APPENDIX 5E – SUBSISTENCE ANALYSIS FOR THE ALASKA PIPELINE PROJECT

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ACRONYMS AND ABBREVIATIONS

§	Section
AAC	Alaska Administrative Code
ADCCED	Alaska Department of Commerce, Community, and Economic Development
ADFG	Alaska Department of Fish and Game
AFB	Air Force Base
ANILCA	Alaska National Interest Lands Conservation Act
APP	Alaska Pipeline Project
ASFDB	Alaska Subsistence Fisheries Database
ATV	All-Terrain Vehicle
BLM	U.S. Bureau of Land Management
BOEM	U.S. Bureau of Ocean Energy Management
CDP	Census-Designated Place
C.F.R.	Code of Federal Regulations
CSIS	Community Subsistence Information System
EIS	Environmental Impact Statement
FERC	Federal Energy Regulatory Commission
GPS	Global Positioning System
ISER	Institute of Social and Economic Research
MMS	U.S. Mineral Management Services
MP	milepost
NMFS	U.S. National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPS	U.S. National Park Service
NWR	National Wildlife Refuge
OSM	U.S. Fish and Wildlife Service, Office of Subsistence Management
SRB&A	Stephen R. Braund & Associates
TAPS	Trans-Alaska Pipeline System
TP	Technical Paper
DOI	U.S. Department of Interior
FWS	U.S. Fish and Wildlife Service
WAMCATS	Washington-Military Cable and Telegraph System

E1.0 INTRODUCTION

The purpose of this report is to characterize the subsistence practices of Alaska communities located along the Alaska Pipeline Project (APP) from the Alaska North Slope to the U.S.-Canada border based on existing subsistence data. Specifically, this draft report will describe the following:

- The baseline conditions for subsistence users along the APP pipeline corridors (Alaska Mainline and Point Thomson Gas Transmission Pipeline) by presenting and discussing community-level harvest data, seasonal round information (i.e., the monthly timing of subsistence activities), and subsistence use areas (Section 4.0).
- Spatial and temporal trends that compare harvest data and subsistence use areas over time, to the extent data are available (Section 5.0).
- The role of traditional knowledge in identifying subsistence use patterns and trends as well as its importance in guiding subsistence activities (Section 6.0).
- Potential impacts of APP by providing a general overview of the types of impacts that could result from construction and operation of a gas pipeline and its ancillary facilities (Section 7.0).
- Data gaps associated with 12 subsistence baseline indicators for each of the 45 study communities (Section 8.0).

This report, combined with the results of the Alaska Department of Fish and Game (ADFG) household subsistence harvest surveys being conducted separately for APP, provides baseline information to assist in the subsistence impact analysis and development of mitigation plans. This draft report will be used as part of APP's filing to the Federal Energy Regulatory Commission (FERC) and is intended to fulfill the subsistence analysis and specific data requirements and guidelines outlined below provided by the FERC to TransCanada Alaska Company on February 17, 2011 (FERC 2011).

Alaska Pipeline Project **Subsistence Analysis Filing Requirements Checklist**	
FERC General Requirements for the Subsistence Analsyis, February 17, 2011[a]	Where Found in Document
• Describe the affected environment (baseline conditions) for both subsistence resources and users.	Section E4.0
• Define baseline conditions using data that are no more than three years old or provide justification for why the use of certain older data is still valid and accurate. Data more than three years old often do not reflect current factors such as levels of participation, specific resources used and levels of use, current status of resources, exchange systems, and harvest patterns. (Only older data are currently available)	Section E3.0
• Identify the expected impacts on subsistence resources and users as a result of construction and operation of the project. (This will be included in the final report.)	Section E7.0
• Discuss measures the applicant proposes that will avoid or minimize adverse effects of the project on subsistence resources and users. (This will be included in the final report.)	Section E7.0
• Identify all of the affected communities that could experience project-related impacts, either direct or indirect, on their subsistence use activities, including incorporated places, census designated places, and non-subsistence areas.	Sections E3.0 and E4.0
• Identify subsistence use areas within 30 miles of the proposed Project Area[b] and any subsistence users who use subsistence resources within this study corridor, but are not associated with the affected communities identified.	Section E4.0
• Provide population data for animal resources in the subsistence use areas, e.g., numbers, locations, and migration patterns. Include those subsistence resources not managed by either the State of Alaska or the Federal Subsistence Board (migratory birds, marine mammals, etc.). Also, incorporate data on individual resources from large game counts, commercial fishing harvests, sport hunting and fishing, etc. (Wildlife and fisheries data are included in Resource Report 3; applicable and available harvest data are included in this report)	Section E5.0 and Resource Report 3
• Include a map of an appropriate scale to depict all of the communities whose subsistence activities could be affected by the project. The map should also show the proposed and alternative pipeline routes, compressor stations, work camps, borrow areas, pipe yards, access roads, and the subsistence use areas. The subsistence use areas (the areas used by each community to seek subsistence resources) should be portrayed as polygons.	Figures Attachment
• Provide citations for data sources used to prepare the analysis, including agency and community contacts. For communications with agencies and individuals, include the name and title of the person, their affiliation, e-mail address, and telephone number.	Section E9.0

Alaska Pipeline Project
Subsistence Analysis Filing Requirements Checklist

FERC Specific Requirements for the Subsistence Analysis	Where Found in Document
• For each affected community, provide:	
o detailed harvest data, including harvest volumes of individual resources and the locations of harvests by geographical area, including uniform coding unit (Data by uniform coding unit will be included in the final report);	Section E4.0
o a description of spatial and temporal trends in subsistence resource use;	Section E5.0
o a map showing, as polygons, the localities where residents seek the different types of subsistence resources in relationship to the project corridor. The maps should contain a level of detail consistent with maps presented in selected Alaska Department of Fish & Game Technical Papers (available at http://www.subsistence.adfg.state.ak.us/geninfo/publctns/techpap.cfm);	Figures Attachment
o demographic information;	Section E4.0
o community subsistence profile data;	Section E4.0
o estimates of the levels of subsistence activities pursued, the percentage of households in the community participating in subsistence uses, and the average household ratio of cash employment and subsistence use (not available for these communities at this time); and	Section E4.0
o a description of subsistence use patterns and trends derived from traditional knowledge.	Section E6.0

[a] As used herein, the term "subsistence" means the customary and traditional uses by rural Alaska residents of wild, renewable resources for the direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for the making and selling of handicraft articles out of nonedible byproducts of fish and wildlife resources taken for personal or family consumption; for barter, or sharing for personal or family consumption.

[b] "Project area" refers to the pipeline centerline and the centers of major aboveground facilities, such as compressor stations, work camps, borrow areas, pipe yards, access roads, etc., when such are distant from the centerline.

E2.0 SUBSISTENCE DEFINITION AND REGULATORY SETTING

E2.1 DEFINITION[1]

Subsistence uses are central to the customs and traditions of indigenous peoples in Alaska, including the Iñupiat of the North Slope and Athabascans of Interior Alaska. Subsistence customs and traditions encompass processing, sharing networks, and cooperative and individual hunting, fishing, gathering, and ceremonial activities. These activities are guided by traditional knowledge based on a long-standing relationship with the environment. Both federal and state regulations define subsistence uses to include the customary and traditional uses of wild renewable resources for food, shelter, fuel, clothing, and other uses (Alaska National Interest Lands Conservation Act [ANILCA], Title VIII, Section 803, and Alaska Statute 16.05.940[33]). The Alaska Federation of Natives not only views subsistence as the traditional hunting, fishing, and gathering of wild resources, but also recognizes the spiritual and cultural importance of subsistence in forming Native peoples' worldview and maintaining ties to their ancient cultures (Alaska Federation of Natives 2005).

Subsistence fishing and hunting are traditional activities that include transmission of traditional knowledge between generations, maintain the connection of people to their land and environment, and support healthy diet and nutrition in rural communities in Alaska. ADFG estimates that the annual wild food harvest in rural areas of the Interior is approximately 6.4 million pounds, or 613 pounds per person per year; and that the annual wild food harvest in the Arctic is approximately 10.5 million pounds, or 516 pounds per person per year (Wolfe 2000). Subsistence harvest levels vary widely from one community to the next as well as vary from year to year. Sharing of subsistence foods is common in rural Alaska and can exceed 80 percent of households giving or receiving resources (ADFG 2011). The term harvest and its variants – harvesters and harvested – are used as the inclusive term to characterize the broad spectrum of subsistence activities, including hunting, fishing, trapping, and gathering.

Subsistence is part of a rural economic system called a "mixed, subsistence-market" economy, wherein families invest money into small-scale, efficient technologies to harvest wild foods (Wolfe 2000). According to Wolfe and Walker (1987), fishing and hunting for subsistence resources provide a reliable economic base for rural regions and these important activities are conducted by domestic family groups who have invested in fish wheels, gillnets, motorized skiffs, and snowmachines (colloquial Alaskan name for snowmobiles). Subsistence is not oriented toward sales, profits, or capital accumulation (commercial market production), but is focused toward meeting the self-limiting needs of families and their extended kin and communities. Participants in this mixed economy in rural Alaska augment their subsistence production by cash employment. Cash (from commercial fishing, trapping, and/or wages from public sector employment, construction, firefighting, oil

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1 This section includes text that was adapted from the subsistence sections prepared by Stephen R. Braund & Associates in Surface Transportation Board 2008 and 2011; U.S. Environmental Protection Agency 2009.

and gas industry, or other services) provides the means to purchase the equipment, supplies, and gas used in subsistence activities. The combination of subsistence and commercial-wage activities provides the economic basis for the way of life so highly valued in rural communities (Wolfe and Walker 1987). As one North Slope hunter observed: "The best mix is half and half. If it was all subsistence, then we would have no money for snowmachines and ammunition. If it was all work, we would have no Native foods. Both work well together," (Alaska Consultants Inc. et al. 1984). While it would be very informative to compare the household ratio of cash employment and subsistence use, these data do not systematically exist in order to address this topic across the four study regions of this report.

Participation in subsistence activities promotes transmission of traditional knowledge from generation to generation and serves to maintain people's connection to the physical and biological environment. The subsistence way of life encompasses cultural values such as sharing, respect for elders, respect for the environment, hard work, and humility. In addition to being culturally important, subsistence is a source of nutrition for residents in areas of Alaska where food prices are high. While some people earn income from employment, these and other residents rely on subsistence to sustain them throughout the year. Furthermore, subsistence activities support a healthy diet and contribute to residents' overall well-being.

E2.2 REGULATIONS[2]

E2.2.1 Regulatory Setting

Subsistence is regulated in multiple ways including federal and state regulations and local traditions, norms, and values that guide subsistence hunting and fishing practices. This section only addresses the federal and state regulatory environment. The federal and state governments regulate subsistence hunting and fishing in the state under a dual-management system. The federal government recognizes subsistence priorities for rural residents on federal public lands, while Alaska considers all residents to have an equal right to hunt and fish when resource abundance and harvestable surpluses are sufficient to meet the demand for all subsistence and other uses.

E2.2.2 Federal Regulations

The U.S. Congress adopted ANILCA recognizing that "the situation in Alaska is unique" regarding food supplies and subsistence practices. ANILCA specifies that any decision to withdraw, reserve, lease, or permit the use, occupancy, or disposition of public lands must evaluate the effects of such decisions on subsistence uses and needs (16 United States Code §§ 3111-3126). In 1990, the U.S. Department of the Interior (DOI) and the U.S. Department of Agriculture established a Federal Subsistence Board to administer the Federal Subsistence Management Program (55 Federal Register 27,114 [June 29, 1990]).

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[2] This section includes text that was adapted from the subsistence sections prepared by Stephen R. Braund & Associates in Surface Transportation Board 2008 and 2011; U.S. Environmental Protection Agency 2009.

The Federal Subsistence Board, under Title VIII of ANILCA and regulations at 36 Code of Federal Regulations (C.F.R.) § 242.1 and 50 C.F.R. § 100.1, recognizes and regulates subsistence practices for rural residents on federal lands. Federal regulations recognize subsistence activities based on a person's residence in Alaska, defined as either rural or nonrural. Only individuals who permanently reside outside federally designated nonrural areas are considered rural residents and qualify for subsistence harvesting on federal lands under federal subsistence regulations. Nonrural residents may harvest fish and game on most federal lands (unless these are closed to non-federally qualified subsistence uses), but, these harvests occur under state regulations. Federal subsistence regulations do not apply to certain federal lands, regardless of residents' rural designations. These include lands withdrawn for military use that are closed to general public access (50 C.F.R. § 100.3). Nonrural areas in Alaska include the areas around Fairbanks North Star Borough, Wasilla/Palmer, Anchorage, Kenai, Homer, Valdez, Seward, Juneau, and Ketchikan (**Figure E-1**). In addition, the Federal Subsistence Board has added Prudhoe Bay as a nonrural place, effective May 2012.

E2.2.3 State Regulations

The Alaska Board of Fisheries and the Alaska Board of Game have adopted regulations enforced by the state for subsistence fishing and hunting on all State of Alaska lands (except nonsubsistence areas) and waters, and private lands, including those lands conveyed to Alaska Native Claims Settlement Act (ANCSA) groups. State law is based on Alaska Statute 16 and Title 5 of the Alaska Administrative Code (AAC) (05 AAC 01, 02, 85, 92, and 99) and regulates state subsistence uses. Under Alaska law, when there is sufficient harvestable surplus to provide for all subsistence and other uses, all Alaskan residents qualify as eligible subsistence users.

The state distinguishes subsistence harvests from personal use, general hunting, sport, or commercial harvests based on where the harvest occurs and the resource being harvested, not where the harvester resides (as is the case under federal law). More specifically, state law provides for subsistence hunting and fishing regulations in areas outside the boundaries of "nonsubsistence areas," as defined in state regulations (5 AAC 99.015). According to these regulations, a nonsubsistence area is "an area or community where dependence upon subsistence is not a principal characteristic of the economy, culture, and way of life of the area or community," (5 AAC 99.016).

Activities permitted in these nonsubsistence areas include general hunting and personal use, sport, guided sport, and commercial fishing. There is no subsistence priority in these areas; therefore, no subsistence hunting or fishing regulations manage the harvest of resources. State-designated nonsubsistence areas in Alaska include the areas around Anchorage, the Matanuska-Susitna Valley, Kenai, Fairbanks, Juneau, Ketchikan, and Valdez (Wolfe, 2000). State nonsubsistence areas in relation to the project are depicted on **Figure E-2**.

E3.0 METHODS

E3.1 DEFINE STUDY COMMUNITIES

The subsistence study area for APP includes those communities that may harvest subsistence resources within or near the Project area,[3] use Project area lands to access other lands for wildlife harvests, or harvest resources that migrate through the Project area and are later harvested in other areas. In accordance with FERC guidance, the following criteria were used to identify communities within the subsistence-affected environment:

- Any community located within 30 miles of the pipeline corridor; or
- Any community located more than 30 miles from the pipeline corridor, but with subsistence use areas within 30 miles of the pipeline corridor.

The list of potential study communities was comprised of communities located in the Alaska Department of Commerce, Community, and Economic Development (ADCCED) Alaska Community Database Community Information Summaries and having corresponding 2010 census data (e.g., Census-Designated Place [CDP]) (ADCCED 2011; U.S. Census Bureau 2011). The Alaska Division of Community and Regional Affairs provided the latitude and longitude of each community in their Community Information Summaries database (Windisch-Cole 2011). Several CDPs were later combined and referred to under one name given their close proximity to each other, similar demographics, history, economic characteristics, and subsistence activities (or lack of information thereof). For example, the community name of Delta Junction was used to represent the five nearby CDPs of Deltana, Big Delta, Delta Junction, Fort Greely, and Whitestone. **Table E-1** lists the 45 study communities that represent 61 CDPs. Unless otherwise noted, this report refers to the 45 study communities and not the 61 CDPs[4]. **Table E-1** also notes the federal rural status and whether the community is located in a "State-designated" nonsubsistence area. **Table E-2** lists the 45 study communities by their associated study regions. The study regions used in this report include the North Slope Region, Yukon River Region, Tanana River Region, and Copper River Region. **Figure E-3** shows the 45 study communities as well as the merged subsistence use areas for each region based on available subsistence use area data for each community.

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[3] As defined in the FERC February 17, 2011, letter: "FERC Guidance on Subsistence Data Requirements," "Project area" will refer to the pipeline centerline and the centers of major aboveground facilities such as compressor stations, work camp, borrow areas, pipe yards, access roads, etc., when such are distant from the centerline.

[4] The U.S. Census records also report people that live outside any incorporated place or CDP. These people are listed as "remainder" of the census area or subarea. These individuals'' subsistence uses have not been included in this report analysis.

E3.2 SUBSISTENCE BASELINE INDICATORS[5]

The intent of subsistence baseline studies is to facilitate the assessment of potential changes to subsistence uses by providing current and representative data that will characterize the environment of subsistence uses in and around a proposed project. Critical to this assessment is the establishment of baseline indicators of subsistence use that can be compared over time. The choice of baseline indicators is informed by the ways in which subsistence uses may change over time. Stephen R. Braund & Associates (SRB&A) (2007, 2009b, and 2009c) has identified the following subsistence baseline indicators:

- Change in Subsistence Use Area;
- Change in Harvest Amount;
- Change in Harvest Effort;
- Change in Timing of Harvest Activity;
- Change in Harvest Participation;
- Change in Harvest Success;
- Change in Harvest Sharing;
- Change in Harvest Diversity;
- Change in Transportation Methods;
- Change in Duration of Harvest Trips;
- Change in Frequency of Harvest Trips; and
- Change in Resources.

Subsistence Use Area: Abundance and quality of subsistence resources, physical and regulatory restrictions affecting access, visual and social disturbances, and the time and funds available to the harvester are all factors that may affect the subsistence use area for an individual resource. A decrease in subsistence use in an area is an indicator of a significant change. Future changes in subsistence use areas constitute a leading indicator of change in subsistence because harvesters are likely to compensate for impacts in one geographic area by increased use of other areas. Increased use of areas could also lead to increased competition.

