Technical Paper No. 299

The Harvest of Non-salmon Fish by Residents of Aniak and Chuathbaluk, Alaska, 2001-2003

by

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Alaska Department of Fish and Game **Division of Subsistence**

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)

Measures (fisheries)

fork length	FL
mideye-to-fork	MEF
mideye-to-tail-fork	METF
standard length	SL
total length	TL

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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Final Report to the U.S. Fish and Wildlife Service, Office of Subsistence Management, Fisheries Resource Monitoring Program to fulfill obligations for Study No. 01-112 under agreements 70181-1-J335 and 70181-1-C068

The Division of Subsistence Technical Paper Series was established in 1979 and represents the most complete collection of information about customary and traditional uses of fish and wildlife resources in Alaska. The papers cover all regions of the state. Some papers were written in response to specific fish and game management issues. Others provide detailed, basic information on the subsistence uses of particular communities which pertain to a large number of scientific and policy questions. Technical Paper Series reports are available through the Alaska State Library and on the Internet: http://www.subsistence.adfg.state.ak.us/

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ABSTRACT

The goal of this project was to identify and understand changes in non-salmon subsistence fishing patterns in the Aniak River drainage during 2001-2003. Data were collected through key respondent interviews and household surveys in Aniak and Chuathbaluk. Key respondent interviews were conducted with five individuals in Aniak in 2002 and documented local knowledge related to critical habitat, life histories, and seasonal movements of non-salmon species, along with changes in the quality and abundance of fish over time in the drainage. Household surveys on non-salmon harvests were completed with most (80-90 percent) households in Aniak and Chuathbaluk in 2002 and 2003, resulting in baseline subsistence harvest estimates for eleven non-salmon species by gear type and season. This detailed examination of contemporary subsistence fishing patterns provides new understanding of subsistence harvests of non-salmon fish in the Middle Kuskokwim River area. It can be used to support future research and may assist policy decisions related to subsistence uses of both salmon and non-salmon species in the area.

Key Words: Kuskokwim River, Yukon-Kuskokwim Delta, Aniak River, Aniak, Chuathbaluk, harvest assessment, non-salmon, resident species, freshwater fish, northern pike (*Esox lucius*), whitefish (*Coregoninae, Propsopium cylindraceum*), inconnu (sheefish) (*Stenodus leucichthys*), burbot (*Lota lota*), Alaska blackfish (*Dallia pectoralis*), Arctic rainbow smelt (*Osmerus mordax*), Arctic grayling (*Thymallus arcticus*), Arctic lamprey (*Lampetra camtschatica*), longnose sucker (*Catostomus catostomus*), Arctic char (*Salvelinus alpinus*), Dolly Varden (*Salvelinus malma*), rainbow trout (*Oncorhynchus mykiss*), lake trout (*Salvelinus namaycush*).

INTRODUCTION

The Aniak river drainage, partially located within the Yukon Delta National Wildlife Refuge in Western Alaska, is an important system for local residents, who use it for hunting, trapping, and to access and harvest several species of salmon and freshwater fish. Located along the middle stretch of the Kuskokwim River, the villages of Aniak and Chuathbaluk are closest to the Aniak river drainage where conservation concerns exist due to the increasing popularity of the area for fishing and hunting (see Figure 1).

Previous studies have documented the customary and traditional reliance on the harvest and use of salmon, moose, and other wild resources by residents of the villages of Aniak and Chuathbaluk (e.g., Brelsford, Petersen, and Haynes 1987; Charnley 1984; Stickney 1981). However, these studies are more than twenty years old such that the effects, if any, of increasing use by non-local users on the local customary and traditional use patterns of wild resources are poorly understood.

In recent years, the Aniak drainage has become increasingly popular with people living outside the area for big game hunting and sport fishing. Increased use of the area has prompted growing concern over the status of resident fish populations in the Aniak River, particularly as potentially affected by guided harvests involving float planes, jet boats, and rafting. Concern over resident fish populations and increased use of the Aniak River has been compounded by recent declines in salmon runs and has recently resulted in one of the most conservatively managed sport fisheries in the state (Lafferty and Bingham 2001). This study was developed in response to these local concerns and was designed primarily to document the subsistence harvest of non-salmon fish species in the Aniak river drainage and the immediately surrounding area.

For over 15 years, the Alaska Department of Fish and Game (ADF&G), Division of Subsistence has conducted annual household salmon harvest surveys in most villages in the Kuskokwim river drainage, including the communities of Aniak and Chuathbaluk. These surveys have served to document in fine-grained detail the annual harvest of the different species of salmon by Kuskokwim area residents, including numbers of fish harvested, methods of harvest, use of fish harvested and more. However, for many villages, including Aniak and Chuathbaluk, the salmon surveys have constituted the only regularly and systematically collected subsistence harvest information for fish and wildlife resources.

Community baseline studies conducted by the ADF&G, Division of Subsistence in the 1980s attempted to document the complex relationships between humans and their environment, which comprise the subsistence way of life in villages throughout the Kuskokwim area. Though rich in ethnographic detail and comprehensive in their description of the various components of the subsistence way of life, such as the seasonal cycle of activities and the economic and social characteristics of local economies, the studies conducted in the middle Kuskokwim region included little quantification of non-

salmon resource utilization (e.g., Brelsford et al. 1987; Charnley 1984; Kari 1985; Stickney 1981).

While some information on non-salmon fishing harvest levels and practices has been documented for the Aniak area, this study is the first comprehensive examination of non-salmon harvest and use by residents of the Kuskokwim Fisheries Management Area (Figure 2). This report documents and quantifies harvest levels for non-salmon fish species, as well as fishing locations, methods and means, and seasonal timing. The species discussed in this report include northern pike (*Esox lucius*), whitefish (*Coregoninae, Propsopium cylindraceum*), inconnu (sheefish) (*Stenodus leucichthys*), burbot (*Lota lota*), Alaska blackfish (*Dallia pectoralis*), Arctic rainbow smelt (*Osmerus mordax*), Arctic grayling (*Thymallus arcticus*), Arctic lamprey (*Lampetra camtschatica*), longnose sucker (*Catostomus catostomus*), Arctic char (*Salvelinus alpinus*), Dolly Varden (*Salvelinus malma*), rainbow trout (*Oncorhynchus mykiss*), lake trout (*Salvelinus namaycush*).

Regulatory Background

During the study period (2001-2003), federal subsistence regulations included a positive customary and traditional use finding for residents of Aniak and Chuathbaluk to fish for all freshwater fish, except for rainbow trout in the Kuskokwim Management Area. Federal subsistence regulations allowed most gear types to be used for freshwater subsistence fishing, including set and drift gillnet, beach seine, fish wheel, pot, long line, fyke net, dip net, jigging gear, spear, lead, handline, and rod and reel.

Rainbow trout were recognized by the Federal Subsistence Board as a customary and traditional resource utilized by residents of Aniak and Chuathbaluk in 2005, subsequent to the completion of this research project. In developing the analysis for the regulatory proposal addressing customary and traditional use of rainbow trout in the Kuskokwim Management Area, federal Office of Subsistence Management staff consulted with ADF&G Division of Subsistence to review the data resulting from this research project. Under federal subsistence regulations in the Kuskokwim Area, there are gear restrictions on the take of rainbow trout from March 15 to June 15, when one may not used gillnets, dip nets, or fyke nets; however, rainbow trout taken incidentally in other subsistence net fisheries or through the ice may be retained.

In contrast to the simplicity of federal subsistence regulations regarding the harvest of freshwater fish in the Kuskokwim Area, the state regulatory history of subsistence fishing in the Aniak River area is complex, in part due to differences in jurisdiction and state and federal laws governing subsistence uses. Until 2000, the use of hook and line attached to a rod or pole ("rod and reel") through open water was prohibited under state subsistence fishing regulations. Under the state regulations, fishing for subsistence uses required the purchase of a sport fishing license and compliance with sport fishing regulations, such as bag and possession limits. In March 2000, however, the Alaska Board of Fisheries

rescinded sport fishing requirements for subsistence rod and reel fishers when they reclassified rod and reel gear as legal subsistence gear in the Kuskokwim Fisheries Management Area and the lower portion of the Yukon Fisheries Management Area (see 5 AAC 01.270(c) and 5 AAC 01.220(k); Burr 2001).

Concurrent with legalizing rod and reel gear for subsistence, however, the Alaska Board of Fisheries also established the Aniak River Subsistence Management Plan in March 2000, which implemented subsistence regulations on the Aniak River identical to sport fishing regulations during the period of June 1 through August 31 (Lafferty and Bingham 2001; cf. 5 AAC 01.270; 5 AAC 01.295; 5 AAC 70.017(c)(3) (the latter was formerly contained in 5 AAC 70.022(e)(12)(G) until July 2004 when 5 AAC 70.017 was promulgated)). Local concern with the new regulations, which included prohibition of the harvest of chum salmon and rainbow trout as well as a one-per-day bag limit for coho salmon, resulted in reconsideration of the Aniak River Subsistence Management Plan at the January 2001 Board of Fisheries meeting. A complex compromise resulted, with daily aggregate bag limits of six fish for both sport and subsistence fishers using rod and reel gear, only three of which could be salmon (Lafferty and Bingham 2001). In January 2004, the Board of Fisheries realigned Aniak River sport fishing regulations with Kuskokwim Area sport fishing regulations, effectively liberalizing total daily aggregate bag limits for sport fishers on the Aniak River. A similar proposal to remove the daily aggregate possession and bag limits for subsistence rod and reel fishing regulations in the Aniak River drainage was voted down by the Board. As a result, current state subsistence regulations in the Aniak River drainage restrict the Aniak River subsistence fishery upstream of Doestock Creek from June 1 through August 31, with daily aggregate bag and possession limits of six fish, of which no more than three fish may be salmon, of which no more than two salmon may be Chinook salmon; rainbow trout may not be retained (5 AAC 01.295). In contrast, current state sport regulations in the Aniak River drainage contain a total daily aggregate bag limit of 32 fish, of which no more than three fish may be salmon, of which no more than two salmon may be Chinook salmon, and rainbow trout may not be retained (5 AAC 70.017). The result is that the non-salmon subsistence rod and reel fishery was more restrictive than the non-salmon sport fishery in the Aniak River, an apparent oversight not caught during the Board of Fisheries deliberations in 2004. To correct this oversight, a regulatory proposal was submitted to the Board of Fisheries for consideration at its February 2007 meeting, where Aniak River subsistence rod and reel summer harvest limits were linked directly to the sport fishing regulations as originally intended in the Aniak River Subsistence Management Plan. In addition, chum salmon can now be retained when caught by hook and line.

OBJECTIVES

1. Through key respondent interviews, identify critical spawning, rearing, seasonal movements and over-wintering habitats for the various non-salmon species in the Aniak River drainage; and record traditional knowledge regarding perceived changes in habitat, changes in the size and health of fish, and changes in abundance and distribution of fish and possible reasons for these changes.

2. Conduct household surveys to determine the number of non-salmon fish, by species, gear type, and season that are harvested by residents of Aniak and Chuathbaluk from the Aniak River drainage during two 12-month harvest periods: March 1, 2001 through February 28, 2002 and March 1, 2002 through February 28, 2003.

3. Identify subsistence fishing locations within the Aniak River drainage and the surrounding area. Identify what, if any, changes households have observed regarding fish populations, conditions of fish being harvested and household harvest and use of fish over time.

METHODS

Non-Salmon Harvest Household Surveys

Systematic household surveys following standard ADF&G Division of Subsistence methods were used to collect information on non-salmon fish harvest. ADF&G Subsistence Resource Specialist, Mike Coffing, in consultation with Kuskokwim Native Association (KNA) Natural Resources Director, Wayne Morgan, developed a survey instrument (Appendix A) based on retrospective recall which questioned households about their locations, methods, and timing of harvest of non-salmon fish.

Wayne Morgan developed comprehensive household lists for Aniak and Chuathbaluk. Initially, a total of 201 households were identified in the study area; therefore, investigators determined a census approach would be utilized instead of a probabilistic sampling design. Table 1 summarizes the total number of occupied households in each community for each year of the project, as well as the number of households contacted in each community during each year of the project. The goal of conducting a census of each community often does not result in 100% of households being contacted in these types of research; however, as Table 1 illustrates, the proportion of households surveyed during the course of the project ranged from 73% to 90%, suggesting that these samples are generally representative of each community's patterns of harvest and use.

Two survey efforts were conducted in both the communities of Aniak and Chuathbaluk; in March 2002 and during April and May 2003. Recall harvest surveys covered the periods of March 1, 2001 through February 28, 2002 and March 1, 2002 through February 28, 2003, respectively. In preparation for the surveys, Coffing prepared a training manual specifically for the project (Appendix C) to promote consistent methods and implementation procedures, and data comparability. KNA hired two local technicians for each survey effort. At the beginning of each survey effort, Coffing traveled to Aniak and trained KNA survey technicians in the use of the household lists, survey instrument, and face-to-face household harvest survey methods. In order to assure informed consent, technicians were instructed to explain to all households contacted the voluntary and confidential nature of their participation in the survey. Morgan ensured that household lists were kept up to date throughout both survey efforts and that attempts were made to contact all households in the study area. Additionally, throughout both survey efforts Morgan and Coffing monitored the survey technicians' progress, providing assistance, direction, and clarification as needed.

Following collection of harvest data, surveys were reviewed and coded by ADF&G Division of Subsistence staff and forwarded on to ADF&G Division of Subsistence Information Management staff for data entry and analysis. Harvest data were collected in terms of numbers of fish and then converted during data analysis into useable pounds of fish. The factors used to convert numbers in pounds are presented in Appendix D. Initial data entry and preliminary analysis occurred immediately following the first survey effort; however, changes in Information Management personnel resulted in incomplete analysis of the first year of data, and delays in the input and analysis of the second year of data. Completed instruments from the second survey effort were reviewed and coded in July 2003 and analyzed in July 2004 when the finalization of the results from the first year of data occurred.

Key Respondent Interviews

From among those who participated in the household survey in March 2002, KNA Natural Resources Director, Wayne Morgan, identified five individuals to be interviewed in greater detail as key respondents, or subject matter experts, for the project. Because of the sensitivity of some of the issues discussed in the interviews, key respondents identities are not included in this report; however, Table 2 summarizes the age, birthplace, number of years spent in the Aniak area, and the length of the interview for each key respondent. Collectively, the five individuals chosen for interviews represent 241 person-years of experience fishing in the Aniak River area, a clear testament to their expertise in this subject. These interviews were conducted in Aniak in April 2002 using maps of the area and a semi-structured interview guide (Appendix E) to discuss each respondent's ecological and historical knowledge related to fishing patterns of the community. The guide outlined topics such as seasonal movement of fish, related habitat and climatic conditions, inter-species relationships, and characterizations of subsistence

activities over time, such as camp sites used, number of families participating, and the seasonal cycles of subsistence harvest and use patterns. Additionally, key respondents were asked about changes in the recreational or sport use of fish resources over time and the effects of commercial salmon fishing on area fisheries.

Morgan and Coffing co-facilitated all key respondent interviews, and Mr. Morgan was responsible for typing the notes during the interviews using a laptop computer. Spatial information on fishing locations, habitats, and other ecological characteristics described by key respondents was documented on maps used in conjunction with interviews. Interviews were not audio or video recorded.

RESULTS OF THE HARVEST SURVEYS

2001-2002 Survey Period

In March 2002, KNA technicians surveyed 126 of the 169 (75%) households in Aniak and 26 of the 32 (86%) households in Chuathbaluk (Table 1). In total, Aniak and Chuathbaluk residents harvested an estimated 42,890 lbs of non-salmon fish between March 1, 2001 and February 28, 2002 (Table 3). For Aniak residents, the total of approximately 22,612 useable lbs of non-salmon fish (Table 4) represents 134 lbs per household, and 40 lbs per capita. In Chuathbaluk, harvest was four times that of Aniak, with 20,290 useable lbs (Table 4) representing 634 lbs per household and 170 lbs per capita for Chuathbaluk. Individual comments from households that participated in the harvest surveys are summarized in Appendix B.

Aniak

Non-Salmon Harvest Assessment: In 2001-2002, the primary non-salmon fish species harvested for subsistence by Aniak residents were whitefish, accounting for 34% of the non-salmon harvest with a total of 7,434 lbs. Both burbot (25% of the harvest with 5,661 lbs) and inconnu (sheefish) (23% of the harvest with 5,244 lbs) were also taken in large amounts. Figure 3 illustrates the composition of non-salmon harvest for Aniak for the first survey year.

Whitefish also were harvested by the greatest number of households; however, the species harvested by the second greatest number of households, rainbow trout, only accounted for 3% (662 lbs) of the total harvest of non-salmon fish taken by Aniak households during the study period (Table 4).

Non-Salmon Gear: Gear used for non-salmon fishing by Aniak residents depended on the species being targeted and the season. Both set and drift gillnets, accounted for the greatest number of fish harvested by Aniak households in 2001-2002, with hook and line

gear accounting for the second greatest number of fish harvested (Table 4). For this report, "hook and line" gear refers to both rod and reel fishing (generally through open water) and hook and line fishing through the ice (e.g., jigging or "*manaq*-ing" for pike). Gillnets were used primarily to harvest inconnu (sheefish) and whitefish, as well as pike and other species. All suckers harvested by Aniak households were taken exclusively through the use of nets. Other gear included fish traps (also referred to as fyke nets; see 5 AAC 39.105(17) for regulatory definition) for harvesting burbot, a fish wheel to harvest whitefish, and hook and line gear was used for nearly all species. At least one household reported spearing whitefish, and one household reported taking lamprey through the use of an "eel rake."

Charnley (1984:147) describes "eel rakes" in detail. Eel rakes generally consist of a wooden handle approximately 9 feet in length with an angled bottom containing five nails that protrude about 2 inches from the stick. The bottom of the stick is placed in the water and the nails catch the underside of the lamprey body, causing the lamprey to bend over the nails as the stick is lifted from the water. The rake is used in a 4-foot by 1½-foot trench made in the river ice. Several lamprey may be caught at once in this manner, which is employed in the fall, as the lamprey make their spawning run in the Kuskokwim (Charnley 1984:147).

Although not directly observed by project investigators, the fish traps used to harvest burbot reported in this study were likely similar in design and construction to those described by Charnley (1984), who noted fish traps most commonly used by Chuathbaluk residents were constructed of wood, wire cable, and chicken wire and measured about 6 feet in length and 2 feet in diameter. Two fences were installed in conjunction with the trap, to guide burbot into the trap. Kari (1985) observed the use of similarly constructed traps by Stony River residents in 1983 and 1984, noting that the traps, which were generally deployed in late November and December and removed in March or April, provided the most productive means of harvesting burbot.

Non-Salmon Season of Harvest: As for the season of harvest, Aniak households reported taking whitefish primarily in the summer and fall months, whereas burbot were harvested primarily in winter. Table 5 and Appendix F provide additional information on harvest seasons and locations. Dolly Varden, rainbow trout, grayling, pike, and inconnu (sheefish) were all harvested in significant numbers throughout the year; however, inconnu (sheefish), rainbow trout, and pike were taken in the greatest numbers during the spring. Suckers and lamprey were harvested exclusively during the fall.

Non-Salmon Location of Harvest: The mainstem of the Kuskokwim River, between Kalskag and Chuathbaluk (Figure 5; see also Figure 4 for location map for Figures 5, 7, and 8), was the location for much of the fish harvested by Aniak residents. Table 6 and Appendix F provide additional information on harvest seasons and locations. Most of the inconnu (sheefish), whitefish, and burbot were harvested in this location, though a sizeable harvest of whitefish also occurred at Whitefish Lake (Figure 5, Tables 6 and 7). Pike, rainbow trout, Dolly Varden, and grayling were harvested in the largest amounts on

Doestock Creek (Figure 5, Table 7); although, in general, harvests of these species were spread among numerous locations within the study area.

Chuathbaluk

Non-Salmon Harvest Assessment: In Chuathbaluk, the primary species harvested for subsistence between March 1, 2001 and February 28, 2002 was burbot, with an estimated total of 17,617 lbs harvested representing some 87% of the harvest (Table 4). Figure 6 illustrates the composition of non-salmon harvest by Chuathbaluk households in 2001-2002. Inconnu (sheefish) harvest came in a very distant second, with 1,215 lbs being harvested, representing 6% of the total harvest for the survey period.

Despite the large amount harvested, only 9 households (26.9% of Chuathbaluk households) reported harvesting burbot (Table 4), one household in particular harvested approximately 13,500 lbs alone, which they reported sharing with other households in the community. Fifteen households (46.2%) reported harvesting inconnu (sheefish). Other species harvested by large numbers of households included grayling (12 households or 38.5%) and whitefish (11 households or 34.6%).

Non-Salmon Gear: As with Aniak households, the gear used by Chuathbaluk residents for fishing was dependent upon the species being fished and the season of harvest. The large number of burbot harvested was done so almost exclusively through the use of a fish trap (fyke net). Set and drift gillnets were utilized for harvesting whitefish and inconnu (sheefish) only, while similarly to Aniak, hook and line gear was used to harvest nearly every species of non-salmon fish (Table 4).

Non-Salmon Season of Harvest: The season of harvest in Chuathbaluk differed from that in Aniak. Burbot were taken primarily in the fall of 2001, grayling and pike in the summer, inconnu (sheefish) in the spring, and whitefish in the fall. Table 5 and Appendix F provide additional information on harvest seasons and locations.

Non-Salmon Location of Harvest: Similarly to Aniak, the primary location for harvesting many of these species by residents of Chuathbaluk was the mainstem of the Kuskokwim River, between Kalskag and on up above Chuathbaluk (Figures 5 and 7, Table 8). Little harvest by Chuathbaluk residents was reported for other locations, such as the Aniak River and Doestock Creek. Figures 5 and 8, Table 9, and Appendix F provide additional information on harvest seasons and locations.

2002-2003 Survey Period

In April-May 2003, 149 of 165 Aniak households and 22 of the 30 Chuathbaluk households were surveyed, for 90% and 73% participation respectively (Table 1). In total, Aniak and Chuathbaluk residents harvested an estimated 17,756 lbs of non-salmon fish (Table 9), which is significantly lower than the 2001-2002 harvest of 42,888 lbs

(Table 3). Household harvest levels are about 68 lbs per household for Aniak and 217 lbs per household for Chuathbaluk for the 2002-2003 survey period. Per capita rates of harvest, based on Department of Community, Commerce, and Economic Development 2000 census figures (572 Aniak and 119 Chuathbaluk) equal 20 lbs per capita for Aniak and 55 lbs per capita for Chuathbaluk (ADCCED 2005). Individual comments from households that participated in the harvest surveys are summarized in Appendix F.

Aniak

Non-Salmon Harvest Assessment: As was true in 2001-2002, during the second survey period the primary freshwater fish species harvested for subsistence by Aniak residents were whitefish, with a total of 4,947 lbs accounting for 44% of the total non-salmon harvest (Table 10). Inconnu (sheefish) (2,379 lbs or 21%) and pike (1,813 lbs or 16%) were the second and third most harvested species, respectively (Figure 9). The largest number of households (44 total or 26.8% of Aniak households) participated in the pike fishery, closely followed by involvement in the whitefish fishery (42 total or 25.5% of households).

Non-Salmon Gear: Blackfish were harvested exclusively through the use of a fish trap, also referred to as a fyke net (Table 10). This is in contrast to 2001-2002, when no households reported harvesting blackfish. Lamprey were taken with eel rakes, and pike were harvested primarily with hook and line gear. As with the previous study year, most whitefish were taken with gillnets. Dolly Varden, rainbow trout and Arctic grayling were harvested primarily through the utilization of hook and line gear.

Non-Salmon Season of Harvest: The timing of harvest for Aniak households in 2002-2003 (Table 11) was very similar to 2001-2002 (Table 5). Appendix F provides additional information on harvest season and locations. Burbot were taken primarily in winter, whitefish in fall (and to a much smaller extent summer), and inconnu (sheefish) in the spring. Rainbow trout, Dolly Varden, grayling and pike harvests were again spread throughout the year. Smelt were taken exclusively in the summer, as that is when the smelt run occurs. Blackfish were harvested exclusively during the winter, and lampreys were taken predominately in fall, though small numbers were harvested in summer and winter as well. Charnley (1984) reports lampreys were harvested immediately following freeze-up in November by Chuathbaluk residents in 1983. Lampreys generally run by the village for a few days only and it is during this time they must be harvested. Kari (1985:132) reported similar timing for the harvest of lampreys by Stony River residents, noting the “eels” make only one large run a year, though a few are occasionally caught in fish wheels or through other means during other times of the year.

Non-Salmon Location of Harvests: As with the previous year, most burbot, inconnu (sheefish), and whitefish were harvested on the mainstem of the Kuskokwim between Kalskag and Aniak. Figure 5, Tables 12 and 13, and Appendix F provide additional information on harvest seasons and locations. The harvest of whitefish from Whitefish Lake was much smaller than that reported for 2001-2002. Again, Doestock Creek accounted for large harvests of pike and rainbow trout, however in contrast to 2001-2002,

the portion of the Aniak River from below Doestock on up to the Buckstock (Figures 5 and 8) accounted for larger harvests of pike and the most sizeable harvests of grayling and Dolly Varden (Table 13).

Chuathbaluk

Non-Salmon Harvest Assessment: As was true for Aniak, the primary freshwater fish species harvested for subsistence by Chuathbaluk residents in 2002-2003 were also whitefish, with a total harvest of 3,885 lbs; this accounted for 59% of the total non-salmon harvest (Table 10, Figure 10). Inconnu (sheefish) was the second most-harvested fish, with 1,346 lbs being harvested, representing 20% of the total harvest. The greatest number of households (14 total or 45.5% of households) participated in the grayling fishery, though the catch totaled only 330 lbs, comprising 5% of the total non-salmon harvest. The second greatest number of households (12 total or 40.9 % of households) participated in both the inconnu (sheefish) and whitefish fisheries in 2003.

Non-Salmon Gear: Drift and set gillnets and hook and line were used exclusively for the harvest of non-salmon fish by Chuathbaluk households in 2002-2003 (Table 10). There were no reported harvests using eel rakes, fish traps (fyke nets), fish wheels, or spears.

Non-Salmon Season of Harvest: Seasonal patterns of harvest in Chuathbaluk in 2002-2003 were similar to those in Aniak during the same year. Burbot were taken primarily in winter, inconnu (sheefish) primarily in spring and whitefish in summer and fall. Table 11 and Appendix F provide additional information on harvest seasons and locations. Grayling harvest was spread throughout the year, however pike, rainbow trout, and Dolly Varden harvests were much smaller and therefore, less frequent, occurring in only 2 of 4 seasons (summer and winter for Dolly Varden, summer for rainbows, summer and fall for pike).

Non-Salmon Location of Harvest: The greatest proportion of fish harvested by Chuathbaluk residents occurred on the mainstem of the Kuskokwim River, upstream of Chuathbaluk. Figure 10, Table 14, and Appendix F provide additional information on harvest seasons and locations. Approximately 1,434 lbs of fish (primarily whitefish) were taken. The mainstem of the Kuskokwim River between Aniak and Chuathbaluk was the primary location for the harvest of burbot, grayling, sucker, and whitefish using hook and line (Figure 5).

