN	FW	O	SN	DN	FW	O	SN	DN	FW	O	SN	DN	FW	O	SN	DN	FW	O
Tanana	61	1	38	0	49	0	51	0	66	0	34	0	78	0	22	0	61	0	39	0	23	0	77	0	63	0	37	0
Stevens Village	100	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0	–	–	–	–	–	–	–	–	100	0	0	0
Birch Creek	100	0	0	0	100	0	0	0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	100	–	–	–
Beaver	98	0	2	0	80	0	20	0	76	8	17	0	45	0	55	0	–	–	–	–	100	0	0	0	75	2	23	0
Fort Yukon	44	0	56	0	21	5	74	0	9	0	91	0	12	0	88	0	100	0	0	0	68	0	32	0	37	1	62	0
Venetie	100	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0
Chalkyitsik	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	100	0	0	0	–	–	–	–	100	0	0	0
District 5	65	0	35	0	44	2	81	0	43	0	57	0	50	0	50	0	68	0	30	0	75	0	25	0	54	0	50	0
Survey totals	32	60	8	0	26	62	12	0	34	54	12	0	47	33	19	11	53	31	2	14	43	42	7	8	39	48	11	5

Note: Numbers indicate the percentage of Chinook salmon harvested in each community by set gillnet (SN), drift gillnet (DN), fish wheel (FW), or other gear types (O). Other gear types include beach seine, dip net, hook and line, or other/unspecified gear. Dashed lines indicate no gear or harvest information was collected from a community.