Harvest Amounts: Subsistence harvest studies directly measure harvests by species as pounds of edible resource. Species of furbearers and small game that are trapped for their furs are not reported in pounds of usable weight and thus are directly measured by number harvested. Changes in harvest amounts constitute the core indicator of changes in subsistence. Decreases in harvests of major species or in overall harvest have implications

5 This section includes text that was adapted from Stephen R. Braund & Associates 2007, 2009b, and 2009c.

for household nutrition, quality of life, and cultural continuity. Other baseline indicators (e.g., changes in subsistence use areas harvest success) are important to understanding changes in harvest amounts.

Harvest Effort: Harvest effort is a product of the time and money spent on harvest-related activities. Changes in the number of harvesters, the geographic distribution of subsistence use areas, the frequency of trips to subsistence use areas, and the months of use all help measure changes in harvest effort. Harvest effort is likely to be a measure derived from these and other variables on a resource-specific basis. Harvester observations and traditional knowledge concerning change in resource use can be documented. In addition, harvest effort can be expressed in terms of the percentage of households attempting harvests of each resource. These results can be used to identify trends in harvest effort by resource.

Timing of Harvest Activity: Changes in the seasonal abundance of resources, physical and regulatory restrictions, and visual and social disturbances may affect use of subsistence use areas over the course of an annual cycle. Development impacts are more likely to occur if there is an overlap in the time of use and the time of disturbance (e.g., road traffic during hunting). A change in the timing of harvest activities is a leading indicator of changes in subsistence.

Harvest Success: Harvest success in specific subsistence use areas is principally affected by the abundance and availability of subsistence resources as well as changes in competition. Measuring harvest success by subsistence use area is a leading indicator of geographically specific causes of changes in resource abundance and availability. Harvest success can be expressed by comparing the percentage of households attempting to harvest a resource and those reporting successful harvests. Harvest success can also be recorded by qualitative descriptions.

Harvest Participation: Participation in harvest activities may be affected by changes in resource abundance and quality, season and bag-limits, changes in physical access, visual and social disturbances, as well as the time and funds available for hunting. Subsistence harvest studies conducted in the 1980s, 1990s, and in recent years, directly measure harvest participation as the percentage of households attempting to harvest, harvesting, using, giving, and receiving specific subsistence resources. Some studies also document individual levels of participation within a household. Changes in harvest participation are a leading indicator of cultural change. Continued participation is important to facilitating the transfer of knowledge and skills and to the formation and maintenance of social relationships, all of which are key to cultural continuity.

Harvest Sharing: The percentage of households involved in sharing subsistence resources is an indicator of resilience of the culture to variations in household abilities to harvest and process subsistence foods. Sharing of resources reinforces social bonds in the community, which in turn are the foundation of the social support system. In subsistence studies, this indicator is often measured by the percentage of households that give and receive subsistence resources. Some studies also document extended sharing networks and are another method of measuring this indicator.

Harvest Diversity: The number of different resources harvested by a household is an indicator of resilience of the household to variations in resource abundance. Diversity is also an indicator of quality of subsistence production. A diverse harvest means a more varied diet, benefiting both nutrition and taste preferences. Current harvest data results could, with additional analysis, provide the basis of measuring harvest diversity.

Methods of Transportation: Transportation methods used can affect the cost and the time required for subsistence activities and changes in transportation methods can be an indicator of changes in access to use areas or changes in climate. Knowledge of transportation use patterns can also be used to mitigate potential development effects.

Duration of Trips: Trip length affects harvesting costs and may be an indicator of changes in resource availability. Multi-day trips can also provide significant opportunities for transfer of traditional and local knowledge. "Time on the land" is considered an important cultural value. Changes in resource distribution and abundance as well as changes in access and available time can affect the distance harvesters travel. In addition, changes in methods of transportation can affect trip duration.

Frequency of Trips: The frequency of harvest trips to an area may be affected by such things as harvest success, family and cultural value of an area, distance from the community, the time available to harvesters, the funds available to support harvest trips, ease of access, and the attractiveness of the area for harvesting activity. Important to the analysis of changes in subsistence use over time is the concurrence of a decreased number of trips to some subsistence use areas and a compensatory increased number of trips to other subsistence use areas.

Change in Resources: Local observations of change in resource use, abundance, quality, distribution/migration, and habitat are leading indicators of changes in subsistence. These indicators can contribute to an understanding of the reasons for changes in subsistence harvests and subsistence activity. Harvesters and processors of subsistence resources are keenly aware of changes in the condition and availability of the harvested resource. Increases in the presence of parasites beyond what is normally observed, for example, raise concerns about the overall health of the animal. Resource changes are identified through fieldwork as harvester observations of change and traditional knowledge. Counts of observations constitute baseline indicators while the observations themselves constitute traditional knowledge.

E3.3 DATA ADEQUACY TO ADDRESS BASELINE INDICATORS

The primary sources of data that address the subsistence baseline indicators are harvest data, subsistence use area, and seasonal round studies. Harvest data provide quantitative estimates of the amount of wildlife and vegetation harvested by each study community, by subsistence species. They are useful for analyzing community harvests and uses (e.g., household participation and sharing) over time, for determining community harvest levels by species, and for comparing subsistence resources to one another in terms of household uses and harvests. Harvest data are not exact and their accuracy depends on various factors, including survey sample sizes and the accuracy of harvester recall. However, they are generally the only source of information for quantitative community-wide harvests for all resources.[6] ADFG is the primary repository for these data. The majority of subsistence harvest surveys in the state have been conducted by ADFG, which has created a standard method for documenting harvests that provides data on harvest amount, harvest effort, timing of harvest activity, harvest participation, harvest success, harvest sharing, and harvest diversity.

ADFG harvest data (available in the Community Subsistence Information System [CSIS] [ADFG 2011]) are valid in describing subsistence baseline indicators. ADFG standard method includes ensuring a representative sample of households within a community are interviewed, using statistical analyses to estimate harvest numbers for the community and to reach appropriate confidence intervals for the sample size, and allowing the community a comment period in order to gain community approval for the study. Other agencies that conduct harvest studies (e.g., DOI Mineral Management Services [MMS] now Bureau of Ocean Energy Management [BOEM], North Slope Borough, U.S. Fish and Wildlife Service [FWS]) use similar methods as those employed by ADFG and these studies are incorporated into this report as available and appropriate. In some cases, the results of other agency harvest surveys have been incorporated into the CSIS.

Subsistence use area data are useful for representing the extent of where community residents identify as their historic and/or current subsistence hunting and harvesting area and, in the case of overlapping use areas, measuring the importance of an area in terms of the number of individuals who use the area and the number of resources targeted in an area (for multi-resource maps). Neither method fully measures the cultural or traditional importance of an area or resource to a community as these measures do not take into account the importance that an area or resource may have in forming individual and group identity (e.g., location of old fish camp, number of years using an area, family and community ties to an area), uses in ceremonies (e.g., potlatch) or education (e.g., harvest of small game animals to teach young subsistence users). Similar to their harvest data, ADFG is the main repository for subsistence use area data, particularly for use areas collected

[6] When used to describe harvest data in this report, “all resources” refers to comprehensive harvest surveys that report most/all species harvested by a community during a study time period. When used to describe subsistence use areas, “all resources” refers to the sum of the entire community’s use areas for all reported species for a particular study time period.

during the 1980s. In the past two decades, development projects have created the need for documenting more current subsistence use areas of potentially affected communities. The most common method employed in subsistence use area mapping studies is to show one polygon representing the extent of a community's use area during a certain time period. This method does not differentiate between areas used periodically or by one harvester and areas used by multiple harvesters on a regular basis.

In addition to single polygon use areas, more recent studies have documented subsistence use areas using Global Positioning System (GPS) units or overlapping polygons. One example of the GPS mapping method is that of the Nuiqsut bowhead study (Galginaitis 2010). This method has provided a more exact depiction of where bowhead whale hunters travel by boat, but Nuiqsut GPS data are currently limited to one resource.

The overlapping polygon method (see SRB&A 2010a, 2009b, and 2007) maps the last 10 years of subsistence use areas on separate acetate overlays during individual interviews with active harvesters. This method creates subsistence use area maps differentiating between areas where only a small number of use areas were reported (shown as yellow shading on the maps) and areas where a higher number of use areas (shown as red shading on the maps) were reported. This method also provides a measure of harvest effort in terms of the number of respondents reporting subsistence activities within geographic areas and, in the case of multi-resource maps, includes the number of species targeted. SRB&A employs a "snowballing" method of informant selection based on the one described in Johnson (1990) to create a sample of active and knowledgeable subsistence harvesters for each study community and uses this to select respondents for the mapping study. Maps using the overlapping polygon method are only available for the APP study communities of Barrow, Kaktovik, Nuiqsut, Beaver, and Fort Yukon.

Subsistence seasonal round data are available in the form of narrative ethnographic descriptions or in the form of tables or figures depicting general resource harvest levels by month; harvest amounts by month; and subsistence use areas by month. It is important to note that harvest amount by month data represent seasonal round in terms of harvest success, while subsistence use area by month data represent seasonal round in terms of harvest effort. Although these two datasets (month by use area and month by harvest amount) are not directly comparable, there is generally a high correlation between harvest effort (represented by numbers of reported use areas) and harvest success (represented by harvest amounts).

It should be noted that not all baseline indicators have been documented for each study community. For example, many communities do not have studies that document duration or frequency of subsistence trips, method of transportation to access use areas, or changes in resources. For consistency, this document describes baseline indicators (e.g., subsistence use areas, seasonal round, harvest data) that are generally available in most of the communities in which subsistence studies have been conducted. Additional indicators (e.g., frequency of trip, changes in resources) that have been collected for a community are noted but not described in detail.

Systematic documentation of contemporary subsistence uses in Alaska began in the 1980s, and for many communities, studies from that time period are the only subsistence data available. While caution should be used when using older data to characterize current subsistence uses, older data are presented in this report for the following reasons:

- They are adequate to describe general subsistence patterns in a community (e.g., resources harvested, primary species);
- They allow for the documentation of changes, trends, and anomalous years when compared to more recent data; and
- They are sometimes the only available harvest data for a community.

Providing older data as part of the overall description of subsistence uses is necessary to address similarities and changes over time. At the same time, certain older data sources may not be as useful for comparative purposes because they could depict land use patterns that occurred prior to the centralization of subsistence communities and therefore do not represent "community-based" subsistence uses. For example, Hall et al. (1985) documented Anaktuvuk Pass subsistence use areas for residents' lifetimes, which included their activities during the nomadic period prior to the establishment of the community. Examples such as Hall et al. (1985) are more often an exception and most older data are useful for characterizing a community's subsistence uses.

Changes to resource availability, competition, and access to use areas occur over time and communities adapt their subsistence patterns in response to these changes. Despite such changes, key subsistence components often remain the same. These components are often only evident in the context of multiple datasets and include the composition of yearly subsistence harvests (i.e., primary subsistence species), the timing of subsistence activities, and core or traditional hunting and harvesting areas. A primary benefit of compiling and analyzing older data is that it is useful in identifying subsistence use trends and it provides more than just a one-year "snapshot" of subsistence uses, which can sometimes misrepresent a community's typical subsistence activities and harvests due to various factors. For example, single-year harvest studies may have rare anomalies (e.g., community did not harvest a bowhead whale and thus overall harvest for that year is lower than usual) that do not represent a typical harvest year. Furthermore, residents' subsistence use areas may vary from year to year due to changes in resource availability or environmental conditions that prevent travel to certain areas.

Older data for subsistence baseline indicators (e.g., seasonal round; harvest amounts; levels of participation, sharing, and use; use areas; resource changes) may not reflect current practices but establish a baseline that is relevant to addressing changes. While a number of the study communities are lacking subsistence use data or have only one older study year, the forthcoming ADFG household harvest surveys will either provide baseline data for these communities or add to and enhance existing datasets. Subsistence uses are dynamic, opportunistic, and responsive to changing environmental conditions, the identification of potential project impacts and development of future mitigation measures must be developed with this understanding. While multiple study years are the best indicators of a region's subsistence uses because trends, anomalies, and patterns become more easily identifiable, single-year information still provides valuable and relevant understandings of the resources harvested by the community.

E3.4 COMPILING SUBSISTENCE BASELINE DATA

To characterize the subsistence-affected environment of the study communities, this report describes the seasonal round, harvest data, and subsistence use areas for each community based on available data. This report relies on existing information only and does not include any data collection. ADFG is the primary repository for these types of data for many study communities. Harvest data are available through ADFG's CSIS and the results of federally sponsored harvest data studies (e.g., BOEM) are often included in the CSIS (ADFG 2011). Seasonal round, subsistence use areas, and in-depth descriptions of the data are provided in the technical papers (TPs) or reports associated with each subsistence study. Subsistence harvest information, seasonal round data, and subsistence use area maps are also available in baseline studies conducted for Environmental Impact Statements (EISs) and federally or academically funded studies. While all residents of Alaska may qualify as subsistence users under state regulations, the majority of previous state-sponsored subsistence studies have focused on those communities where a "mixed, subsistence-market" economy is the driving economic force in the community. As such, less rural areas of the state (e.g., Fairbanks area) that do not rely on a mixed subsistence economy have had far fewer, if any, comprehensive subsistence studies that characterize their seasonal round, harvest data, and subsistence use areas. Although many of the nonrural areas of the state have not had comprehensive subsistence studies, agency data from permits, harvest tickets, and other annual monitoring programs provide data for these areas and thus provide a level of characterization of their seasonal round, harvest data, and subsistence use areas as well. As discussed above, these data were not available to the study team in time for inclusion into this draft report but will be included in the October 2012 final report.

Table E-3 lists the 45 study communities and associated harvest data, seasonal round, and use area studies identified by the study team. Descriptions, tables, and figures of community harvest data, seasonal round, and subsistence use areas are included in Section 4.0, Subsistence-Affected Environment. Summary tables of harvest data are only included if the harvest numbers are estimated for the entire community (or represent over 80 percent of households surveyed) and represent the total harvest for a species during the study time period. Certain harvest studies such as the Nuiqsut Colville River fall fishery (LGL Alaska Research Associates, Inc. 2007), Nuiqsut caribou monitoring project (SRB&A 2010c and 2011b), Beaver large land mammal study (Council of Athabascan Tribal Governments [CATG] 2005), Stevens Village and Tanana salmon study (Wolfe and Scott 2010) are not discussed in detail because the harvest data were either not estimated for the entire community or do not represent harvests for an entire year and thus do not provide adequate information to describe overall subsistence use patterns for that community. For seasonal round, this report reproduces the most recent general seasonal round table, which shows levels of subsistence activities by month, to describe each community's seasonal round and updates this information with other more recent data on the timing of subsistence activities and harvests. Subsistence use areas maps in this report show the community's all-resources use area by study period as well as individual resource maps if available. Individual household or respondent use areas are not shown in order to protect respondent confidentiality.

The following sections describe the methods used to identify and document the various sources of subsistence data compiled for this report including federal (e.g., MMS, FWS, NPS), ADFG, North Slope Borough, and other sources.

E3.4.1 Alaska Department of Fish and Game

The study team reviewed, compiled, and categorized public data from ADFG subsistence publications pertaining to the study communities. Publications include Technical Papers, Fishery Data Series, Regional Information Reports, Technical Fishery Reports, and Special Publications. For each community, the study team searched the reference section of ADFG's CSIS (ADFG 2011) and the ADFG e-library, both located on the ADFG web site, for fishing and subsistence-related literature. Within the publications searchable database, the study team conducted a keyword search of identified reports and a document content search for incidences of study community names. All search results were filtered in order to target only those documents that were related to subsistence. Sources pertaining to sport harvests, resource management, or resource monitoring were not reviewed because they do not directly characterize subsistence uses. Documents pertaining to any of the study communities were reviewed for subsistence-related data including harvest, seasonal round, use area, and traditional knowledge data.

For each identified publication, the study team documented whether the source contained the above types of data and provided relevant notes about each source. Certain sources contained subsistence data for multiple communities, in which case a separate documentation was made for each community mentioned. The study team tallied over 650 incidences of subsistence data related to study communities from ADFG sources, including over 60 individual referenced sources. Search results identified a total of 3 (Alcan Border, Livengood, and Nolan) of the 45 study communities without any ADFG source material (see **Table E-3**). In some cases, documents were listed as unavailable in CSIS search results. Other documents, including Alaska subsistence salmon fisheries annual reports, were not identified during searches of ADFG databases, but rather during independent searches of source material related to the fisheries resource monitoring program under FWS.

The study team also downloaded harvest data from the publically available CSIS database on the ADFG web site (ADFG 2011). This database provides harvest data collected by the ADFG, Division of Subsistence. In addition the CSIS includes harvest data from other agency harvest surveys employing similar methods to those used by ADFG (e.g., SRB&A and ISER 1993). The CSIS data are compiled from TPs and harvest reports and include reported and estimated harvest amounts. The web site provides the data as well as the references from which the data were derived. If the CSIS cited unpublished fieldwork as the source of the harvest data, the study team cited the CSIS (ADFG 2011) as the default source. The study team reviewed all available and cited documents in the ADFG e-library in order to identify the most accurate references for each harvest study year. The study team conducted a search of the CSIS, by community name, for all study communities included in this report; CSIS data were not available for 9 of the 45 study communities (**Table E-3**).

For salmon subsistence harvests, the study team used the Alaska Subsistence Fisheries Database (ASFDB) (ADFG 2009). This database contains salmon fisheries data primarily from 1988 through 2009, with a few communities having data as early as 1983. For some communities there are salmon fishery data from the 1970s and early 1980s that are available in early ADFG reports and not in the database. For this report, the study team only used the salmon fishery data from the ASFDB for the following reasons:

- The database focuses on more current data (FERC preference);
- The database allows for discussion of more recent 20-year trends; and
- The database matches other study years for all resources and large land mammals, which mostly date from mid-1980s.