RESULTS OF THE KEY RESPONDENT INTERVIEWS

As previously noted, key respondent interviews with five individuals were conducted in Aniak during 2002 by Mike Coffing and Wayne Morgan. Maps of the Aniak River drainage area and an interview guide prepared by ADF&G Division of Subsistence staff were used to facilitate these interviews. Table 2 lists the age, birthplace, and number of

years spent in the Aniak area for each informant. Information was collected for a number of species of non-salmon fish. However, though asked about in the household surveys, information was not collected for smelt or blackfish in the key respondent interviews.

Information from the interviews is presented as follows. First, information about non-salmon is discussed in general terms, and then specific discussions of individual species are presented. Results are concluded with a general discussion of salmon, followed by a discussion of salmon and beaver interactions. For the purposes of this project and report, references to "the past" generally refer to the way things were before the increase in non-local users that occurred with the growth of the sport-fishing industry in the area in the 1990s.

Non-Salmon Fish in General

Many respondents generally spoke of changes in the size and condition of non-salmon fish, as well as changes in the location, harvest methods, and population sizes of non-salmon fish in the middle Kuskokwim area. One respondent noted that all species of fish seemed smaller now. Other respondents noted that fish abundance has decreased in recent years following the increase in non-local recreational fishing in the area. Heavy fall rains and increased boat traffic causing muddy water were cited as reasons for the decline in numbers of fish. Respondents also noted seasonal variations in the size and condition of fish. For example, one respondent reported that fish are fatter in the fall while feeding off the spawning salmon, but then they become thinner in the spring. Another respondent differed in his/her observation of seasonal variation in fish size, noting that in September the fish seem to get smaller than during the rest of the year.

Respondents made a few observations regarding distribution and seasonal movements. First, fish tend to hang out in the same holes year after year. Second, in the spring and during break-up, when water is high, and also during heavy rain events, fish hide out in the side sloughs. No one fishes during the high water periods, as the water is too mucky. Respondents reported that during low water years, the fish head to deep holes, and that from the Salmon River and on down, particularly below Buckstock Creek, the fish like deep holes. Respondents also noted that fish in general pooled in the mouths of the creeks.

Regarding methods and gear used to fish for non-salmon species, one respondent noted that ice fishing levels have remained consistent over the years. Another respondent noted that fishers are not supposed to use ice axes when opening holes to fish through the ice, only ice picks. Charnley (1984:145) briefly discusses this taboo, reporting that the practice of making holes in the ice with an axe is considered to bring bad luck to the fisher.

Individual Non-Salmon Fish by Species

Burbot

Few respondents spoke of burbot. One noted that he had never seen burbot up the Aniak River, while another noted that the burbot hang around the main stem of the Kuskokwim, which is where he liked to catch resident fish (mainly burbot). This same respondent noted that commercial fishing does not affect the resident fish in the area.

Dolly Varden and Arctic Char

Most respondents spoke about Dolly Varden and Arctic char interchangeably, though one respondent did refer to both Dolly Varden and Arctic char as two different fish. According to Charnley (1984), Chuathbaluk and Sleetmute residents refer to Arctic char as Dolly Varden, therefore the interview results for Dolly Varden and Arctic char are presented together. Respondents also noted that in the springtime, Dolly Varden congregate around the main channels of the rivers. One respondent recalled not seeing any Dolly Varden in the last 20 years on the Aniak River from Buckstock Creek and on up, yet another respondent noted that there were no longer large Dolly Varden in the Aniak River from Doestock Creek and upriver. This same respondent recalls there being larger Dolly Varden in that same area 10 to 15 years ago.

Respondents also noted that 10 to 20 years ago the Salmon River was a good location for catching large Arctic char, and further, at the time there was little fishing going on there. One respondent recalled that people would walk a few miles up the Salmon River to fish, another recalled going up the Salmon River with a boat equipped with a small outboard motor. The Arctic char averaged 20 pounds in the 1980s and 1990s, but the respondent who noted this also pointed out he has not caught a large Arctic char since the early 1990s. Back then, some of the Arctic char had bigger heads but smaller bodies and these fish would be fed to dogs.

Arctic Grayling

Respondents differed in their perspectives regarding current status of grayling populations as well as regarding the locations for grayling fishing. One respondent, who customarily caught grayling in the fall time at the mouth of the Aniak River, noted he had not caught grayling there in three years, and that grayling numbers are much reduced now than he had observed previously. Other respondents said they had not noticed a change in the numbers of grayling in the area. Respondents also disagreed about where grayling could be found in the Aniak area. It was noted by one respondent that there are many grayling in the east fork of the Aniak River, however another respondent claimed grayling are difficult to find on the Aniak and that they mainly hang around on the Kuskokwim. This same respondent also noted that grayling can be found on Timber Creek, and that after periods of flooding in Aniak, he saw grayling around Aniak. Still

another respondent noted that the side streams of the Aniak River used to contain grayling and that they still do today.

Lake Trout

Only one respondent spoke of lake trout, and only to say that they had never seen a lake trout in the Aniak River.

Arctic Lamprey

Though not truly an eel, lampreys are generally referred to by local residents as eels. Key respondents noted that eels were mainly used for feeding dogs and caught on the Kuskokwim around the town of Aniak, though not in the Aniak River itself. One respondent discussed having seen small eels (2-3 inches long) in the month of September at the mouth of the Kipchuk (see Figure 8) and wondered what they were doing up there. Another respondent noted once seeing eels in Mission Creek (above Chuathbaluk) in April.

Northern Pike

Respondents noted that though the size of pike seem to be getting smaller, on average there are more pike around than there used to be. It was noted that pike used to be present in the Aniak River from Doestock Creek (see Figure 5) and on down, but now they are present as far up as the Buckstock (see Figure 8). One respondent noted that he thought the pike migrated upstream. The mouth of the Aniak was described as a good spot to go ice fishing at freeze up for pike. A few respondents noted that back in the 1940s they would make hooks out of moose horn to catch pike and other freshwater fish.

Rainbow Trout

Respondents noted that the harvest of rainbow trout takes place primarily in winter and spring with hook and line gear, jigging through the ice. Hooks used for jigging were traditionally made from caribou and moose leg bone or antler and used by respondents as recently as the 1960s. Rainbows are targeted specifically during winter and spring for fresh food. According to one respondent, rainbows school up in the wintertime, congregating around beaver lodges, log jams, and cut banks, making it easier to catch many fish in a day. Respondents spoke of catching 30 fish a day with little problem and one respondent noted hearing about someone catching up to 100 in a single fishing hole. It was also noted that rainbows are fatter in the winter.

Rainbow trout also are taken during summer and fall with rod and reel in open water and are sometimes caught incidentally during summer net fishing for salmon. One respondent recalled his father teaching him to beach seine on the Aniak to catch fish and rainbow trout just to eat right away for dinner if needed.

All respondents noted a general decline in the rainbow population since the 1960s and 1970s, as well as a decline in the overall size of the fish. Because of the declines, many respondents noted that they were not targeting or catching as many fish as they did previously. Most respondents linked the decline with a rise in the popularity of recreational fishing in the region, and the overfishing and habitat problems associated with a large increase of people using the Aniak River and its tributaries. One respondent noted that the rainbow trout seemed to be rebounding and credited catch and release methods for the recovery.

Inconnu (sheefish)

Respondents noted fishing in the early spring for inconnu (sheefish) and that drying was a common preservation method. One respondent noted catching inconnu (sheefish) in Doestock Creek.

Longnose Sucker

Respondents noted that suckers are located in the slower water and that they feed off dead fish. Two respondents noted that suckers are not present way up the Aniak River drainage, beyond Timber Creek. It was also noted that suckers are not considered food for humans but rather are used to feed dogs.

Whitefish

Whitefish were reported occurring way up the Aniak River, as far as Buckstock Creek. It was noted however that these whitefish were mainly ciscos. One respondent expressed a conservation concern regarding overharvest of whitefish in the late 1980s, when he observed fishers filling up large fish totes with whitefish. The respondent noted that now that there are less whitefish, managers and biologists are finally studying the fish. This same respondent noted that in the past some whitefish reached much larger sizes than are seen today, perhaps as much as 3 feet long. Unfortunately, additional information was not provided.

Salmon

Although the interviews for this project focused on non-salmon fish, most respondents wanted to talk about salmon as well. Key respondents were specifically interested in the relationship between non-salmon fish and salmon and the possible cause and effect relationships between recreational and commercial fishing activity and salmon population status. Nearly every respondent noted that non-salmon feed off the spawning salmon and salmon eggs. One respondent in particular noted that if adequate numbers of salmon don't return each year to spawn in Kuskokwim tributaries, then there will be fewer non-salmon because of this interrelationship.

Respondents reported numerous observations regarding the decline of salmon. One spoke of this decline in terms of dead fish, reporting that he no longer sees spawned out salmon or rotten salmon heads on the shores and beaches like he used to. Other respondents couched their observations in terms of live fish, one noting that he no longer sees kings jumping in the lower portion of the Aniak River and that the number of coho salmon is way down. Respondents cited the record commercial salmon harvests of the 1980s and the recent increases in size and number of jet boats traveling local river corridors as contributing factors to these salmon declines.

Regarding stock composition, one respondent reported that in the old days there were no signs of reds (presumably sockeye salmon), and that the run was mainly of chum salmon; however, the respondent reported that there are now more reds returning to the area than chum.

The local experts also reported many observations with respect to run-timing, spawning, and distribution patterns of salmon. For Chinook salmon (kings), one respondent reported that the first Chinook start heading up the Aniak River around June 15 and that, in years past, the biggest Chinook run was around July 4. Another respondent noted that Chinook salmon spawn in the Aniak River drainage, from Timber Creek and on up the river, adding that high water is beneficial for spawning kings. Chum salmon were reported to spawn in the lower Aniak drainage, from the Buckstock River and on down. In contrast to Chinook salmon, this respondent suggested that high water, while good for Chinook spawning, was not good for spawning chum. Sockeye salmon reportedly spawn around the Buckstock River and dead-end sloughs, but one respondent noted seeing sockeye salmon way up the Kipchuk River (Figure 8).

In terms of distribution and migration patterns, one respondent noted that the salmon have resting holes on the Kuskokwim before heading up the Aniak and other spawning streams. It was also pointed out that salmon hang around the mouths of sloughs, and because of this, these areas should be closed to fishing. Small salmon were said to hide out in log jams over the winter and then leave in the spring, and the Salmon River (Figure 8) was mentioned specifically as an Aniak River tributary containing many Chinook and chum salmon.

Finally, with respect to salmon, a respondent noted that there are two kinds of “red” (sockeye) salmon, one called *sayak* and the other called *ookurliq;* the difference between the two having to do with the scales and the inside of the fish. This last result will be talked about further in the discussion section of this report.

Beaver and Salmon

Another topic that most respondents spoke at some length about was the relationship between beavers and salmon. Those respondents discussing beaver populations noted the large numbers of beaver present in the Aniak and Chuathbaluk areas currently and cited

the decline in trapping for the increase in population. Respondents also noted an increase in the size of beaver dams. While some respondents thought beavers were bad for fish in general, plugging spawning streams by creating too many dams too big for fish to pass over, others spoke of beavers and their dams as being beneficial for salmon populations, in particular noting that with the increases in dams and beaver populations, they've seen many Chinook and coho spawning in the sloughs.

DISCUSSION

Information gained from this project correlates with previous work done in the areas of Aniak (Brelsford et al. 1987; Stickney 1981) and Chuathbaluk (Charnley 1984). In comparison with the baseline work done by Charnley (1984) in Chuathbaluk, non-salmon harvest locations and methods of fishing have remained fairly consistent. Season of harvest, delineated by month in Charnley (1984), also has remained fairly consistent, though harvest of species such as grayling, Dolly Varden, and rainbow trout is more spread out through the year rather than concentrated during a particular season. The mainstem of the Kuskokwim continues to be a primary fishing location for Chuathbaluk residents. Of some interest were the low harvests of lampreys documented in both studies. Charnley (1984) noted that 1981 and 1982 had been the only years in Chuathbaluk residents' memories when lampreys were scarce, and consequently, few lampreys were harvested in Chuathbaluk in 1982, despite "persistent efforts" by local residents. Prior to 1981, most households had generally reportedly harvested large amounts of lamprey. At the time, there was no specific explanation for the lamprey decline, though many suggestions involving changing lamprey spawning routes, migration patterns, and timing of migration were suggested. In this study, again very few lamprey were harvested and there was little discussion of lamprey during key respondent interviews.

As evidenced in this report, there can be great variability in a community's harvest from one year to the next, so it is with caution that comparisons are made among only two data sets. Reasons for variability in harvest may be numerous, from a usually high harvesting household being unable to fish one year, to poor fishing or travel conditions. For example, in 2001-2002 in Chuathbaluk, the non-salmon harvest was comprised largely of burbot (87%), most of which were caught through the use of a fish trap (fyke net) by one household and then shared with other households in the community. The following year, however, the trap was not set and the resulting harvest composition was radically different, with burbot accounting for only 7% of the total non-salmon harvest by Chuathbaluk residents. Such variability underscores the need for multiple years of harvest information to allow for more meaningful comparisons between years so as to better elucidate community harvest patterns and trends.

For the purposes of this report, data gathered during key respondent interviews were organized through a discussion of specific non-salmon fish species and fishing practices.

It is important to keep in mind, however, that this organization was utilized to more effectively present this fisheries information to fisheries managers, biologists, and other researchers. During review of the notes taken during key respondent interviews, key respondents often discussed non-salmon fish and fishing in the context of, and seemingly secondarily to, other subsistence activities such as trapping and hunting, or in the case of one respondent, reindeer herding. How key respondents structure their answers to particular questions is often as important as the content of their answers. Likewise, perhaps more important is what kind of questions are asked by the interviewers, which is why interview guides are helpful to ensure systematic coverage of a range of topics (see Appendix E). While this additional information is not explored in any detail here, the local organization of interview information suggests the critical importance of other activities and resources to the non-salmon subsistence fishery.

Implications for Fisheries Management

This study contributes to fisheries management in three main ways. First, this study provides quantitative information on the amount of non-salmon fish harvested by subsistence users along the middle Kuskokwim River for two time periods, 2001-2002 and 2002-2003. This study is the first comprehensive quantification of non-salmon harvest in the middle Kuskokwim region. This is perhaps the most useful information for managers and biologists as basic harvest information is a necessary and commonly used management tool. Results from this project identify baseline community harvest estimates for non-salmon fish for two years, as well as more specific information regarding fishing locations, gear utilization, and timing of harvest.

Information about the location of harvest may be useful in identifying distribution patterns of non-salmon fish, and in combination with harvest timing information, may elucidate migration routes and spawning locations. Furthermore, the documentation of harvest timing may contribute important information regarding subsistence practices and patterns throughout the seasonal cycle, potentially allowing regulations to be more responsive to customary and traditional uses. Collection and analysis of data regarding subsistence fishing methods may inform managers' decisions regarding potential selective harvest of certain age, sex, and length classes. Information regarding harvest locations, timing, gear used, and quantity of fish harvested also will inform future customary and traditional use determination analyses, just as the results of this study were used to support the positive customary and traditional use determination made by the Federal Subsistence Board in 2005.

Quantitative information becomes more useful to managers when considered alongside the knowledge shared during the key respondent interviews; the information from the interviews can serve to contextualize the harvest estimates. For example, harvest survey results show year round utilization and harvest of Arctic grayling, rainbow trout, and Dolly Varden. This use, in part, can be contributed to the procurement of these resources

during other subsistence activities, such as moose hunting, which was explained during one of the key respondent interviews.

Second, the qualitative information contained in this report, though gathered from a small number of informants, includes numerous observations of declining fish sizes and populations, as well as examples of locations where fish were once plentiful but now are virtually gone. These observations can assist managers and researchers in framing research questions and potential projects regarding population/stock status and species spawning, distribution, and migration routes, to name a few examples.

Finally, results from this project help to contextualize the detailed subsistence salmon harvest information collected annually throughout the Kuskokwim river drainage. As discussed in the introduction of this report, fine-grained information on the harvest of Chinook, chum, sockeye, and coho salmon by Aniak and Chuathbaluk residents has been collected systematically since 1989. For the first time, salmon harvest estimates for these communities can be compared with non-salmon harvest estimates, to provide federal and state managers with a comprehensive picture of the composition of the subsistence fisheries in the middle Kuskokwim region. For example, Aniak residents' fish harvests during the 2001-2002 study year was 22% non-salmon and 78% salmon; for 2002-2003 Aniak residents' fish harvest was 11% non-salmon and 89% salmon. The 2001-2002 harvest of fish by residents of Chuathbaluk was 39% non-salmon and 61% salmon; for 2002-2003 the total fish harvest was 20% non-salmon and 80% salmon. Clearly, while the contribution of salmon to customary and traditional harvests and uses predominates, non-salmon fish make important contributions to annual subsistence fishing activities of Aniak and Chuathbaluk households. While the results of this study do not specifically address the effects of declines in salmon harvests on non-salmon fish harvest patterns, it is likely that non-salmon harvests would increase, as has been demonstrated in other areas of the state (e.g., Brown et al. 2005).

CONCLUSIONS

Through the Aniak River Subsistence Fisheries Project, Study No. 01-112, investigators sought to collect and analyze contemporary baseline harvest information for non-salmon species harvested in the middle Kuskokwim region by Aniak and Chuathbaluk residents during 2001 to 2003. Additionally, the study sought to document traditional ecological knowledge regarding a variety of non-salmon topics from local experts. Although there was significant staff turnover between the collection of the survey and interview information and the reporting of this information, the project was successful in documenting baseline harvest information. The detailed quantitative and qualitative information regarding the harvest of whitefish, burbot, pike, inconnu (sheefish), rainbow trout, Dolly Varden, lamprey, and others will be useful to federal and state managers in the process of management decision-making and regulatory analysis, as well as in the identification and development of research topics and projects.

RECOMMENDATIONS

As is often the nature of baseline documentation, this study has resulted in many additional questions and ideas for continued research:

1) Harvest Monitoring
Proposed large-scale development at the Donlin Creek Mine (which may include transmission lines and transportation corridors that would traverse the Aniak area), as well as proposed shallow gas exploration in the Holitna Basin have the potential to significantly affect non-salmon fish populations in the middle Kuskokwim region, as well as contemporary subsistence harvest and use patterns. In the 2004 subsistence salmon surveys, two Chuathbaluk households reported not fishing for salmon because the heads of household were busy working at the mine (McNeil 2004). Furthermore, previous Division of Subsistence research suggests that "substantial impacts on subsistence systems can occur due to road construction" (Wolfe and Walker 1986:3). The potential for change in subsistence harvest patterns, as well as the already discussed inter-annual variability in harvest levels illustrated by this study, indicate the need and importance of regular harvest monitoring and assessment projects.

Future harvest monitoring efforts should seek to collect information on individual whitefish species, rather than lumping them as a whole. Local concerns over decreasing broad whitefish populations (e.g., Matter 2004) will likely result in state and federal regulatory proposals affecting commercial, subsistence, and sport harvest of whitefish in the Kuskokwim River and in Whitefish Lake. Preliminary research by USFWS (Harper 2004), suggests that whitefish have extremely complicated and far-reaching migration patterns, and it is possible that lower Kuskokwim communities (e.g. Eek, Tuntutuliak, Nunapitchuk, Atmautluak, Kasigluk, etc.) as well as far upriver communities (McGrath, Nikolai, Takotna) may be targeting the same whitefish populations. In light of this information, it is suggested that non-salmon harvest monitoring efforts be expanded to other villages in other portions of the river.

2) Follow-up Traditional Ecological Knowledge
The ethnographic information documented in this study barely begins to address the myriad questions regarding resident fish species. However, it does provide a springboard for further ethnographic investigations. Additionally, the knowledge documented through this project helps to inform future investigators about what informants consider to be relevant (for example, non-salmon must be considered in their relationship with salmon, as results suggest) and contributes to greater cross-cultural understanding of this complex component of the subsistence way of life for middle Kuskokwim residents. The key respondent information presented in this report identified many potential areas for future research, and work should continue to investigate issues already identified in the investigation plan, but not adequately addressed in the key respondent interview results.

For example, respondents participating in this study recognized an ecological relationship between non-salmon and salmon, many noting that they have observed non-salmon feeding off of spawning salmon and salmon eggs, such that low salmon returns could have a negative effect on non-salmon fish populations.

Additionally, one specific question with potentially interesting implications for fishery management did arise. In a discussion of salmon species, one respondent noted that there were two kinds of red salmon, *sayak* and *ookirluq*. *Sayak* is the commonly used Yup'ik term for sockeye salmon; however interviewers were unfamiliar with the term *ookirluq*. In Jacobson's Yupik Eskimo Dictionary (1984), a rarely used word *ikirluq* is listed under the definition for coho salmon. While residents of the upriver villages of McGrath, Nikolai, and Takotna commonly refer to coho (silver) salmon as "reds," this is generally not the case in the study area reported on here. Therefore, it is unclear if the respondent identifies two separate species of sockeye salmon, or if the respondent was referring to coho salmon and sockeye salmon. Investigation of local taxonomic structures would likely result in resolution of this question.

3) Synthesis with current biological investigations

Finally, information documented during this project has the potential to inform and be informed by other research currently being conducted or planned by other researchers. These other projects include tagging and tracking of whitefish from the Whitefish Lake area and planned research on inconnu (sheefish) populations. Following the success of recent interdisciplinary collaborative efforts in the Grayling, Anvik, Shageluk, and Holy Cross (GASH) region investigating non-salmon and pike populations specifically (Brown et al. 2005), it is recommended that Kuskokwim investigators work collaboratively to understand the complex issues regarding non-salmon fish and subsistence.

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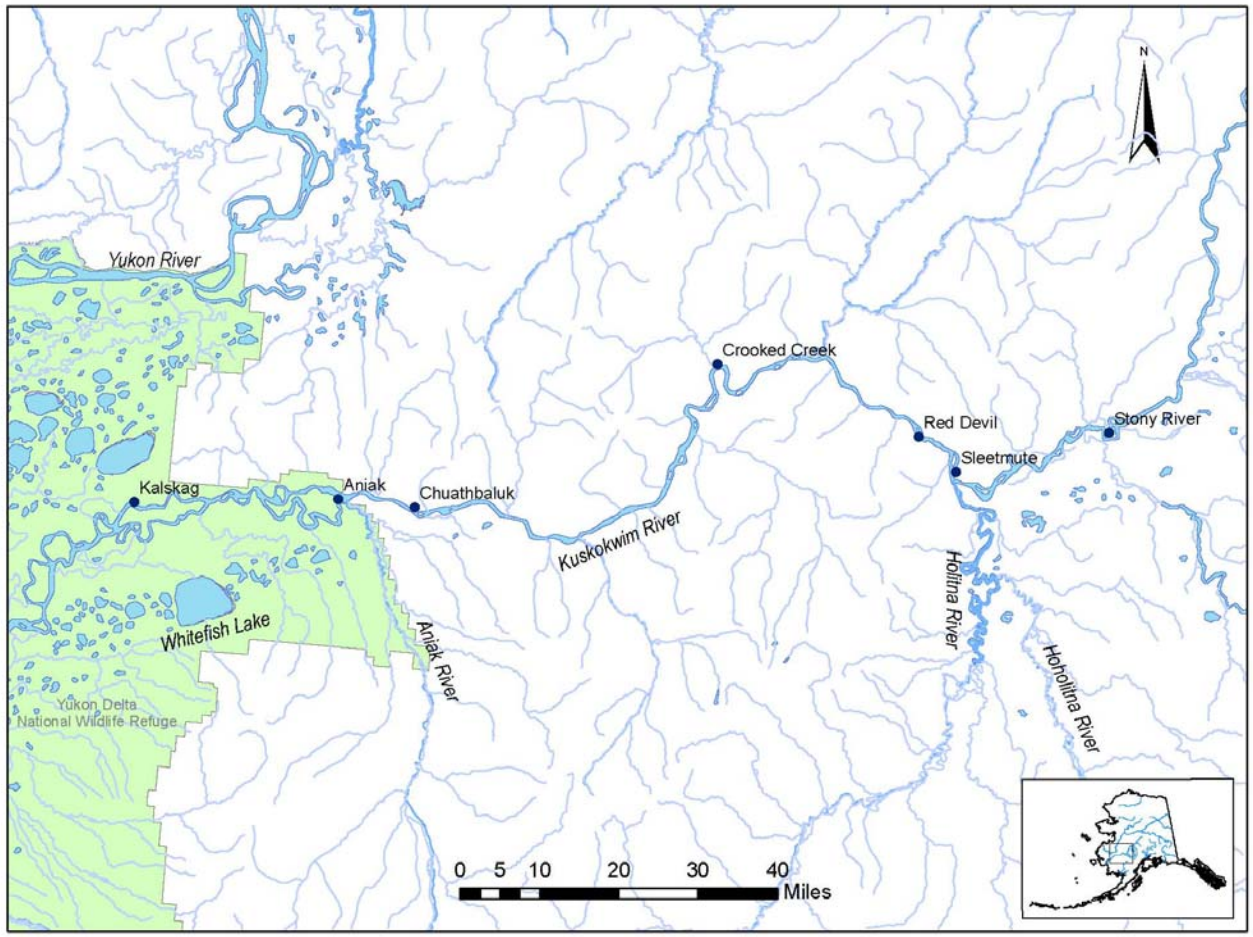

Figure 1. Location of the Study Communities of Aniak and Chuathbaluk.

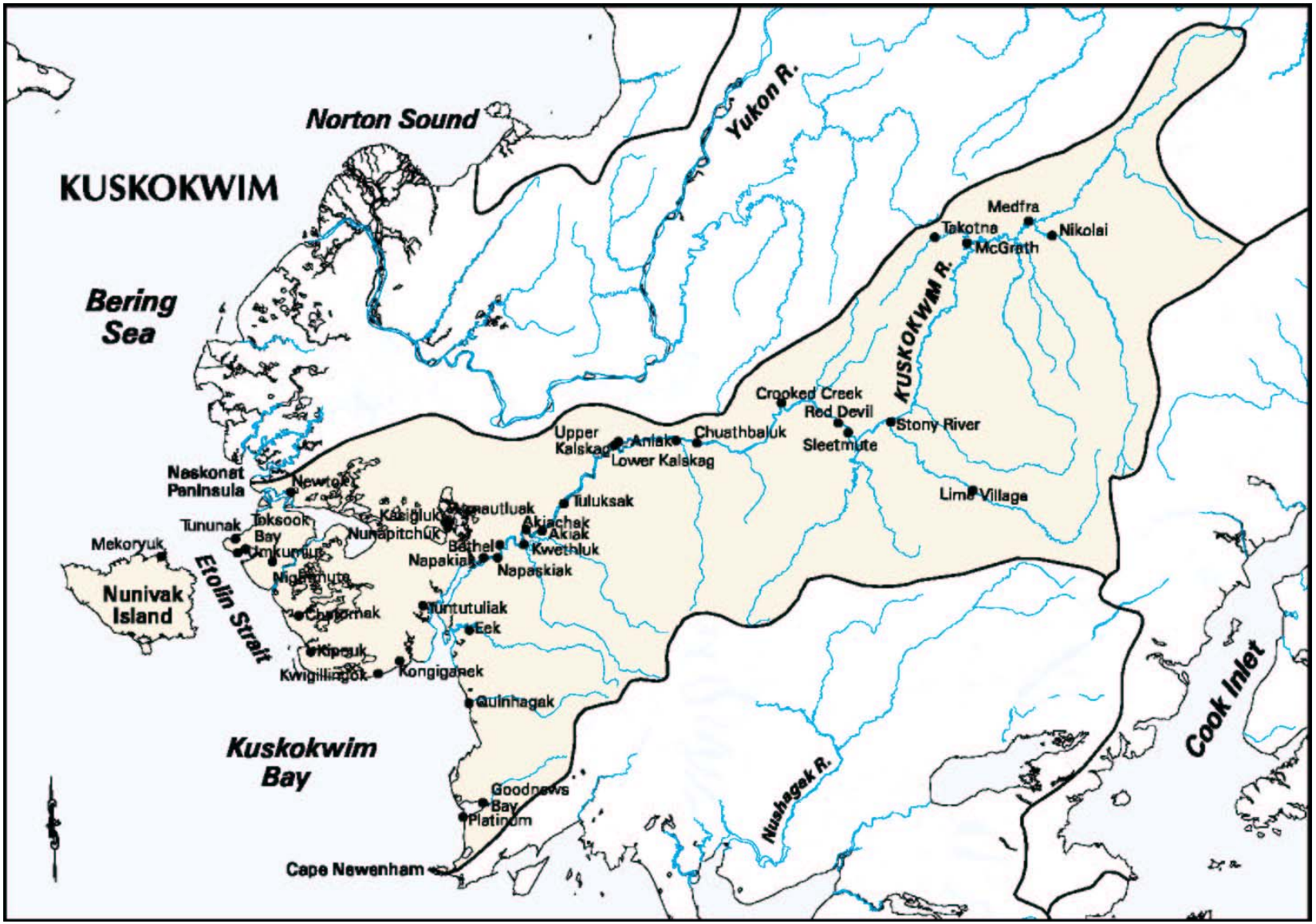

Figure 2. Map of the Kuskokwim Fisheries Management Area (shaded).

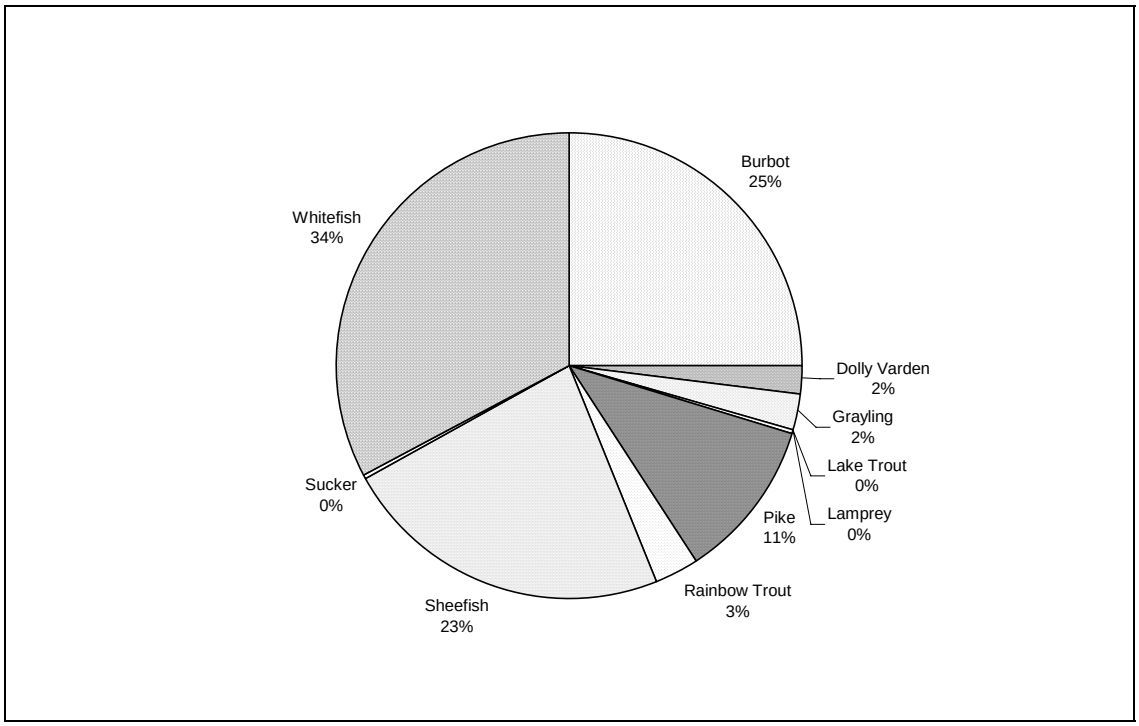

Figure 3. Composition of Non-Salmon Subsistence Harvest, Aniak 2001-2002 (lbs useable weight).

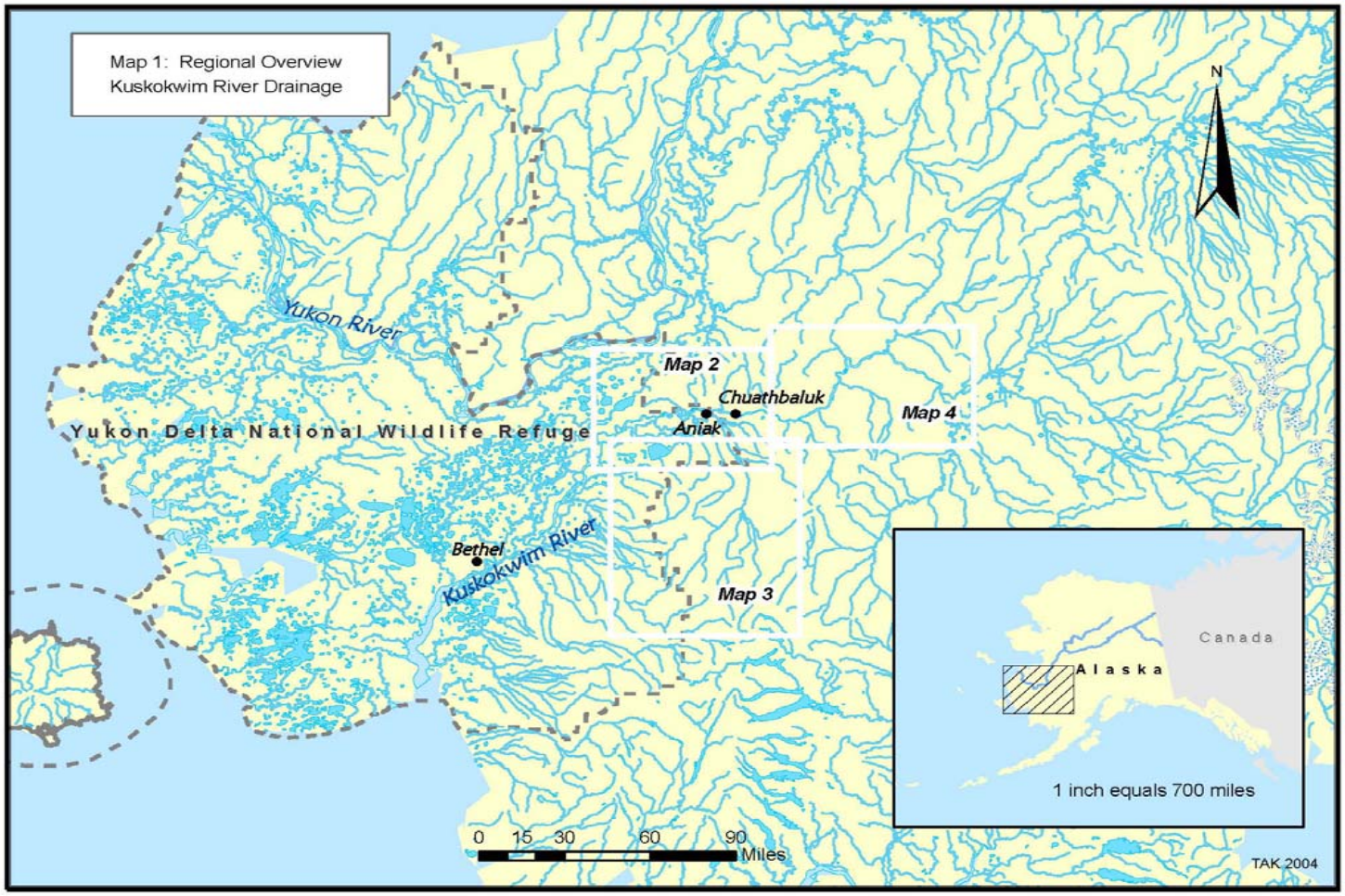

Figure 4. Key to Harvest Location Maps.

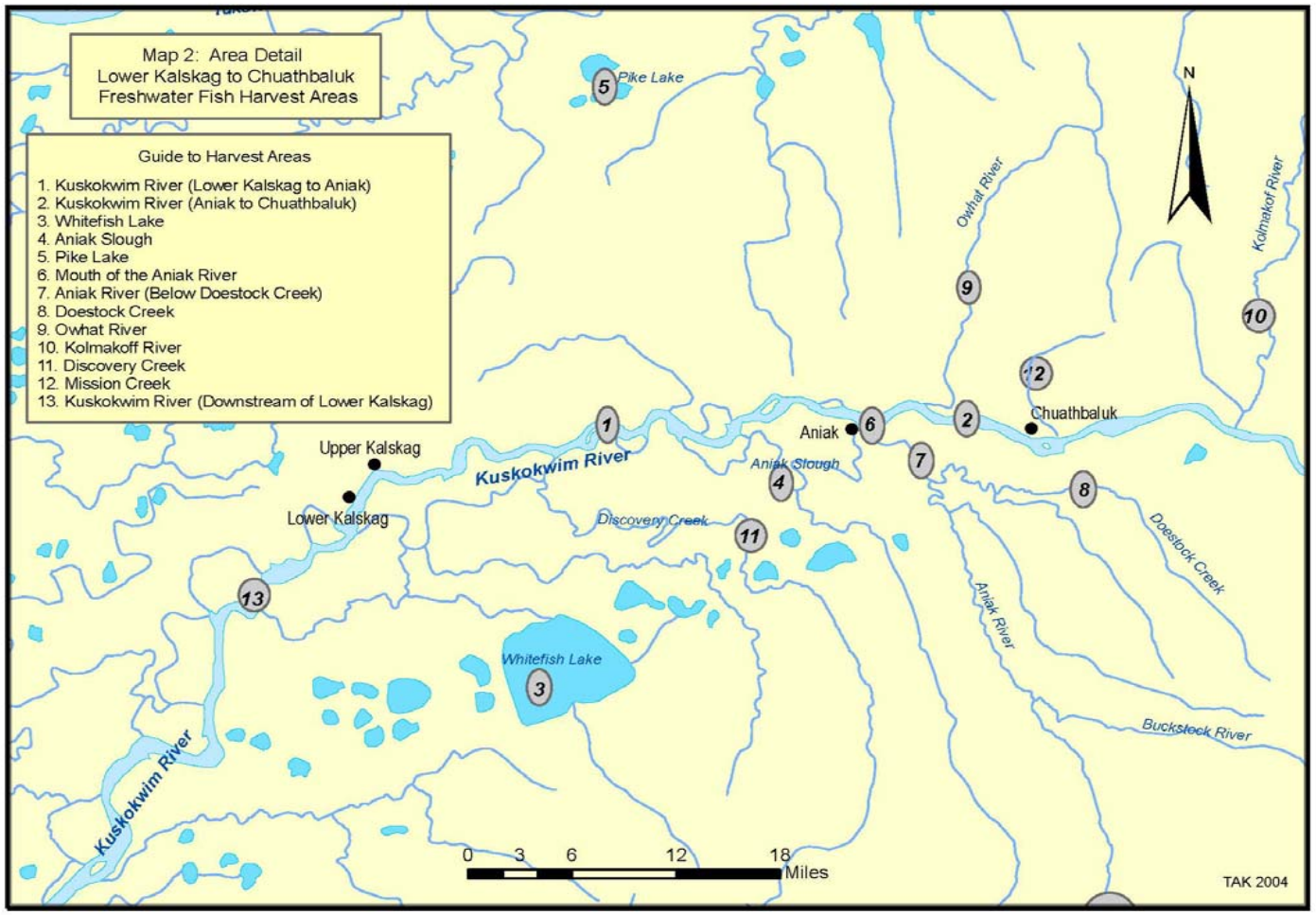

Figure 5. Map of Harvest Locations, Lower Kalskag to Chuathbaluk.

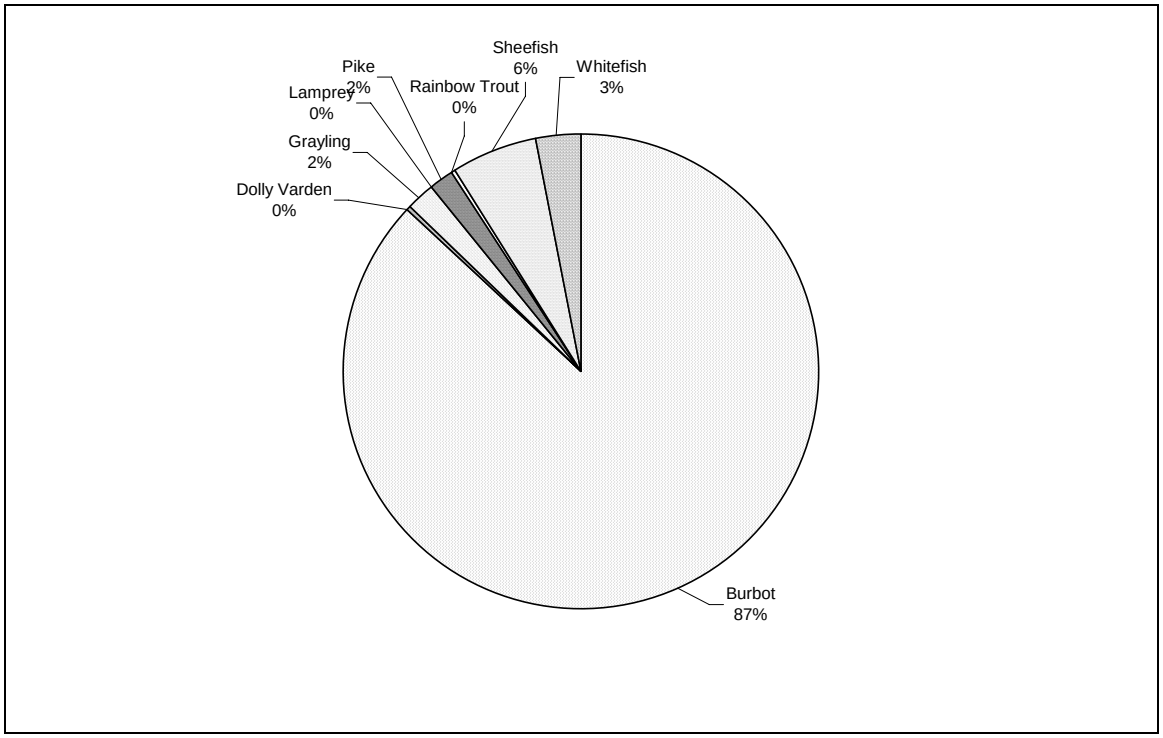

Figure 6. Composition of Non-Salmon Harvest, Chuathbaluk 2001-2002 (lbs useable weight).

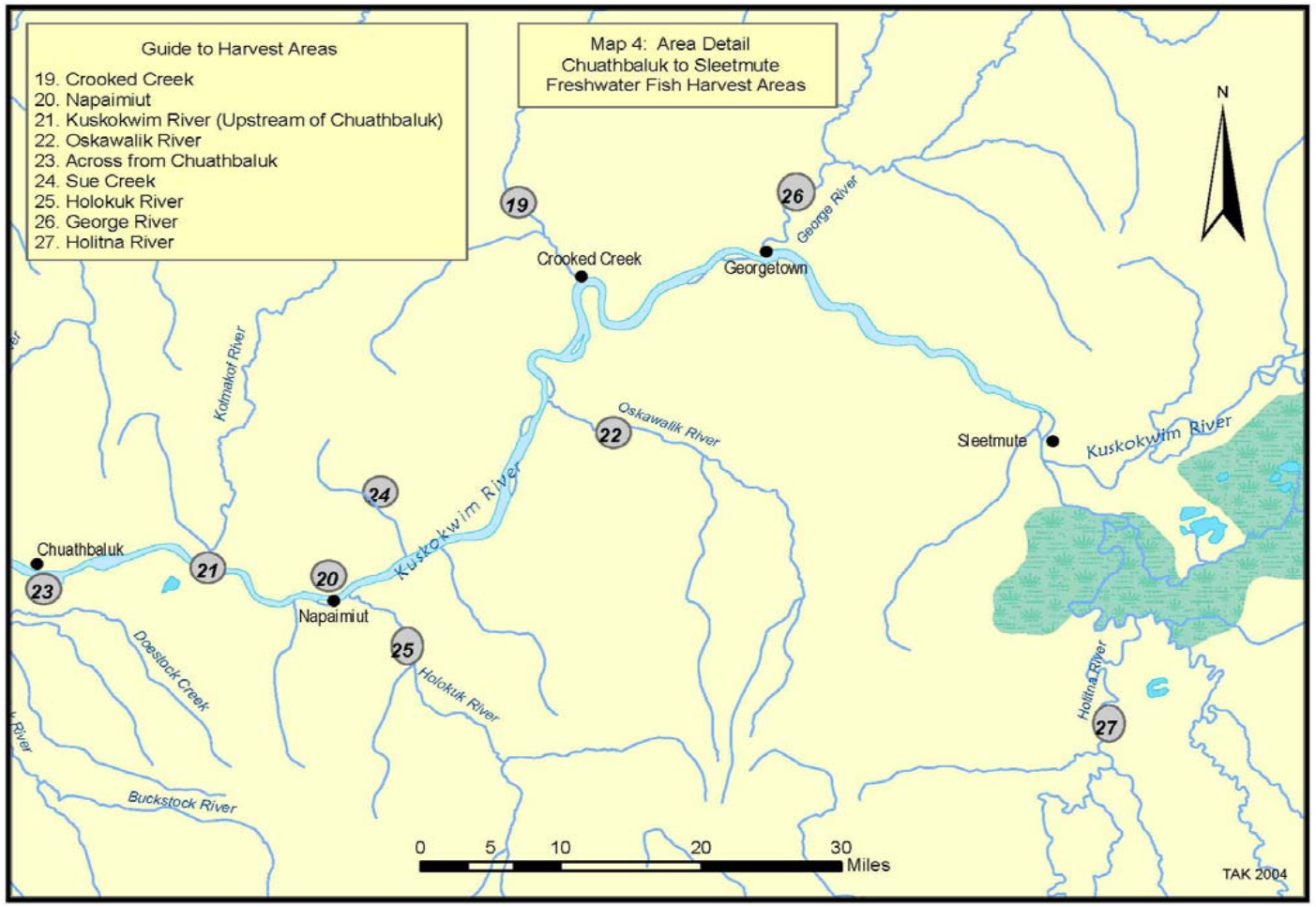

Figure 7. Map of Harvest Locations, Chuathbaluk to Sleetmute.

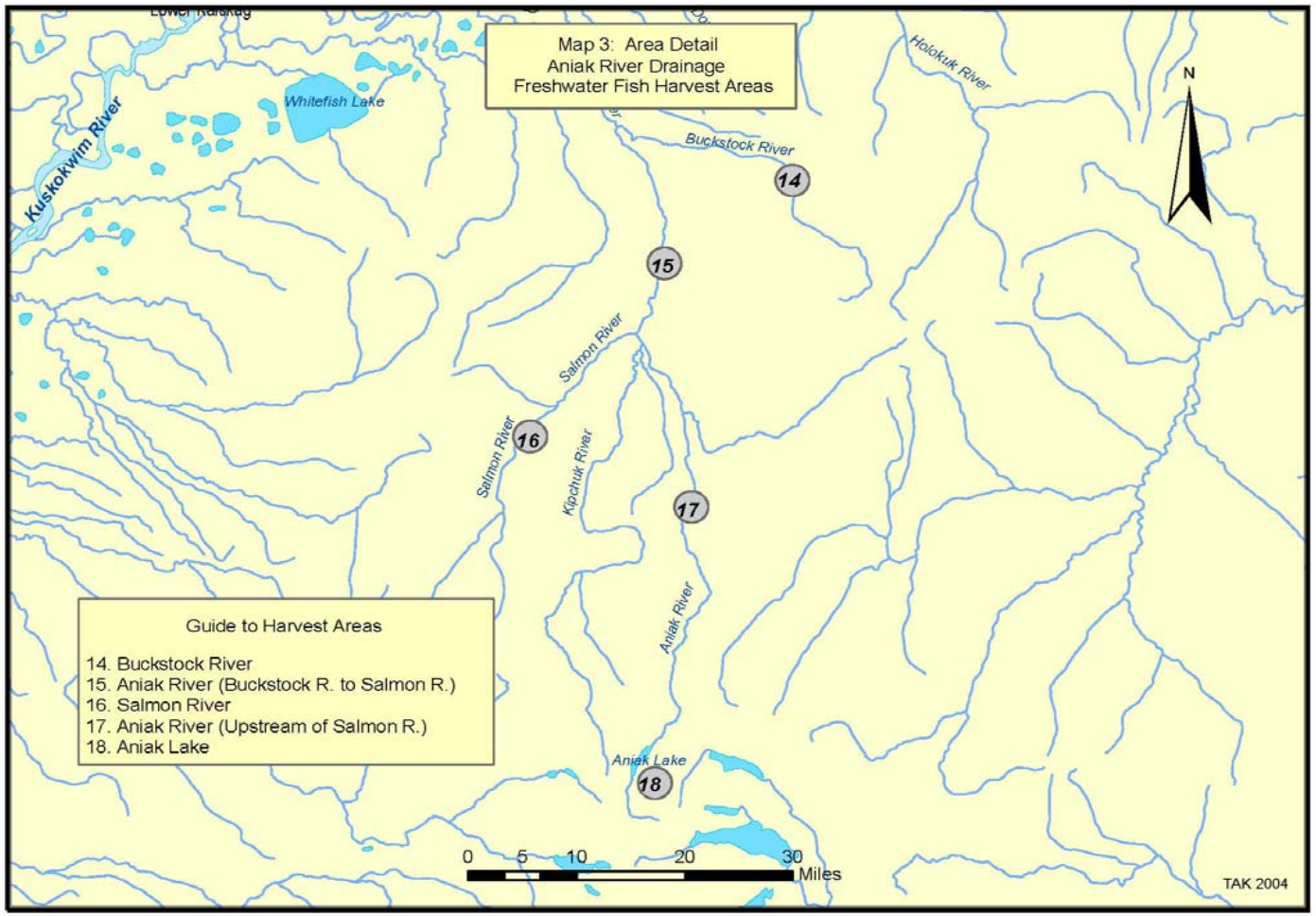

Figure 8. Map of Harvest Locations, Aniak River Drainage.

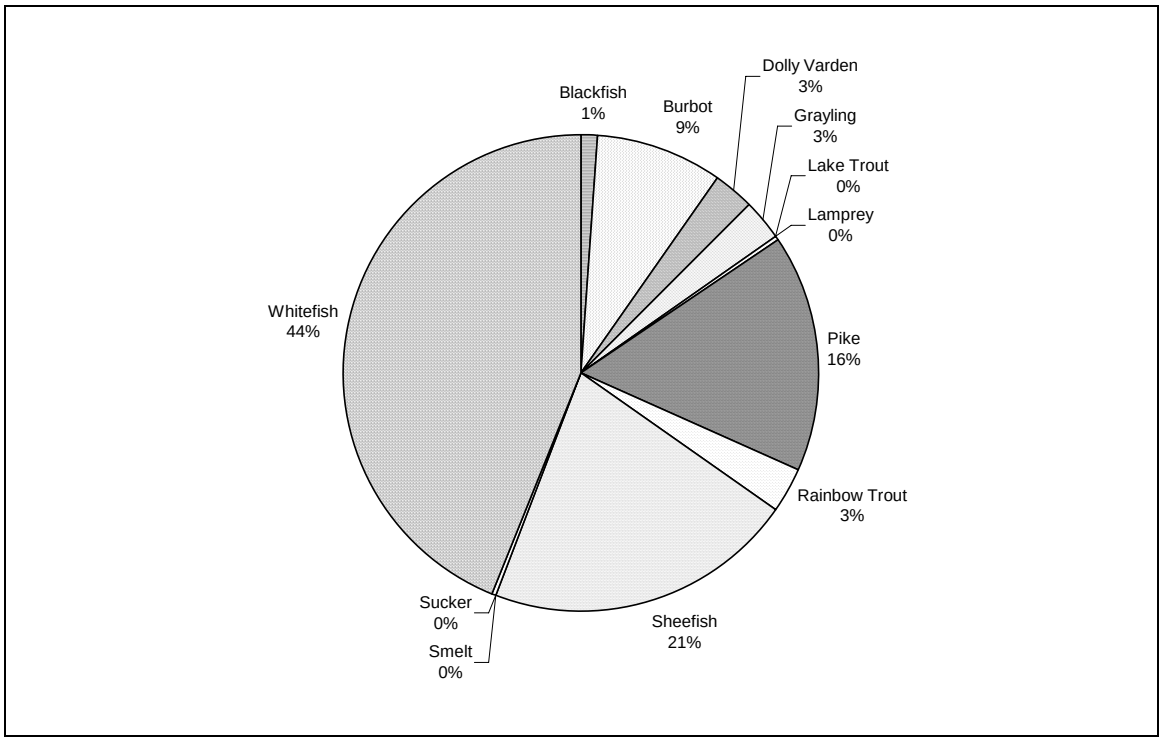

Figure 9. Composition of Non-Salmon Harvest, Aniak 2002-2003 (lbs useable weight).

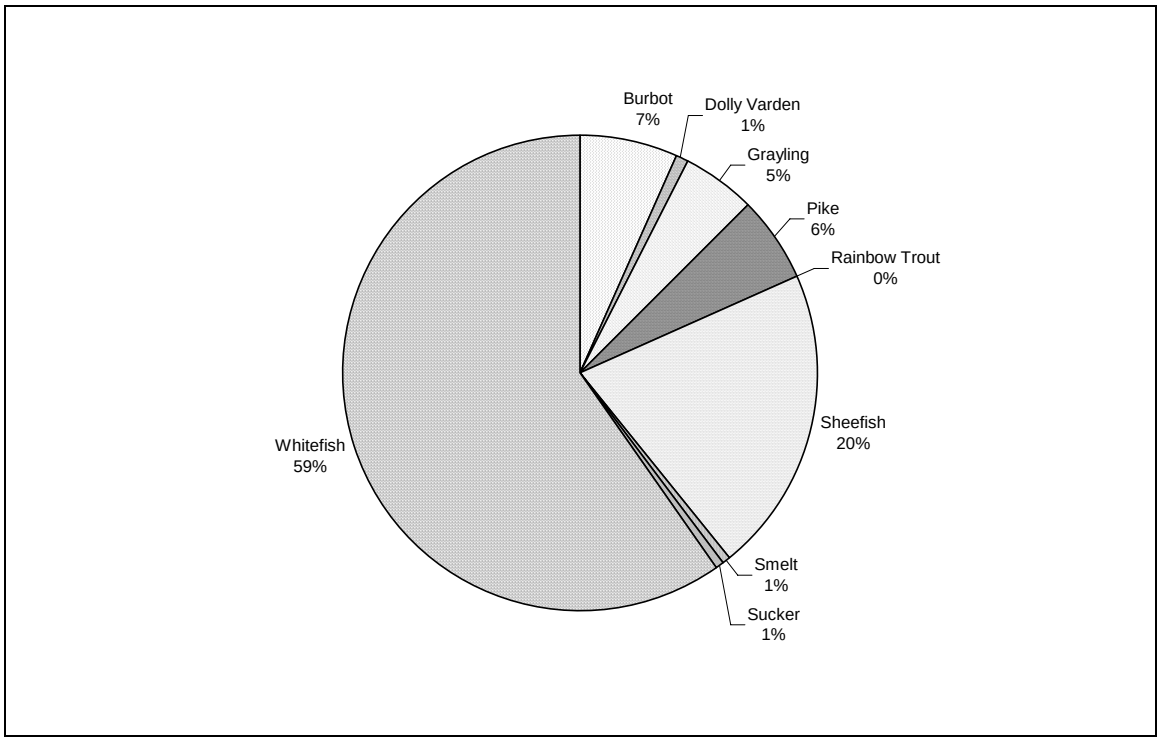

Figure 10. Composition of Non-Salmon Harvest, Chuathbaluk 2002-2003 (lbs useable weight).