Thus, the fisheries information in the tables and discussion in this report do not focus on the 1970s and early 1980s data, but instead rely on the more recent and systematic salmon fisheries data available in the ASFDB. Limitations of the ASFDB are that the data do not usually account for fish taken with rod-and-reel or retained from commercial harvests, and it is not known if all subsistence users obtain permits and provide harvest reports (the source of these data). Thus, harvest data from the ASFDB should be considered a conservative estimate of the number of salmon taken for subsistence uses (Fall et al. 2011). It should also be noted that the salmon data for a community include harvests from fisheries throughout the state (i.e., Barrow salmon harvest numbers from ASFDB include salmon caught by Barrow residents from the Copper River, Southeast, Bristol Bay, and Northwest management areas). The tables in this report that contain salmon data from the ASFDB only show data for species and years with reported harvest numbers; years with no available harvest data or reported harvests of zero for a particular species are not shown in the tables.

As identified by FERC as a resource for this report, the state's database for wildlife regulatory harvest data (WinfoNet) is an additional source of relevant information including individual resource harvest data, harvest locations, and data on residence of wildlife harvesters. Thus, specific data were requested from ADFG to identify any use of wildlife resources within the study corridor and to incorporate detailed harvest data of individual resources and locations of harvest by geographical area, including uniform coding unit (FERC 2011). The resulting database, which contains over 118,000 records that pertain to the area surrounding the corridor, was not received in time to incorporate into this phase of work, however, an analysis of these data will be provided in the report to FERC in October of 2012.

E3.4.2 Federal

In order to identify federal publications that contained data pertaining to the study communities, the study team conducted a search of documents available for public access from multiple federal agencies. The federal agencies in this search include:

- The U.S. National Marine Fisheries Service (NMFS) Sustainable Fisheries Division;
- The National Oceanic and Atmospheric Administration (NOAA);
- The U.S. Forest Service (USFS);
- BOEM (previously MMS);
- NPS; and
- FWS, Office of Subsistence Management (OSM).

The study team successfully contacted all but one of these agencies in order to ensure that the data available online via the agencies' webpages were current and to determine whether there were any additional repositories for the agencies' publications. A search of the NOAA and the NMFS central library web site primarily contained links to ADFG and OSM reports available on each of the agencies' respective web sites. The remaining reports either did not pertain to the study area or had restricted access and were only available to NOAA employees. The study team reviewed MMS/BOEM reports that were relevant to subsistence and reviewed the abstract of each document for information pertaining to subsistence data for the study communities. On the OSM web site, report titles and abstracts were also reviewed for information on subsistence uses and activities. The U.S. Forest Service web site connects to the Federal Subsistence Board, which in turn provides access to reports through the OSM web site. The NPS's Integrated Resource Management Applications Portal did not contain any documents relevant to subsistence within the study area. The U.S. Bureau of Land Management (BLM) Final EIS Renewal for the Trans-Alaska Pipeline System (TAPS) (DOI, BLM 2002) was also reviewed by the study team for subsistence data sources that were applicable to this report's study communities. The team attempted contact but did not receive a response from the NMFS Sustainable Fisheries Division in the Alaska Office.

Documents identified using these sources were reviewed for content including use areas, harvest data, seasonal round, and traditional knowledge data. From the search for relevant federal documents, the study team was able to identify 27 documents containing information on 28 of the study communities (**Table E-3**). Over 100 additional reports were reviewed that did not contain relevant data to the study communities for this project.

E3.4.3 North Slope Borough

To identify North Slope Borough publications or North Slope Borough-funded publications associated with the North Slope Region study communities (Anaktuvuk Pass, Barrow, Kaktovik, Nuiqsut, and Prudhoe Bay), the study team reviewed the North Slope Borough bibliography of subsistence documents as found in its 2007 Coastal Management Plan (Gray, Glenn & Associates 2007). The study team also reviewed the Alaska Resources Library and Information Service (using a keyword search for "North Slope Borough" and "Subsistence" as well as an author search for "North Slope Borough") and SRB&A's library for North Slope Borough subsistence publications. Each of the documents found to pertain to any of the study communities were reviewed for their content, particularly for use areas, harvest data, seasonal round data, and traditional knowledge data. The study team identified 29 North Slope Borough documents that were relevant to the North Slope Region study communities for this project (**Table E-3**).

The study team identified additional North Slope Borough or North Slope Borough-related documents which were noted but not inventoried thoroughly. These included a series of reports on the Colville River fishery (beginning in the 1980s) (e.g., Seigle and Parrett 2009; LGL Alaska Research Associates, Inc. 2007; Moulton 2002 and 2000). While these reports contain Nuiqsut harvest amounts for Arctic cisco and other fish during the fall gillnet fishery, they do not include community-wide estimates for an entire year (which is the general timeframe for other systematic harvest studies) and were therefore not included in the harvest data tables in this report. Additionally, North Slope Borough has published a number of reports reviewing the bowhead whale harvest for each year. The study team has a current listing of bowhead whale harvest numbers from North Slope Borough and therefore did not review the individual bowhead whale harvest reports for each year. The final North Slope Borough review included sources for use areas, seasonal round, harvest data, and traditional knowledge for all North Slope study communities except for Prudhoe Bay.

E3.4.4 Other Non-Agency Baseline Data

The study team reviewed, compiled, and categorized data from non-agency documents pertaining to the study communities and subsistence uses and activities. The study team defined "non-agency" documents as books, book chapters, journal articles, theses and dissertations, private sector reports, institutional reports, conference papers, and Alaska Native organization reports. Non-agency document searches were exclusive of federal and state reports, newspaper articles, and non-topical books and journal articles (e.g., archaeological or biological studies, sport harvest or resource management reports).

Keyword searches were conducted on a number of databases to identify, locate, and procure data sources that might contain relevant information related to the study communities. These databases include library catalogs (e.g., University of Alaska Anchorage/Alaska Pacific University Consortium Library), specific scholarly search engines (e.g., Science Direct), and Internet search engines (e.g., Google Scholar). The following is a complete list of these databases:

- EBSCOhost/Academic Search Premier;
- ISI Web of Science/Knowledge;
- Science Direct;
- JSTOR;
- University of Alaska Anchorage/Alaska Pacific University Consortium Library; and
- Google Scholar.

Keyword searches for non-agency documents included the study community (e.g., “Minto” or “Minto, Alaska”) as well as study community and subsistence (e.g., “Minto” AND subsistence or “Minto, Alaska” AND subsistence). Often, the same documents were found in more than one database; for the study team this demonstrated a thoroughness of a database search.

In several instances, documents contained information concerning more than one community. For each relevant document found, the study team conducted a document content search for incidences of individual study community names and related subsistence information. Documents pertaining to any of the study communities were reviewed for subsistence-related data including harvest, seasonal round, use area, traditional knowledge data as well as information related to the importance and sharing of subsistence resources within the community/region. The study team identified over 60 non-agency documents which were relevant to subsistence in the study communities for this project (**Table E-3**). These results were largely narrative accounts documenting the relationship of the study communities to the life and practice of subsistence; very few of the documents contained primary data related to subsistence use areas, harvest data, or seasonal round.

E3.4.5 Geographic Information System

As part of the subsistence use area compilation, the study team reviewed all known sources of Geographic Information System subsistence use area data that pertained to the 45 study communities. These data sources included previous ADFG mapping studies (primarily from the 1980s), previous projects during which SRB&A conducted primary research, and a few mapping studies conducted for EISs (e.g., Betts 1997) and baseline studies (e.g., Scott 1998).

All ADFG subsistence data shown on these maps can be located in their primary source, which is either a TP written by ADFG or one of the Habitat Management Guides produced by ADFG in the 1980s and available for viewing at the Alaska Resources Library and Information Service. The study team included references to these sources on each map showing ADFG data. In some instances both the Habitat Management Guide and a TP show the same dataset. In these cases, the study team referenced both sources on the map. In total, the study team identified 36 sources of data that contained use areas for 37 of the 45 study communities (**Table E-3**).

E4.0 SUBSISTENCE-AFFECTED ENVIRONMENT

E4.1 NORTH SLOPE REGION

The North Slope region is a geographical area that extends north of the Brooks Range in Alaska to the Beaufort Sea. The North Slope environment includes the Brooks Range, Arctic Foothills, and Arctic Coastal Plain eco-regions, which consist of flat tundra environment with poor drainage and numerous lakes (the Arctic Coastal Plain); treeless rolling hills and plateaus with defined drainage patterns (the Arctic Foothills); and rugged mountain terrain shaped by Pleistocene glaciation and dwarf scrub vegetation (the Brooks Range) (Gallant et al. 1995). All three regions of the North Slope are characterized by low mean annual temperatures and precipitation.

At the time of European contact, the North Slope was inhabited by indigenous Iñupiat populations, which were comprised of two primary cultural groups. The Tagiugmiut inhabited coastal areas of the Arctic Coastal Plain and the Nunamiut inhabited the Brooks Range and Arctic Foothills areas. Iñupiaq is the language spoken by both North Slope cultural groups as well as in other areas of Alaska (including Northwestern Alaska and the Seward Peninsula), Canada, and Greenland (**Figure E-4**). Coastal Iñupiat (Tagiugmiut) relied primarily on harvests of marine mammals, terrestrial mammals, and fish, while their inland neighbors, the Nunamiut, relied mostly on terrestrial mammals and fish, with caribou comprising the majority of their subsistence harvests.

Iñupiat are still the primary occupants of the North Slope today and continue the hunting and harvesting traditions of their ancestors. Local residents often harvest subsistence resources from specific camps that are situated in locations that provide multiple resource harvest opportunities throughout the year. Harvest activities tend to occur near communities, along rivers and coastlines, or at particularly productive sites, where resources are known to occur seasonally. Determining what, where, and when a subsistence resource will be harvested is based on traditional knowledge about the distribution, migration, and seasonal variation of animal populations, as well as various other environmental factors (e.g., tides, currents, ice, and snow conditions).

While some harvest locations may be used infrequently, they can still be important to a subsistence user or a community if they are particularly productive areas or if they have cultural, historical, or family significance to the user (DOI, BLM 1978). Prior to the 1950s, when mandatory school attendance and economic factors such as a decline in fur prices compelled families to permanently settle in one of a few centralized communities, the Iñupiat were highly mobile and ranged over large geographic areas for trapping, fishing, gathering, sealing, and bird hunting activities. Contemporary subsistence use areas include many of these former areas. The advent of snowmachines and all-terrain vehicles (ATVs) including four wheelers have reduced the time required to travel to traditional hunting and harvesting areas, but have also increased the need for cash employment to pay for purchase, maintenance, and supplies for the new equipment (Ahtuangaruak 1997; Impact Assessment Inc. 1990a and 1990b; SRB&A and Institute of Social and Economic Research [ISER] 1993;

Worl and Smythe 1986). The nomadic land use patterns once typical of North Slope Iñupiat have evolved to the use of base camps consisting of tent platforms, cabins, and/or caches located near productive resource bases. Residents conduct subsistence hunting, harvesting, and processing activities from these locations (Impact Assessment Inc. 1990b; SRB&A 2010a).

For APP, five study communities are within the North Slope Region including Anaktuvuk Pass, Barrow, Kaktovik, Nuiqsut, and Prudhoe Bay. Anaktuvuk Pass, Kaktovik, and Nuiqsut have use areas that overlap with the APP corridor (**Table E-1**). The following section provides a brief introduction of each of these five study communities and a description of their subsistence use areas, harvest data, and seasonal round data as available.

E4.1.1 Anaktuvuk Pass

The community of Anaktuvuk Pass is located in a low pass in the Brooks Range just south of the continental divide, 60 miles west of the Dalton Highway. The Anaktuvuk and John rivers flow north and south from the divide, respectively, with the Anaktuvuk River draining into the Colville River and the John River flowing into the Koyukuk River (Hall et al. 1985). The people of Anaktuvuk Pass are the last remaining settlement of Nunamiut Iñupiat, Nunamiut meaning “people of the land” (Rausch 1951). The area has been used by the Nunamiut for at least 500 years and by Iñupiaq predecessor groups for at least 4,000 years (Hall et al. 1985). Historically, the Nunamiut were nomadic and relied heavily on the seasonal migrations of the caribou through the Brooks Range. Decreased caribou populations in the late 1800s and early 1900s resulted in the Nunamiut moving northward toward the coast for jobs related to whaling and trapping, or eastward into Canada where the caribou were more abundant (North Slope Borough 1990). With fur and whaling industries on the decline, a number of Nunamiut families returned to their traditional grounds in the Brooks Range, continuing a semi-nomadic lifestyle well into the 1950s.

The modern village began in 1949 when Nunamiut families from camps at Killik River and Chandler Lake joined those at Tulugak Lake, near the present-day location of Anaktuvuk Pass. A trading post was established, followed by a post office in 1951 and a church in 1958. Residents incorporated as a fourth-class city in 1959. A permanent school was established in 1961, and the community was reclassified as a second-class city in 1971 (Hall et al. 1985). The Naqsragmuit Tribal Council is a federally recognized tribe. The 2010 population of Anaktuvuk Pass was 324, of whom 83 percent were Native (U.S. Census Bureau 2011). Residents continue to engage in year-round subsistence activities while also participating in the local workforce. Major employers include North Slope Borough, the North Slope Borough School District, and the village corporation (URS Corporation 2005).

E4.1.1.1 Subsistence Use Areas

Figure E-5 depicts Anaktuvuk Pass subsistence use areas as documented by Pedersen (1979) and SRB&A (2003a). Not shown on **Figure E-5** are Anaktuvuk Pass subsistence use areas collected for the 2001-2010 time period related to the Foothills West Transportation Access Corridor baseline studies. These data are forthcoming and are not available at this time (SRB&A, Forthcoming). Hall et al.’s (1985) lifetime (i.e., pre-1985) use areas include activities conducted while residents lived in other communities or during periods of nomadism and extend as far as Canada in the east, Kotzebue in the west, and Fort Yukon in the south. While these use areas illustrate the highly nomadic nature of the Nunamiut people prior to the establishment of the community of Anaktuvuk Pass, they are not shown on **Figure E-5** because they do not represent community-based subsistence use areas like those documented by Pedersen (1979) and SRB&A (2003a). Likewise, Nelson et al. (1982) documented traditional Anaktuvuk Pass subsistence use areas, however, the time period for these use areas is unknown and these use areas were not mapped using methods consistent with the other mapping sources shown in this report.

Pedersen's (1979) study recorded areas frequented within residents' lifetimes. The study documented Anaktuvuk Pass harvesters traveling west beyond the Noatak River to Ambler, and just beyond the Dalton Highway to the east near Galbraith Lake. Use areas also occurred in a large area surrounding the Killik, Chandler, Anaktuvuk, and John river drainages. SRB&A (2003a) recorded Anaktuvuk Pass use areas for the time period of 1994-2003. The use areas are partial and focused on gathering data relevant to development of the Alpine Satellite Development Project (near Nuiqsut). Anaktuvuk Pass subsistence use areas during the 1994-2003 time period are similar to those recorded by Pedersen (1979) and are located in an area surrounding the community and extending as far west as the Noatak River and as far north as Nuiqsut when Anaktuvuk Pass residents traveled to Nuiqsut. Also documented during this study were use areas near Umiat along the Colville River and a broad area in the Foothills of the Brooks Range north of Anaktuvuk Pass. Anaktuvuk Pass lifetime subsistence use areas (Pedersen 1979) overlap with the APP corridor, and the more recent 1994-2003 use areas (SRB&A 2003a) come within 10 miles of the corridor. SRB&A (Forthcoming) recently documented 2001-2010 Anaktuvuk Pass subsistence use areas extending east to Galbraith Lake and Toolik Lake, near the pipeline corridor.

Resource-specific subsistence use area maps for Anaktuvuk Pass are shown on **Figure E-6** through **E-13** and include the lifetime (pre-1979) and 1994-2003 time periods. Anaktuvuk Pass contemporary and lifetime fishing areas for the lifetime and 1994-2003 time periods are depicted on **Figures E-6** and **E-7** and both studies (Pedersen 1979; SRB&A 2003a) show residents fishing along various local drainages and in a number of area lakes. According to **Figures E-6** and **E-7**, Anaktuvuk Pass residents harvest fish from the Anaktuvuk, John, and Itkillik rivers; along Kollutaruk, Masu, and Ekokpuk creeks; and in Chandler Lake as well as various other smaller lakes north of the community. The more recent use areas (1994-2003; **Figure E-7**) show fish harvesting occurring farther east (to Itkillik River) and north (to the Nuiqsut area) compared to the lifetime (pre-1979) study (**Figure E-7**).

Anaktuvuk Pass subsistence use areas for large land mammals are shown on **Figures E-8** through **E-10**. Caribou harvests (**Figure E-8**) occur over an extensive area within the Brooks Range, north into the Foothills, and along travel and hunting routes as far as Nuiqsut. Reported caribou hunting areas extend east as far as the APP corridor, likely during the winter months when these areas are accessible by snowmachine and while residents are traveling overland in search of wolf, wolverine, and other furbearers. Lifetime moose use areas (**Figure E-9**) are shown along various drainages, including Easter Creek and the Chandler and Anaktuvuk rivers, and east in an area relatively close to the Dalton Highway; more recent (1994-2003) use area data on moose hunting areas are limited to the immediate area around Anaktuvuk Pass including the John River and along local creeks. Dall sheep and bear use areas (**Figure E-10**; lifetime use areas only) are located primarily within the Brooks Range, extending east within 10 miles of the Dalton Highway and north into the Foothills along the Anaktuvuk River.

Similar to caribou use areas, lifetime furbearer use areas (**Figure E-11**) extend over a large area from Ambler in the west to the Dalton Highway in the east. More recent use areas do not extend as far east or west but include the area north of the community as far as Nuiqsut. The eastern edge of lifetime furbearer use areas overlap with the APP corridor. Small land mammal hunting and trapping is mostly centered on the community as well as an area west of Easter Creek.