Table 1. Community Sampling and Participation Rates.

Community	Survey Design	No. of Households		No. of Surveyed Households		Percentage of Households Surveyed		Comm. Pop. (US Census 2000)
		2002	2003	2002	2003	2002	2003	
Aniak	Census	169	165	126	149	75%	90%	572
Chuathbaluk	Census	32	30	26	22	84%	73%	119
Total, Both Communities	Census	201	195	152	171	76%	88%	691

Table 2. Key Respondent Information.

Key Respondent Number	Year of Birth	Place of Birth	Years Spent in Aniak Area	Length of Interview
1	1936	Aniak River (Chicken Creek)	1936 to Present	1:40
2	1941	Unknown	1949 to Present	1:20
3	1952	Unknown	1952 to Present	3:05
4	1925	Ohagamiut	1960 to Present	1:15
5	Unknown	Unknown	1972 to Present	2:20

Table 3. Estimated Subsistence Harvest of Non-Salmon Fish in Aniak and Chuathbaluk, 2001-2002.

Resource	Number of Fish Harvested Aniak	Number of Fish Harvested Chuathbaluk	Total Number of Fish Harvested	Total Estimated Usable Pounds Harvested
Burbot	1,258.0	3,915.0	5,173.0	23,278.5
Dolly Varden	296.0	47.0	343.0	514.5
Grayling	365.0	254.0	619.0	927.0
Lake Trout	35.0	0.0	35.0	35.0
Lamprey	21.0	4.0	25.0	25.0
Pike	561.0	81.0	642.0	2,884.0
Rainbow Trout	331.0	11.0	342.0	684.0
Sheefish	808.0	187.0	995.0	6,460.0
Sucker	34.0	0.0	34.0	34.0
Whitefish	2,477.0	205.0	2,682.0	8,046.0
Total	6,186.0	4,704.0	10,890.0	42,888.0

Source: Alaska Department of Fish and Game, Division of Subsistence, Household Survey, 2002

Table 4. Estimated Useable Pounds of Non-Salmon Fish Harvested by Gear Type, 2001-2002.

Community: **Aniak**

Total Number of Households: 169

	Households*		Useable Lbs Harvested by Gear Type						
Species	**#**	**%**	**Net**	**Hook/Line**	**Eel Rake**	**Fish Trap**	**Fish Wheel**	**Spear**	**TOTAL**
Burbot	28	16.7%	58.5	1,215	0.0	4,387.5	0.0	0.0	5,661.0
Dolly Varden	43	25.4%	0.0	444	0.0	0.0	0.0	0.0	444.0
Grayling	36	21.4%	30.0	517.5	0.0	0.0	0.0	0.0	547.5
Lake Trout	4	2.4%	0.0	35	0.0	0.0	0.0	0.0	35.0
Lamprey	5	3.2%	0.0	0	21.0	0.0	0.0	0.0	21.0
Pike	59	34.9%	459.0	2,065.5	0.0	0.0	0.0	0.0	2,524.5
Rainbow Trout	62	36.5%	48.0	614	0.0	0.0	0.0	0.0	662.0
Sheefish	56	33.3%	3,952.0	1,300	0.0	0.0	0.0	0.0	5,252.0
Sucker	1	0.8%	34.0	0	0.0	0.0	0.0	0.0	34.0
Whitefish	76	45.2%	3,618.0	1,602	0.0	0.0	2,091.0	120.0	7,431.0
TOTAL			8,199.5	7,793	21.0	4,387.5	2,091.0	120.0	22,612.0

Community: **Chuathbaluk**

Total Number of Households: 32

	Households*		Useable Lbs Harvested by Gear Type						
Species	**#**	**%**	**Net**	**Hook/Line**	**Eel Rake**	**Fish Trap**	**Fish Wheel**	**Spear**	**TOTAL**
Burbot	9	26.9%	0.0	171.0	0.0	17,446.5	0.0	0.0	17,617.5
Dolly Varden	5	15.4%	0.0	70.5	0.0	0.0	0.0	0.0	70.5
Grayling	12	38.5%	0.0	381.0	0.0	0.0	0.0	0.0	381.0
Lamprey	1	3.8%	0.0	0.0	4.0	0.0	0.0	0.0	4.0
Pike	7	23.1%	0.0	364.5	0.0	0.0	0.0	0.0	364.5
Rainbow Trout	5	15.4%	0.0	22.0	0.0	0.0	0.0	0.0	22.0
Sheefish	15	46.2%	1,157.0	58.5	0.0	0.0	0.0	0.0	1,215.5
Whitefish	11	34.6%	411.0	204.0	0.0	0.0	0.0	0.0	615.0
TOTAL			1,568.0	1,271.5	4.0	17,446.5	0.0	0.0	20,290.0

* Household number and percentage estimates expanded from household surveys only.

Table 5. Estimated Useable Pounds of Non-Salmon Harvested by Season, 2001-2002.

Community: **Aniak**
Total Number of Households: 169

	Households*		Total Useable lbs Harvested By Season**				
Species	**#**	**%**	**Spring**	**Summer**	**Fall**	**Winter**	**TOTAL**
Burbot	28	16.7%	225.0	0.0	801.0	4,635.0	5,661.0
Dolly Varden	43	25.4%	126.0	151.5	106.5	60.0	444.0
Grayling	36	21.4%	30.0	253.5	160.5	102.0	546.0
Lake Trout	4	2.4%	0.0	27.0	8.0	0.0	35.0
Lamprey	5	3.2%	0.0	0.0	21.0	0.0	21.0
Pike	59	34.9%	846.0	756.0	549.0	373.5	2,524.5
Rainbow Trout	62	36.5%	260.0	94.0	144.0	164.0	662.0
Sheefish	56	33.3%	2,522.0	1,157.0	1,306.5	260.0	5,244.5
Sucker	1	0.8%	0.0	0.0	34.0	0.0	34.0
Whitefish	76	45.2%	303.0	3,288.0	3,321.0	522.0	7,434.0
TOTAL			4,312.0	5,727.0	6,451.5	6,116.5	22,606.0

Community: **Chuathbaluk**
Total Number of Households: 32

	Households*		Total Useable lbs Harvested By Season**				
Species	**#**	**%**	**Spring**	**Summer**	**Fall**	**Winter**	**TOTAL**
Burbot	9	26.9%	0.0	0.0	17,032.5	585.0	17,617.5
Dolly Varden	5	15.4%	15.0	22.5	33.0	0.0	70.5
Grayling	12	38.5%	37.5	265.5	63.0	15.0	381.0
Lamprey	1	3.8%	0.0	0.0	4.0	0.0	4.0
Pike	7	23.1%	54.0	297.0	9.0	0.0	360.0
Rainbow Trout	5	15.4%	8.0	14.0	0.0	0.0	22.0
Sheefish	15	46.2%	715.0	383.5	117.0	0.0	1,215.5
Whitefish	11	34.6%	0.0	222.0	390.0	0.0	612.0
TOTAL			829.5	1,204.5	17,648.5	600.0	20,282.5

* Household number and percentage estimates expanded from household surveys only.
** Spring: March-May; Summer: June -August; Fall: September-November; Winter: December- February

Table 6. Non-Salmon Fish Harvest Locations for Net Use by Aniak Residents, 2001-2002.

Community: **Aniak**
Total Number of Households: 169

Net

Location	Total	Useable lbs Harvested by Location									
		Burbot	Dolly Varden	Grayling	Lake Trout	Lamprey	Pike	Rainbow Trout	Sheefish	Sucker	Whitefish
Aniak Lake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak River: below Doestock Crk.	159.0	0.0	0.0	0.0	0.0	0.0	121.5	16.0	0.0	0.0	21.0
Aniak River: Buckstock to Salmon R.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak River: Doestock to Buckstock	26.0	0.0	0.0	0.0	0.0	0.0	0.0	26.0	0.0	0.0	0.0
Aniak River: upstream of Salmon R.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak Slough	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buckstock River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Doestock Creek	21.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.0
George River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Holitna River	30.0	0.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Holokuk River	6.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0
Kolmakof River	120.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	120.0
Kusko River: Aniak to Chuathbaluk	2,058.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	968.5	0.0	1,089.0
Kusko River: downstream of Lower Kalskag	180.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	180.0
Kusko River: Kalskag to Aniak	3,174.0	58.5	0.0	0.0	0.0	0.0	270.0	0.0	2,125.5	34.0	744.0
Kusko River: upstream of Chuathbaluk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mission Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mouth of Aniak River	933.0	0.0	0.0	0.0	0.0	0.0	54.0	0.0	819.0	0.0	60.0
Napaimiut	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oskawalik River	188.0	0.0	0.0	0.0	0.0	0.0	13.5	0.0	32.5	0.0	141.0
Owhat River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pike Lake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salmon River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whitefish Lake	1,239.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,239.0
Total	8,134.0	58.5	0.0	30.0	0.0	0.0	459.0	48.0	3,945.5	34.0	3,615.0

Table 7. Non-Salmon Fish Harvest Locations for Hook and Line Use by Aniak Residents, 2001-2002.

Community: **Aniak**
Total Number of Households: 169

Hook

Location	Total	Useable lbs Harvested by Location									
		Burbot	Dolly Varden	Grayling	Lake Trout	Lamprey	Pike	Rainbow Trout	Sheefish	Sucker	Whitefish
Aniak Lake	45.0	0.0	0.0	0.0	35.0	0.0	0.0	10.0	0.0	0.0	0.0
Aniak River: below Doestock Crk.	585.5	0.0	22.5	13.5	0.0	0.0	436.5	32.0	0.0	0.0	81.0
Aniak River: Buckstock to Salmon R.	111.0	0.0	57.0	0.0	0.0	0.0	0.0	54.0	0.0	0.0	0.0
Aniak River: Doestock to Buckstock	207.0	0.0	54.0	28.5	0.0	0.0	4.5	120.0	0.0	0.0	0.0
Aniak River: upstream of Salmon R.	174.0	0.0	60.0	72.0	0.0	0.0	0.0	42.0	0.0	0.0	0.0
Aniak Slough	65.0	0.0	0.0	0.0	0.0	0.0	58.5	0.0	6.5	0.0	0.0
Buckstock River	78.0	0.0	7.5	28.5	0.0	0.0	0.0	42.0	0.0	0.0	0.0
Doestock Creek	1,754.0	0.0	195.0	82.5	0.0	0.0	976.5	282.0	104.0	0.0	114.0
George River	55.5	0.0	0.0	37.5	0.0	0.0	18.0	0.0	0.0	0.0	0.0
Holitna River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Holokuk River	6.5	0.0	0.0	4.5	0.0	0.0	0.0	2.0	0.0	0.0	0.0
Kolmakof River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: Aniak to Chuathbaluk	2,164.5	1,030.5	18.0	54.0	0.0	0.0	13.5	2.0	149.5	0.0	897.0
Kusko River: downstream of Lower Kalskag	369.5	90.0	0.0	0.0	0.0	0.0	58.5	0.0	221.0	0.0	0.0
Kusko River: Kalskag to Aniak	1,268.0	90.0	28.5	78.0	0.0	0.0	207.0	8.0	643.5	0.0	213.0
Kusko River: upstream of Chuathbaluk	36.0	0.0	0.0	36.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mission Creek	19.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.5	0.0	0.0
Mouth of Aniak River	249.5	0.0	1.5	58.5	0.0	0.0	94.5	14.0	78.0	0.0	3.0
Napaimiut	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0
Oskawalik River	37.5	0.0	0.0	0.0	0.0	0.0	18.0	0.0	19.5	0.0	0.0
Owhat River	64.5	0.0	0.0	1.5	0.0	0.0	4.5	0.0	58.5	0.0	0.0
Pike Lake	178.5	0.0	0.0	7.5	0.0	0.0	171.0	0.0	0.0	0.0	0.0
Salmon River	12.0	0.0	0.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whitefish Lake	294.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	294.0
Total	7,777.0	1,210.5	444.0	514.5	35.0	0.0	2,061.0	610.0	1,300.0	0.0	1,602.0

Table 8. Non-Salmon Fish Harvest Locations for Net and Hook and Line Use by Chuathbaluk Residents, 2001-2002.

Community: **Chuathbaluk**
Total Number of Households: 32

Net

		Useable lbs Harvested by Location							
Location	**Total**	**Burbot**	**Dolly Varden**	**Grayling**	**Lamprey**	**Pike**	**Rainbow Trout**	**Sheefish**	**Whitefish**
Aniak River: below Doestock Crk.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Doestock Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
George River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Holokuk River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: Aniak to Chuathbaluk	1,568.0	0.0	0.0	0.0	0.0	0.0	0.0	1,157.0	411.0
Kusko River: Kalskag to Aniak	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: upstream of Chuathbaluk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mouth of Aniak River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	1,568.0	0.0	0.0	0.0	0.0	0.0	0.0	1,157.0	411.0

Hook

		Useable lbs Harvested by Location							
Location	**Total**	**Burbot**	**Dolly Varden**	**Grayling**	**Lamprey**	**Pike**	**Rainbow Trout**	**Sheefish**	**Whitefish**
Aniak River: below Doestock Crk.	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Doestock Creek	62.0	0.0	0.0	0.0	0.0	54.0	8.0	0.0	0.0
George River	9.0	0.0	0.0	0.0	0.0	9.0	0.0	0.0	0.0
Holokuk River	52.0	0.0	33.0	15.0	0.0	0.0	4.0	0.0	0.0
Kusko River: Aniak to Chuathbaluk	773.5	171.0	33.0	306.0	0.0	67.5	10.0	0.0	186.0
Kusko River: Kalskag to Aniak	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: upstream of Chuathbaluk	349.5	0.0	3.0	55.5	0.0	234.0	0.0	39.0	18.0
Mouth of Aniak River	13.0	0.0	0.0	0.0	0.0	0.0	0.0	13.0	0.0
Total	1,262.0	171.0	69.0	379.5	0.0	364.5	22.0	52.0	204.0

Table 9. Estimated Subsistence Harvest of Non-Salmon Fish in Aniak and Chuathbaluk, 2001-2002

Resource	Number of Fish Harvested Aniak	Number of Fish Harvested Chuathbaluk	Total Number of Fish Harvested	Total Estimated Usable Pounds
Blackfish	111.0	0.0	111.0	111.0
Burbot	217.0	98.0	315.0	1,413.0
Dolly Varden	207.0	29.0	236.0	354.0
Grayling	220.0	220.0	440.0	658.5
Lake Trout	2.0	0.0	2.0	2.0
Lamprey	28.0	0.0	28.0	28.0
Pike	403.0	86.0	489.0	2,196.0
Rainbow Trout	165.0	3.0	168.0	336.0
Sheefish	366.0	207.0	573.0	3,718.0
Smelt	22.0	41.0	63.0	63.0
Sucker	7.0	41.0	48.0	48.0
Whitefish	1,649.0	1,295.0	2,944.0	8,829.0
Total	3,397.0	2,020.0	5,417.0	17,756.5

Source: Alaska Department of Fish and Game, Division of Subsistence Household Survey, 2003

Table 10. Estimated Useable Pounds of Non-Salmon Fish Harvested by Gear Type, 2002-2003.

Community: **Aniak**
Total Number of Households: 165

	Households*		Useable Lbs Harvested by Gear Type						
Species	**#**	**%**	**Net**	**Hook/Line**	**Eel Rake**	**Fish Trap**	**Fish Wheel**	**Spear**	**TOTAL**
Blackfish	1	0.7%	0.0	0.0	0.0	111.0	0.0	0.0	111.0
Burbot	11	6.7%	783.0	193.5	0.0	0.0	0.0	0.0	977.0
Dolly Varden	30	18.1%	12.0	298.5	0.0	0.0	0.0	0.0	310.5
Grayling	24	14.8%	0.0	330.0	0.0	0.0	0.0	0.0	330.0
Lake Trout	1	0.7%	0.0	2.0	0.0	0.0	0.0	0.0	2.0
Lamprey	3	2.0%	0.0	0.0	29.0	0.0	0.0	0.0	29.0
Pike	44	26.8%	99.0	1,714.5	0.0	0.0	0.0	0.0	1,813.5
Rainbow Trout	27	16.1%	8.0	322.0	0.0	0.0	0.0	0.0	330.0
Sheefish	38	22.8%	1,456.0	923.0	0.0	0.0	0.0	0.0	2,379.0
Smelt	2	1.3%	22.0	0.0	0.0	0.0	0.0	0.0	22.0
Sucker	1	0.7%	0.0	7.0	0.0	0.0	0.0	0.0	7.0
Whitefish	42	25.5%	4,485.0	462.0	0.0	0.0	0.0	0.0	4,947.0
TOTAL			6,865.0	4,252.5	29.0	111.0	0.0	0.0	11,258.0

Community: **Chuathbaluk**
Total Number of Households: 30

	Households*		Useable Lbs Harvested by Gear Type						
Species	**#**	**%**	**Net**	**Hook/Line**	**Eel Rake**	**Fish Trap**	**Fish Wheel**	**Spear**	**TOTAL**
Burbot	5	18.2%	0	441	0	0	0	0	441
Dolly Varden	4	13.6%	0	44	0	0	0	0	44
Grayling	14	45.5%	0	330	0	0	0	0	330
Pike	8	27.3%	198	189	0	0	0	0	387
Rainbow Trout	1	4.5%	6	0	0	0	0	0	6
Sheefish	12	40.9%	1,346	0	0	0	0	0	1,346
Smelt	1	4.5%	41	0	0	0	0	0	41
Sucker	3	9.1%	0	41	0	0	0	0	41
Whitefish	12	40.9%	3,810	75	0	0	0	0	3,885
TOTAL			5,401	1,120	0	0	0	0	6,520

* Household number and percentage estimates expanded from household surveys only.

Table 11. Estimated Useable Pounds of Non-Salmon Harvested by Season, 2002-2003.

Community: **Aniak**

Total Number of Households: 165

	Households*		Total Useable lbs Harvested By Season**				
Species	**#**	**%**	**Spring**	**Summer**	**Fall**	**Winter**	**TOTAL**
Blackfish	1	0.7%	0.0	0.0	0.0	111.0	111.0
Burbot	11	6.7%	4.5	54.0	13.5	900.0	972.0
Dolly Varden	30	18.1%	73.5	129.0	33.0	75.0	310.5
Grayling	24	14.8%	0.0	138.0	66.0	126.0	330.0
Lake Trout	1	0.7%	0.0	2.0	0.0	0.0	2.0
Lamprey	3	2.0%	0.0	3.0	22.0	3.0	28.0
Pike	44	26.8%	427.5	517.5	229.5	639.0	1,813.5
Rainbow Trout	27	16.1%	126.0	62.0	26.0	116.0	330.0
Sheefish	38	22.8%	1,157.0	858.0	338.0	19.5	2,372.5
Smelt	2	1.3%	0.0	22.0	0.0	0.0	22.0
Sucker	1	0.7%	0.0	3.0	0.0	3.0	6.0
Whitefish	42	25.5%	69.0	738.0	3,903.0	237.0	4,947.0
TOTAL			1,857.5	2,526.5	4,631.0	2,229.5	11,244.5

Community: **Chuathbaluk**

Total Number of Households: 30

	Households*		Total Useable lbs Harvested By Season**				
Species	**#**	**%**	**Spring**	**Summer**	**Fall**	**Winter**	**TOTAL**
Burbot	5	18.2%	0.0	0.0	135.0	306.0	441.0
Dolly Varden	4	13.6%	0.0	33.0	0.0	10.5	43.5
Grayling	14	45.5%	22.5	135.0	142.5	28.5	328.5
Pike	8	27.3%	0.0	157.5	225.0	0.0	382.5
Rainbow Trout	1	4.5%	0.0	6.0	0.0	0.0	6.0
Sheefish	12	40.9%	689.0	344.5	312.0	0.0	1,345.5
Smelt	1	4.5%	0.0	41.0	0.0	0.0	41.0
Sucker	3	9.1%	0.0	27.0	0.0	14.0	41.0
Whitefish	12	40.9%	720.0	1,932.0	1,230.0	0.0	3,882.0
TOTAL			1,431.5	2,676.0	2,044.5	359.0	6,511.0

* Household number and percentage estimates expanded from household surveys only.

** Spring: March-May; Summer: June -August; Fall: September-November; Winter: December- February

Table 12. Non-Salmon Fish Harvest Locations for Net Use by Aniak, 2002-2003.

Community: **Aniak**
Total Number of Households: 165

Net

Useable lbs Harvested by Location

Location	Total	Blackfish	Burbot	Dolly Varden	Grayling	Lamprey	Pike	Rainbow Trout	Sheefish	Smelt	Sucker	Whitefish
Along the beach in front of Aniak	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak Lake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak River: below Doestock Crk.	27.0	0.0	0.0	0.0	0.0	0.0	27.0	0.0	0.0	0.0	0.0	0.0
Aniak River: Buckstock to Salmon R.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak River: Doestock to Buckstock	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
Aniak River: upstream of Salmon R.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak Slough	45.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.5	0.0	0.0	0.0
Bethel	22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.0	0.0	0.0
Buckstock River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Crooked Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Discovery Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Doestock Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Holokuk River	4.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0
Kusko River: Aniak to Chuathbaluk	1,479.0	0.0	756.0	0.0	0.0	0.0	9.0	0.0	312.0	0.0	0.0	402.0
Kusko River: Kalskag to Aniak	4,832.5	0.0	27.0	4.5	0.0	0.0	49.5	2.0	1,098.5	0.0	0.0	3,651.0
Kusko River: upstream of Chuathbaluk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mouth of Aniak River	13.5	0.0	0.0	0.0	0.0	0.0	13.5	0.0	0.0	0.0	0.0	0.0
Napaimiut	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oskawalik River	6.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Owhat River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pike Lake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salmon River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sue Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whitefish Lake	432.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	432.0
Yukon River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	6,863.5	0.0	783.0	10.5	0.0	0.0	99.0	8.0	1,456.0	22.0	0.0	4,485.0

Table 13. Non-Salmon Fish Harvest Locations for Hook and Line Use by Aniak Residents, 2002-2003.

Community: **Aniak**
Total Number of Households: 165
Hook

		Useable lbs Harvested by Location										
Location	**Total**	**Blackfish**	**Burbot**	**Dolly Varden**	**Grayling**	**Lake Trout**	**Lamprey**	**Pike**	**Rainbow Trout**	**Sheefish**	**Sucker**	**Whitefish**
Along the beach in front of Aniak	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.5	0.0	0.0
Aniak Lake	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak River: below Doestock Crk.	520.5	0.0	0.0	15.0	6.0	0.0	0.0	382.5	18.0	78.0	0.0	21.0
Aniak River: Buckstock to Salmon R.	51.0	0.0	0.0	13.5	6.0	0.0	0.0	31.5	0.0	0.0	0.0	0.0
Aniak River: Doestock to Buckstock	567.0	0.0	0.0	112.5	84.0	0.0	0.0	265.5	102.0	0.0	0.0	3.0
Aniak River: upstream of Salmon R.	6.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak Slough	46.0	0.0	0.0	16.5	16.5	0.0	0.0	0.0	0.0	13.0	0.0	0.0
Bethel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buckstock River	38.0	0.0	0.0	10.5	6.0	0.0	0.0	13.5	8.0	0.0	0.0	0.0
Crooked Creek	62.5	0.0	0.0	0.0	49.5	0.0	0.0	0.0	0.0	13.0	0.0	0.0
Discovery Creek	72.0	0.0	0.0	0.0	3.0	0.0	0.0	36.0	0.0	0.0	0.0	33.0
Doestock Creek	567.0	0.0	0.0	49.5	3.0	0.0	0.0	315.0	168.0	19.5	0.0	12.0
Holokuk River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: Aniak to Chuathbaluk	566.0	0.0	157.5	1.5	76.5	0.0	0.0	0.0	0.0	149.5	7.0	174.0
Kusko River: Kalskag to Aniak	488.0	0.0	31.5	12.0	18.0	0.0	0.0	121.5	18.0	182.0	0.0	105.0
Kusko River: upstream of Chuathbaluk	49.5	0.0	0.0	0.0	0.0	0.0	0.0	49.5	0.0	0.0	0.0	0.0
Mouth of Aniak River	470.0	0.0	0.0	58.5	34.5	0.0	0.0	99.0	6.0	260.0	0.0	12.0
Napaimiut	13.5	0.0	4.5	0.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oskawalik River	39.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	39.0	0.0	0.0
Owhat River	160.5	0.0	0.0	0.0	4.5	0.0	0.0	0.0	0.0	156.0	0.0	0.0
Pike Lake	279.0	0.0	0.0	0.0	0.0	0.0	0.0	279.0	0.0	0.0	0.0	0.0
Salmon River	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sue Creek	10.5	0.0	0.0	0.0	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whitefish Lake	99.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.0
Yukon River	126.0	0.0	0.0	0.0	0.0	0.0	0.0	126.0	0.0	0.0	0.0	0.0
Total	4,242.5	0.0	193.5	298.5	327.0	2.0	0.0	1,719.0	320.0	916.5	7.0	459.0

Table 14. Non-Salmon Fish Harvest Locations for Net and Hook/Line Use by Chuathbaluk Residents, 2002-2003.

Community: **Chuathbaluk**
Total Number of Households: 30

Net

		Useable lbs Harvested by Location								
Location	**Total**	**Burbot**	**Dolly Varden**	**Grayling**	**Pike**	**Rainbow Trout**	**Sheefish**	**Smelt**	**Sucker**	**Whitefish**
Across CHU	26.0	0.0	0.0	0.0	0.0	0.0	26.0	0.0	0.0	0.0
Holokuk River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: Aniak to Chuathbaluk	171.5	0.0	0.0	0.0	4.5	0.0	143.0	0.0	0.0	24.0
Kusko River: downstream of Lower Kalskag	41.0	0.0	0.0	0.0	0.0	0.0	0.0	41.0	0.0	0.0
Kusko River: upstream of Chuathbaluk	4,929.0	0.0	0.0	0.0	189.0	6.0	1,092.0	0.0	0.0	3,642.0
Mission Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Napaimiut	133.0	0.0	0.0	0.0	0.0	0.0	91.0	0.0	0.0	42.0
Whitefish Lake	102.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	102.0
Total	5,402.5	0.0	0.0	0.0	193.5	6.0	1,352.0	41.0	0.0	3,810.0

Hook

		Useable lbs Harvested by Location								
Location	**Total**	**Burbot**	**Dolly Varden**	**Grayling**	**Pike**	**Rainbow Trout**	**Sheefish**	**Smelt**	**Sucker**	**Whitefish**
Across CHU	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.0
Holokuk River	49.5	0.0	0.0	0.0	49.5	0.0	0.0	0.0	0.0	0.0
Kusko River: Aniak to Chuathbaluk	824.0	441.0	33.0	225.0	18.0	0.0	0.0	0.0	41.0	66.0
Kusko River: downstream of Lower Kalskag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: upstream of Chuathbaluk	10.5	0.0	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mission Creek	1.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
Napaimiut	223.5	0.0	0.0	102.0	121.5	0.0	0.0	0.0	0.0	0.0
Whitefish Lake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	1118.0	441.0	43.5	328.5	189.0	0.0	0.0	0.0	41.0	75.0

Appendix A. Survey Instrument

DOLLY VARDEN
March 1, 2002 - Feb. 28, 2003

	Y	N
USED		
TRIED TO HARVEST		
HARVESTED		
RECEIVED		
GAVE		

LOCATION	SPRING MARCH - MAY		SUMMER JUNE - AUGUST		FALL SEPT. - NOV.		WINTER DEC. - FEBR.		HARVEST TOTAL
	Net	Hook/Line	Net	Hook/Line	Net	Hook/Line	Net	Hook/Line	
Kusko River: L Kalskag to Aniak									
1									
Kusko River: Aniak to Chuathbaluk									
2									
Whitefish Lake									
3									
Aniak Slough									
4									
Pike Lake									
5									
Mouth of Aniak River									
6									
Aniak River: below Doestock Crk.									
7									
Doestock Creek									
8									
Aniak River: Doestock to Buckstock									
9									
Buckstock River									
10									
Aniak River: Buckstock to Salmon R.									
11									
Salmon River									
12									
Aniak River upstream of Salmon R.									
13									
Aniak Lake									
14									
Owhat River									
15									
Kolmakof River									
16									
Holokuk River									
17									
George River									
18									
Holitna River									
19									

What sort of changes have you seen in the Dolly Varden populations (number of fish, size, condition etc.)?

How has your household's harvest and use of Dolly Varden changed over time?

GRAYLING
March 1, 2002 - Feb. 28, 2003

	Y	N
USED		
TRIED TO HARVEST		
HARVESTED		
RECEIVED		
GAVE		

LOCATION	SPRING MARCH - MAY		SUMMER JUNE - AUGUST		FALL SEPT. - NOV.		WINTER DEC. - FEBR.	
	Net	Hook/Line	Net	Hook/Line	Net	Hook/Line	Net	Hook/Line
Kusko River: L Kalskag to Aniak								
1								
Kusko River: Aniak to Chuathbaluk								
2								
Whitefish Lake								
3								
Aniak Slough								
4								
Pike Lake								
5								
Mouth of Aniak River								
6								
Aniak River: below Doestock Crk.								
7								
Doestock Creek								
8								
Aniak River: Doestock to Buckstock								
9								
Buckstock River								
10								
Aniak River: Buckstock to Salmon R.								
11								
Salmon River								
12								
Aniak River upstream of Salmon R.								
13								
Aniak Lake								
14								
Owhat River								
15								
Kolmakof River								
16								
Holokuk River								
17								
George River								
18								
Holitna River								
19								

What sort of changes have you seen in the Grayling populations (number of fish, size, condition etc.)?

How has your household's harvest and use of Grayling changed over time?

RAINBOW TROUT
March 1, 2002 - Feb. 28, 2003

	Y	N
USED		
TRIED TO HARVEST		
HARVESTED		
RECEIVED		
GAVE		

LOCATION	SPRING MARCH - MAY		SUMMER JUNE - AUGUST		FALL SEPT. - NOV.		WINTER DEC. - FEBR.		HARVEST TOTAL
	Net	Hook/Line	Net	Hook/Line	Net	Hook/Line	Net	Hook/Line	
Kusko River: L Kalskag to Aniak									
1									
Kusko River: Aniak to Chuathbaluk									
2									
Whitefish Lake									
3									
Aniak Slough									
4									
Pike Lake									
5									
Mouth of Aniak River									
6									
Aniak River: below Doestock Crk.									
7									
Doestock Creek									
8									
Aniak River: Doestock to Buckstock									
9									
Buckstock River									
10									
Aniak River: Buckstock to Salmon R.									
11									
Salmon River									
12									
Aniak River upstream of Salmon R.									
13									
Aniak Lake									
14									
Owhat River									
15									
Kolmakof River									
16									
Holokuk River									
17									
George River									
18									
Holitna River									
19									

What sort of changes have you seen in the Rainbow Trout populations (number of fish, size, condition etc.)?

How has your household's harvest and use Rainbow Trout changed over time?

NORTHERN PIKE

March 1, 2002 - Feb. 28, 2003

USED Y N
TRIED TO HARVEST
HARVESTED

RECEIVED Y N
GAVE

LOCATION	SPRING MARCH - MAY Net	SPRING MARCH - MAY Hook/Line	SUMMER JUNE - AUGUST Net	SUMMER JUNE - AUGUST Hook/Line	FALL SEPT. - NOV. Net	FALL SEPT. - NOV. Hook/Line	WINTER DEC. - FEBR. Net	WINTER DEC. - FEBR. Hook/Line	HARVEST TOTAL
Kusko River: L Kalskag to Aniak									
1									
Kusko River: Aniak to Chuathbaluk									
2									
Whitefish Lake									
3									
Aniak Slough									
4									
Pike Lake									
5									
Mouth of Aniak River									
6									
Aniak River: below Doestock Crk.									
7									
Doestock Creek									
8									
Aniak River: Doestock to Buckstock									
9									
Buckstock River									
10									
Aniak River: Buckstock to Salmon R.									
11									
Salmon River									
12									
Aniak River upstream of Salmon R.									
13									
Aniak Lake									
14									
Owhat River									
15									
Kolmakof River									
16									
Holokuk River									
17									
George River									
18									
Holitna River									
19									

What sort of changes have you seen in Northern Pike populations (number of fish, size, condition etc.)?

How has your household's harvest and use of Northern Pike changed over time?

LAKE TROUT

March 1, 2002 - Feb. 28, 2003

USED Y N
TRIED TO HARVEST
HARVESTED

RECEIVED Y N
GAVE

LOCATION	SPRING MARCH - MAY Net	SPRING MARCH - MAY Hook/Line	SUMMER JUNE - AUGUST Net	SUMMER JUNE - AUGUST Hook/Line	FALL SEPT. - NOV. Net	FALL SEPT. - NOV. Hook/Line	WINTER DEC. - FEBR. Net	WINTER DEC. - FEBR. Hook/Line
Kusko River: L Kalskag to Aniak								
1								
Kusko River: Aniak to Chuathbaluk								
2								
Whitefish Lake								
3								
Aniak Slough								
4								
Pike Lake								
5								
Mouth of Aniak River								
6								
Aniak River: below Doestock Crk.								
7								
Doestock Creek								
8								
Aniak River: Doestock to Buckstock								
9								
Buckstock River								
10								
Aniak River: Buckstock to Salmon R.								
11								
Salmon River								
12								
Aniak River upstream of Salmon R.								
13								
Aniak Lake								
14								
Owhat River								
15								
Kolmakof River								
16								
Holokuk River								
17								
George River								
18								
Holitna River								
19								

What sort of changes have you seen in Lake Trout populations (number of fish, size, condition etc.)?

How has your household's harvest and use of Lake Trout changed over time?

BURBOT

March 1, 2002 - Feb. 28, 2003

USED Y N
TRIED TO HARVEST
HARVESTED

RECEIVED Y N
GAVE

LOCATION	SPRING MARCH - MAY Net	SPRING MARCH - MAY Hook/Line	SUMMER JUNE - AUGUST Net	SUMMER JUNE - AUGUST Hook/Line	FALL SEPT. - NOV. Net	FALL SEPT. - NOV. Hook/Line	WINTER DEC. - FEBR. Net	WINTER DEC. - FEBR. Hook/Line	HARVEST TOTAL
Kusko River: L Kalskag to Aniak									
1									
Kusko River: Aniak to Chuathbaluk									
2									
Whitefish Lake									
3									
Aniak Slough									
4									
Pike Lake									
5									
Mouth of Aniak River									
6									
Aniak River: below Doestock Crk.									
7									
Doestock Creek									
8									
Aniak River: Doestock to Buckstock									
9									
Buckstock River									
10									
Aniak River: Buckstock to Salmon R.									
11									
Salmon River									
12									
Aniak River upstream of Salmon R.									
13									
Aniak Lake									
14									
Owhat River									
15									
Kolmakof River									
16									
Holokuk River									
17									
George River									
18									
Holitna River									
19									

What sort of changes have you seen in Burbot populations (number of fish, size, condition etc.)?

How has your household's harvest and use Burbot changed over time?

WHITEFISH

March 1, 2002 - Feb. 28, 2003

USED Y N
TRIED TO HARVEST
HARVESTED

RECEIVED Y N
GAVE

LOCATION	SPRING MARCH - MAY		SUMMER JUNE - AUGUST		FALL SEPT. - NOV.		WINTER DEC. - FEBR.		HARVEST TOTAL
	Net	Hook/Line	Net	Hook/Line	Net	Hook/Line	Net	Hook/Line	
Kusko River: L Kalskag to Aniak									
1									
Kusko River: Aniak to Chuathbaluk									
2									
Whitefish Lake									
3									
Aniak Slough									
4									
Pike Lake									
5									
Mouth of Aniak River									
6									
Aniak River: below Doestock Crk.									
7									
Doestock Creek									
8									
Aniak River: Doestock to Buckstock									
9									
Buckstock River									
10									
Aniak River: Buckstock to Salmon R.									
11									
Salmon River									
12									
Aniak River upstream of Salmon R.									
13									
Aniak Lake									
14									
Owhat River									
15									
Kolmakof River									
16									
Holokuk River									
17									
George River									
18									
Holitna River									
19									

What sort of changes have you seen in Whitefish populations (number of fish, size, condition etc.)?

How has your household's harvest and use of Whitefish changed over time?

SHEEFISH

March 1, 2002 - Feb. 28, 2003

USED Y N
TRIED TO HARVEST
HARVESTED

RECEIVED Y N
GAVE

LOCATION	SPRING MARCH - MAY		SUMMER JUNE - AUGUST		FALL SEPT. - NOV.		WINTER DEC. - FEBR.		HARVEST TOTAL
	Net	Hook/Line	Net	Hook/Line	Net	Hook/Line	Net	Hook/Line	
Kusko River: L Kalskag to Aniak									
1									
Kusko River: Aniak to Chuathbaluk									
2									
Whitefish Lake									
3									
Aniak Slough									
4									
Pike Lake									
5									
Mouth of Aniak River									
6									
Aniak River: below Doestock Crk.									
7									
Doestock Creek									
8									
Aniak River: Doestock to Buckstock									
9									
Buckstock River									
10									
Aniak River: Buckstock to Salmon R.									
11									
Salmon River									
12									
Aniak River upstream of Salmon R.									
13									
Aniak Lake									
14									
Owhat River									
15									
Kolmakof River									
16									
Holokuk River									
17									
George River									
18									
Holitna River									
19									

What sort of changes have you seen in Sheefish populations (number of fish, size, condition etc.)?

How has your household's harvest and use of Sheefish changed over time?

SUCKERS

March 1, 2002 - Feb. 28, 2003

USED Y N
TRIED TO HARVEST
HARVESTED

RECEIVED Y N
GAVE

LOCATION	SPRING MARCH - MAY		SUMMER JUNE - AUGUST		FALL SEPT. - NOV.		WINTER DEC. - FEBR.		HARVEST TOTAL
	Net	Hook/Line	Net	Hook/Line	Net	Hook/Line	Net	Hook/Line	
Kusko River: L Kalskag to Aniak									
1									
Kusko River: Aniak to Chuathbaluk									
2									
Whitefish Lake									
3									
Aniak Slough									
4									
Pike Lake									
5									
Mouth of Aniak River									
6									
Aniak River: below Doestock Crk.									
7									
Doestock Creek									
8									
Aniak River: Doestock to Buckstock									
9									
Buckstock River									
10									
Aniak River: Buckstock to Salmon R.									
11									
Salmon River									
12									
Aniak River upstream of Salmon R.									
13									
Aniak Lake									
14									
Owhat River									
15									
Kolmakof River									
16									
Holokuk River									
17									
George River									
18									
Holitna River									
19									

What sort of changes have you seen in the Sucker populations (number of fish, size, condition etc.)?

How has your household's harvest and use ofSuckers changed over time?

BLACKFISH

March 1, 2002 - Feb. 28, 2003

Gear Type Used: **FISH TRAP**

USED Y N
TRIED TO HARVEST
HARVESTED

RECEIVED Y N
GAVE

LOCATION	SPRING MARCH - MAY		SUMMER JUNE - AUGUST		FALL SEPT. - NOV.		WINTER DEC. - FEBR.		HARVEST TOTAL
Kusko River: L Kalskag to Aniak 1									
Kusko River: Aniak to Chuathbaluk 2									
Whitefish Lake 3									
Aniak Slough 4									
Pike Lake 5									
Mouth of Aniak River 6									
Aniak River: below Doestock Crk. 7									
Doestock Creek 8									
Aniak River: Doestock to Buckstock 9									
Buckstock River 10									
Aniak River: Buckstock to Salmon R. 11									
Salmon River 12									
Aniak River upstream of Salmon R. 13									
Aniak Lake 14									
Owhat River 15									
Kolmakof River 16									
Holokuk River 17									
George River 18									
Holitna River 19									

What sort of changes have you seen in Blackfish populations (number of fish, size, condition etc.)?

How has your household's harvest and use of Blackfish changed over time?

LAMPREY EEL

March 1, 2002 - Feb. 28, 2003

Gear Type Used: **EEL RAKE**

USED Y N
TRIED TO HARVEST
HARVESTED

RECEIVED Y N
GAVE

LOCATION	SPRING MARCH - MAY		SUMMER JUNE - AUGUST		FALL SEPT. - NOV.		WINTER DEC. - FEBR.		HARVEST TOTAL
Kusko River: L Kalskag to Aniak 1									
Kusko River: Aniak to Chuathbaluk 2									
Whitefish Lake 3									
Aniak Slough 4									
Pike Lake 5									
Mouth of Aniak River 6									
Aniak River: below Doestock Crk. 7									
Doestock Creek 8									
Aniak River: Doestock to Buckstock 9									
Buckstock River 10									
Aniak River: Buckstock to Salmon R. 11									
Salmon River 12									
Aniak River upstream of Salmon R. 13									
Aniak Lake 14									
Owhat River 15									
Kolmakof River 16									
Holokuk River 17									
George River 18									
Holitna River 19									

What sort of changes have you seen in Lamprey Eel populations (number of fish, size, condition etc.)?

How has your household's harvest and use of Lamprey Eel changed over time?

_____

March 1, 2002 - Feb. 28, 2003

USED Y N
TRIED TO HARVEST
HARVESTED

RECEIVED Y N
GAVE

LOCATION	SPRING MARCH - MAY		SUMMER JUNE - AUGUST		FALL SEPT. - NOV.		WINTER DEC. - FEBR.		HARVEST TOTAL
	Net	Hook/Line	Net	Hook/Line	Net	Hook/Line	Net	Hook/Line	
Kusko River: L Kalskag to Aniak 1									
Kusko River: Aniak to Chuathbaluk 2									
Whitefish Lake 3									
Aniak Slough 4									
Pike Lake 5									
Mouth of Aniak River 6									
Aniak River: below Doestock Crk. 7									
Doestock Creek 8									
Aniak River: Doestock to Buckstock 9									
Buckstock River 10									
Aniak River: Buckstock to Salmon R. 11									
Salmon River 12									
Aniak River upstream of Salmon R. 13									
Aniak Lake 14									
Owhat River 15									
Kolmakof River 16									
Holokuk River 17									
George River 18									
Holitna River 19									

What sort of changes have you seen in _____ populations (number of fish, size, condition etc.)?

How has your household's harvest and use of _____ changed over time?

Appendix B. Survey Comments, 2001-2002

Aniak River Survey Comments (2001-2002)

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Lamprey	Aniak	Same, no change in population.	same
Lamprey	Aniak	People say declining. Heard from others decrease in population.	
Lamprey	Aniak	Less, not as much as before. Decrease in population.	
Lamprey	Aniak	No change in population.	No change.
		Uses in gallons. Used eel rake.	
Lamprey	Aniak	There are no eels now. Ten years ago there were more eels.	
Lamprey	Aniak	Hardly any - population decrease.	less
Lamprey	Aniak	Not as much, decrease in population.	less
Lamprey	Aniak	No change in population.	
Lamprey	Aniak	No change.	same
Lamprey	Aniak		same
Lamprey	Aniak		We don't use them.
Lamprey	Aniak	Lots of eels.	Don't change.
Lamprey	Aniak	No change.	No change.
		Used eel rake, numbers in gallons.	
Lamprey	Aniak	Can't say the populations.	No change.
Lamprey	Aniak	Decrease in population.	
		Used eel rake. Numbers in gallons.	
Lamprey	Aniak		same
Lamprey	Aniak	Has never gone.	
Lamprey	Aniak	No change. Eel rake was used,	same
		1/2 gallon was harvested.	
Lamprey	Aniak	No change.	same using less
Lamprey	Chuathbaluk		same
Lamprey	Chuathbaluk	Not as many as before.	same
		Used eel rake, numbers in gallons.	

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Blackfish	Aniak		same
Blackfish	Aniak	Decrease in size, decrease in population.	less
Blackfish	Aniak		less
Blackfish	Aniak		We don't use them.
Blackfish	Aniak		same
Blackfish	Aniak		same
Blackfish	Aniak	Don't have use for blackfish.	
Blackfish	Chuathbaluk		same
Blackfish	Chuathbaluk	Lots, no change in population.	same
Burbot	Aniak	Don't know.	No change.
Burbot	Aniak	People give them to me.	
Burbot	Aniak		same
Burbot	Aniak	Same, no change in population.	same
Burbot	Aniak	No changes in population.	same
		Used trap.	
Burbot	Aniak	Don't really know. Just started fishing for them a couple years.	Start using more of it.
Burbot	Aniak	Hasn't noticed.	
Burbot	Aniak	Small in size.	same
Burbot	Aniak	Fish population is declining and the fish are smaller in size.	No change.
Burbot	Aniak	Same, no change in population.	Don't use hardly any more.
Burbot	Aniak	No changes in population.	
Burbot	Aniak	The fish are smaller in size. The color is changing to lighter.	No change.
Burbot	Aniak	They seem to be at a decrease, becoming more popular.	Same average, 2-3 fish a year.
Burbot	Aniak	Same to slightly less. Size smaller. Personal use, but give many away.	same
		Uses fish trap.	
Burbot	Aniak	Decrease in population, small in size.	same
Burbot	Aniak	No change, still pretty good.	same
Burbot	Aniak	No changes in population.	
Burbot	Aniak	Smaller fish size.	more
Burbot	Aniak	Not noticed.	
Burbot	Aniak	Smaller in size every year.	same
Burbot	Aniak	Smaller fish size.	Eat less.
Burbot	Aniak	No change in population.	No change.

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Burbot	Aniak	No changes in population.	Never change
Burbot	Aniak	Decrease in population, small in size.	same
Burbot	Aniak	No change in population.	
Burbot	Aniak	No change in population.	same
Burbot	Aniak	No change in population.	same
Burbot	Aniak	The size of the fish is smaller.	Household uses more.
Burbot	Aniak	Don't know.	same
Burbot	Aniak	No change.	same
Burbot	Aniak	Small in size, decrease.	same
Burbot	Aniak	No changes.	same
Burbot	Aniak	same	More - uses a trap.
Burbot	Aniak	No change.	
Burbot	Aniak	Decrease in population.	same
Burbot	Aniak	Used maybe 20 from other people.	
Burbot	Aniak	Decrease in population.	less
Burbot	Aniak	Smaller in size.	Don't go fishing.
Burbot	Aniak	The fish seem a lot smaller in size.	We don't really eat or use lush.
Burbot	Aniak	No change, same.	same
Burbot	Aniak	Lots of fish, lots are small size.	Seasonal - fall, spring.
Burbot	Aniak	Less, smaller sizes.	less
Burbot	Aniak	Smaller in size, less populations.	less usage
Burbot	Aniak	Smaller in size, same population.	same
Burbot	Aniak	Doesn't know. Doesn't try to catch burbot any more.	
Burbot	Aniak	A lot smaller in size.	same
Burbot	Aniak	Smaller in size.	same
		Uses fish trap.	
Burbot	Aniak	Thinks no change.	Used to eat a lot, but not anymore. Use one to four times a year.
Burbot	Aniak	No change.	same
Burbot	Aniak	Much smaller in size.	No change.
Burbot	Aniak	Used fish trap.	same
Burbot	Aniak	Fewer in population, smaller in size.	same
Burbot	Aniak	Increase in population.	same
Burbot	Aniak	No change.	same
Burbot	Aniak	No change.	same

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Burbot	Aniak	A lot less fish than in previous years, and smaller in size.	
Burbot	Aniak	Don't know.	
Burbot	Aniak	same	same
Burbot	Aniak		less
Burbot	Aniak		less
Burbot	Aniak	Don't know.	same
Burbot	Aniak	No change.	same
Burbot	Chuathbaluk	No change in populations.	same
Burbot	Chuathbaluk	No change in population.	same
Burbot	Chuathbaluk	Same, no change in population.	same
Burbot	Chuathbaluk	Doesn't really know. Uses fish trap.	Use less now.
Burbot	Chuathbaluk	No change in population. Uses fish trap. Household gives to household in village.	same
Burbot	Chuathbaluk	Decrease in population.	same
Burbot	Chuathbaluk	less - decline in population.	same
Burbot	Chuathbaluk	Used fish trap.	same
Dolly Varden	Aniak	A couple of years ago it seemed like there were a lot more.	
Dolly Varden	Aniak	Hasn't had the chance to really fish here yet, but plans on doing so this year.	
Dolly Varden	Aniak	Not much change.	This household does not use Dolly Varden much.
Dolly Varden	Aniak	Slight decrease in population.	less
Dolly Varden	Aniak	Decrease in population.	
Dolly Varden	Aniak	Decrease in population.	same
Dolly Varden	Aniak	Decline in population.	less

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Dolly Varden	Aniak	Less number of fish and smaller. Don't look healthy.	less
Dolly Varden	Aniak	1973 very dramatic change in population. Fewer fish now.	Harvest fewer now.
Dolly Varden	Aniak	No change in population.	same
Dolly Varden	Aniak	Hard to get any nowadays, last ten years.	Haven't had any because they are harder to get.
Dolly Varden	Aniak	Harder to catch - population decrease. Smaller in size.	same
Dolly Varden	Aniak	No changes in population.	
Dolly Varden	Aniak	Less Dolly Varden compared to ten years ago.	Not much as before. Fishing as before. Less
Dolly Varden	Aniak	Decrease in population, small in size.	same
Dolly Varden	Aniak	No change in population.	same
Dolly Varden	Aniak	No change in population.	same
Dolly Varden	Aniak	The population is smaller than 10 years ago. The fish are smaller in size and skinnier than 10 years ago. Fishing is better in the evening time.	Don't use as much now because they are harder to catch.
Dolly Varden	Aniak	Never catch any.	Less eating.
Dolly Varden	Aniak	Great decline in population.	Using less because there is less.
Dolly Varden	Aniak	Less fish. Decrease in population.	No change.
Dolly Varden	Aniak	Decrease in population.	same
Dolly Varden	Aniak	Less in population.	same
Dolly Varden	Aniak	No change in population.	more

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Dolly Varden	Aniak	No change, not as many as in past.	Less use because they are harder to get.
Dolly Varden	Aniak	Low water, less fish. Too many beaver dams. Less in population.	less
Dolly Varden	Aniak	There are not as many as in years past. Decrease in population.	Not using as much because of declined numbers.
Dolly Varden	Aniak	Not too many fish. Decrease in population.	No change.
Dolly Varden	Aniak	It is harder to catch them nowadays. There are fewer fish.	
Dolly Varden	Aniak	No change, same in population.	same
Dolly Varden	Aniak	No change in population.	
Dolly Varden	Aniak	Don't know.	same
Dolly Varden	Aniak	Less population.	less
Dolly Varden	Aniak	Hardly any in population.	same
Dolly Varden	Aniak	The fish are smaller, harder to catch.	Used to go to the mouth of the Aniak. Now don't use area. Used to because of land ownership. Old fishing spots seem to be taken.
Dolly Varden	Aniak	No change.	less
Dolly Varden	Aniak	No change.	Same - only when people give.
Dolly Varden	Aniak	Decreasing in population.	same
Dolly Varden	Aniak	No change.	less
Dolly Varden	Aniak	No more fish.	
Dolly Varden	Aniak	Decrease in population, smaller in size.	same

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Dolly Varden	Aniak	No change.	
Dolly Varden	Aniak	Didn't have time to fish this past year, but feels the Aniak River drainage is very important for local subsistence.	
Dolly Varden	Aniak	Says he doesn't fish up there much. His brother gives them fish.	
Dolly Varden	Aniak	Says daughter gives whatever fish we eat. I don't go fishing.	
Dolly Varden	Aniak	The fish are smaller and harder to catch.	No change, other than use less because of less fish.
Dolly Varden	Aniak		same
Dolly Varden	Aniak	Less than before, some were bigger before, now there's hardly any big ones.	
Dolly Varden	Aniak	Less populations.	No changes.
Dolly Varden	Aniak	No changes.	
Dolly Varden	Aniak	Same, no change.	less
Dolly Varden	Aniak	Rarely eats Dolly Varden. Dolly Varden are smaller in size than they used to be.	No change. This HH never has used Dolly Varden very often.
Dolly Varden	Aniak	Harder to catch, fewer numbers.	Less use.
Dolly Varden	Aniak	Hardly any out there. Decline.	less
Dolly Varden	Aniak	Decrease in population.	less
Dolly Varden	Aniak	Don't know, no change	less
Dolly Varden	Aniak	Seem normal.	Has stayed the same, no change.
Dolly Varden	Aniak	Some were in poor condition, 30% skinny.	same
Dolly Varden	Aniak	Decrease in population.	