Bird hunting by Anaktuvuk Pass residents is generally limited to an area near the community and north along the Anaktuvuk River; bird use areas also occur at Chandler Lake (**Figure E-12**). Lifetime wildfowl areas were documented north of the community, at the headwaters of the John River, and around Chandler Lake. Waterfowl use areas for the 1994-2003 time period were documented in a more extensive area north of the community along the Anaktuvuk River as well as around Chandler Lake.

Figure E-13 depicts Anaktuvuk Pass use areas for berries, vegetation, and wood, and includes Pedersen (1979) lifetime use areas and SRB&A (2003a) berry gathering areas. Residents travel by snowmachine in the winter to gather firewood over a relatively extensive area ranging from Killik River in the west to the Dalton Highway in the east. Berry and plant harvesting areas are located closer to the community and north into the foothills of the Brooks Range.

E4.1.1.2 Harvest Data

Various subsistence harvest studies describe Anaktuvuk Pass harvests from the 1980s through 2007 (**Tables E-4** through **E-6**). These include eight comprehensive (i.e., all resources) studies conducted by North Slope Borough. In addition, four studies (1990-91,[7] 1991-92, 1993-94, and 2006) collected data solely on caribou harvests, and another (for 2001-02 and 2002-03) collected only fish harvest data. Furthermore, ADFG's ASFDB (ADFG 2009) includes salmon harvest data for Anaktuvuk Pass for various years from 1991 through 2007. Although the study periods for the single-resource (e.g., caribou, fish, salmon) harvest studies overlap with the study periods for comprehensive (i.e., all resources) North Slope Borough studies, the months often differ (e.g., October through September [fish studies] versus July through June [North Slope Borough studies]).

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[7] For harvest data in this report, the 6-digit date range (e.g., 1990-91) refers to a single 12-month study that extended over two (2) calendar years (e.g., June 1990 through May 1991). The eight-digit date-range (e.g., 1990-1992) refers to separate single-year studies (e.g., January through December 1990, 1991, and 1992).

As shown in **Table E-4**, which presents the eight all-resources studies organized by resource category, land mammals by far provide the highest percentage of subsistence harvests in Anaktuvuk Pass, followed by fish and, in some years, vegetation. Specifically, caribou were the most harvested resource during all comprehensive study years, providing between 75.2 percent (during the 1999-00 study year) and 91.5 percent (during the 2002-03 study year) of the total subsistence harvest (**Table E-6**). Fish harvests are limited primarily to non-salmon fish (**Tables E-4** and **E-5**) such as Arctic grayling, Arctic char (Dolly Varden), and lake trout (**Table E-6**), with only limited sockeye and coho salmon harvests reported during the 1990s and 2000s (**Table E-6**). Other species that have contributed large quantities to Anaktuvuk Pass subsistence harvests over the study years include Dall sheep, moose, and berries.

Although not evident in **Table E-6**, which only shows top species by edible pounds and therefore excludes most furbearing animals, Anaktuvuk Pass is an active trapping community. A 1980s wolf study (Adams et al. 2008) showed annual Anaktuvuk Pass harvests of between 38 and 110 wolves (**Table E-6**); more recent studies (Fuller and George 1999; Brower and Opie 1996; Bacon et al. 2009) show a continuing interest in these activities, with similar harvest estimates. Unlike most other North Slope communities, Anaktuvuk Pass is not located near the coast, and therefore marine mammals are not available for residents to harvest. Anaktuvuk Pass residents commonly trade inland resources, such as caribou, for marine mammals from coastal North Slope communities (Fuller and George 1999; Bacon et al. 2009; SRB&A 2003a).

Non-salmon fish harvests during Anaktuvuk Pass study years ranged from 1,830 total pounds in 1996-97 to 12,282 pounds in 1999-00 (**Table E-4**); during non-salmon fish study years in 2001-02 and 2002-03, which were conducted by ADFG and include per capita harvest estimates, residents harvested 13 and 16 pounds of fish per capita, respectively (**Table E-5**). These harvests were comprised primarily of Arctic grayling, Arctic char, and lake trout from nearby lakes and streams (Pedersen and Hugo 2005).

Household harvest participation data are available for only a few study years. In 1992, nearly three-quarters (74 percent) of households attempted to harvest caribou, 40 percent attempted to harvest other large land mammals, 67 percent attempted to harvest fish, and 68 percent attempted harvests of vegetation (**Table E-4**, **E-6**, and Fuller and George 1999). A small percentage of households attempted harvests of waterfowl and eggs (22 percent) and marine mammals (1 percent) in 1992. In 1994-95, 62 percent of Anaktuvuk Pass households reported attempted harvests of at least one resource. Caribou-specific data show approximately half of Anaktuvuk Pass households successfully harvesting caribou during most available study years. A similar percentage (between 37 percent and 53 percent) harvested non-salmon fish during the 2001-02 and 2002-03 study years.

E4.1.1.3 Seasonal Round

Seasonal subsistence activities for Anaktuvuk Pass, based on Brower and Opie (1996) for the 1994-95 study year, are provided in **Table E-7**. This table depicts the seasonal round for only one year and, because the timing of subsistence activities varies from year to year based on numerous factors, may not adequately represent the general seasonal round of

Anaktuvuk Pass. Therefore, this discussion of Anaktuvuk Pass' seasonal round is based on this table in addition to a review of other and more recent sources (Bacon et al. 2009; Fuller and George 1999; Gray, Glenn & Associates 2007; Naves 2010; Nelson et al. 1982; Pedersen and Hugo 2005; Pedersen and Nageak 2009; Spearman et al. 1979). As shown in **Table E-7**, the late winter and spring (March through May) is dedicated primarily to the harvest of game birds (ptarmigan), caribou, and fishing.

The fish harvest continues and intensifies during the summer months (July and August), which are a high point of activity for many subsistence pursuits and, in addition to fishing, include active harvesting of caribou, moose, Dall sheep, and berries (**Table E-7**) as well as the occasional brown bear (Bacon et al. 2009; Fuller and George 1999; Brower and Opie 1996). As discussed above (see Section 4.1.1.2, Harvest Data), caribou are a major subsistence resource for the community of Anaktuvuk Pass. **Table E-7** shows high levels of caribou hunting in July to August of 1994-1995, with low to medium levels of hunting from March to June and September to December. Other sources of data show residents hunting caribou throughout most of the year with greater intensity in February, March, and July through September (Bacon et al. 2009; Pedersen and Nageak 2009); the majority of harvest efforts occur in the late summer and fall (July through September) when residents await their yearly migration from the north into the Brooks Range.

Table E-7 indicates that the fall months (September and October) are a period of lower activity levels, however, other sources indicate that harvests of caribou, Dall sheep and fish particularly Arctic grayling) are common during this time (Pedersen and Hugo 2005; Bacon et al. 2009). Also harvested during the fall months, particularly in September, are berries and waterfowl (Bacon et al. 2009)

During the winter months, ptarmigan and furbearers are actively pursued, particularly during the late winter months of February and March. Unlike the data depicted by Brower and Opie (1996) in **Table E-7**, which show furbearer hunting activities limited to the winter months, Bacon et al. (2009) show harvests of small land mammals such as ground squirrels and snowshoe hare also occurring during the fall months. A high number of caribou harvests have been reported during certain years in the late winter and early spring months (February through May) (Bacon et al. 2009; Brower and Opie 1996; Pedersen and Nageak 2009).

E4.1.2 Barrow

Barrow is located on the northern coast of the Chukchi Sea approximately 7.5 miles south of Point Barrow or *Nuvuk*, the demarcation point where the Chukchi and Beaufort seas converge. The Iñupiat name for the modern Barrow area is *Utqiagviq*, meaning "the place where we hunt snowy owls." Humans have occupied the Barrow area for at least 5,000 years, and continuous occupation of the area began approximately 1,300 years ago. Beginning after European contact in the 1820s, the growth of the commercial whaling and trapping industries brought Iñupiat from across the North Slope to Barrow in pursuit of employment and trade opportunities. Barrow continued to grow as new economic opportunities, including oil and gas exploration, arose on the North Slope. Today, Barrow is the most populous community on the North Slope and is the headquarters for various regional organizations and corporations including North Slope Borough and the Arctic Slope Regional Corporation (SRB&A and ISER 1993).

Barrow is one of 11 Alaska Eskimo bowhead whaling communities. The U.S. Census Bureau recorded a 2010 population of 4,212 residents living in 1,554 households; 61 percent were Native (U.S. Census Bureau 2011). The Native Village of Barrow is a federally recognized tribe.

E4.1.2.1 Subsistence Use Areas

Figure E-14 depicts Barrow subsistence use areas for the lifetime (ADFG 1986a; Pedersen 1979), 1987-1989 (SRB&A and ISER 1993; SRB&A Unpublished-a), 1994-2003 (SRB&A 2003a), and 1997-2006 (SRB&A 2010a) time periods. ADFG (1986a) and Pedersen's (1979) lifetime use areas include locations as far south as the Colville River near Umiat, beyond Nuiqsut in the east, offshore from the community to the southeast and southwest, and inland beyond Wainwright toward Point Lay. SRB&A and ISER (1993) documented Barrow harvest sites for the 1987-1989 time period that were concentrated in offshore environments near the community and onshore areas extending south from the community as far as the Colville River. SRB&A (Unpublished-a) also recorded Barrow's all-resources use areas for the 1987-1989 time period, which include areas similar to those previously recorded by Pedersen (1979), but extend farther offshore from the community. SRB&A (2003a) conducted another study recording Barrow's all-resources use areas from 1994-2003; these use areas are partial and focused on gathering data relevant to development of the Alpine Satellite Development Project (near Nuiqsut). They extend to the east beyond Colville River as far as the Itkillik and Anaktuvuk rivers. The most recent study documenting all-resources subsistence use areas for Barrow (SRB&A 2010a) recorded data for the years 1997-2006. This study recorded the most expansive extent of Barrow's subsistence activities, with use areas that extend well offshore to the north of the community, east of the Itkillik River, south into the foothills of the Brooks Range, and as far west as Point Lay. SRB&A's (2010a) overlapping subsistence use areas show the highest numbers of reported use areas displayed as red-shaded areas, and the fewest numbers of reported use areas displayed as yellow-shaded areas. The highest numbers of overlapping use areas occur offshore from the community up to 20 miles and in an overland area south of the community and along the Chipp and Ikpikpuk rivers. Fewer use areas (yellow) occur at greater distances from the community, particularly east and south of the Colville River (**Figure E-14**). Barrow lifetime subsistence use areas (Pedersen 1979) do not overlap with the APP corridor, but one 1987-1989 harvest site to the east of Prudhoe Bay appears to be overlapped by the APP corridor. Additionally, SRB&A's (2010a) use areas for the 1997-2006 time period nearly overlap the pipeline corridor near Prudhoe Bay.

Resource-specific use area maps for Barrow are shown on **Figures E-15** through **E-25** and include the lifetime (pre-1979), 1987-1989, 1994-2003, and 1997-2006 time periods. Barrow fishing areas for these time periods are depicted on **Figure E-15** and these studies (Pedersen 1979; SRB&A Unpublished-a, 2003a, and 2010a; SRB&A and ISER 1993) show residents fishing across a large river and lake system to the south of the community, west to the Kuk River near Wainwright, and as far east as Nuiqsut and on the Colville River.

SRB&A and ISER (1993) also documented fish use areas along the Anaktuvuk River for the 1987-1989 time period and at one location in the Beaufort Sea east of Prudhoe Bay.

Barrow subsistence use areas for large land mammals are shown on **Figures E-16** through **E-18**. Barrow residents reported caribou use areas (**Figure E-16**) that cover an extensive area from Icy Cape to Prudhoe Bay, and as far south as the Colville River. Lifetime caribou use areas documented by Pedersen (1979) include a large area extending along coastal areas toward Icy Cape in the west, near Nuiqsut in the east, and inland as far south as Umiat on the Colville River. Caribou use areas recorded during the 1987-1989, 1994-2003, and 1997-2006 time periods occur mostly within the lifetime use area data collected by Pedersen (1979), however, SRB&A's (2010a) 1997-2006 use areas extend farther south beyond the Colville River and east toward the Kuparuk River; the highest numbers of overlapping caribou use areas (1997-2006) occur in an overland area south of the community to Inaru River and along the Chipp and Ikpikpuk rivers. **Figure E-17** depicts Barrow moose use areas and includes the lifetime (pre-1979), 1987-1989, 1994-2003, and 1997-2006 time periods. Pedersen's (1979) lifetime use areas include discontinuous locations south of Atqasuk, along the Colville River, and west of Teshekpuk Lake. SRB&A's (2003a and 2010a) use areas (1994-2003 and 1997-2006) indicate use of a considerably larger area, and include a continuous use area from Barrow to the Colville River and as far east as Nuiqsut. The highest numbers of overlapping moose use areas reported during the 1997-2006 time period occur along the Colville River upriver from Nuiqsut. Harvest locations are mostly grouped along the Colville River near Umiat with a few additional harvest locations south of Barrow and Nuiqsut (SRB&A and ISER 1993). Barrow lifetime subsistence use areas for bear are shown on **Figure E-18** as documented by Pedersen (1979). Polar bear use areas occur mostly offshore from Point Franklin to Cape Halkett at distances of no more than 20 miles, and grizzly bear use areas are concentrated around Atqasuk, near Point Franklin, and inland from Cape Simpson.

Barrow small land mammal use areas (**Figure E-19**) as documented by Pedersen (1979), SRB&A and ISER (1993), SRB&A (Unpublished-a and 2010a) cover an extensive area from Point Lay to the Kuparuk River, and beyond the Colville River in the south. Pedersen's (1979) lifetime furbearer, small mammal, and trapping use areas cover areas from Wainwright in the west to Nuiqsut in the east, and as far south as the Colville River. SRB&A's (2003a) and SRB&A and ISER's (1993) wolf and wolverine use areas fall within those documented by Pedersen (1979) with additional use areas west of the Kuk River and east of Nuiqsut. SRB&A's (2010a) most recent use areas are for wolf and wolverine and extend beyond previously documented furbearer use areas beyond Icy Cape to Point Lay in the west, past Nuiqsut to the Kuparuk River in the east, and well beyond the Colville River in the south. High numbers of overlapping use areas occur south and east of the community toward the Colville River, and a relatively high number of overlapping use areas are also reported along the Anaktuvuk and Chandler rivers (**Figure E-19**)

Barrow subsistence use areas for marine mammals are shown on **Figures E-20** through **E-22**. **Figure E-20** depicts Barrow subsistence use areas for seal for the lifetime, 1987-1989, and 1997-2006 time periods. Pedersen's (1979) lifetime use areas show Barrow residents traveling from the mouth of the Kuk River to Cape Halkett and offshore to a distance of 20 miles to harvest seal, while use areas for bearded and ringed seal (SRB&A 2010a) for the 1997-2006 time period extend to Prudhoe Bay in the east, and offshore at a distance greater than 60 miles. The highest numbers of overlapping use areas for seal during the 1997-2006 time period occur in the Chukchi Sea up to 25 miles from shore. Barrow 1987-1989 seal use areas and harvest sites (SRB&A and ISER 1993; SRB&A Unpublished-a) are located within those areas documented by Pedersen (1979) and SRB&A (2010a). **Figure E-21** displays Barrow whale use areas, showing an expansion of harvest areas over time. While lifetime use areas are defined by areas between Point Franklin and Cape Simpson and just over 20 miles offshore, use areas for the 1987-1989 time period show extended areas used for whaling beyond Cape Simpson in the east and more than 40 miles offshore. SRB&A's (2010a) most recent use areas for bowhead whale for the 1997-2006 time period show Barrow residents using areas beyond Wainwright in the west and offshore more than 60 miles, with the highest numbers of overlapping use areas occurring between 10 and 20 miles from shore both in the Chukchi and Beaufort seas. Similar to seal, lifetime walrus use areas stretch from the Kuk River to an area offshore from Cape Simpson (Pedersen 1979), and use areas (SRB&A 2010a) for the 1997-2006 time period include offshore areas reaching beyond Wainwright toward Icy Cape in the west, and offshore to a distance of nearly 90 miles north of Barrow (**Figure E-22**). The highest numbers of 1997-2006 overlapping use areas for walrus occur in the Chukchi Sea from Point Barrow toward Peard Bay and offshore over 20 miles. Barrow 1987-1989 walrus use areas and harvest sites (SRB&A and ISER 1993; SRB&A Unpublished-a) are located within those areas documented by Pedersen (1979) and SRB&A (2010a).

Barrow use areas for birds, including eiders and geese, for the lifetime, 1987-1989, 1994-2003, and 1997-2006 time periods are consistent over time, though extending considerably farther offshore during the most recent study (SRB&A 2010a) (**Figure E-23**). Use areas are generally located in the vicinity of Barrow, offshore at a distance greater than 40 miles to the northwest, inland just beyond Atqasuk in the west, and east as far as Nuiqsut. High amounts of overlapping use (1997-2006) occur offshore from the community up to 10 miles and at various locations south of the community.

Figure E-24 depicts Barrow use areas for marine invertebrates for the lifetime (pre-1979) time period (Pedersen 1979). As shown on the figure, residents harvested these resources along shores near the community and in the area of Point Franklin/Peard Bay to the west. More recent mapping studies have not included marine invertebrates on their mapping protocols.

Barrow harvests of berries, vegetation, and wood are depicted on **Figure E-25** for the lifetime (pre-1979) and 1994-2003 time periods (Pedersen 1979; SRB&A 2003a). Barrow use of wood, mostly in the form of driftwood, is confined to areas along the shore from Point Franklin to Cape Simpson, as well as south of Atqasuk. Barrow residents mostly harvested vegetation and berries in overland areas between Atqasuk and Teshekpuk Lake during the lifetime and 1994-2003 time periods.

E4.1.2.2 Harvest Data

Tables E-8 through **E-10** provide subsistence harvest data for Barrow. Various subsistence harvest studies describe Barrow harvests from 1987 through 2009 (**Tables E-8** through **E-10**). These include nine comprehensive (i.e., all resources) study years from ADFG and North Slope Borough (1987-1989, 1992, 1995-96, 1996-97, 2000, 2001, and 2003) (**Table E-8**). In addition, single-resource studies include those specific to salmon, birds and eggs, and caribou (**Tables E-9** and **E-10**).