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Dolly Varden	Aniak	Increase a little over the years.	Use more.
Dolly Varden	Aniak	Noticed a decline	
Dolly Varden	Aniak	Don't know.	
Dolly Varden	Aniak	No change.	less
Dolly Varden	Aniak	No change.	same
Dolly Varden	Aniak	No change.	same
Dolly Varden	Aniak	Smaller in size, but lots of them.	
Dolly Varden	Aniak	Haven't noticed.	
Dolly Varden	Aniak	Seems to be more - but	
Dolly Varden	Aniak	Decrease in population.	same
Dolly Varden	Aniak	Decrease in population.	less
Dolly Varden	Aniak	Don't know.	less
Dolly Varden	Aniak	Decline in population.	Don't know.
Dolly Varden	Aniak	No changes.	
Dolly Varden	Chuathbaluk	No change in population. One mile below Hookup River.	same
Dolly Varden	Chuathbaluk	Decrease in population.	less
Dolly Varden	Chuathbaluk	Decrease in population.	same

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Dolly Varden	Chuathbaluk	No change in population.	same
Dolly Varden	Chuathbaluk	Not as big as before, slight decrease in population.	less
Dolly Varden	Chuathbaluk	Decrease in population.	same
Dolly Varden	Chuathbaluk	Decrease in population.	same
Lake Trout	Aniak	No changes in population.	
Lake Trout	Aniak	Not as many as before, not as big. Shorter life span.	Less of lake trout.
Lake Trout	Aniak	Same, no change in population.	same
Lake Trout	Aniak	No change - don't know too much about lake trout.	same
Lake Trout	Aniak	No difference - plenty of fish.	
		No change in population.	
Lake Trout	Aniak	No change.	
Lake Trout	Aniak	Don't get any around here.	
Lake Trout	Aniak		Haven't gotten any in 15 years.
Lake Trout	Aniak	less	No change.
Lake Trout	Aniak	No changes Don't know	
Lake Trout	Aniak	same	same
Grayling	Aniak	Don't see as many people catching grayling any more.	Don't use.
Grayling	Aniak	No change in population.	
Grayling	Aniak	No change in population.	same
Grayling	Aniak	Smaller in size.	same
Grayling	Aniak	Hardly any in the area.	Use less, hardly any.
Grayling	Aniak	Feels like a reduction, but haven't fished for them in several years. Decrease in population.	
Grayling	Aniak	No change in population.	same
Grayling	Aniak	Smaller fish and population is smaller.	No change.
Grayling	Aniak	Decrease in population.	same
Grayling	Aniak	No changes in population.	
Grayling	Aniak	Pretty much the same. More than before.	No change.
Grayling	Aniak	Less in population.	same
Grayling	Aniak	No change in population.	same
Grayling	Aniak	No change in population.	

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Grayling	Aniak	Noticed no changes in populations.	
Grayling	Aniak	From 20 years ago we used to catch lots, maybe 10 a day. Now they are harder to catch. They are a lot smaller. Certain areas are still good to catch a smaller number of fish.	Don't use as much because they are harder to catch.
Grayling	Aniak	none	same
Grayling	Aniak	Less in populations.	Using less, less available.
Grayling	Aniak	There are less fish. Decrease population.	
Grayling	Aniak	No change in population.	same
Grayling	Aniak	Hardly seen any. Decrease in population.	No change.
Grayling	Aniak	Not as large as they used to be.	No change.
Grayling	Aniak	Less population. Same as Dolly Varden, beaver dams.	Less - same.
Grayling	Aniak	The fish sizes are smaller, 8-10 inches.	No change.
Grayling	Aniak	Low population, small size.	Same, but can't catch.
Grayling	Aniak	Not much of a change in population.	
Grayling	Aniak	Haven't noticed any changes, but don't really fish for them.	
Grayling	Aniak	No change in population.	same
Grayling	Aniak	Less populations.	less
Grayling	Aniak	No change.	less
Grayling	Aniak	Location: Five miles above Holokuk. Size is smaller, number of fish is the same.	No change.
Grayling	Aniak	No change.	same
Grayling	Aniak	Same, no change.	same
Grayling	Aniak	Low numbers in populations.	Don't use.
Grayling	Aniak	No change.	
Grayling	Aniak	Decline in population.	less
Grayling	Aniak	No change.	Don't eat often.
Grayling	Aniak	Decrease in population.	less
Grayling	Aniak	No changes.	same
Grayling	Aniak	Grayling on the George River are smaller. The number of fish is the same, though.	We use about the same amount.
Grayling	Aniak	No change, still the same.	same
Grayling	Aniak	Small sizes, not too many.	No changes.
Grayling	Aniak	Bigger in size, same population.	same
Grayling	Aniak	The fish are smaller in size.	If caught they are used, same as usual.
Grayling	Aniak	same	No change.

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Grayling	Aniak	Decline - used to depend on it.	Less because harder to get.
Grayling	Aniak	No change.	less
Grayling	Aniak	Some are bigger, especially in the fall.	Same for the last 20 years.
Grayling	Aniak	Decrease in population.	
Grayling	Aniak	No change.	More or less.
Grayling	Aniak	Don't know.	less
Grayling	Aniak	Don't know.	
Grayling	Aniak	No change Don't know	same
Grayling	Aniak	No change.	same
Grayling	Aniak	Fish were bigger, good condition.	
Grayling	Aniak	Decline in population.	
Grayling	Aniak	A lot of them, bigger in size.	
Grayling	Aniak	There seem to be fewer fish.	
Grayling	Aniak	No change.	same
Grayling	Aniak		less
Grayling	Aniak	Don't know.	
Grayling	Aniak	No changes.	
Grayling	Chuathbaluk	Increase in population everywhere.	Less
Grayling	Chuathbaluk	Less than before.	
Grayling	Chuathbaluk	No change in population.	same
		One mile below Holokuk River.	
Grayling	Chuathbaluk		same
Grayling	Chuathbaluk	Decrease in population.	less
Grayling	Chuathbaluk	No change in population.	same
Grayling	Chuathbaluk	No change in population.	same
Grayling	Chuathbaluk	Big decrease in population.	same
Grayling	Chuathbaluk	No change in population.	same
Grayling	Chuathbaluk	Decrease in population.	same
Grayling	Chuathbaluk	Decrease in population, smaller in size.	same
Grayling	Chuathbaluk	Don't know about population.	same
Pike	Aniak	Real fat, good shape. Healthy fish.	same
Pike	Aniak	Don't fish for pike.	
Pike	Aniak	Use for ice cream	
Pike	Aniak	No changes in population.	same
Pike	Aniak	Not aware of any change.	

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Pike	Aniak	More than before in population.	same
Pike	Aniak	Smaller in size.	same
Pike	Aniak	Same, no change in population.	Same, don't change.
Pike	Aniak	Not really noticed.	
Pike	Aniak	No change in population.	same
Pike	Aniak	Seems like they are growing in population. Increase in population.	No change.
Pike	Aniak	No change in population.	
Pike	Aniak	Less northern pike in the past couple years.	Using less.
Pike	Aniak	Decrease in population.	same
Pike	Aniak	No change in population.	same
Pike	Aniak	No changes.	
Pike	Aniak	Getting smaller in size because of overfishing - skinnier sized fish.	Haven't used any because harder to catch.
Pike	Aniak	Same, no change in population.	same
Pike	Aniak	Almost wiped out, population in trouble.	same
Pike	Aniak	Too small. Don't usually use pike.	less
Pike	Aniak	Decrease in population, smaller in size.	same
Pike	Aniak	Didn't catch as many. Decrease in population.	
Pike	Aniak	No changes in population.	
Pike	Aniak	Smaller fish size.	less
Pike	Aniak	Seems like there are more.	No change.
Pike	Aniak	Smaller in size, less population.	same
Pike	Aniak	There are more of them and they eat all of the other fish.	Use more now because of dogs, for dog food.
Pike	Aniak	No changes I population.	Eat less.
Pike	Aniak	Less populations.	same
Pike	Aniak	Seem to be health, can always catch a fish. High populations.	No changes
Pike	Aniak	No change in population.	same
Pike	Aniak		same
Pike	Aniak	Less populations.	less
Pike	Aniak	No change in population.	same
Pike	Aniak	Seems they are the same, if not more.	No change.
Pike	Aniak	Don't know.	less
Pike	Aniak	No change.	same
Pike	Aniak	Smaller in size.	same
Pike	Aniak	Population low in numbers.	same
Pike	Aniak	Decline in population.	same

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Pike	Aniak	Don't know.	same
Pike	Aniak	Says he only helps with salmon.	
Pike	Aniak	Decrease in population.	less
Pike	Aniak	same	same
Pike	Aniak	It seems like there are more pike than there were a couple of years ago.	
Pike	Aniak	Don't know.	same
Pike	Aniak	No change.	same
Pike	Aniak	Same, less in lakes.	more
Pike	Aniak	No changes.	same
Pike	Aniak		same
Pike	Aniak	Smaller fish sizes.	less
Pike	Aniak	Same in population, smaller in size.	less
Pike	Aniak	Don't really fish enough to answer that.	
Pike	Aniak	No change.	Haven't affected use.
Pike	Aniak	Don't know.	
Pike	Aniak	No change.	less
Pike	Aniak	Seems like more people are getting more from the lakes. Aniak River pike are smaller.	Used to jar for pickled fish 25 years ago. Don't use now.
Pike	Aniak	Don't know.	same
Pike	Aniak	No change in population, size little smaller.	
Pike	Aniak	No change.	No change.
Pike	Aniak	Smaller in size.	same
Pike	Aniak		same
Pike	Aniak		same
Pike	Aniak	My son fishes off the bank.	
Pike	Aniak	No change.	
		24=Kuskokwim River drainage upstream of Holitna River.	
Pike	Aniak	Decrease, smaller in size.	same
Pike	Aniak	decrease	same
Pike	Aniak		same
Pike	Aniak	Hasn't noticed any difference.	All fishing is catch and release.
Pike	Aniak	Don't know.	
Pike	Aniak	Increase in population, bigger in size.	same
Pike	Aniak	same	same

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Pike	Aniak	Don't know	less
Pike	Aniak	Increase in population.	same
Pike	Aniak	No change.	
Pike	Aniak		same
Pike	Aniak	The fish size seems smaller.	
Pike	Chuathbaluk	No change in population.	
Pike	Chuathbaluk	No change in population.	same
		One mile below Holokuk River.	
Pike	Chuathbaluk	No change in population.	same
Pike	Chuathbaluk	No change in population.	same
Pike	Chuathbaluk	No changes in population.	same
Pike	Chuathbaluk	No change in population.	same
Pike	Chuathbaluk		same
Pike	Chuathbaluk	No change in population.	same
		1/2 mile above Kolmakof River.	
Pike	Chuathbaluk		same
Sheefish	Aniak	No change in population.	
Sheefish	Aniak	Don't really know.	
Sheefish	Aniak	Good shape.	same
Sheefish	Aniak	No change in population, smaller in size.	
Sheefish	Aniak	No change, same in population.	same
Sheefish	Aniak	Smaller in size.	same
Sheefish	Aniak	Don't know.	less
Sheefish	Aniak	Hasn't noticed any changes.	
Sheefish	Aniak	No change in population.	
Sheefish	Aniak	Sheefish population is declining.	No change.
Sheefish	Aniak	No changes in population.	
Sheefish	Aniak	Lots of fish in spring. Increase in population.	Less use over years.
Sheefish	Aniak	Less in population.	same
Sheefish	Aniak		same
Sheefish	Aniak	No changes in population.	
Sheefish	Aniak	There is a smaller number of fish, due to over fishing.	No change.
Sheefish	Aniak	Not as big as they used to be. Smaller in size.	Uses less of it.
Sheefish	Aniak	Don't know population.	same

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Sheefish	Aniak	No change in population.	same
Sheefish	Aniak	Less in population.	same
Sheefish	Aniak	Seem to be more. Larger and a lot.	
Sheefish	Aniak	No changes in population.	
Sheefish	Aniak	No changes in population.	less
Sheefish	Aniak	No changes in population.	
Sheefish	Aniak	Smaller in size.	same
Sheefish	Aniak	No changes in population.	less
Sheefish	Aniak	Same in population.	same
Sheefish	Aniak	No changes in population.	
		Location - Tatlawiksuk	
Sheefish	Aniak	No changes in population	No changes.
Sheefish	Aniak	Less every year.	
Sheefish	Aniak		same
Sheefish	Aniak	Same - no change in population.	same
Sheefish	Aniak	No change in population.	same
Sheefish	Aniak	Seemed the same. No change.	Yes, more dependent on it.
Sheefish	Aniak	No change.	same
Sheefish	Aniak	No changes.	no
Sheefish	Aniak	same	same
Sheefish	Aniak	Decline in population.	same
Sheefish	Aniak	Brother gave him fish, maybe six.	
Sheefish	Aniak	same	No change.
Sheefish	Aniak	It seems like fewer people are catching the bigger ones nowadays.	No change.
Sheefish	Aniak	No change.	same
Sheefish	Aniak	No change, same.	same
Sheefish	Aniak	No change.	same
Sheefish	Aniak	No change.	
Sheefish	Aniak	Seems like they are okay.	
Sheefish	Aniak	Fish are smaller.	
Sheefish	Aniak	Haven't noticed any changes.	No changes.
Sheefish	Aniak	It's been poor, hard to get.	No change.
Sheefish	Aniak	No change.	same
Sheefish	Aniak	No change.	

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Sheefish	Aniak	Don't know.	same
Sheefish	Aniak	No change.	same
Sheefish	Aniak	No change.	No changed
Sheefish	Aniak	No change.	same
Sheefish	Aniak	No change.	same
Sheefish	Aniak	Don't know.	same
Sheefish	Aniak	Don't fish enough to notice changes.	
Sheefish	Aniak	No change.	same
Sheefish	Aniak		same
Sheefish	Aniak	No change.	same
Sheefish	Aniak	No changes.	same
Sheefish	Chuathbaluk	No change in populations.	same
Sheefish	Chuathbaluk	Decrease in population.	same
Sheefish	Chuathbaluk	No change in population.	same
		One mile below Holokuk River.	
Sheefish	Chuathbaluk		same
Sheefish	Chuathbaluk	No change in population.	same
Sheefish	Chuathbaluk	No change in population.	same
Sheefish	Chuathbaluk	No change in population.	same
Sheefish	Chuathbaluk		same
Sheefish	Chuathbaluk	No change in population.	same
Sheefish	Chuathbaluk	More than last two years.	less
Sheefish	Chuathbaluk	Decrease in population.	same
Sheefish	Chuathbaluk		same
Sheefish	Chuathbaluk	No change in population.	same
		Share with families.	
Sheefish	Chuathbaluk	Decrease in population.	same
Sheefish	Chuathbaluk		same
Sheefish	Chuathbaluk	Don't know about population.	same
Sucker	Aniak	No use for suckers.	
Sucker	Aniak	Too many nowadays.	
Sucker	Aniak	Too many.	
Sucker	Aniak	No changes.	
Sucker	Aniak	No changes.	

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Sucker	Aniak	Yes, there are a lot more.	
Sucker	Aniak	No changes, lots in population.	
Sucker	Aniak	Lots of fish in population.	
Sucker	Aniak	Lots in population.	
Sucker	Aniak		We don't use suckers.
Sucker	Aniak	Lots, too many.	
Sucker	Aniak	Growing populations.	Never did.
Sucker	Aniak	Suckers are a major annoyance.	
Sucker	Aniak		same
Rainbow Trout	Aniak	There are not as many as five years ago.	
Rainbow Trout	Aniak	Real healthy fish.	same
Rainbow Trout	Aniak	From a lot to just a few in the last 20 years. Smaller sized fish. Over fished!	No change.
Rainbow Trout	Aniak	Have not noticed.	Does not eat rainbow trout.
Rainbow Trout	Aniak	No change in population.	same
Rainbow Trout	Aniak	Decrease in population.	
Rainbow Trout	Aniak	No change in population.	same
Rainbow Trout	Aniak	Decline in population, small in size. Each year less, less.	same
Rainbow Trout	Aniak		same
Rainbow Trout	Aniak	Small increase.	same
Rainbow Trout	Aniak	Over the years the population is holding, compared to other species.	
Rainbow Trout	Aniak	No change in population.	same
Rainbow Trout	Aniak	There are a lot less now, maybe because of over fishing. Decrease in population.	

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Rainbow Trout	Aniak	Not as bad as years before.	same
Rainbow Trout	Aniak	A lot more in population. Bigger fish are more aggressive, so you don't hook into smaller ones.	
Rainbow Trout	Aniak	Increase in populations.	Use less because of shortage.
Rainbow Trout	Aniak	Less in population.	less
Rainbow Trout	Aniak	No change in population.	same
Rainbow Trout	Aniak	Decline in population.	same
Rainbow Trout	Aniak	Tried fishing for them, but didn't get any.	
Rainbow Trout	Aniak	Getting smaller in population. Summer and winter they are harder to catch. The fish are a lot smaller.	Don't use as much because they are harder to catch.
Rainbow Trout	Aniak	Same as any other year. No change in population.	same
Rainbow Trout	Aniak		same
Rainbow Trout	Aniak	Only a small fraction in population to what it was in 1970s.	same
Rainbow Trout	Aniak	Hardly sees rainbow trout any more.	Uses less rainbow trout because there are not as many rainbows now and because of increased enforcement of fishing regulations.
Rainbow Trout	Aniak	Decrease in population.	same
Rainbow Trout	Aniak	Less in population.	same
Rainbow Trout	Aniak	No changes in population.	
Rainbow Trout	Aniak	No change / same in population.	No change.
Rainbow Trout	Aniak		same

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Rainbow Trout	Aniak	The population is depleted within the last five years.	No changes.
Rainbow Trout	Aniak	Less in populations.	Less - only once in a while.
Rainbow Trout	Aniak	A lot less fish than in years ago. Decrease in population.	No change.
Rainbow Trout	Aniak	No change, same in population.	Never tried or use.
Rainbow Trout	Aniak	Less fish.	No change.
Rainbow Trout	Aniak	There seems to be a smaller number of fish below Buckstock River; above, there are more.	
Rainbow Trout	Aniak	Haven't really noticed. Don't fish for them.	
		Location - Oskawalik	
Rainbow Trout	Aniak	No change in population.	same
Rainbow Trout	Aniak		same
Rainbow Trout	Aniak		same
Rainbow Trout	Aniak	Less populations.	same
Rainbow Trout	Aniak	No change in population.	less
Rainbow Trout	Aniak	A smaller number of fish on the Aniak River, less fish and fish are smaller. Used to be able right in front of town to catch, now harder to catch.	Don't use as much because they are harder to catch.
Rainbow Trout	Aniak	No change.	same
Rainbow Trout	Aniak	Decrease in population.	same
Rainbow Trout	Aniak	Decline in numbers.	Don't use it.
Rainbow Trout	Aniak	Seems like there are more.	

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Rainbow Trout	Aniak	Decline in population.	same
Rainbow Trout	Aniak	No change.	
Rainbow Trout	Aniak	Decrease in population.	Don't use.
Rainbow Trout	Aniak	Less rainbow populations.	less
Rainbow Trout	Aniak	The trout population seems smaller, and the fish we do catch are smaller.	Don't use as much, because there are less fish, harder to catch.
Rainbow Trout	Aniak	First season going fishing.	same
Rainbow Trout	Aniak	Some have gotten bigger, no change.	same
Rainbow Trout	Aniak	Less populations. Too many sport fishing.	No change.
Rainbow Trout	Aniak	No changes.	same
Rainbow Trout	Aniak	No change - further up Aniak River seems to be more in population.	same
Rainbow Trout	Aniak	The fish population is smaller, fish are smaller.	No change. Use them if caught.
Rainbow Trout	Aniak	Haven't noticed any changes.	No change.
Rainbow Trout	Aniak	Decline in population.	Don't eat, try not to eat because of decrease.
Rainbow Trout	Aniak	Decrease in population.	
Rainbow Trout	Aniak	No change.	less
Rainbow Trout	Aniak	Feels like the population is rising.	same
Rainbow Trout	Aniak	Increase in population above Doestock Creek.	
Rainbow Trout	Aniak	Slight decrease.	

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Rainbow Trout	Aniak	Increase in fish.	more
Rainbow Trout	Aniak	Decrease in population.	less
Rainbow Trout	Aniak	Don't know.	same
Rainbow Trout	Aniak	No change - increase slowly.	
Rainbow Trout	Aniak	Healthy, large, and lots of them.	Except for salmon, all fishing is catch and release.
Rainbow Trout	Aniak		same
Rainbow Trout	Aniak	Large in size, no small ones. Concerned about no small ones.	
Rainbow Trout	Aniak	Went fishing five times, but didn't get any. Noticed decline.	
Rainbow Trout	Aniak	A lot more.	
Rainbow Trout	Aniak	No change.	No change.
Rainbow Trout	Aniak	More in population.	more
Rainbow Trout	Aniak	No change.	same
Rainbow Trout	Aniak	Good in population, gotten smaller in size.	Use less.
Rainbow Trout	Chuathbaluk	Decrease in population	
Rainbow Trout	Chuathbaluk	Decrease in population.	same
Rainbow Trout	Chuathbaluk	Slight decline in population.	same
Rainbow Trout	Chuathbaluk	Decrease in population.	same
Rainbow Trout	Chuathbaluk	Decrease in population.	same

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Rainbow Trout	Chuathbaluk	Decrease in population.	
Rainbow Trout	Chuathbaluk	Don't know about population.	same
Whitefish	Aniak	No change in population.	
Whitefish	Aniak	Decrease in population.	Harder to catch, so use less.
Whitefish	Aniak	Fish were given to me in good shape.	same
Whitefish	Aniak	Harder to get some, not so many any more. Decrease in population.	
Whitefish	Aniak	Seems like they declined.	Use less now. This household uses less whitefish than before.
Whitefish	Aniak	Don't know populations.	
Whitefish	Aniak		same
Whitefish	Aniak	Same, no change in population.	same
Whitefish	Aniak	No change in population.	same
Whitefish	Aniak	Less than used to be and harder to catch.	less
Whitefish	Aniak	Don't know.	same
Whitefish	Aniak	Seems like fewer at fall time.	
Whitefish	Aniak	No changes in population.	same
Whitefish	Aniak	Haven't set a net in a few years because of low fish counts.	
Whitefish	Aniak	No change in population.	same
Whitefish	Aniak	Less, harder to catch. Decrease in population.	Less use because less population.
Whitefish	Aniak	Slow decrease in population. Smaller in size.	same
Whitefish	Aniak	No change in population.	same
Whitefish	Aniak	Don't know about population.	same
		Uses fish wheel.	
Whitefish	Aniak	Big fish / seem to be fewer.	
		Bigger in size - decrease in population.	
Whitefish	Aniak	The fish are smaller in size, skinny, less fat on the fish.	No change.
Whitefish	Aniak	They notice a decline. The fish size is small.	Family uses more of it.
Whitefish	Aniak	Same in population.	same
		Spearing.	
Whitefish	Aniak	The fish size is smaller and population is smaller.	Use less nowadays.

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Whitefish	Aniak	Don't know, just started fishing.	same
Whitefish	Aniak	Less in population.	same
Whitefish	Aniak	No changes in population.	
Whitefish	Aniak	Smaller fish, less populations.	more
Whitefish	Aniak		same
Whitefish	Aniak	They are not as big, and there are not as many as there used to be.	
Whitefish	Aniak	Smaller in size, less population.	same
Whitefish	Aniak	They are smaller and numbers are smaller.	Use more now because of family size. Not enough fish to meet our needs.
Whitefish	Aniak	Not as much from before, small sizes.	No changes.
Whitefish	Aniak	Less fish, smaller in size.	same
Whitefish	Aniak	Same in population.	
Whitefish	Aniak	Seemed to be smaller on Kuskokwim. Population seems to be better than last year.	No changes.
Whitefish	Aniak	Don't know.	same
Whitefish	Aniak	No change in population.	same
Whitefish	Aniak		same
Whitefish	Aniak	Fewer fish out there, smaller in size.	same
Whitefish	Aniak	No change in population.	same
Whitefish	Aniak	The size of the fish is smaller.	More dependent on whitefish now.
Whitefish	Aniak	Whitefish are much smaller.	
Whitefish	Aniak	Decline in population.	same
Whitefish	Aniak	No change.	same
Whitefish	Aniak	Small in size.	same
Whitefish	Aniak	No changes.	same
Whitefish	Aniak	Comment: Use for ice cream.	
Whitefish	Aniak	No change.	less
Whitefish	Aniak		Same when people give.
Whitefish	Aniak	Populations went down.	same
Whitefish	Aniak		same
Whitefish	Aniak	Fewer fish, good condition.	
Whitefish	Aniak	There are lots more, and they are bigger.	
Whitefish	Aniak	Decline in population, small in size.	same
Whitefish	Aniak	No change.	same
Whitefish	Aniak	Brother and other people gave maybe 25 fish, some pretty small.	

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Whitefish	Aniak	Decrease in population.	less
Whitefish	Aniak	Smaller, less populations compared to years before.	same
Whitefish	Aniak	The fish seem smaller than in years past.	No change really.
Whitefish	Aniak	No change.	same
Whitefish	Aniak	Smaller in size, more smaller ones.	less
Whitefish	Aniak	Smaller in size, decrease in population.	same
Whitefish	Aniak	No change, same.	same
Whitefish	Aniak	Less populations - small, no big ones.	Still the same.
Whitefish	Aniak	No change, don't know.	same
Whitefish	Aniak	Not as much, small in size.	less
Whitefish	Aniak	Size is the same.	same
Whitefish	Aniak	Smaller in size, less population.	same
Whitefish	Aniak	Fish are smaller.	
Whitefish	Aniak	Less fish.	same
Whitefish	Aniak	Not too many, lots of smaller ones.	Hasn't changed.
Whitefish	Aniak	Don't know.	
Whitefish	Aniak	No change.	less
Whitefish	Aniak	Depends on season, no change.	No change.
Whitefish	Aniak	No change.	same
Whitefish	Aniak		same
Whitefish	Aniak	Decrease, small size.	No change.
Whitefish	Aniak	First year, can't compare. Doesn't know.	same
Whitefish	Aniak	Fewer in population, smaller in size.	
Whitefish	Aniak		same
Whitefish	Aniak	No changes.	same
Whitefish	Aniak	Increase in population.	same
Whitefish	Aniak	Less in population, smaller in size.	same
Whitefish	Aniak	No change - decrease of big fish.	same
Whitefish	Aniak	Decrease in population.	same
Whitefish	Aniak	Don't know.	same
Whitefish	Aniak	No change.	
Whitefish	Aniak	No change.	same
Whitefish	Aniak	same	same
		500 whitefish were harvested by fish wheel.	
Whitefish	Aniak	Sores on the skin, mushy meat (some of the fish).	same

Resource	Community	Changes seen in the population	Changes in Harvest and Use
Whitefish	Aniak	Less in population, smaller in size.	same
Whitefish	Aniak	Less in population.	same
Whitefish	Aniak	Less, smaller in size.	same
Whitefish	Aniak	Don't know.	
Whitefish	Chuathbaluk	Don't know.	same
Whitefish	Chuathbaluk		same
Whitefish	Chuathbaluk	No change in population.	same
Whitefish	Chuathbaluk	No change in population.	same
		One mile below Holokuk River.	
Whitefish	Chuathbaluk	Decrease in population.	same
Whitefish	Chuathbaluk	Decrease in population.	
Whitefish	Chuathbaluk	Decrease in population, smaller in size.	same
Whitefish	Chuathbaluk	Decrease in population, smaller in size.	same
Whitefish	Chuathbaluk	No more, or hardly any, big whitefish.	same
Whitefish	Chuathbaluk	More, because last year was less in population.	less
Whitefish	Chuathbaluk	No change in population.	same
Whitefish	Chuathbaluk	Don't know.	same
Whitefish	Chuathbaluk		same
Whitefish	Chuathbaluk	Decrease in population, smaller in size.	same
Whitefish	Chuathbaluk	Decrease in population, smaller in size.	same
Whitefish	Chuathbaluk	No change in population.	same
Whitefish	Chuathbaluk	Decrease in population, smaller in size.	same
Whitefish	Chuathbaluk		same

Appendix C. Survey Instrument Training Manual

I. INTRODUCTION

A. PURPOSE OF THE HOUSEHOLD SURVEYS

The purpose of this training manual is to assist personnel with the Division of Subsistence of the Alaska Department of Fish and Game and cooperating organizations to conduct household interviews using the division's standard household survey instrument and any supplemental questions that have been developed for the particular project that is underway. The division has a very broad statutory mandate to collect information about "all aspects of the role of subsistence hunting and fishing in the lives of residents of Alaska." We are also responsible for making this information available to the public and to see that it is available for use in resource management and land use decisions.

Consequently, the division has an active social science research program which utilizes several kinds of data gathering methods. A primary method of collecting information is the systematic household survey, the goal of which is to collect quantifiable data on harvest levels, levels of participation in hunting and fishing, demographic data, and other economic data. The findings of this research are summarized in the division's Technical Paper Series and in the Community Profile Database.

B. RESEARCH ETHICS: CONFIDENTIALITY, ANONYMITY, AND INFORMED CONSENT

The Division of Subsistence ascribes to the "Ethical Principles for the Conduct of Research in the North," a copy *of* which is attached to this manual as Appendix A. Among other things, these principles state that:

1. The research must respect the privacy and dignity of the people involved in the research activities
2. No research should begin without the informed consent of those who are involved in the study
3. Research subjects, such as survey respondents, should remain anonymous unless they have agreed to be identified; if anonymity cannot be guaranteed (note that this is very unlikely), the respondent must be informed of this before becoming involved in the research.

Accordingly, we must make sure that before we begin an interview, we have done the following:

1. Obtained the respondents' informed consent to be interviewed. This means providing a brief overview of the purposes *of* the project, who you are and for whom you work, and the ways in which the information will be used. They must understand that their participation is voluntary and that they may ~ choose not to answer any particular question. Also, at any time, they may ask for clarification of the purposes of a question. Under no circumstances should a person be pressured into participating in the survey. They should understand that they will suffer no sanctions *if* they choose not to be interviewed.
2. Respondents must understand that their identities will remain anonymous. No names appear on the survey forms and the respondents' names do not become part *of* the computerized database. These surveys are not done for enforcement purposes and responses will not be tied to specific individuals. Data will be summarized at a community level.

   ⇨ You should also be aware that at times we write up "case studies" of particular households which appear in technical papers. In these instances, care is taken to disguise the identity of the household.

3. Responses must remain anonymous and generally confidential. You are expected to keep confidential the information given to you. Please DO NOT discuss individual responses with other households in the community. Nor should you discuss specific responses with ADF&G staff or the staff of cooperating organizations if they are not part of the study team. On the other

hand, if you have questions or difficulties with a particular respondent's answers (for example, if you feel he/she is not being truthful), you should discuss your concerns with the project leader as soon as possible.

4. Respondents should also be aware that the general study findings, summarized at the community level, will be available to the public in reports and data bases.

If we fail to abide by these principles, our entire program is placed in jeopardy, for we have violated the public trust. Make sure you understand these principles, follow them, and are able to explain them to others.

II. BACKGROUND TO CONDUCTING THE INTERVIEW

A. THE HOUSEHOLD SAMPLE

In small communities (usually 40-50 households or less), we generally try to interview representatives of every household. This is called a "census sample." In larger communities, we choose random samples.

You will be supplied with a set of "daily log sheets." You should record each contact with a household in the sample and each attempt to contact in the logs. You should try to contact the household three times, at different times of the day or weekend. If you have failed to make contact after the three tries, or establish that the household is out of town or the house is vacant, indicate that on the log and on the master list of households, and continue to the next household in the sequence.

B. THE INITIAL CONTACT: SETTING UP THE INTERVIEW, AND INTRODUCING YOURSELF AND THE PROJECT

1. Interviewer's Checklist:

   When you head for an interview, you will need to have the following with you:

   - Clipboard
   - Several pencils
   - Survey form
   - Letter describing the project: The project leader will provide you with a letter of introduction, which you should show to the respondent if asked.
   - Paper or notebook to write notes in, or to make notes of any follow-up questions the respondent may have.

2. At the Door [or on the phone]

   You have a choice to make the first contact in person, by knocking on the door, or over the phone. Contacting first by telephone has an advantage in that it saves time and helps you plan your day. The potential disadvantage is that it is probably easier for households to express disinterest or refuse to participate if the first contact is by phone - they can't see your supporting materials and might be less likely to ask questions which will lead to their participation. Therefore, if you decide to contact people first by phone, be attentive to an unusual number of refusals, especially if people ask few questions and just say "no." Anything over a 10 - 20 percent refusal rate is high. You'll need to adjust your method for making the first contact.

Screening Questions: Before you go into detail about the project and obtain informed consent, you need to establish if the household is eligible for inclusion in the study. There are two criteria:

1. Is this the permanent residence of the household? Household must be a permanent resident of the study community, that is, the household does not just occupy the dwelling seasonally as a

recreational cabin, for example. Evidence of permanent occupancy includes voting registration, place of work, address on hunting or fishing license, or place where children go to school. (You do not need to see this documentation, but if people aren't sure if they are permanent residents, you can ask about the location named on these items.) Individuals who work in shifts on the North Slope are still permanent residents of the Kenai Peninsula, for example.

2. Has the household lived in the study community for at least six months of the study year? The household must have been a permanent resident of the study community for at least six months of the study year, that is, since at least September 1, 2001.

If the answer to either question is "No" thank the person for their time and explain that we do not need to interview them. Households answering No to the first screening question should be recorded as "seasonal" on the tracking sheets and daily logs.

Introducing the project: If someone is interested, leave a copy of the letter with more information and names and phone numbers of project personnel and supervisors. A point to remember: give the respondent as much information as they want regarding the project. We don't have anything to hide, but don't bore them to death with details they don't care about.

Here are some suggestions for a brief introduction of the project:

a. You should not read your introduction.

b. Use your own words and speak directly with eye contact.

c. Make sure you've covered the points summarized here so you are sure you have obtained informed consent.

d. Present the project in a positive light. Be encouraging. There is no reason to raise suspicions that aren't there.

e. Be pleasant. Most of the interviews will be done in people's homes. Be a good guest. Do your part to make the interview enjoyable and informative.

"Hello, I'm [your name]. I'm working for the Kuskokwim Native Association. We are doing household interviews in [name of community] about people's uses and harvests of fish and game. The purpose of the project is to get an understanding of the role of wild resource uses in the lives of people of [community]. We have received funding for this project from the United States Fish and Wildlife Service. The Department of Fish and Game is also involved and is providing the oversight of the project. We are using research methods developed by the Division of Subsistence. We'd like to talk with every household in [community]. It's important to us that we talk with everyone in our sample, even if they use little or no fish and game. Participation in this survey is voluntary, and you don't have to answer any questions you don't want to. Most have to do with fishing and other uses of the Aniak River drainage. All of your responses are anonymous - we don't write your name on the interview form. The information will be summarized for the community and will appear in a report. The average interview takes about 15 or 20 minutes. We would like to talk with the person or persons in the household who know about the household's fishing activities. Are you this person? So, is this a good time to go through this? or When would be a convenient time to schedule the interview?"

Some common initial questions and answers (people might ask these even if you've gone over them in your introduction).

1. *Will answering these questions get* me *in trouble?*
   "No, absolutely not. Individual responses to harvest and use questions are confidential. Participants will remain anonymous."

2. *Will <u>not</u> answering these questions get* me *in trouble?*

"No - participation is completely voluntary. But we really hope you'll choose to participate, because it will help us get accurate and complete information."

3. *Why do KNA and Fish and Game need all this information anyway?*
   It is the responsibility of the Division of Subsistence to collect information about the role of subsistence resource uses in communities, families, and households. This information can be used to demonstrate the importance of these activities to Alaskans, and this, in turn helps us protect the resources and harvest opportunities. One of the best ways to gather this information is to talk directly with people about what they do. We've found that collecting systematic, detailed information through this kind of survey gives us very reliable information.- [You will have a one-page project overview to provide the household. Let them read it ahead of time if they want to, but it's better if you provide a short summary yourself. It shows that you know why you're doing the interview."

   If you work for a cooperating organization such a tribal council, you should be ready to explain why your organization is interested in this information and why it is participating in the project.

4. *Why is the Fish and Wildlife Service interested in this information?*
   Presently, the Federal Subsistence Board has responsibility for management of subsistence activities on federal lands. The US Fish and Wildlife Service is staff to the Federal Subsistence Board and wants the best information available to support its decisions. The Department of Fish and Game is acknowledged as having expertise in conducting this kind of research and can use the information as well. Therefore we support collaborative projects such as this one. [Again, refer to the one-page project overview.]

5. *If I tell you how much (or how little) we use, will* we *be limited to that in the future?*
   "No. Your responses will not be used to set individual quotas or bag limits for your household. Project
   results may be used to change hunting and fishing regulations, however.

6. *Our household doesn't hunt or fish and we don't use any fish or game. Do you still want to interview us?*
   "Yes. We want to get a good overall understanding of hunting and fishing activities in this community. This means we need to talk with all kinds of users, including people who seldom, if ever, use wild foods. - Yes, it is very important that we talk with you. In your case, the interview will probably not take very long."

   When you ask for an interview, someone might respond with comments like they "don't do much," or "it wouldn't be worth the time." Let them know that the survey is also about what they use, and sharing in the community. If they don't 'harvest much, it won't be a very long interview, but you would still very much like to talk with them. Every household in the community is important.

   => Note: A comment like this is very rare in a village, but is not uncommon in larger communities. It is very important that we interview households that initially say they use no fish or game in order to avoid biasing our sample. Please keep careful notes regarding such comments from households which decline to participate in the survey.

7. *How long will this take?*

"That depends on how much fishing your household does. If your family is moderately active, it will take about 15 to 30 minutes. The shortest survey is about 10-15 minutes for families that don't use much fish or don't use the Aniak River area."

8. *I'm sorry, but I'm really busy to do this right now.*
   "That's OK. May we schedule a convenient time for me to return to talk with you?"

C. INTERVIEWING ETIQUETE AND A FEW TIPS AND REMINDERS

- You are on duty when you are doing an interview. While it is entirely appropriate to spend time talking with people before and after the survey, please do not drink alcoholic beverages or use any other controlled substances while on duty. If someone offers you alcohol, please politely decline, saying you are on the job.

- Be courteous with the household you are interviewing. For example, if you are visiting a non-smoking household, please refrain from smoking while you are there.

- Interviewing hours: Generally, you will not want to go knocking on doors or calling on the phone before 9 am or after 9 p.m. If a respondent suggests an early morning appointment or one later in the evening, that is fine. Be considerate and aware of people's habits. Saturday night and Sunday morning may not be a good time to interview some households.

- Respondent fatigue: Sometimes, the respondent may get tired. If so, and you have more than a couple pages left, you may want to suggest that you return at another time. Taking short breaks is OK too.

- Interviewer saturation: Be aware of yourself. If you are in the middle of your fourth interview in one day, and you are having trouble remembering which question you just asked, it is time to take a break. Finish the interview, complete your thumbnail sketch and relax! It's important to recognize this point for two reasons:

  1) We value you as an interviewer, and we don't want you to bum out.

  2) We lose important information when we get overloaded. We don't listen as well, or take notes as carefully when fatigued.

- Sizing up the situation: You are not expected to go into a situation that you feel is threatening. Your personal safety is more important than getting an interview. If you are advised that someone is unstable, if possible, verify with another source. Notify your project leader about all such encounters. The best solution might be to drop that household from the target sample.

- There may be times when you are invited in to conduct the interview, but the situation is not good. Some examples of times when the situation may not be right to conduct the interview include when there is or has been some drinking going on, or when there are other people visiting. The respondent may answer questions differently knowing that a neighbor is listening. Avoid this bias by asking for a good time to stop by later or the next day.

- Changing the situation: There may be a distraction that you can politely eliminate. For example, the television set is on. You might ask if the respondent is watching the show, would they like you to return later; if not, would they mind turning the TV off during the interview?

- Helping a respondent come up with an answer: When a respondent has trouble estimating how much of something was harvested, you may prompt them. When you prompt them, always give them more than one possible answer. “Did you harvest more than 50 or 75 northern pike?” “Did you harvest them in the winter or summer?” For your information, when a respondent gives you a range (10 to 20 fish), it will become 15 fish when coded. You might tell the respondent "The computer only takes one number. Does 15 sound about right?”

- Local interviewer bias: If you live in the community you are doing surveys in, it is possible that there are some households there that you may not be comfortable interviewing, or who may not be comfortable talking to you. This is not uncommon. That is one reason we have more than one person doing surveys. Talk over this concern with the project leader, and they will assign another person to talk with those households.

Summary: Some “Do's” and "Don'ts”:

- Don’t write anyone's name on the survey form except your own. Keep track of names in a separate notebook if necessary.
- Don’t continue the interview if the respondent is hostile or uncooperative
- Don’t discuss the specific responses of any household with other respondents, or with anyone else except members of the study team. General comments and observations about what you are noticing are OK.
- Don’t force a person to answer questions that they feel uncomfortable answering.
- Don’t leave the form with the respondent to fill out themselves. This almost always results in confusing and unusable data.
- Don’t try to do the interview over the phone. If the person does not want to be interviewed in their houses, arrange another location. It is best that this is a private, quiet location, such as an office or unused conference room, rather than, for example, a restaurant.
- Do take the time to answer people's questions about the purposes of the research or any particular question.
- Do take supplemental notes, either on the form itself or in a separate notebook. These should be edited and typed at your earliest opportunity.
- Do write down qualifying statements and responses which you have questions about.
- Do remember that the data are for all household members, not just the respondent.
- Do make sure you speak with knowledgeable household members

III. CONDUCTING THE INTERVIEW

A. PRELIMINARY: BEFORE YOU START THE SURVEY

1. Explain the purposes of the survey, establish eligibility, and obtain informed consent [see above]
2. Complete the bottom of page 1. This includes:
    - Household ID number: from sample list.
    - Date of Interview
    - Community name
    - Your name or initials

B. SOME OTHER BASICS

This survey instrument is divided into two major parts (sets of topics and questions). These are: Harvest and use information for each fish species and information about other uses of the Aniak River drainage. It is a good idea to begin the transition to each section with a short introduction and explanation.

It is often helpful to let the respondent follow along as you work through the survey form, either watching as you fill out the form or with a second, blank copy. This helps them understand the structure of the questions and often saves time. Do not, however, have the respondent fill out the form themselves - the form has not been designed for anyone except you, the survey technician, to fill out.

Almost without exception the data are collected for a 12-month study year. For this survey, the study year is from March 1, 2001, through February 28, 2002 (the calendar year). It is very important to develop the habit of consistently reminding the respondent to think about his/her household's activities for that particular year.

If the household has been a permanent resident of the study community for a portion of the study year (more than 6 months but less then 12), only record the activities that household members engaged in since the household moved to the study community. Do record activities that take place from seasonal residences, camps, or boats.

Make sure you establish that you are talking with a person in the household that is knowledgeable about the family's hunting and fishing activities and harvest levels. A "household head" (husband or wife), or both, is almost always the best, rather than, for example, a teenaged child. Sometimes, it is necessary to talk to both heads, if, for example the wife isn't sure of all her husband's hunting activities, or the husband isn't sure of how many fish his wife put up from the household's harvest. If the knowledgeable person isn't home, make an appointment to return. Another option is to obtain as much information from one respondent, and then contact another for the missing information. Sometimes, the missing or uncertain information is fairly minor and can be obtained with a follow-up phone call, but it might require a second visit. For example:

Q: (To wife, husband absent) *How many Dolly Varden did this household harvest in (study year)?*

A: Well, my husband went fishing and brought eight home, but he might have caught more and gave them to his mother. You'll have to ask him about that.

Solution: record that the household used Dolly Varden, tried to harvest and harvested at least eight. Make a note to call the husband to find out about if any other Dolly Varden were caught. If he caught more Dolly Varden, add them it to the harvest total and mark "yes" for "give away" as well. If you never are able to contact the husband, the harvest will stay as eight.

When in doubt about a response, write down as much detail as you can, and contact the project leader afterwards.

=> The rule is: When in doubt, write it down, with a note to clarify the response later.

Refusal to answer a question: write in REF or REFUSED. Do not leave the space blank.

Unknown: if a respondent simply does not know the answer (example: how many whitefish the oldest son caught and gave away), suggest the respondent make the best possible estimate. If they cannot, write in UNKNOWN (or UNK). Do not leave the space blank. You can make a note to yourself to try to talk to that person later. If coded “some amount, amount unknown” the amount will become “one” of whatever unit is commonly used to record that species (e.g. one lake trout, one northern pike, one gallon bucket of blackfish, etc.).

C. SUBSISTENCE HARVEST AND USES SECTION

1. General Structure

This section is organized by eight resource categories: salmon, other finfish, marine invertebrates, large land mammals, furbearers/small land mammals, marine mammals, birds and eggs, and wild plants. Lists of species under each category are specific to the community or area of the survey. In this section, we obtain the following information for the specific study year:

- Estimates of levels of participation in the use, attempt to harvest, and sharing of wild resources
- Estimates of harvest quantities
- Location of activities in the study year

The section for each category is organized in a matrix. For each resource, the following is asked:

1. Did the household use the resource during the study year?
2. Did the household try to harvest the resource during the study year?
3. How much of each resource did the household harvest?
4. Did the household receive the resource from people living in other households or other communities?
5. Did the household give away this resource to people living in other households or communities?

2. Definitions

USE: "Use" consists of resources harvested, received, or utilized in the respondents' homes. It does not include eating something at someone else's home or in a community meal or what was purchased. It ~ include harvesting something and giving all of it away. In other words, a person used a resource if he harvested it, and gave all of it away. We do not collect amount used, only whether or not a use occurred.

TRIED TO HARVEST. Any hunting, fishing, or gathering activity the purpose of which was to harvest for home use or non-commercial sharing. Catch-and-release fishing does not Constitute attempt to ! harvest. If a household harvested a resource, attempt to harvest is always recorded as "yes." In other words, if a household set a net primarily for sockeyes, but caught some chums or a Dolly Varden, attempt to harvest for these latter two species is recorded as "yes." This does

include hunting, fishing, or gathering which occurred anywhere in the state. It does not include activities that took place outside the state.

HARVESTED: Any resource harvested for one's home use or given away. Catch-and-release is NOT counted. Harvests should only be included for permanent household members, not visitors. Make sure the respondent is including resources which household members harvested and gave away in their harvest estimates. This should include resources that the household harvested "for" another household. For example, if a subsistence fisherman harvested 100 king salmon, kept 50 and gave 50 to his elderly mother, this household's harvest is 100, NOT 50. If a hunter shot 4 caribou, 2 of which he shot "for" his grandfather and gave to him, this household's harvest of caribou is 4, NOT 2. It is important that a household reports harvests which they entirely gave away. For example, sometimes a person will harvest a brown bear even though they are not fond of the meat - they are harvesting it "for" elders and give all of it away. This household should be credited with a harvest of the bear they killed, even if they eat none of the meat.

=> Use of certain verbs in asking for harvest quantities can lead to confusion and incorrect information. For example, if you ask the respondent "How many salmon did you get?" they might respond with the number of fish they received. Also, if you ask "How many salmon did you catch?" they might include caught and released fish. The best way to ask this question is "How many fish did you harvest?"

=> Another easy mistake to make is to ask only for the harvests of the person or persons you are interviewing, forgetting to ask about other household members. Remember to periodically remind the interviewee to report the household's harvest, not just his/her own.

=> Most harvest quantities should be reported in numbers of fish, or in gallons of blackfish. In some cases, respondents will report harvest quantities in pounds. In such cases, you must determine if this is "whole (round) weight" or "usable (dressed) weight." When the data are coded for computer entry, all harvest estimates recorded in pounds will be entered in usable weight. If you recorded the harvest in whole or round weight, we will convert it using standard factors. If you do not specify whole or usable weight, we will assume it is usable weight. This makes a big difference. For example, 100 pounds of round weight halibut becomes 72 pounds of usable weight halibut (dressed, head off).

RECEIVE: Includes any resource which was received through non-commercial means, including sharing, "swapping," trading, or bartering, from people living in other households or communities. It does not include resources that were eaten in another person's home, but would include raw resources which a person brought home after sharing a meal at someone else's house. It does not include purchases. It does include resources which are received and then given away. We do not ask' - people to report how much of a resource they received. If they do report a number, you can make a note of it in the margins or in your notebook. Under no circumstances should you put number of fish or game received in the columns for number harvested. If this is done, it leads to confusion and errors.

GAVE. Includes any resource which the household "gave" to someone living in another household or community, including sharing, trading, or bartering. It also includes resources that the household either caught itself or received, and shared. It does not include resources that are sold or that were purchased and given away.

=> It is a good idea to read through the species list or a portion of it even if the household initially says they didn't use or harvest anything from that category. For example:

Q: *Did your household do any fishing in the (study year), or use any fish?*

A: No, we don't fish.

Q: *OK,* so, *did anyone give you any fish?*
A: Oh, yes - we received some grayling from our neighbor.
Follow-up: OK, well then let's check a few others. (continue with a few more examples)

=> Sometimes, especially in larger communities, a household will report using a resource but not harvesting it or receiving it during the study year. Do not record the previous year's harvest quantity on the survey form.

HARVEST LOCATIONS: For each of the fish species harvested, place the harvest number in the appropriate location and under the appropriate gear type.

If the household harvested fish in any other locations not listed, write the location on the form, if needed.

3. Fish Harvest Numbers

Harvest quantities should be recorded in numbers of fish harvested by gear type. Approximations and ranges are OK. If the respondent says "About 50," write down 50. If the respondent says, "40 or 50" write ; down 45. Make sure you and the respondent are using the same units. If the respondent simply can't say '" 0;1: how many fish they harvested, record their answer in another unit, such as pounds (specify usable [that is, dressed] or round [that is, whole] weight), racks, buckets, tubs, etc. Try, then, to get and estimate of the size of the bucket (5 gallons?) or length of the rack. Remember that -some amount, amount unknown- will be analyzed as -one- of the resource in the most common unit.

Take care to avoid -double counting. Sometimes, two or more households may fish together for whitefish or burbot. In such cases, each household should be credited with the amount of the joint catch that they took home or that they gave away.

Again, for most species, the number of fish is the preferred unit. Some fish such as blackfish or perhaps eels may be reported in -buckets-, -gallons8 or -sacks.8 We will use gallons as the standard reporting unity for blackfish and will use for eels.

Sometimes, people will harvest blackfish to use for ice fishing for lush (burbot) or pike. If it was for bait for a subsistence activity, please record it and make a note on the side that the harvest was for "subsistence bait for ice fishing," for example, the household harvests a gallon of blackfish for use when ice fishing for lush.

There are several species of whitefish. Except for cisco, all whitefish should be reported as one species “whitefish” on the 3rd page.

If some species of fish is harvested that is not on the survey form, there is a place on 4th page to write in one additional species of fish.

After questions for each fish species, there are two questions that are designed to learn what the household has observed or thinks about the fish population and also about how the household's harvest or use of the fish has changed over time. Write legibly and as much as possible, write the words that the respondent says. We want to get the full meaning of their response. You can use the backside of the last page of the survey form to write more if you need to.

D. ANIAK RIVER QUESTIONS

The purpose of this section is to learn more specifically about the Household's use of the Aniak River drainage.

The first few questions are about -fish, the following few questions are about “salmon.” We have already asked subsistence fishing households how many salmon they harvested (we did that in October" so WE I ARE NOT GOING TO ASK HOUSEHOLDS TO TELL US HOW MANY SALMON THEY HARVESTED LAST SUMMER.

However, we are going to ask households where in the Aniak River drainage they tried to harvest salmon. In this section we do not need numbers of fish, just place a checkmark in the location where they fished for salmon, under the appropriate gear type (Net or Hook and Line), for each species of salmon.

Much of the remainder of the survey is self explanatory and very straightforward. In this section you simply need to fill in the blank, place a checkmark in the appropriate line, and circle the appropriate month.

We also want to know if households try to harvest from anywhere in the Aniak River drainage. In this part of the survey, circle each resource or category that the household USUALLY tries to harvest in the Aniak River drainage and the month(s) that the activity usually occurs. Circle as many months as appropriate, but be careful to circle only the months that represent each activity.

Percentage of meat, fish and poultry from wild foods: Mark the category that the respondent's answer fits in. If they say, "about half", mark "26 - 50%". "Almost all" would be 76-99 percent. "Just a little" would be 1 to 25 percent. You can also suggest the categories.

E. OTHER QUESTIONS, COMMENTS AND CONCERNS.

Ask this question directly when you are done. If you don't have the answers, write the question down and, separately, get a name, address, or phone number so we can respond later. IT IS VERY IMPORTANT THAT RESPONDENTS HAVE THIS OPPORTUNITY TO ASK QUESTIONS OF US. WE NEED TO DO OUR BEST TO BE RESPONSIVE.

There is quite a lot of room on the backside of Page 5 for writing notes, comments etc. PLEASE WRITE OR PRINT LEGIBILY.

IV. AFTER THE INTERVIEW

A. Before you leave the household, do the following:

1. Record the time you finish, on Page 5.

2. Flip through the survey form to make sure you didn't miss any pages.

3. Ask the respondent, one last time, if they have any questions. If you can't answer the question, make a note of it, get the answer later, and provide the respondent with the information.

4. Leave your name and phone number with the respondent so they can contact you if they have additional information or questions.

B. After you leave the respondent's home, do the following as soon as possible (preferably the same day or the ~ next morning): ~

1. Carefully review the responses. Make sure everything is legible. If you discover that something is missing inadvertently, or if you don't understand a response, contact the respondent to clarify the answer.

2. Note on the master sample list that this household has been interviewed. We don't want someone else going back and doing the interview all over again!

3. File the completed form in a secure location. We will need them next when data coding begins. The original forms will eventually be stored in Anchorage.

The project leader (Subsistence Resource Specialist) working on the project with you will be reviewing the surveys you have completed. Sometimes, they will have questions about the survey. The sooner you turn in surveys, so they can review them, the better chance there is that you will remember the interview, and can help clarify the information.

Appendix D. Conversion Factors

The following is a list of the conversion factors used in the 2001-2003 Aniak and Chuathbaluk non-salmon harvest surveys to convert numbers of harvested fish into useable pounds. The most recent or most often used conversion factors identified in the ADF&G Community Profile Database (CPDB) for resources in the Y-K Region were used, except for whitefish. The conversion factor for whitefish was developed in consultation with USFWS staff and Aniak subsistence users.

Fish Species	Measurement in Pounds
Blackfish	lbs*
Burbot	4.5
Dolly Varden	1.5
Grayling	1.5
Lake Trout	1.0
Lamprey (Eel)	lbs*
Pike	4.5
Rainbow Trout	2.0
Inconnu (sheefish)	6.5
Smelt	lbs*
Sucker	1.0
Whitefish	3.0

* Where “lbs” is listed for measurement, local residents reported their harvest in pounds only, rather than in individual fish numbers, generally because of the small size of these species.