Studies from the 1980s show Barrow households harvesting between 204 and 289 pounds per capita of subsistence resources. Per capita harvest data are not available during subsequent study years (1992, 1995-1997, 2000, 2001, and 2003), but show total pounds harvested ranging from 1,082,241 (in 2001) to 1,363,738 (in 1992). As shown in **Table E-8**, during all nine years for which comprehensive harvest data are available, marine mammals contributed the highest amount toward total subsistence harvests in Barrow (in terms of pounds usable weight), followed by large land mammals. Marine mammals provided at least 50 percent of the harvest during all study years and as much as 81.1 percent in 1996-97. Large land mammals generally contributed between 20 and 40 percent of the total harvest during most study years. Non-salmon fish and migratory birds provided a smaller but still substantial portion of the yearly harvest during most years (**Table E-8**).

Specifically, bowhead whales were the most harvested species, in terms of usable weight, during all but one study year, providing between 29.7 percent (during the 1987 study year) and 68.1 percent (during the 1996-97 study year) of the total subsistence harvest (**Table E-10**). Caribou was the second most harvested resource during all but 2 study years (1987 and 2009), accounting for between 13.3 percent and 30.1 percent of Barrow harvests during the study years. Study years with data on per capita harvests show bowhead whales providing between 61 and 125 pounds per capita and caribou providing between 59 and 123 pounds per capita (**Table E-10**). Other subsistence species that have contributed large quantities to Barrow subsistence harvests over the study years include seal (bearded and ringed), walrus, whitefish (especially broad whitefish), geese, ducks (primarily eiders), polar bear, Arctic grayling, and moose. Although they account for a small portion of Barrow's yearly harvest, vegetation (e.g., berries and plants) invertebrates (e.g., clams), and eggs are also harvested by Barrow residents on a yearly basis (**Tables E-9**, **E-10**).

Harvests of salmon are relatively common in Barrow in small quantities and have accounted for between 0.1 percent (1988) and 1.8 percent (2003) during comprehensive study years. The ASFDB, which relies primarily on salmon fishing permits and does not include harvests by methods such as rod-and-reel, shows annual salmon harvests of between 50 salmon and 616 salmon (**Table E-9**); these estimates include harvests from the Bristol Bay, Copper River, and Southeast management areas and do not include harvests from the Barrow area. Comprehensive harvest studies generally show higher yearly estimated salmon harvest numbers, between 80 (1988) and 4,793 (2003) and may or may not include harvests from outside the North Slope (**Table E-9**).

Participation in subsistence activities by Barrow households is relatively high. Household participation data (in terms of percentage of households harvesting or attempting to harvest) are available only for four study years (1987, 1988, 1989, and 1992) and show at least half of Barrow households harvesting subsistence resources during each of the study years. Household participation rates are particularly high in harvests of marine mammals, migratory birds, and large land mammals (**Table E-8**). Data on subsistence sharing are not available for the community of Barrow.

E4.1.2.3 Seasonal Round

Barrow's seasonal round, like many communities, is dictated mostly by the timing of subsistence resource migration through the area. Barrow seasonal round data are available in a number of sources including SRB&A and ISER (1993), Fuller and George (1999), EDAW Inc. (2008), Bacon et al. *(*2009), SRB&A (2010a), and Braem et al. (2011). **Table E-11** shows the general description of the annual cycle of subsistence activities in Barrow as described in SRB&A and ISER's (1993) report.

The spring subsistence season (April and May) in Barrow is dedicated primarily to hunting bowhead whales with additional harvests of other marine mammals including seals and polar bears (**Table E-11**). Large land mammals such as caribou, grizzly bears, and moose may also be taken during the spring (EDAW Inc. 2008). Several species of fish and birds are actively harvested during the spring with harvests of eiders and geese occurring in May and June around Barrow and inland at various camps, weather and ice conditions permitting.

According to EDAW Inc. (2008), the summer months (June through August) are a time of diversified subsistence activity. SRB&A (2010a) also record the highest numbers of subsistence use areas accessed during the summer and early fall (July- through September) as well as in May. The summer and fall months are occupied with hunting marine mammals (bearded and ringed seal, walrus) as they migrate north with the floe ice, traveling along the coast and inland to hunt caribou, and harvesting a variety of fish in lagoons and rivers. Barrow residents harvest large numbers of caribou in July and August when they are available to hunters traveling by boat along the coast and area rivers. Local berry and plant harvests also occur during the summer months.

Families may go up the Colville River to harvest moose and berries during August and early September (Fuller and George 1999). The fall months of September and October are spent primarily focusing on bowhead whale. In addition, caribou, fish, and birds remain sought after resources throughout the fall season (**Table E-11**). Bacon et al. (2009) record eiders and ducks being particularly valuable resources during these fall months. Fuller and George (1999) note that the subsistence fish harvest generally peaks in October (under-ice fishery) when whitefish and Arctic grayling are concentrated at overwintering areas.

Winter months (November through March) are primarily spent hunting caribou, seals, and the occasional polar bear, and harvesting fish (**Table E-11**). Bacon et al. (2009) recorded the importance of furbearer harvests including fox, wolf, and wolverine during the winter season as well. Incidental caribou may be taken during these furbearer trips.

E4.1.3 Kaktovik

Kaktovik is located on Barter Island in the Beaufort Sea, just north of the Arctic National Wildlife Refuge (NWR) coastal plain. Iñupiat from Canada and Alaska once used the site when trading with Athabascan Indians from the Interior (Impact Assessment Inc. 1990b) and as a seasonal base for the harvest of subsistence resources (Jacobson and Wentworth 1982). Kaktovik was established in its contemporary form in 1923, when the Gordon family moved their trading post from Demarcation Point to Barter Island. The trading post became a center of annual travel for Iñupiat from Barrow to Herschel Island and a small group of people settled there more permanently. Commercial reindeer herding was introduced to the area in the late 1920s, with families herding reindeer in their normal hunting and trapping territories until the practice ended in the late 1930s. Upon the death of Tom Gordon and the closure of the trading post at Barter Island, the community dispersed, with some moving to Herschel Island or Barrow. Iñupiat were drawn back to Kaktovik for jobs when preparations for a Distant Early Warning (DEW) Line site at Barter Island began. The Bureau of Indian Affairs opened a school in 1951.

The community started bowhead whaling again in the early 1960s (Impact Assessment Inc. 1990b) and is now one of 11 Alaska Eskimo bowhead whaling communities. The U.S. Census 2010 population of Kaktovik was 239, of whom 89 percent were Native (U.S. Census Bureau 2011). The Native Village of Kaktovik is a federally recognized tribe.

E4.1.3.1 Subsistence Use Areas

Figure E-26 depicts Kaktovik subsistence use areas as documented by ADFG (1986a) and Pedersen (1979) for the lifetime time period (pre-1979), and SRB&A (2010a) for the 1996-2006 time period. Lifetime all-resources use areas show Kaktovik residents using a large area stretching from the Kuparuk River to the Canada border, offshore at distances greater than 25 miles, and inland to the south along and between several river drainages and into the Brooks Range. SRB&A's (2010a) use areas mostly correspond to those previously documented, with some variances; use areas were recorded more than 30 miles offshore, and although not shown on the map, in an isolated location near Teshekpuk Lake. SRB&A's (2010a) overlapping subsistence use area data show that the majority of Kaktovik's all-resources use areas are concentrated (red-shaded areas) along the Hulahula, Okpilak, and Jago rivers; in offshore areas up to 20 miles north of the community; and at coastal locations from Prudhoe Bay to Canada. Kaktovik lifetime subsistence use areas (Pedersen 1979) overlap with the APP corridor from Point Thomson to Prudhoe Bay, and along the Dalton Highway to the south of Prudhoe Bay; SRB&A's (2010a) use areas for the 1996-2006 time period overlap the pipeline corridor from Point Thomson to just east of Prudhoe Bay.

Resource-specific subsistence use area maps are shown on **Figures E-27** through **E-36**, and include the lifetime, 1923-1983, 1994-2003, and 1996-2006 time periods as documented by Pedersen (1979), Coffing and Pedersen (1985), and SRB&A (2003b and 2010a). Kaktovik fishing areas (**Figure E-27**) include a long stretch of coastline to the east and west of the community, and several river systems including the Shaviovik, Canning, Hulahula, Sadlerochit, and Kongakut rivers. Fish use areas overlap with the APP corridor along the coast to the west of Point Thomson.

Kaktovik subsistence use areas for large land mammals are shown on **Figures E-28** through **E-30**. Kaktovik caribou harvests (**Figure E-28**) occur across a wide inland and coastal area stretching from Prudhoe Bay to the Canada border as documented by Pedersen (1979), Coffing and Pedersen (1985), and SRB&A (2003b and 2010a). SRB&A's (2010a) most recent use areas also show a few isolated caribou use areas near Teshekpuk Lake (not shown on **Figure E-28**) and south of Smith Bay. Caribou use areas overlap with the APP corridor from Point Thomson to just east of Prudhoe Bay. Kaktovik moose use areas (**Figure E-29**) for the lifetime time period show residents hunting in discontinuous areas along several river systems, mostly centered on the Sadlerochit, Hulahula, Okpilak, and Jago rivers. SRB&A's (2010a) use areas occur solely along these main river systems to the south of the community, with the highest number of use areas along the Sadlerochit River. **Figure E-30** depicts Kaktovik use areas for grizzly and polar bear for the lifetime (pre-1979) time period. While grizzly bear use areas occurred along the Sadlerochit, Hulahula, Okpilak, and Jago rivers to the south of the community, polar bear use areas extended into offshore areas from the Canada border to just east of Prudhoe Bay, with the greatest distance offshore at approximately 25 miles.

Kaktovik use areas for small land mammals are displayed on **Figure E-31** for the lifetime and 1996-2006 time periods. Lifetime use areas show residents traveling from beyond Prudhoe Bay in the west to the Canada border in the east, and south along several major river drainages; SRB&A's (2010a) most recent use areas for wolf and wolverine documents use areas that are concentrated to the south of the community along the Sadlerochit, Hulahula, Okpilak, and Jago rivers. Pedersen's (1979) use areas overlap with the APP corridor between Point Thomson and Prudhoe Bay, as well as south along the Dalton Highway.

Kaktovik subsistence use areas for marine mammals are shown on **Figures E-32** through **E-34**. Lifetime Kaktovik seal use areas (**Figure E-33**) were recorded from Prudhoe Bay to the Canada border and offshore less than 20 miles, while use areas for the 1996-2006 time period include similar areas but extend more than 30 miles offshore in the area north of the community. Likewise, **Figure E-34** depicts Kaktovik use areas for walrus, showing lifetime use areas that are concentrated in marine environments near the community and 10 to 15 miles offshore, and use areas for the 1996-2006 time period extending beyond Point Thomson in the west and offshore more than 30 miles north of the community. Kaktovik whaling areas (**Figure E-32**), as documented by Pedersen (1979) and SRB&A (2010a) extend approximately 30 miles east and west of the community as well as 30 miles offshore and indicate residents traveling slightly farther offshore during the most recent study.

Kaktovik lifetime bird use areas (**Figure E-35**) occurred in onshore and offshore areas from Prudhoe Bay to the Canada border. Geese and eider use areas for the 1996-2006 time period are more focused on nearshore areas and along the Hulahula and Jago rivers. Use areas for both time periods overlap with the APP corridor between Prudhoe Bay and Point Thomson.

Kaktovik use areas for vegetation and wood are depicted in **Figure E-36** for the lifetime time period. These use areas show residents traveling along coastal areas from Prudhoe Bay to the Canada border and along several major river systems to harvest these resources. Wood lifetime use areas overlap the APP corridor between Prudhoe Bay and Point Thomson.

E4.1.3.2 Harvest Data

Kaktovik harvest data are available for various study years between 1981 and 2009. Comprehensive (i.e., all resources) study years are available for 1985, 1986, 1992, 1994-95, and 2002-03 from ADFG and North Slope Borough (**Table E-12**). Additional study years are available for single-resource categories or species (**Tables E-13** and **E-14**).

Based on available data, Kaktovik's total annual subsistence harvests have ranged from a low of 61,663 pounds in 1985 to between 170,939 and 180,970 pounds in 1992 (two separate surveys were conducted in 1992) (**Table E-12**). Per capita harvest data from 1982, 1986, and 1992 show residents harvesting between 328 and 886 pounds per capita of subsistence resources. Kaktovik residents rely heavily on marine mammals, large land mammals, and fish (**Table E-12**). Marine mammals provided over half of the community's yearly harvest during all but 1 study year and accounted for as much as 79.4 percent of the total harvest in 1994-95. Harvests of marine mammals are generally followed by large land mammals (contributing between 13.4 and 57.3 percent of the harvest during study years) and non-salmon fish (contributing between 4.6 percent and 18.5 percent). Other resources harvested annually by local residents include migratory birds, small land mammals (including furbearers), and vegetation.

The primary species harvested by Kaktovik residents, in terms of pounds of usable weight, are bowhead whales, caribou, Arctic char, and bearded and ringed seals (**Table E-14**). Bowhead whales were the top species harvested during the majority of study years, usually accounting for over half of the total annual harvest and providing 225 and 560 pounds per capita during available study years. The yearly contribution of subsistence species to the total subsistence harvest fluctuates depending on resource availability and harvest success (**Table E-14**). The major species harvested in Kaktovik have accounted for varying portions of the total subsistence harvest from year to year. Arctic char provided between 9 and 80 pounds per capita during study years; caribou provided between 67 and 149 pounds per capita; and seal species provided between 9 and 34 pounds per capita. Dall sheep, muskox, geese, and Arctic cisco have also provided notable portions of the subsistence harvest during certain years (**Table E-14**).

The ASFDB, which includes salmon data collected by ADFG between 1991 and 2009, reflects harvests from the Copper River Region and does not include salmon harvested in the Kaktovik area (**Table E-13**). While salmon are available near Kaktovik to a limited extent, they are not harvested in large quantities. According to **Tables E-13** and **E-14**, salmon (primarily sockeye salmon) harvests have ranged from a total harvest of 7 (in 1997 and 2000) to 143 (in 2009).

The importance of subsistence to Kaktovik residents is reflected both by harvest amounts and by the level of community participation in subsistence activities. In 1992, the most recent year for which such data are available, 96 percent of households reported using subsistence resources, 89 percent tried to harvest subsistence resources, and 83 percent of households shared subsistence resources with other households (**Table E-12**). Household participation was particularly common in harvests of non-salmon fish, large land mammals, and vegetation.

E4.1.3.3 Seasonal Round

A comprehensive depiction of seasonal round for Kaktovik is provided in Jacobson and Wentworth (1982) (**Table E-15**). Additional seasonal round data for Kaktovik are also available in more recent sources (Coffing and Pedersen 1985; Pedersen et al. 1985 and 1991; Pedersen 1990; Fuller and George 1999; Brower et al. 2000; EDAW Inc. 2008; edersen and Linn 2005; Bacon et al. 2009; SRB&A 2010a). As indicated in **Table E-15**, the spring subsistence hunting season in Kaktovik includes harvests of small mammals and birds and eggs. Additional spring harvests of Dall sheep, brown bear, wolf, and wolverine occur in the spring, although these resources become less desirable after mid-May (Jacobson and Wentworth 1982).

Summer caribou hunting occurs once the ice breaks up in July, until late August, peaking in July when animals seek relief from insects along the coast, and often continuing into the fall months (Pedersen 1990; SRB&A 2010a). Fishing also begins in July in the rivers, lagoon systems, and along the barrier islands. Dolly Varden, Arctic cisco, and broad whitefish are primarily harvested in July and August, with some fall fishing activities extending into September (SRB&A 2010a). Although **Table E-15** shows seal harvests primarily occurring in May and June, more recent studies show Kaktovik hunters also harvest bearded, ringed, and spotted seals by boat throughout the summer and fall months of July through September (Fuller and George 1999; Brower et al. 2000; Bacon et al. 2009; SRB&A 2010a).

The majority of bowhead whale harvests occur during the month of September as the whales migrate closest to shore (**Table E-15**), however, other sources report the harvesting of bowhead whales starting during the month of August and continuing with increasing intensity into fall (Fuller and George 1999; Brower et al. 2000; Bacon et al. 2009). Once the whaling season concludes, usually in late September, hunters once again focus on caribou and Dall sheep, supplementing these resources with continued harvests of fish and the occasional muskox (**Table E-15**) (EDAW Inc. 2008).

Kaktovik's proximity to the Brooks Range allows access to Dall sheep, which are generally hunted in late October through November according to Jacobson and Wentworth (1982). **Table E-15** shows that the primary winter subsistence resources are furbearers, Dall sheep, caribou, and fish. Dall sheep, wolf, wolverine, caribou, and an occasional moose are harvested from November through early April, with activities peaking in the late winter and early spring (February through April) when the days are longer (Jacobson and Wentworth 1982; SRB&A 2010a).

E4.1.4 Nuiqsut

Nuiqsut is located on the Colville River, approximately 35 miles upstream from the Beaufort Sea, in an area that provides abundant opportunities for harvests of fish, land mammals, birds, and other resources. Although the location is less advantageous for marine mammal harvests, residents regularly travel to the ocean to harvest them. The Colville River is the largest river system on the North Slope and supports the largest overwintering areas for whitefish, which local residents harvest in substantial quantities (Craig 1987). The Nuiqsut area was formerly a place where Iñupiat and Athabascan people gathered to trade and fish, maintaining connections between the Nunamiut of the inland areas and the Taremiut of the coast (Brown 1979). After the passage of Alaska Native Claims Settlement Act, a group of Iñupiat families from Barrow resettled at Nuiqsut to live in a more traditional manner, and many of those who moved there had a family connection to the area (Impact Assessment Inc. 1990a). Easy access to the main channel of the Colville River for fishing, hunting, and ease of movement between upriver hunting sites and downriver whaling and sealing sites was the primary reason for selection of the site (Brown 1979). Twenty-seven families from Barrow permanently resettled Nuiqsut in 1973.

Since its resettlement nearly 40 years ago, Nuiqsut has grown to a population of 402 residents living in 114 households (U.S. Census Bureau 2011). Primary sources of employment in the community include the village corporation (Kuukpik Corporation), North Slope Borough, and the North Slope Borough School District (URS Corporation 2005). Nuiqsut is one of 11 Alaska Eskimo bowhead whaling communities. It is the closest community to the major oil-producing fields of the North Slope, which has resulted both in impacts on subsistence uses (Fuller and George 1999; Impact Assessment Inc. 1990a; Pedersen et al. 2000) as well as economic benefits (e.g., jobs, dividends, and local revenue) for local residents.

E4.1.4.1 Subsistence Use Areas

Figure E-37 depicts Nuiqsut all-resources subsistence use areas for multiple time periods, as documented by ADFG (1986a) Pedersen (1979 and 1986), and SRB&A (2003a and 2010a). Pedersen's (1979) lifetime (pre-1979) use areas show Nuiqsut residents utilizing a large area centered on the community to harvest subsistence resources; reported use areas extended offshore approximately 15 miles, as far east as Camden Bay, south along the Itkillik River, and west as far as Teshekpuk Lake. Subsequent use area data shows Nuiqsut residents traveling across a progressively larger area to harvest subsistence resources. SRB&A's (2010a) most recent use areas document Nuiqsut residents traveling beyond Atqasuk in the west, offshore more than 60 miles northeast of Cross Island, overland to Cape Halkett and Barrow in the north, to Camden Bay in the east, and beyond the Colville River in the south. The majority of Nuiqsut 1995-2006 use areas are concentrated around the Colville River, overland areas to the southwest of the community, offshore areas north of the Colville River delta, and northeast of Cross Island. Pedersen (1986) and SRB&A (2003a) use areas for Nuiqsut are all located within the extent of Pedersen (1979) and SRB&A (2010a) use areas described above with the exception of extending as far as Kaktovik in the east and along the Anaktuvuk River as far as Anaktuvuk Pass to the south.

Nuiqsut all-resources use areas from several studies (Pedersen 1979 and 1986; SRB&A 2003a and 2010a) overlap with large portions of the APP corridor from Point Thomson to north of the Brooks Range along the Dalton Highway.

Nuiqsut subsistence use area maps organized by resource are shown on **Figures E-38** through **E-48** for the lifetime (pre-1979), 1973-1986, 1994-2003, 1995-2006, and 2008 and 2009 time periods. Nuiqsut lifetime (1973-1986 and pre-1979) and contemporary (1994-2003 and 1995-2006) fishing areas are shown on **Figures E-38** and **E-39**, indicating consistent use of the Colville River and smaller tributaries including the Itkillik, Chandler, and Anaktuvuk rivers as well as Fish and Judy creeks. Contemporary use areas extend somewhat father along the Colville, Chandler, and Anaktuvuk rivers as well as along Fish Creek. Two isolated fish use areas west of Point Thomson as documented by Pedersen's (1986) study are near the APP corridor just west of Point Thomson (**Figure E-38**).

Nuiqsut subsistence use areas for large land mammals are shown on **Figures E-40** through **E-42**. Nuiqsut caribou use areas are shown on **Figure E-40** and include use areas documented by Pedersen (1979 and 1986), and SRB&A (2003a, 2010a, 2010c, and 2011b). As indicated on the map, areas consistently used by Nuiqsut residents for caribou hunting occur in an overland area between the Ikpikpuk and Kuparuk rivers, north to the coast, and south along the Colville River. The maximum extent of their use areas documented between all the studies extends from Atqasuk in the west, toward Point Thomson in the east, and south along the Colville and Anaktuvuk rivers. SRB&A's (2010a) overlapping use areas show the greatest number of caribou use areas are concentrated along the Colville River and delta, along the Itkillik River, and overland to the west and south of the community; these areas correspond to the caribou hunting areas reported during the 2008 and 2009 study years (SRB&A 2010c and 2011b). All caribou mapping studies, except for SRB&A (2010c and 2011b) show overlap of the APP corridor near Prudhoe Bay and along the Dalton Highway. Nuiqsut moose use areas (**Figure E-41**) as documented by Pedersen (1979 and 1986), and SRB&A (2003a and 2010a) show residents' consistent use of areas adjacent to the Colville River for moose harvests. While lifetime (pre-1979) use areas were completely confined to the Colville River, more recent moose use areas for the 1973-1986, 1994-2003, and 1995-2006 time periods have expanded to include other tributaries including the Chandler and Anaktuvuk rivers, and Fish Creek. The 1995-2006 moose use areas show the highest amount of overlap along the Colville River south of Nuiqsut as far as Umiat. **Figure E-42** depicts Nuiqsut use areas for bear as documented by Pedersen (1986 and 1979). Use areas for grizzly bear for the lifetime and 1973-1986 time periods include areas along the Colville River watershed from Fish Creek to Umiat. Polar bear use areas for the 1973-1986 time period were documented in the Colville River delta and offshore areas extending east to Cross and Tigvariak islands.

Nuiqsut small land mammal use areas are shown on **Figure E-43** for the lifetime, 1973-1986, 1994-2003, and 1995-2006 time periods. Lifetime (pre-1979) use areas documented by Pedersen (1979) show residents using overland areas near the community, as well as the more southern Colville, Chandler, Anaktuvuk, Itkillik, and Kuparuk rivers to harvest small land mammals. Pedersen's (1986) furbearer and small land mammal use areas for the 1973-1986 time period expanded from previously recorded use areas to the west beyond the Ikpikpuk River and south to Anaktuvuk Pass. SRB&A's (2010a) most recent wolf and wolverine use areas for the 1995-2006 time period indicate a further expansion of use areas to the Meade River in the west and beyond the Dalton Highway and APP pipeline corridor in the east, including an eastward area reaching to just south of Kaktovik. All small land mammal mapping studies, except for the earliest Pedersen (1979) study, documented use areas overlapping the APP corridor.

Nuiqsut subsistence use areas for marine mammals are shown on **Figures E-44** through **E-46**. Nuiqsut seal use areas are depicted on **Figure E-45** for the lifetime (pre-1979), 1973-1986, 1994-2003, and 1995-2006 time periods. Lifetime Nuiqsut use areas for seal included offshore areas from Atigaru Point to Camden Bay at distances of less than 20 miles; subsequent studies documented use areas extending to Cape Halkett in the west and varying distances to the east. SRB&A's (2010a) most recent use areas show Nuiqsut residents harvesting seal up to 40 miles offshore to the north of the community with the highest number of seal use areas reported north of the Colville Delta. Nuiqsut subsistence use areas for walrus (**Figure E-46**), as documented by Pedersen (1986) for the 1973-1986 time period, show residents harvesting these resources in offshore areas near Prudhoe Bay and east of Atigaru Point. **Figure E-44** depicts Nuiqsut whale use areas for the lifetime, 1973-1986, 1994-2003, and 1995-2006 time periods. All study periods include use areas centered on Cross Island, a sandy barrier island used traditionally and currently as a base of operations for Nuiqsut whaling crews. Lifetime use areas (pre-1979) occurred offshore less than 20 miles stretching from Prudhoe Bay to Camden Bay; Pedersen's (1986) use areas extended from Nuiqsut to Kaktovik, while SRB&A's most recent use areas for bowhead whale include areas from west of the Kuparuk River to Camden Bay and offshore more than 60 miles.

Nuiqsut use areas for birds (**Figure E-47**) are mostly concentrated along the Colville River and nearby overland areas for the lifetime (pre-1979), 1973-1986, 1994-2003, and 1995-2006 time periods, though they also include offshore eider hunting areas extending from Cape Halkett to Camden Bay. Lifetime (pre-1979) wildfowl use areas include areas near the Colville River and near-shore locations extending east to Prudhoe Bay; later studies documented similar use areas including Pedersen's (1986) that overlap with the APP corridor east of Prudhoe Bay. SRB&A's (2003a and 2010a) most recent use areas for geese and eider for the 1994-2003 and 1995-2006 time period expanded previously recorded bird use areas to include areas offshore and east of Prudhoe Bay to Camden Bay.

Figure E-48 displays Nuiqsut use areas for vegetation for the 1973-1986 and 1994-2003 time periods. Both studies documented use of the Colville River as far as Umiat and areas near Fish Creek for harvests of vegetation and berries. SRB&A (2003a) also documented berry-gathering areas along the Itkillik, Chandler, and Anaktuvuk rivers.

E4.1.4.2 Harvest Data

Tables E-16 and **E-17** provide Nuiqsut harvest data for various years between 1985 and 2007. Comprehensive (i.e., all resources) study years are available for 1985, 1992, 1993, 1994-95, 1995-96, and 2000-01 and are shown in **Table E-16**. **Table E-17** provides all study years, including species-specific study years, by top species harvested. Five studies collected data solely on caribou harvests (Braem et al. 2011) (**Table E-17**).

During years with per capita harvest data, Nuiqsut households harvested 399 (in 1985) and 742 (in 1993) pounds per capita of subsistence resources (**Table E-16**). Land mammals, marine mammals, and fish are all major subsistence resources in Nuiqsut; the contribution of these resources toward the total subsistence harvest varies from year to year. According to available data (**Table E-16**), marine mammals contributed the highest amount to the total subsistence harvest (in terms of the percent of total harvest of edible pounds) during three comprehensive study years (1992, 1995-96, and 2000-01), providing 33 (in 1985) and 236 (in 1993) pounds per capita. Non-salmon fish were the top harvested resource during the remaining three study years (1985, 1993, and 1994-95) and accounted for 173 and 248 pounds per capita in 1985 and 1993, respectively. Large land mammals were generally the second or third most harvested resource during all study years and provided 169 (in 1985) and 242 (in 1993) pounds per capita.

Specifically, bowhead whales, whitefish (Arctic cisco or *qaaktaq* and broad whitefish), and caribou are the primary subsistence resources harvested in Nuiqsut. Bowhead whale harvests accounted for between 28.7 percent and 60.3 percent of the total harvest during all study years (except for 1985 and 1994-95, when Nuiqsut did not successfully harvest a whale) (**Table E-17**). Arctic cisco harvests have accounted for between 1.9 and 14.9 percent of the total harvest, broad whitefish have accounted for between 5.5 and 45 percent of the total harvest, and caribou have accounted for between 21.7 and 37.5 percent of the total harvest. Other subsistence species that have contributed large quantities to Nuiqsut subsistence harvests over the study years include moose, seals, geese, Arctic grayling, and burbot. Although not in large quantities, vegetation (e.g., berries and plants) are also harvested yearly by Nuiqsut residents (**Table E-16**).

Household participation data (in terms of percentage of households harvesting) are available only for some study years (1985, 1992, 1993, and 2002-2007 caribou study years) (**Tables E-16** and **E-17**). As shown in **Table E-16**, 100 percent of households reported using subsistence resources in 1985 and 1993, and over 90 percent of households participated in subsistence activities (i.e., attempted harvests of subsistence resources). Sharing of subsistence resources is also high, with 100 percent of households in 1985, and 98 percent in 1993, receiving subsistence resources, and over 90 percent during both study years giving away subsistence foods. Specific data on caribou available for 7 study years show over 90 percent of households using caribou during all study years, and between 47 percent and 90 percent of households attempting harvests of caribou (**Table E-17**).

E4.1.4.3 Seasonal Round

A general depiction of Nuiqsut seasonal subsistence activities is shown in **Table E-18** and based on information collected by Impact Assessment Inc. (1990a) and Research Foundation of the State University of New York (1984). Additional seasonal round data are available from more recent sources (Fuller and George 1999; Bacon et al. 2009; Braem et al. 2011; SRB&A 2010a, 2010c, and 2011b). Spring harvests are focused on caribou, furbearers, and seals (**Table E-18**). While **Table E-18** shows usual harvests of birds and eggs occurring in June, SRB&A (2010a) reports May to be the primary waterfowl hunting month. Additionally, Bacon et al. (2009) also report that May is the primary month for harvesting waterfowl.

Caribou are an important resource to the community of Nuiqsut and are harvested throughout the year as reported in **Table E-18**, however, Braem et al. (2011) reports that the majority of caribou harvests occurring during the summer months of June, July, and August. In addition to traveling inland along the Colville River during the summer for fishing and caribou hunting, residents travel to the ocean to hunt for ringed seals, bearded seals, and eiders during the months of June, July, and August. Berry and plant gathering also occur during the summer months (**Table E-18**).

Moose hunting takes place in August and September along river hunting areas south of Nuiqsut (Fuller and George 1999). Bowhead whaling usually occurs in September when whaling crews are stationed at Cross Island. Nuiqsut hunters harvest few polar bears, but if they are harvested it is often after the fall whaling season.

Gillnetting, primarily for Arctic cisco, is most productive between October and mid-November. Residents jig for burbot throughout the winter months at nearby locations. Also during the winter months, furbearer hunters pursue wolves and wolverines and target caribou and ptarmigan as needed and available (**Table E-18**). The prime wolf and wolverine hunting months are February and March (SRB&A 2010a).

E4.1.5 Prudhoe Bay

Prudhoe Bay, which includes the community of Deadhorse, is located adjacent to the Beaufort Sea on the North Slope, approximately 54 miles east of the community of Nuiqsut. Prudhoe Bay was developed during the 1970s as a base for oil industry workers. All residents of Prudhoe Bay are employed by oil-drilling or oil-production and support companies and work in shifts based out of Prudhoe Bay (ADCCED 2011). The U.S. Census Bureau (2011) reported in 2010 that the population of Prudhoe Bay/Deadhorse was 2,174, 7.8 percent of whom were Native. This number reflects people living in non-institutionalized group quarters, and 0 households. The previous U.S. Census in 2000 listed five individuals and this increase in reported population in 2010 is accounting for seasonal workers. The Federal Subsistence Board has classified Prudhoe Bay as a nonrural place beginning in May of 2012.

E4.1.5.1 Subsistence Use Areas

Subsistence use area data are not available for the community of Prudhoe Bay.

E4.1.5.2 Harvest Data

Harvest data available for the community of Prudhoe Bay/Deadhorse consist of four years of salmon harvest data from the ASFDB. The results of these studies are shown in **Tables E-19** and **E-20** and depict harvests from the Prince William Sound/Copper River Management Area. Data show a relatively small number of salmon harvested during each year, with 9 salmon harvested in 1996, 15 in 2000, 30 in 2005, and 15 in 2006 (**Table E-19**). The majority of salmon harvested during these years were sockeye; one to two Chinook were harvested during three of the study years (**Table E-20**). Household subsistence participation and sharing data are not available for Prudhoe Bay/Deadhorse.

E4.1.5.3 Seasonal Round

Seasonal round data are not available for the community of Prudhoe Bay

E4.2 YUKON RIVER REGION

The Yukon River Region encompasses 12 study communities located along the Yukon River and Yukon River drainages. The region, located south of the Brooks Range and north of the Alaska Range, is a geographically diverse area comprised of highlands, forested lowlands, bottomlands, and flats that are drained by the Koyukuk, Yukon, and Tanana rivers. This report addresses Tanana River communities separately from Yukon River communities (see Section 4.3, Tanana River Region). The Yukon River region includes the following Alaska ecoregions: The Interior Highlands, Interior Forested Lowlands and Uplands, Interior Bottomlands, and Yukon Flats (Gallant et al. 1995). The Interior Highlands are characterized by low, rounded mountains interspersed with glaciated rugged peaks with dwarf scrub vegetation and open spruce stands; the Interior Forested Lowlands and Uplands have a continental climate, lack Pleistocene glaciations, and are predominately forests; the landscape of the Interior Bottomlands includes flat and poorly drained terrain along large rivers surrounded by forests and wetlands; and the Yukon Flats is similar to the Interior Bottomlands, but differs in that it has a more extreme climate and less precipitation (Gallant et al. 1995).

The people residing in this region are primarily descendants of Athabascan language-speaking groups with regional and linguistic distinctions. The primary Athabascan language groups in the Yukon River Region near the APP corridor include Koyukon and Gwich'in (**Figure E-4**). Athabascan language-sharing groups are divided into regional bands. For example, Gwich'in groups include the *Dendu*, *Draan'jik* (or Tranjik), *Danshit Hanlaih*, *Gwich'yaa* (or Kutcha), *Dihaii* (or Dihai), and *Neets'ii* (or Netsi). Neighboring groups with distinct languages include the Han, Lower Tanana, Koyukon, and Iñupiat (Caulfield 1983; VanStone 1974). The Athabascan peoples of the Interior in the late prehistoric and early historic period typically lived in small bands along river drainages and lakes. Koyukon-speaking people lived along the Koyukuk and Yukon rivers and their tributaries, and Gwich'in-speaking people lived along the upper Yukon River and drainages and into the Northwest Territories of Canada. Interior people from communities such as Alatna and Beaver may also speak Iñupiaq or have Iñupiaq heritage. Iñupiaq people from Kobuk and Barrow moved to Alatna and Beaver, respectively, just before the turn of the 20th century in search of better living conditions and trade. Centuries of conflict and cooperation along the borders between the Iñupiat and Athabascan speakers have created blurred boundaries between these Native groups. This is especially true in the upper Koyukuk River drainage, where some researchers have theorized that Athabascan people once lived in the Brooks Range in the vicinity of Anaktuvuk Pass and other mountain valleys (Raboff 2001).

Subsistence activities were carried out by small, family-centered bands that were dispersed on the landscape in small camps. These bands had territories that could overlap for resource harvesting, and aligned bands could meet in specific locations for resource harvests that required cooperative efforts such as construction and maintenance of caribou fences and fish traps. Neighboring bands often shared a dialect or language, however, over the vast spaces of the Interior, changes accumulated such that the differences constitute a dialectical or linguistic boundary. These boundaries are exclusively linguistic, as the material culture, technology, food-harvesting techniques, and social culture of these Interior Native groups are very similar.