Appendix E. Key Respondent Interview Guide

Ecological and Environmental Knowledge
Fishing Patterns of the community

Brief Biography of the individual
- Date started living in Aniak
- Date started using Aniak River

Allow fishers to develop their own facts, concepts and interpretations

Seasonal movements of Fish
- Influences
- Direction: upstream, downstream, Certain tributaries
- Time of year
- Duration (days/weeks)

Local Movements
- Location
- Time of year
- Influences of
  - weather
  - ice
  - food
  - boat traffic
  - fishing activities

Feeding
- location
- Prey (what are they feeding on)
- Time of year
- Movement
- Duration
- Age/sex mix

Seasonal condition of fish
- Spring
- Summer
- Fall
- Winter

Over-wintering areas
- Early winter
- Mid winter
- Late winter

- Spring

Environmental factors
- Wind
- Temperature
  - Air temperature
  - Water temperature
- Ice conditions
- Snow conditions
  - Snow depth
- Water conditions
  - High water
    - Spring floods
    - Fall high water
  - Low water
    - Summer
    - Winter
- Climate change

Interrelationship with other species
- Prey competition

Other Influences
- Boat traffic/noise
- Pollution
- Fishing and Subsistence

Changes in
- fish populations over time
- Quality and condition of fish over time
- Number of large adult fish
- Number of smaller fish
- Sex ratio males/females over time

Changes in subsistence use patterns over time
- Areas used for subsistence fishing
  - Areas where subsistence fishing is concentrated
- Camping sites or traditional use sites/ cabins
- Times of the year when subsistence fishing occurs (Spring, Summer, Fall camp)
- Number of families participating in subsistence fishing activities
- Methods used for harvesting fish
  - Some methods used but discontinued
    - Bait or lures once used
    - Bait or lures now used
    - New methods used that were once never used
- Transportation/access to subsistence fishing areas

- Number of subsistence boats using the river
- Changes in subsistence hunting patterns on the river/lake
- Other factors that have affected when, where, frequency and duration of subsistence fishing activities on Aniak River i.e. .,
  - bears, or other resources
  - land ownership,
  - changes in river channel,
  - changes in family structure
  - wage employment

Changes in Sport use of fish resources over time

- Areas used for sport fishing
- Number of sport fishers using the river
  - Number of “local” people involved in sport fishing
  - Number of “non-local” people involved in sportfishing activities on Aniak River
- Camping sites or lodges/cabins/tent sites
- Locations where sportfishers concentrate
- Float plane drop off or pickup sites
- Number of boats using the river
- Times of the year when commercial activities are present

Effects of commercial salmon fishing on fish

Appendix F. Location of Harvest and Estimated Pounds of Non-Salmon Fish by Season and Year for Aniak and Chuathbaluk, 2001 through 2003.

Location of Harvest and Estimated Pounds of Non-Salmon Fish Harvested in Spring by Aniak Residents, 2001-2002

Community:	**Aniak**
Total Number of Households:	169
Spring	

		Useable lbs Harvested by Location									
Location	**Total**	**Burbot**	**Dolly Varden**	**Grayling**	**Lake Trout**	**Lamprey**	**Pike**	**Rainbow Trout**	**Sheefish**	**Sucker**	**Whitefish**
Aniak Lake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak River: below Doestock Crk.	16.0	0.0	0.0	0.0	0.0	0.0	0.0	16.0	0.0	0.0	0.0
Aniak River: Buckstock to Salmon R.	6.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak River: Doestock to Buckstock	142.0	0.0	30.0	18.0	0.0	0.0	0.0	94.0	0.0	0.0	0.0
Aniak River: upstream of Salmon R.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak Slough	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buckstock River	14.0	0.0	0.0	0.0	0.0	0.0	0.0	14.0	0.0	0.0	0.0
Doestock Creek	777.5	0.0	90.0	10.5	0.0	0.0	549.0	128.0	0.0	0.0	0.0
George River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Holitna River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Holokuk River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kolmakof River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: Aniak to Chuathbaluk	1,082.5	108.0	0.0	0.0	0.0	0.0	0.0	0.0	812.5	0.0	162.0
Kusko River: downstream of Lower Kalskag	40.5	40.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: Kalskag to Aniak	1,227.5	72.0	0.0	0.0	0.0	0.0	153.0	0.0	942.5	0.0	60.0
Kusko River: upstream of Chuathbaluk	1.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mission Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mouth of Aniak River	754.5	0.0	0.0	0.0	0.0	0.0	31.5	8.0	715.0	0.0	0.0
Napaimiut	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oskawalik River	151.0	0.0	0.0	0.0	0.0	0.0	18.0	0.0	52.0	0.0	81.0
Owhat River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pike Lake	94.5	0.0	0.0	0.0	0.0	0.0	94.5	0.0	0.0	0.0	0.0
Salmon River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whitefish Lake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	4,307.5	220.5	126.0	30.0	0.0	0.0	846.0	260.0	2,522.0	0.0	303.0

Location of Harvest and Estimated Pounds of Non-Salmon Fish Harvested in Summer by Aniak Residents, 2001-2002

Community: **Aniak**

Total Number of Households: 169

Summer

Location	Total	Useable lbs Harvested by Location									
		Burbot	Dolly Varden	Grayling	Lake Trout	Lamprey	Pike	Rainbow Trout	Sheefish	Sucker	Whitefish
Aniak Lake	64.0	0.0	0.0	0.0	54.0	0.0	0.0	10.0	0.0	0.0	0.0
Aniak River: below Doestock Crk.	350.5	0.0	18.0	10.5	0.0	0.0	279.0	16.0	0.0	0.0	27.0
Aniak River: Buckstock to Salmon R.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak River: Doestock to Buckstock	41.0	0.0	4.5	10.5	0.0	0.0	0.0	26.0	0.0	0.0	0.0
Aniak River: upstream of Salmon R.	132.0	0.0	60.0	72.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak Slough	58.5	0.0	0.0	0.0	0.0	0.0	58.5	0.0	0.0	0.0	0.0
Buckstock River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Doestock Creek	119.0	0.0	22.5	10.5	0.0	0.0	40.5	18.0	6.5	0.0	21.0
George River	37.5	0.0	0.0	24.0	0.0	0.0	13.5	0.0	0.0	0.0	0.0
Holitna River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Holokuk River	12.5	0.0	0.0	4.5	0.0	0.0	0.0	8.0	0.0	0.0	0.0
Kolmakof River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: Aniak to Chuathbaluk	835.5	0.0	18.0	54.0	0.0	0.0	13.5	0.0	234.0	0.0	516.0
Kusko River: downstream of Lower Kalskag	459.5	0.0	0.0	0.0	0.0	0.0	58.5	0.0	221.0	0.0	180.0
Kusko River: Kalskag to Aniak	3,548.5	0.0	25.5	31.5	0.0	0.0	270.0	8.0	669.5	0.0	2,544.0
Kusko River: upstream of Chuathbaluk	24.0	0.0	0.0	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mission Creek	19.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.5	0.0	0.0
Mouth of Aniak River	7.5	0.0	1.5	0.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0
Napaimiut	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oskawalik River	13.5	0.0	0.0	0.0	0.0	0.0	13.5	0.0	0.0	0.0	0.0
Owhat River	11.0	0.0	0.0	0.0	0.0	0.0	4.5	0.0	6.5	0.0	0.0
Pike Lake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salmon River	12.0	0.0	0.0	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whitefish Lake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	5,746.0	0.0	150.0	253.5	54.0	0.0	751.5	92.0	1,157.0	0.0	3,288.0

Location of Harvest and Estimated Pounds of Non-Salmon Harvested in Fall by Aniak, 2001-2002

Community:	**Aniak**
Total Number of Households:	169
Fall	

		Useable lbs Harvested by Location									
Location	**Total**	**Burbot**	**Dolly Varden**	**Grayling**	**Lake Trout**	**Lamprey**	**Pike**	**Rainbow Trout**	**Sheefish**	**Sucker**	**Whitefish**
Aniak Lake	16.0	0.0	0.0	0.0	16.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak River: below Doestock Crk.	232.5	0.0	0.0	4.5	0.0	0.0	157.5	10.0	0.0	0.0	60.0
Aniak River: Buckstock to Salmon R.	50.5	0.0	40.5	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0
Aniak River: Doestock to Buckstock	45.5	0.0	19.5	0.0	0.0	0.0	0.0	26.0	0.0	0.0	0.0
Aniak River: upstream of Salmon R.	26.0	0.0	0.0	0.0	0.0	0.0	0.0	26.0	0.0	0.0	0.0
Aniak Slough	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.5	0.0	0.0
Buckstock River	66.0	0.0	7.5	28.5	0.0	0.0	0.0	30.0	0.0	0.0	0.0
Doestock Creek	508.0	0.0	36.0	7.5	0.0	0.0	243.0	34.0	97.5	0.0	90.0
George River	18.0	0.0	0.0	13.5	0.0	0.0	4.5	0.0	0.0	0.0	0.0
Holitna River	30.0	0.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Holokuk River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kolmakof River	120.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	120.0
Kusko River: Aniak to Chuathbaluk	1,566.5	567.0	0.0	0.0	0.0	17.0	0.0	2.0	71.5	0.0	909.0
Kusko River: downstream of Lower Kalskag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: Kalskag to Aniak	1,614.5	234.0	1.5	46.5	0.0	4.0	31.5	0.0	897.0	34.0	366.0
Kusko River: upstream of Chuathbaluk	7.5	0.0	0.0	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mission Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mouth of Aniak River	339.5	0.0	0.0	12.0	0.0	0.0	85.5	0.0	182.0	0.0	60.0
Napaimiut	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0
Oskawalik River	60.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.0
Owhat River	53.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	52.0	0.0	0.0
Pike Lake	39.0	0.0	0.0	7.5	0.0	0.0	31.5	0.0	0.0	0.0	0.0
Salmon River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whitefish Lake	1,653.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,653.0
Total	6,454.5	801.0	105.0	159.0	16.0	21.0	553.5	140.0	1,306.5	34.0	3,318.0

Location of Harvest and Estimated Pounds of Non-Salmon Harvested in Winter by Aniak, 2001-2002

Community: **Aniak**
Total Number of Households: 169
Winter

Location	Total	Useable lbs Harvested by Location									
		Burbot	Dolly Varden	Grayling	Lake Trout	Lamprey	Pike	Rainbow Trout	Sheefish	Sucker	Whitefish
Aniak Lake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak River: below Doestock Crk.	144.0	0.0	4.5	0.0	0.0	0.0	121.5	6.0	0.0	0.0	12.0
Aniak River: Buckstock to Salmon R.	52.5	0.0	10.5	0.0	0.0	0.0	0.0	42.0	0.0	0.0	0.0
Aniak River: Doestock to Buckstock	4.5	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	0.0	0.0
Aniak River: upstream of Salmon R.	16.0	0.0	0.0	0.0	0.0	0.0	0.0	16.0	0.0	0.0	0.0
Aniak Slough	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buckstock River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Doestock Creek	368.5	0.0	46.5	54.0	0.0	0.0	144.0	100.0	0.0	0.0	24.0
George River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Holitna River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Holokuk River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kolmakof River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: Aniak to Chuathbaluk	5,005.5	4,522.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	483.0
Kusko River: downstream of Lower Kalskag	49.5	49.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: Kalskag to Aniak	350.0	67.5	0.0	0.0	0.0	0.0	22.5	0.0	260.0	0.0	0.0
Kusko River: upstream of Chuathbaluk	1.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mission Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mouth of Aniak River	85.5	0.0	0.0	46.5	0.0	0.0	36.0	0.0	0.0	0.0	3.0
Napaimiut	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oskawalik River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Owhat River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pike Lake	40.5	0.0	0.0	0.0	0.0	0.0	40.5	0.0	0.0	0.0	0.0
Salmon River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whitefish Lake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	6,118.0	4,639.5	61.5	102.0	0.0	0.0	369.0	164.0	260.0	0.0	522.0

Location of Harvest and Estimated Pounds of Non-Salmon Harvested in Spring and Summer by Chuathbaluk, 2001-2002

Community: **Chuathbaluk**
Total Number of Households: 32

Spring

		Useable lbs Harvested by Location							
Location	**Total**	**Burbot**	**Dolly Varden**	**Grayling**	**Lamprey**	**Pike**	**Rainbow Trout**	**Sheefish**	**Whitefish**
Aniak River: below Doestock Crk.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Doestock Creek	62.0	0.0	0.0	0.0	0.0	54.0	8.0	0.0	0.0
George River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Holokuk River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: Aniak to Chuathbaluk	767.5	0.0	15.0	37.5	0.0	0.0	0.0	715.0	0.0
Kusko River: Kalskag to Aniak	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: upstream of Chuathbaluk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mouth of Aniak River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	830	0	15	38	0	54	8	715	0

Summer

		Useable lbs Harvested by Location							
Location	**Total**	**Burbot**	**Dolly Varden**	**Grayling**	**Lamprey**	**Pike**	**Rainbow Trout**	**Sheefish**	**Whitefish**
Aniak River: below Doestock Crk.	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0
Doestock Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
George River	9.0	0.0	0.0	0.0	0.0	9.0	0.0	0.0	0.0
Holokuk River	7.0	0.0	0.0	3.0	0.0	0.0	4.0	0.0	0.0
Kusko River: Aniak to Chuathbaluk	813.5	0.0	18.0	202.5	0.0	54.0	10.0	325.0	204.0
Kusko River: Kalskag to Aniak	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: upstream of Chuathbaluk	349.5	0.0	3.0	55.5	0.0	234.0	0.0	39.0	18.0
Mouth of Aniak River	13.0	0.0	0.0	0.0	0.0	0.0	0.0	13.0	0.0
Total	1,195.0	0.0	21.0	264.0	0.0	297.0	14.0	377.0	222.0

Location of Harvest and Estimated Pounds of Non-Salmon Harvested in Fall and Winter by Chuathbaluk, 2001-2002

Community: **Chuathbaluk**
Total Number of Households: 32

Fall

		Useable lbs Harvested by Location							
Location	**Total**	**Burbot**	**Dolly Varden**	**Grayling**	**Lamprey**	**Pike**	**Rainbow Trout**	**Sheefish**	**Whitefish**
Aniak River: below Doestock Crk.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Doestock Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
George River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Holokuk River	43.5	0.0	33.0	10.5	0.0	0.0	0.0	0.0	0.0
Kusko River: Aniak to Chuathbaluk	985.0	414.0	0.0	51.0	4.0	9.0	0.0	117.0	390.0
Kusko River: Kalskag to Aniak	16,614.0	16,614.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: upstream of Chuathbaluk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mouth of Aniak River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	17,642.5	17,028.0	33.0	61.5	4.0	9.0	0.0	117.0	390.0

Winter

		Useable lbs Harvested by Location							
Location	**Total**	**Burbot**	**Dolly Varden**	**Grayling**	**Lamprey**	**Pike**	**Rainbow Trout**	**Sheefish**	**Whitefish**
Aniak River: below Doestock Crk.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Doestock Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
George River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Holokuk River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: Aniak to Chuathbaluk	600.0	585.0	0.0	15.0	0.0	0.0	0.0	0.0	0.0
Kusko River: Kalskag to Aniak	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: upstream of Chuathbaluk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mouth of Aniak River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	600.0	585.0	0.0	15.0	0.0	0.0	0.0	0.0	0.0

Location of Harvest and Estimated Pounds of Non-Salmon Harvested in Spring by Aniak, 2002-2003

Community: **Aniak**

Total Number of Households: 165

Spring

Location	Total	Useable lbs Harvested by Location											
		Blackfish	Burbot	Dolly Varden	Grayling	Lake Trout	Lamprey	Pike	Rainbow Trout	Sheefish	Smelt	Sucker	Whitefish
Along the beach in front of Aniak	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak Lake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak River: below Doestock Crk.	131.0	0.0	0.0	4.5	0.0	0.0	0.0	81.0	0.0	45.5	0.0	0.0	0.0
Aniak River: Buckstock to Salmon R.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak River: Doestock to Buckstock	66.5	0.0	0.0	12.0	0.0	0.0	0.0	40.5	14.0	0.0	0.0	0.0	0.0
Aniak River: upstream of Salmon R.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak Slough	45.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.5	0.0	0.0	0.0
Bethel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buckstock River	13.5	0.0	0.0	0.0	0.0	0.0	0.0	13.5	0.0	0.0	0.0	0.0	0.0
Crooked Creek	13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.0	0.0	0.0	0.0
Discovery Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Doestock Creek	254.0	0.0	0.0	6.0	0.0	0.0	0.0	135.0	110.0	0.0	0.0	0.0	3.0
Holokuk River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: Aniak to Chuathbaluk	78.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	78.0	0.0	0.0	0.0
Kusko River: Kalskag to Aniak	1,090.0	0.0	4.5	0.0	0.0	0.0	0.0	36.0	2.0	981.5	0.0	0.0	66.0
Kusko River: upstream of Chuathbaluk	49.5	0.0	0.0	0.0	0.0	0.0	0.0	49.5	0.0	0.0	0.0	0.0	0.0
Mouth of Aniak River	49.5	0.0	0.0	49.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Napaimiut	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oskawalik River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Owhat River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pike Lake	76.5	0.0	0.0	0.0	0.0	0.0	0.0	76.5	0.0	0.0	0.0	0.0	0.0
Salmon River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sue Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whitefish Lake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yukon River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	1,867.0	0.0	4.5	72.0	0.0	0.0	0.0	432.0	126.0	1,163.5	0.0	0.0	69.0

Location of Harvest and Estimated Pounds of Non-Salmon Harvested in Summer by Aniak, 2002-2003

Community: **Aniak**

Total Number of Households: 165

Summer

Location	Total	Useable lbs Harvested by Location											
		Blackfish	Burbot	Dolly Varden	Grayling	Lake Trout	Lamprey	Pike	Rainbow Trout	Sheefish	Smelt	Sucker	Whitefish
Along the beach in front of Aniak	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak Lake	4.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak River: below Doestock Crk.	347.5	0.0	0.0	10.5	6.0	0.0	0.0	288.0	4.0	39.0	0.0	0.0	0.0
Aniak River: Buckstock to Salmon R.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak River: Doestock to Buckstock	267.5	0.0	0.0	79.5	61.5	0.0	0.0	85.5	38.0	0.0	0.0	0.0	3.0
Aniak River: upstream of Salmon R.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak Slough	23.0	0.0	0.0	16.5	0.0	0.0	0.0	0.0	0.0	6.5	0.0	0.0	0.0
Bethel	22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.0	0.0	0.0
Buckstock River	6.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Crooked Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Discovery Creek	72.0	0.0	0.0	0.0	3.0	0.0	0.0	36.0	0.0	0.0	0.0	0.0	33.0
Doestock Creek	19.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.5	0.0	0.0	0.0
Holokuk River	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0
Kusko River: Aniak to Chuathbaluk	988.0	0.0	27.0	0.0	10.5	0.0	0.0	9.0	0.0	383.5	0.0	3.0	558.0
Kusko River: Kalskag to Aniak	426.0	0.0	27.0	16.5	1.5	0.0	3.0	81.0	16.0	143.0	0.0	0.0	141.0
Kusko River: upstream of Chuathbaluk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mouth of Aniak River	209.0	0.0	0.0	0.0	25.5	0.0	0.0	18.0	0.0	162.5	0.0	0.0	3.0
Napaimiut	13.5	0.0	4.5	0.0	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oskawalik River	6.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Owhat River	108.5	0.0	0.0	0.0	4.5	0.0	0.0	0.0	0.0	104.0	0.0	0.0	0.0
Pike Lake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salmon River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sue Creek	10.5	0.0	0.0	0.0	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whitefish Lake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yukon River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	2,527.0	0.0	58.5	129.0	138.0	4.0	3.0	517.5	62.0	858.0	22.0	3.0	738.0

Location of Harvest and Estimated Pounds of Non-Salmon Harvested in Fall by Aniak, 2002-2003

Community: **Aniak**
Total Number of Households: 165

Fall

Location	Total	Useable lbs Harvested by Location											
		Blackfish	Burbot	Dolly Varden	Grayling	Lake Trout	Lamprey	Pike	Rainbow Trout	Sheefish	Smelt	Sucker	Whitefish
Along the beach in front of Aniak	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.5	0.0	0.0	0.0
Aniak Lake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak River: below Doestock Crk.	40.5	0.0	0.0	0.0	0.0	0.0	0.0	40.5	0.0	0.0	0.0	0.0	0.0
Aniak River: Buckstock to Salmon R.	19.5	0.0	0.0	13.5	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak River: Doestock to Buckstock	69.5	0.0	0.0	0.0	6.0	0.0	0.0	49.5	14.0	0.0	0.0	0.0	0.0
Aniak River: upstream of Salmon R.	6.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak Slough	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.5	0.0	0.0	0.0
Bethel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buckstock River	10.5	0.0	0.0	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Crooked Creek	49.5	0.0	0.0	0.0	49.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Discovery Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Doestock Creek	90.5	0.0	0.0	1.5	0.0	0.0	0.0	72.0	14.0	0.0	0.0	0.0	3.0
Holokuk River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: Aniak to Chuathbaluk	19.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.0
Kusko River: Kalskag to Aniak	3,771.0	0.0	13.5	0.0	0.0	0.0	22.0	49.5	0.0	156.0	0.0	0.0	3,552.0
Kusko River: upstream of Chuathbaluk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mouth of Aniak River	92.5	0.0	0.0	0.0	3.0	0.0	0.0	18.0	0.0	71.5	0.0	0.0	0.0
Napaimiut	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oskawalik River	39.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	39.0	0.0	0.0	0.0
Owhat River	58.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	58.5	0.0	0.0	0.0
Pike Lake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Salmon River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sue Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whitefish Lake	333.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	333.0
Yukon River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	4,612.5	0.0	13.5	33.0	64.5	0.0	22.0	229.5	28.0	338.0	0.0	0.0	3,906.0

Location of Harvest and Estimated Pounds of Non-Salmon Harvested in Winter by Aniak, 2002-2003

Community: **Aniak**
Total Number of Households: 165

Winter

		Useable lbs Harvested by Location											
Location	**Total**	**Blackfish**	**Burbot**	**Dolly Varden**	**Grayling**	**Lake Trout**	**Lamprey**	**Pike**	**Rainbow Trout**	**Sheefish**	**Smelt**	**Sucker**	**Whitefish**
Along the beach in front of Aniak	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak Lake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak River: below Doestock Crk.	35.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.0	0.0	0.0	0.0	21.0
Aniak River: Buckstock to Salmon R.	31.5	0.0	0.0	0.0	0.0	0.0	0.0	31.5	0.0	0.0	0.0	0.0	0.0
Aniak River: Doestock to Buckstock	167.5	0.0	0.0	21.0	16.5	0.0	0.0	90.0	40.0	0.0	0.0	0.0	0.0
Aniak River: upstream of Salmon R.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aniak Slough	16.5	0.0	0.0	0.0	16.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bethel	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buckstock River	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0	0.0	0.0	0.0	0.0
Crooked Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Discovery Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Doestock Creek	203.0	0.0	0.0	42.0	3.0	0.0	0.0	108.0	44.0	0.0	0.0	0.0	6.0
Holokuk River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: Aniak to Chuathbaluk	960.0	0.0	891.0	0.0	66.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Kusko River: Kalskag to Aniak	146.0	111.0	9.0	0.0	16.5	0.0	3.0	4.5	2.0	0.0	0.0	0.0	0.0
Kusko River: upstream of Chuathbaluk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mouth of Aniak River	126.0	0.0	0.0	9.0	6.0	0.0	0.0	76.5	6.0	19.5	0.0	0.0	9.0
Napaimiut	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oskawalik River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Owhat River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pike Lake	202.5	0.0	0.0	0.0	0.0	0.0	0.0	202.5	0.0	0.0	0.0	0.0	0.0
Salmon River	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sue Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whitefish Lake	198.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	198.0
Yukon River	126.0	0.0	0.0	0.0	0.0	0.0	0.0	126.0	0.0	0.0	0.0	0.0	0.0
Total	2,223.0	111.0	900.0	75.0	124.5	0.0	3.0	639.0	114.0	19.5	0.0	3.0	234.0

Location of Harvest and Estimated Pounds of Non-Salmon Harvested in Spring and Summer by Chuathbaluk, 2002-2003

Community: **Chuathbaluk**
Total Number of Households: 30

Spring

Location	Total	Useable lbs Harvested by Location								
		Burbot	Dolly Varden	Grayling	Pike	Rainbow Trout	Sheefish	Smelt	Sucker	Whitefish
Across CHU	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Holokuk River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: Aniak to Chuathbaluk	46.5	0.0	0.0	22.5	0.0	0.0	0.0	0.0	0.0	24.0
Kusko River: downstream of Lower Kalskag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: upstream of Chuathbaluk	1,385.0	0.0	0.0	0.0	0.0	0.0	689.0	0.0	0.0	696.0
Mission Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Napaimiut	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whitefish Lake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	1,431.5	0.0	0.0	22.5	0.0	0.0	689.0	0.0	0.0	720.0

Summer

Location	Total	Useable lbs Harvested by Location								
		Burbot	Dolly Varden	Grayling	Pike	Rainbow Trout	Sheefish	Smelt	Sucker	Whitefish
Across CHU	35.0	0.0	0.0	0.0	0.0	0.0	26.0	0.0	0.0	9.0
Holokuk River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: Aniak to Chuathbaluk	173.5	0.0	22.5	30.0	0.0	0.0	52.0	0.0	27.0	42.0
Kusko River: downstream of Lower Kalskag	41.0	0.0	0.0	0.0	0.0	0.0	0.0	41.0	0.0	0.0
Kusko River: upstream of Chuathbaluk	2,109.0	0.0	10.5	0.0	36.0	6.0	175.5	0.0	0.0	1,881.0
Mission Creek	1.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
Napaimiut	314.5	0.0	0.0	102.0	121.5	0.0	91.0	0.0	0.0	0.0
Whitefish Lake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	2,674.5	0.0	33.0	133.5	157.5	6.0	344.5	41.0	27.0	1,932.0

Location of Harvest and Estimated Pounds of Non-Salmon Harvested in Fall and Winter by Chuathbaluk, 2002-2003

Community: **Chuathbaluk**
Total Number of Households: 30

Fall

Location	Total	Useable lbs Harvested by Location								
		Burbot	Dolly Varden	Grayling	Pike	Rainbow Trout	Sheefish	Smelt	Sucker	Whitefish
Across CHU	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Holokuk River	50.0	0.0	0.0	0.0	49.5	0.0	0.0	0.0	0.0	0.0
Kusko River: Aniak to Chuathbaluk	415.0	135.0	0.0	142.5	22.5	0.0	91.0	0.0	0.0	24.0
Kusko River: downstream of Lower Kalskag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: upstream of Chuathbaluk	1,439.0	0.0	0.0	0.0	153.0	0.0	221.0	0.0	0.0	1,065.0
Mission Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Napaimiut	42.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	42.0
Whitefish Lake	102.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	102.0
Total	2,048.0	135.0	0.0	142.5	225.0	0.0	312.0	0.0	0.0	1,233.0

Winter

Location	Total	Useable lbs Harvested by Location								
		Burbot	Dolly Varden	Grayling	Pike	Rainbow Trout	Sheefish	Smelt	Sucker	Whitefish
Across CHU	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Holokuk River	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: Aniak to Chuathbaluk	345.0	306.0	10.5	28.5	0.0	0.0	0.0	0.0	14.0	0.0
Kusko River: downstream of Lower Kalskag	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Kusko River: upstream of Chuathbaluk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mission Creek	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Napaimiut	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Whitefish Lake	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	345.0	306.0	10.5	28.5	0.0	0.0	0.0	0.0	14.0	0.0