Residents of the Yukon River Region have, and continue to, rely primarily on fish and meat for food, including salmon, moose, caribou, and an array of other fish and smaller mammals and birds (VanStone 1974). Residents use snowmachines, planes, ATVs, and outboard-equipped boats to access subsistence hunting and harvesting areas. Limitations on subsistence harvests include time-constrictions due to wage employment; federal and state regulations intended to manage fish, game, and migratory waterfowl populations; the costs of fuel and equipment needed to harvest game; and competition between local hunters and urban sport hunters (Andersen and Alexander 1992; Simeone 2002).

For APP, 12 communities have been identified within the Yukon River Region including Alatna, Allakaket, Beaver, Bettles, Coldfoot, Evansville, Fort Yukon, Livengood, Nolan, Rampart, Stevens Village, and Wiseman. Rampart, Stevens Village, and Wiseman have use areas that overlap with the APP corridor (**Table E-1**). It should be noted that communities such as Beaver and Bettles have use areas that are within a few hundred feet of other APP corridor but do not overlap. The following section provides a brief introduction of each of these study communities and a description of their subsistence use areas, harvest data, and seasonal round data as available.

E4.2.1 Alatna

The community of Alatna is located on the north-bank of the Koyukuk River just south of its confluence with the Alatna River. The community was formerly located on a river bar, but relocated to higher ground following a flood in 1994. Alatna is located west of, and across the river from Allakaket, in an area that was formerly a trading village where Kobuk Eskimos and Athabascan people met to trade products from the coast for the furs of the Interior (Marcotte and Haynes 1985). Iñupiaq residents from Kobuk settled in Alatna in the early 1900s, and many of their ancestors remain in the community today. The Alatna Tribal Council is a federally recognized tribe. The U.S. Census Bureau (2011) reported a 2010 population of 32 residents in Alatna, 97 percent of whom were Native. Sources of employment include seasonal construction and firefighting jobs, the Alatna clinic, and income from trapping and Native crafts.

E4.2.1.1 Subsistence Use Areas

Figure E-49 displays Alatna and Allakaket combined subsistence use areas for all resources as documented by ADFG (1986b) and Marcotte and Haynes (1985) for the 1981-1983 time period; all of the reported use areas are located west of the Dalton Highway.

Subsistence use areas extend north along the Alatna River into the Brooks Range, west as far as Norutak Lake, south along the Kanuti River, and beyond Bettles and Evansville in the east. These studies show Alatna and Allakaket residents utilized a large area centered on the Koyukuk River, and along other major river drainages when accessing more distant use areas. Alatna and Allakaket use areas for the 1981-1983 time periods do not overlap with the APP corridor, but approach within 10 miles of the corridor to the east of Bettles and Evansville.

Resource-specific subsistence use area maps for Alatna and Allakaket are shown on **Figures E-50** through **E-54**, for the 1981-1983 time periods. Alatna and Allakaket salmon use areas for the 1981-1983 time period depicted on **Figure E-50** show residents fishing predominantly along the Koyukuk River south of the communities as well as on the Alatna River. As shown on **Figure E-51**, residents harvest non-salmon fish along the Alatna, Koyukuk (including the South Fork Koyukuk), and Kanuti rivers.

Large land mammal use areas (**Figure E-52**), including those for bear, moose, and Dall sheep, extend along several river drainages in the vicinity of Alatna and Allakaket. For the time period of 1981-1982, Alatna and Allakaket residents reported harvests of bear along the Koyukuk River between their communities and Bettles and Evansville, along the South Fork of the Koyukuk River, along the Alatna and Kanuti rivers, and in an isolated location adjacent to the Koyukuk River south of the communities. Bear and moose are often hunted in conjunction with one another, which is reflected by the fact that bear use areas closely mirror those for moose, though extending to within 10 miles of the APP corridor. Moose use areas notably extend farther north along the Alatna River in comparison to bear use areas. Dall sheep hunting occurs in mountainous areas of the Brooks Range surrounding the Alatna River.

Alatna and Allakaket small land mammal use areas are depicted in **Figure E-53** for the 1981-1983 time period. Residents reported harvesting furbearers, primarily through trapping and hunting during winter months when overland travel is more viable, in an area extending east along the South Fork of the Koyukuk River to within approximately 15 miles of APP, south along the Kanuti River, as far west as Norutak Lake, and stretching overland to the foothills of the Brooks Range in the north. Small game (including upland birds and furbearers), hunted for meat in addition to fur, were harvested in several areas close to the communities, mostly along the Alatna and Koyukuk rivers.

Figure E-54 depicts Alatna and Allakaket use areas for berries, plants, and wood, for the time period of 1981-1982. According to Marcotte and Haynes (1985), berry and plant harvests are concentrated in isolated spots along the Alatna, Kanuti, and Koyukuk rivers. Wood is mostly collected in areas immediately surrounding the communities.

E4.2.1.2 Harvest Data

Subsistence harvest data available for Alatna include three comprehensive (i.e., all resources) study years in the 1980s (1981-82, 1982-83, and 1983-84) for Allakaket and Alatna combined; five large land mammal study years (1997-1999, 2001, and 2002-03); a non-salmon fish study year (2002); and various years of salmon data between 1992 and

2009 (**Tables E-21** through **E-23**). During the three comprehensive study years, estimated per capita harvests in the two communities ranged from 629 pounds (1983-84) to 906 pounds (1981-82), indicating a heavy reliance on subsistence foods.

All-resources study years for Allakaket and Alatna (1981-82, 1982-83, and 1983-84) show salmon comprising the majority of yearly subsistence harvests, followed by non-salmon fish, and large land mammals. During all available study years (including the 1980s Allakaket and Alatna study years and a more recent 2002 Alatna-only study year), non-salmon fish harvests ranged from 34 pounds per capita to 177 pounds per capita (**Tables E-21** and **E-22**). Large land mammal harvests ranged from 73 pounds per capita in 1982-83 to 320 pounds per capita in 1997 (**Tables E-21** and **E-22**).

More specifically, the top species harvested by Alatna and Allakaket during the 1980s study years (**Table E-23**) were chum salmon, moose, Chinook salmon, and whitefish, with sheefish included in the top three species during the 1982-83 study year. Moose were also the top harvested large land mammal during more recent study years (1997-1999, 2001, and 2002-03), and chum were the top harvested salmon species during salmon study years from the 1990s through 2009. Other species that have contributed large quantities to Alatna's subsistence harvests include beaver, ducks, geese, and black bear. Several more recent study years show caribou harvests accounting for between 53 and 123 pounds per capita, however, other years show no harvests of this resource by the community likely due to the unpredictable availability of caribou in the area.

Salmon data from the ASFDB (ADFG 2009; **Tables E-22** and **E-23**) provide only harvest numbers and do not include estimated pounds. Numbers of salmon harvested by Alatna residents under salmon fishing permits in the Yukon Management Area have ranged from 5 salmon in 2005, to 659 salmon in 1992. Harvests of salmon are highly variable depending on the annual size of the salmon run as well as other environmental factors. For other limitations to the ASFDB data see Section 3.4.1. The most recent reported salmon harvest in 2009 amounted to 173 salmon.

Available data show high rates of participation in subsistence activities, with 100 percent of households using large land mammals during all but one study year, and between 55 percent and 90 percent of households attempting to harvest large land mammals (**Table E-22**). In particular, moose hunting shows a high rate of households participating, between 55 and 86 percent. The 1980s studies show over half of Alatna and Allakaket households harvesting Chinook salmon, chum salmon, ducks, geese, and whitefish. More recent non-salmon fish data for 2002 (**Table E-23**) show a relatively high percentage of households attempting to harvest sheefish (50 percent), Arctic grayling (33 percent), and northern pike (25 percent). Sharing of subsistence resources is common among Alatna households, with up to 67 percent giving away large land mammals and up to 100 percent receiving large land mammals during available study years. During the 2002 non-salmon fish study year (**Table E-22**), 50 percent of households received non-salmon fish and 17 percent gave the resource away.

E4.2.1.3 Seasonal Round

The seasonal round of subsistence harvest activities for communities in the Upper Koyukuk River region, which includes the communities of Alatna, Allakaket, Bettles, and Evansville, are described in Marcotte and Haynes (1985). Andersen et al. (2004a) and Brown et al. (2004) also provide updated seasonal round information for large land mammals and fish. The seasonal round presented in **Table E-24** represents the 1982 harvest-year and may not adequately represent the general seasonal round for these communities. **Table E-24** indicates that the spring months (April and May) are a period of lower activity for these four communities in the Upper Koyukuk River region. Resources including fish (e.g., whitefish, northern pike, and longnose sucker), waterfowl, game birds, bear, and small mammals including muskrat and hare are important resources during this period.

The summer months (June through August) are filled with a diverse number of subsistence harvest activities. Harvesters focus on fishing throughout this season, with salmon and other anadromous fish harvests taking place throughout the summer and into fall. In contrast to the seasonal round data presented in **Table E-24**, Andersen et al. (2004a) report non-salmon fish being harvested beginning in July and continuing into the month of November. They do not report fish harvests in any other months, whereas **Table E-24** shows non-salmon fish harvests occurring in May and June. Also in the summer, Upper Koyukuk community residents harvest hare, black bear, and Dall sheep, with the berry-picking season beginning in July and lasting into early fall (**Table E-24**).

Birds including waterfowl, grouse, and ptarmigan are important resources in the fall, as are large land mammals, including black bear and moose. Seasonal round data concerning moose harvests vary slightly between **Table E-24** data and Brown et al. (2004). While **Table E-24** shows moose being harvested throughout the winter months, Brown et al. (2004) recorded moose being harvested during the late summer and early fall, as well as in the month of March.

The winter season, which extends from November through March, is primarily spent harvesting furbearers including wolf, fox, wolverine, lynx, otter, beaver, marten, and muskrat (**Table E-24**). Grouse and ptarmigan as well as hare remain important resources throughout the winter. Northern pike, Arctic grayling, and burbot are harvested during the early winter. Caribou, which are not shown in **Table E-24**, reportedly are actively harvested during the months of March and April, as well as during the late fall and early winter months (Brown et al. 2004).

E4.2.2 Allakaket

As noted in the previous section (see Section 4.2.1, Alatna), the Allakaket and Alatna area was once the location of a seasonal trading village, where Koyukon Athabascans would meet and trade with Kobuk Eskimos from the north (Raboff 2001). The Reverend Hudson Stuck established a mission school for Native children, the St. John's in the Wilderness Episcopal Mission, in 1906, marking the permanent establishment of the community (ADCCED 2011). A post office was built in 1925. The general area where the Alatna and Koyukuk rivers meet was referred to as Alatna until 1938, when the name for the primarily

Koyukon mission community was changed to Allakaket and the Iñupiaq community across the river became Alatna. A clinic and airport were constructed for village residents in 1978; similar to Alatna, the community was rebuilt twice after flooding in 1964 and 1994, and in 1994 a new housing development was built on an adjacent hill, with some rebuilding on the floodplain (ADCCED 2011). The 2010 U.S. Census population was 105 persons, of whom 95 percent were Native (U.S. Census Bureau 2011). The Allakaket Tribal Council is a federally recognized tribe.

E4.2.2.1 Subsistence Use Areas

Allakaket subsistence use areas were documented by ADFG (1986b) and Marcotte and Haynes (1985) for the 1981-1983 time period and are the same as those shown and discussed for Alatna (**Figure E-49** through **E-54**) (see Section 4.2.1.1, Subsistence Use Areas).

E4.2.2.2 Harvest Data

Harvest data for Allakaket include several all-resources study years in the early 1980s for Allakaket and Alatna combined, five large land mammal study years between 1997 and 2003, one non-salmon fish study year (2002), and various years of salmon data between 1992 and 2009 available from the ASFDB (ADFG 2009). These data are provided in **Tables E-25** through **E-27**.

All-resources study years for Allakaket and Alatna (1981-82, 1982-83, and 1983-84) show salmon, primarily chum and Chinook salmon, comprising the majority of yearly subsistence harvests (between 59.8 percent and 63.8 percent), followed by non-salmon fish (between 18.6 percent and 20.1 percent) and large land mammals (between 10.5 percent and 18.6 percent) (see discussion of all-resources study years in Section 4.2.1.2, Harvest Data) (**Table E-25**). During all available study years, salmon provided between 376 and 554 pounds per capita, and large land mammals provided between 73 (in 1982-83) and 139 (in 1998) pounds per capita. Non-salmon fish, also an important subsistence resource, accounted for between 117 (in 1983-84) and 155 (in 2002) pounds per capita.

The top species harvested during the study years were chum salmon (providing between 347 and 512 pounds per capita) and moose (providing between 70 and 133 pounds per capita). Whitefish, sheefish, and northern pike were among the top non-salmon fish harvested during all available study years. Caribou harvests ranged from 7 pounds harvested per capita in 2001, to 53 pounds per capita a year later, in 2002-03. In addition, Allakaket households reported harvesting a total of between 10 and 18 black bears during available study years, which provided between 1 and 9 pounds per capita (**Table E-27**). Other key resources harvested during these study years included geese, ducks, and beaver (**Table E-27**).

The ASFDB (ADFG 2009) (**Table E-26**) shows salmon harvests from the Yukon Management Area, with one study year showing harvests in the Prince William Sound/Copper River Management Area. According to these data, Allakaket residents rely primarily on harvests of chum salmon followed by Chinook salmon. Harvests of salmon ranged from 997 salmon for the community in 1998 to 8,216 salmon in 1992. During the most recent study year (2009), residents harvested 5,629 salmon (**Table E-26**).

Similar to the neighboring community of Alatna, participation in subsistence activities among Allakaket households is high. Available data show between 69 and 84 percent of households attempting harvests of large land mammals during study years (**Table E-26**). In particular, between 66 and 80 percent of households attempted harvests of moose and between 7 and 68 percent attempted harvests of caribou (with the higher percentages likely occurring during years when caribou were in the area). Similarly, 66 percent of households participated in non-salmon fish harvests in 2002 (**Table E-26**). Resource-specific data from the 1980s indicates a similar amount of participation among Allakaket households (**Table E-27**). Sharing among Allakaket households is common, with up to 100 percent of households receiving large land mammals during available study years and up to 61 percent of households giving this resource away.

E4.2.2.3 Seasonal Round

Seasonal round data for the community of Allakaket are presented in **Table E-24** and are the same as described above for Alatna (see Section 4.2.1.3, Seasonal Round). In addition to the data provided by Marcotte and Haynes (1985), several other studies provide more recent seasonal round data for Allakaket (Andersen et al. 2004a; Brown et al. 2004). Brown et al. (2004) reported that caribou are actively harvested by the community of Allakaket during the spring, fall, and winter subsistence seasons, with the highest activity-level occurring in the late winter. In contrast to the data presented in **Table E-24**, Brown et al. (2004) reported moose harvests only during the month of March and September, with the latter being the most productive harvest month. Andersen et al. (2004a) corroborates the seasonal round data presented in **Table E-24** concerning harvests of non-salmon fish for the community of Allakaket. It should be noted that all seasonal round data for Allakaket are based on a single year of harvest data and may not adequately represent the general seasonal round of Allakaket.

E4.2.3 Beaver

Beaver is located on the north-bank of the Yukon River, approximately 110 miles north of Fairbanks in the Yukon Flats. The community was established in 1910 during a gold rush on the Chandalar River and nearby Caro gold fields. In 1910, Thomas Carter and H.E. Ashelby established a trading post in this location. One year later Frank Yasuda, a Japanese-American trader, arrived with his extended family from Barrow and became a partner in the trading post. When mining activity diminished in the area, the population declined. Trapping and trading became an important local economy, and in 1913 a post office was established. Since the establishment of the community in 1910, the population has fluctuated, reaching a low of 66 people during the 1980s (Sumida 1989). In 2010 the population of Beaver was 84, 98 percent of whom were Native (U.S. Census Bureau 2011). The Beaver Tribal Council is a federally recognized tribe.

E4.2.3.1 Subsistence Use Areas

Figure E-55 displays Beaver all-resource use areas as documented by SRB&A (2007) for the 1997-2006 time period, and Sumida (1989) for the lifetime (1930-1986) time period. Sumida's use areas are concentrated on the Yukon River near the community, and extend to overland areas on either side of the river. SRB&A's (2007) documented use areas for the time period 1997-2006 cover a considerably larger area, though those areas most heavily used (shown as red overlapping polygons) are located near the community and along the Yukon River, with fewer overland use areas than documented by Sumida (1989). SRB&A (2007) also documented use areas along major nearby tributaries including the Porcupine, Black, and Hadweenzic rivers, as well as Beaver Creek and Upper and Lower Birch creeks. Residents reported use areas as far west along the Yukon River to where it is crossed by the Dalton Highway, and as far east as the upper portions of the Porcupine and Black rivers. The highest numbers of overlapping use areas are located along the Yukon River, both upstream and downstream from the community. The westernmost boundary of Beaver subsistence use areas for the time period 1997-2006 (SRB&A 2007) meets the APP corridor at the Dalton Highway where it crosses the Yukon River. Sumida (1989) documented use areas that end east of the corridor at a considerable distance.

Resource-specific subsistence use area maps for Beaver are shown on **Figures E-56** through **E-63,** and include the 1930-1986 and 1997-2006 time periods. Beaver residents' salmon fishing areas (**Figure E-56**) for the 1930-1986 and 1997-2006 time periods are located primarily along the Yukon River between the mouths of Hodzana River and Lower Mouth Birch Creek. A small number of 1997-2006 salmon use areas were also reported on the Black River near Chalkyitsik and near the Dalton Highway where it crosses the Yukon River. Non-salmon fish use areas occur in the same areas, but with additional use areas occurring in various local lakes and along Beaver Creek, Hodzana River, Lower and Upper Mouth Birch creeks, and near Stevens Village (**Figure E-57**).

Beaver subsistence use areas for large land mammals are shown on **Figures E-58** through **E-59**. **Figure E-58** depicts lifetime caribou and moose use areas for the pre-1986 time period as documented by Sumida (1989), and moose use areas for the 1997-2006 time period as documented by SRB&A (2007). Beaver lifetime subsistence use areas for moose are mostly concentrated on the Yukon River near the community, as well as along several nearby drainages including Beaver Creek, and the Hodzana and Hadweenzic rivers. Sumida's (1989) study notes that moose hunting areas extend upstream to the community of Fort Yukon, though this was not spatially represented on the maps. Lifetime use areas for caribou occur solely along a "Government Trail" that extends north from the community between the Hodzana and Hadweenzic rivers. SRB&A (2007) recorded Beaver moose use areas, documenting considerably more area in comparison to Sumida's study, however, the greatest number of overlapping use areas are located within the moose use area reported by Sumida (1989). The 1997-2006 use areas for moose are most highly concentrated along the Yukon River near the community, but extend to the Dalton Highway and APP corridor in the west, south along Beaver Creek, as far east as the Salmon Fork of the Black River, and north along the Porcupine River. Beaver's bear use areas are shown on **Figure E-59** and include the lifetime (pre-1986) and 1997-2006 time periods. Lifetime use areas for bear were concentrated on the Yukon River and Beaver Creek, and use areas for the 1997-2006 time period extend past Fort Yukon along the Porcupine River in the east, south along Beaver Creek, west to just beyond Stevens Village, and north along the Hadweenzic and Hodzana rivers. Again, the majority of 1997-2006 use areas were reported along the Yukon River and lower portion of Beaver Creek (SRB&A 2007).

Lifetime furbearer hunting and trapping use areas (including traplines) (**Figure E-60**) extend east and west along the Yukon River, overland to the south, north toward Lone Mountain, and along the Government Trail adjacent to the Hadweenzic River. Use areas and traplines for furbearers and small land mammals recorded by SRB&A (2007) overlap with the APP corridor near the Dalton Highway in the west, extend north along the Hodzana River, south along Beaver Creek, and as far east as the Salmon Fork of the Black River. Traplines spread radially from the community and were also recorded near the communities of Chalkyitsik and Stevens Village. The 1997-2006 use areas for Beaver show less overland use but a greater extent of river travel.

Displayed in **Figure E-61** are Beaver residents' migratory bird use areas for the lifetime and 1997-2006 time periods. Use areas for both time periods are mostly centered on the community and downstream along the Yukon River, though SRB&A (2007) documented use areas extending to the Dalton Highway and overlapping with the APP corridor in the west in addition to isolated locations near Chalkyitsik. SRB&A (2007) recorded the greatest number of overlapping use areas for waterfowl located in lakes and sloughs directly surrounding the community and off of the Yukon River.

Upland bird use areas (**Figure E-62**) for the 1997-2006 time period were documented mostly near the community and in an isolated location near Chalkyitsik. The Government Road near Beaver is a popular local upland bird use area. Although not included in the mapping protocol, Sumida (1989) noted that both grouse and ptarmigan are hunted and ptarmigan are most often found in the flats and hills around Beaver.

Beaver use areas for plants, wood, and berries (**Figure E-63**) were documented in the immediate vicinity of the community, as well as in isolated locations near Stevens Village and Chalkyitsik. Wood in particular is harvested close to the community due to the effort involved in hauling the wood. Berry use areas are similar to those of plants and wood, but also extend south of the community along Beaver Creek.

E4.2.3.2 Harvest Data

Harvest data available for the community of Beaver consist of three comprehensive (i.e., all resources) studies for 1985, 1995, and 1996 (**Table E-28**), and multiple study years with data for one or more resource categories (e.g., birds, large land mammals, salmon; see **Table E-29**). The results of these studies are reported in **Tables E-28**, **E-29**, and **E-30**.

All-resources harvest data show that salmon comprised over half (56.6 and 54.3 percent) of the annual subsistence harvest during two study years (1985 and 1995) (**Table E-28**). Large land mammals were the top harvested resource in 1996, accounting for 62 percent of the total subsistence harvest in terms of percent of edible pounds, with salmon providing a smaller portion (28.7 percent). Per capita data are limited but show residents harvesting a total of 732 pounds per capita in 1985, with 414 pounds coming from salmon harvests, 129 from large land mammals, and 79 from non-salmon fish. A recent study on non-salmon fish shows the community harvesting the same pounds per capita (79) as in the earlier study (**Table E-29**). Non-salmon fish were generally the third most harvested resource during available study years, accounting for between 2.7 and 10.8 percent of the total harvest and ranging from 86 fish in 1993 to 6,580 in 1985. In addition to large land mammals and fish, Beaver residents also harvest migratory birds, small land mammals, upland game birds, and vegetation to varying degrees each year.

The primary species harvested in Beaver include chum salmon, Chinook salmon, and moose. During all harvest years reporting large land mammal harvests, the community harvested between 1 and 15 moose. Reported harvests of black bears were generally between 1 and 3 bears during most study years, with the exception of 2001-2002 when the Council of Athabascan Tribal Governments (2002) reported 22 black bears harvested by the community of Beaver. Other species contributing highly to the total subsistence harvest during available study years include ducks, geese, and northern pike (**Table E-30**). The harvest of muskrat, which contributed 2.1 percent of the total harvest in 1985, declined during later study years, however, as recently as 2007, residents of Beaver reported attempting harvests of muskrat (SRB&A 2007).

The ASFDB (ADFG 2009) shows residents utilizing both the Yukon and (to a lesser extent) Prince William Sound/Copper River management areas and harvesting between 203 and 3,583 salmon for all reported years (an average of 1,396 annually) (**Table E-29**). The most commonly harvested salmon species according to all available data are Chinook and chum (**Table E-30**).

Household participation data are only available for the 1985 all-resource study year (**Table E-28**) and for several resource-specific study years (**Table E-29**). In 1985, 100 percent of households reported attempting harvests of at least one subsistence resource, and over half of households reported attempting harvests of non-salmon fish, large land mammals, small land mammals, upland game birds, and vegetation (**Table E-28**). More recent study years show similarly high participation rates in Beaver, with 73 percent of households attempting to harvest non-salmon fish in 2005, and 46 percent attempting harvests of large land mammals in 2001-02, and over half of Beaver households harvesting migratory birds in 2000 (**Table E-29**). Sharing of subsistence resources is important, with 84 percent of Beaver households giving subsistence resources in 1985 and 94 percent receiving subsistence resources. More recent data show 46 percent of households receiving non-salmon fish (in 2005) and 88 percent of households receiving large land mammals (in 2003) (**Table E-28**).

E4.2.3.3 Seasonal Round

Beaver residents harvest a number of seasonal resources in the course of their annual cycle of subsistence activities. A comprehensive table of seasonal round data is presented in Sumida (1989) and reproduced as **Table E-31**. Additional studies with available seasonal round data for the community of Beaver include Sumida and Alexander (1985), Andersen and Jennings (2001a), SRB&A (2007), and Koskey and Mull (2011). Throughout the spring hunting season, harvesters focus on waterfowl (e.g., white-fronted and Canada geese and ducks), ptarmigan, and several species of fish including northern pike, burbot, and whitefish (**Table E-31**). Alternately, Andersen and Jennings (2001a) reported migratory bird harvests in Beaver starting in May. Small mammals such as muskrat and porcupine are harvested during the spring as well as the occasional black bear (**Table E-31**).

During the summer months, most of the resources harvested consist of Chinook, chum, and coho salmon and other fish. Chinook salmon are actively harvested in July, while chum salmon are one of the most heavily harvested resources during late July and August. Other fish including northern pike, sheefish, and whitefish are harvested throughout the summer months and are important subsistence resources for the community of Beaver (Koskey and Mull 2011). Small mammals and black bear continue to be harvested during the summer months with the addition of multiple varieties of berries.

Fishing for non-salmon fish continues throughout the fall months for Beaver residents according to Sumida (1989), however, more recent data by Koskey and Mull (2011) based on 2005 fish harvests suggest that almost all fishing activity occurred during the summer months during that time. Similar to Koskey and Mull (2011), SRB&A (2007) reported the majority of non-salmon fish use areas are accessed during June and July, with a smaller number also used between August and November. The harvest of moose and black bear intensifies during August and September, in addition to harvests of small mammals (e.g., porcupine, hare, and ground squirrel), waterfowl, and grouse (**Table E-31**).

Throughout the winter, Beaver residents engage in caribou hunting, with occasional moose harvests. Whitefish, northern pike, burbot, Arctic grayling, and longnose sucker are also harvested in early winter. Small land mammals (e.g., tree squirrels, hare, and beaver), furbearers, and ptarmigan are actively harvested throughout the winter months until the return of spring when the cycle begins again.

E4.2.4 Bettles

The community of Bettles is located 180 miles northwest of Fairbanks and directly north of the Kanuti NWR. Bettles is closely associated with the neighboring community of Evansville. A number of different Native groups historically utilized this area, including Koyukon Athabascans and Eskimos from the north and northwest, and the Koyukon reportedly had several camps throughout the area prior to the establishment of the towns. The original townsite of Bettles, or “Old Bettles,” is located approximately 6 miles from the current location and was once the northern-most terminal for the Koyukuk River barge line. Since its establishment, Bettles, and neighboring Evansville, have seen the construction of a Federal Aviation Administration airfield used by the U.S. Navy for exploration and maintenance purposes, a school, a post office, a health clinic, and several small businesses (Anderson 2010; ADCCED 2011). In 2010 the population of Bettles was 12, none of whom reported being Native (U.S. Census Bureau 2011).

E4.2.4.1 Subsistence Use Areas

Figure E-64 depicts Bettles and Evansville combined subsistence use areas for the 1981-1983 time period as documented by ADFG (1986b) and Marcotte and Haynes (1985). These studies show residents using areas near Alatna and Allakaket and along the Alatna River in the south, in mountainous areas of the Brooks Range near the John River in the north, as far east as the Dalton Highway, and along the Alatna River within the Brooks Range in the west. Use areas overlap with those of the nearby communities of Alatna and Allakaket (see **Figure E-49**), and tend to correspond with major river drainages, though there is considerable use of overland areas west of the John River and east of the Koyukuk River. Bettles and Evansville 1981-1983 subsistence use areas cover a large area that overlaps with the APP corridor near where the South Fork Koyukuk River meets the Dalton Highway, and use areas come within 5 miles of the corridor just south of where the Koyukuk River meets the Dalton Highway.

Resource-specific subsistence use area maps are displayed on **Figures E-65** through **E-69**, and are for the 1981-1983 time period. Bettles and Evansville salmon use areas for the 1981-1983 time period are depicted on **Figure E-65**. According to the figure, residents fished for salmon along the Koyukuk River as well as at the mouth of the South Fork Koyukuk River. Non-salmon fishing occurred at various locations on the Koyukuk River near the community and in various other smaller tributaries including the John and Alatna rivers and Iniakuk Lake (**Figure E-66**).

Documented moose and Dall sheep subsistence use areas are shown on **Figure E-67** for the 1981-1983 time period. Moose harvests occurred over a wide area along several river drainages, including the Koyukuk, Wild, John, and Alatna rivers. Dall sheep habitat tends to exist in mountainous areas, and use areas for Dall sheep correspond to river drainages within the Brooks Range, including the John and Alatna rivers.

Furbearer subsistence use areas (**Figure E-68**) for the 1981-1983 time period, predominantly utilized during winter months when overland travel is easier, covered an extensive area south of the Brooks Range and centered on the communities. These furbearer use areas included the area as far south as Fish Creek, west to Deadman Mountain, and north to Sixtymile Creek. Furbearers use areas occurred as far east as the Dalton Highway, and this eastern edge of their furbearer use for the 1981-1983 time period overlap with the APP corridor.

Wood, berries, and plants (**Figure E-69**) were all harvested close to the communities, mostly along the Koyukuk River. In general, wood use areas are located around the community and upriver on the Koyukuk River, whereas berry gathering also includes several areas south of the community and downriver on the Koyukuk River. An isolated wood use area was also documented along the South Fork Koyukuk River.

E4.2.4.2 Harvest Data

Subsistence harvest data available for Bettles consist of three comprehensive (i.e., all resources) studies and two-resource studies (for large land mammals and non-salmon fish), which report combined harvest totals for Bettles and Evansville (**Table E-32**, **E-33**, and **E-**

34). Data for Bettles alone consist of three large land mammal harvest studies and salmon harvest data from the ASFDB.

All-resources study years (**Table E-32**) show residents of Bettles and Evansville harvesting between 10,348 and 16,903 total edible pounds of subsistence resources. Per capita harvests for these communities ranged from 123 and 260 pounds of edible harvest (**Table E-32**). Large land mammals accounted for the majority of the subsistence harvest during all available study years, followed by salmon, non-salmon fish, and vegetation. While harvests of large land mammals by Bettles and Evansville in the 1980s provided between 89 and 134 edible pounds per capita, more recent data from 1998 and 1999 for Bettles alone show per capita harvests of 242 and 80 pounds, respectively.

Moose and chum salmon were the top harvested species during the 1980s study years. The most harvested large land mammal species, in terms of edible pounds, were moose and caribou. Per capita harvests of these species are highly variable and no harvests of either were reported during two of the study years. During successful years, harvests ranged from 18 to 127 pounds of moose per capita, and from 5 to 107 pounds of caribou per capita. Chum salmon harvests provided between 11 and 62 pounds per capita during available study years. Both brown and black bear were harvested in some but not all years. Other top species include sheefish, Arctic grayling, and berries (**Table E-34**)

The ASFDB reports that residents of Bettles harvest salmon from the Yukon, Prince William Sound/Copper River and Kodiak management areas. According to these data, subsistence salmon harvests for Bettles are highly variable; during some years residents reported no harvests of salmon, and in 1995, 1,328 salmon were harvested (years with no reported harvests are not shown in the harvest data tables) (**Table E-33**). During years with reported harvests, Bettles residents reported harvesting an average of 168 salmon annually. Chum salmon comprise the majority of salmon harvests, but Chinook, coho, and sockeye salmon are also harvested (**Table E-34**).

Participation data are available from the 1980s Bettles and Evansville study years and from the 1997-1999 large land mammal studies (**Table E-32** and **E-33**). The 1980s data show over one-third of households harvesting moose (data on attempted harvests are not available) and between 16 and 25 percent of households harvesting chum salmon. Over 50 percent of households harvested berries and Arctic grayling during the 1980s study years. More recent studies for Bettles alone show 60 and 67 percent of households attempting harvests of large land mammals, and 38 percent attempting harvests of non-salmon fish (**Table E-33**). In 1997, no households were successful in harvesting large land mammals (**Table E-34**).

E4.2.4.3 Seasonal Round

Seasonal round data for the community of Bettles are presented in **Table E-24** and are the same as described above for Alatna (see Section 4.2.1.3, Seasonal Round).

E4.2.5 Coldfoot

Coldfoot is located at the mouth of Slate Creek on the east-bank of the Middle Fork Koyukuk River, at milepost (MP) 175 of the Dalton Highway. In 2010 the reported population was 10, of whom 10 percent were Native (U.S. Census Bureau 2011). Originally named Slate Creek, the town was established during the gold rush around the turn of the 20th century. By 1902, Coldfoot had a number of businesses and a post office, all of which were closed by 1912 when the nearby mine was abandoned for other areas further north (ADCCED 2011).

E4.2.5.1 Subsistence Use Areas

Subsistence use area data are not available for the community of Coldfoot.

E4.2.5.2 Harvest Data

Existing harvest data for the community of Coldfoot consist solely of ASFBD data from 1988, 1992, 1994, and 2006-2008 (**Table E-35**). Residents of Coldfoot reported salmon harvests in the Yukon and Prince William Sound/Copper River Management Areas. Residents of Coldfoot most commonly reported harvesting sockeye salmon, with harvest numbers ranging between 5 and 60 individual fish during the 6 years of available data. Limited harvests of Chinook and other salmon were also reported during certain study years (**Table E-36**).

E4.2.5.3 Seasonal Round

Seasonal round data are not available for the community of Coldfoot. Wiseman is the nearest study community with available seasonal round descriptions (see Section 4.2.12.3, Seasonal Round).

E4.2.6 Evansville

The community of Evansville is located 180 miles northwest of Fairbanks and directly north of the Kanuti NWR. Evansville is closely associated with the neighboring community of Bettles. A number of different Athabascan and Eskimo groups utilized this area historically, and the Koyukon Athabascans are reported as having several camps throughout the area prior to the establishment of the towns. The town was named after Wilford Evans Sr., who owned and operated a sawmill at the site in the first half of the 20th century. Since their establishment, Evansville and neighboring Bettles have seen the construction of a Federal Aviation Administration airfield used by the U.S. Navy for exploration and maintenance purposes, a school, a post office, a health clinic, and several small businesses (Anderson 2010; ADCCED 2011). In 2010 the population was estimated to be 15, 53 percent of whom were Native (U.S. Census Bureau 2011). Evansville Tribal Council is a federally recognized tribe.

E4.2.6.1 Subsistence Use Areas

Evansville subsistence use areas were documented by ADFG (1986b) and Marcotte and Haynes (1985) for the 1981-1983 time period and are the same as those shown and discussed for Bettles (**Figure E-64** through **E-69**) (see Section 4.2.4.1, Subsistence Use Areas).

E4.2.6.2 Harvest Data

Subsistence harvest data available for Evansville consist of three comprehensive (i.e., all resources) studies from the 1980s, and two single-resource studies (for large land mammals and non-salmon fish) that report combined harvest totals for Evansville and Bettles (**Table E-37**, **E-38**, and **E-39**). Available data for Evansville alone include three single-resource studies for large land mammals.

All-resources study years for Evansville and Bettles combined are from 1981-82, 1983, and 1984, and report an estimated total subsistence harvest of between 10,348 and 16,903 pounds annually. During these study years, the per capita harvests for both communities was between 123 and 260 pounds of edible harvest (**Table E-37**) (see discussion of all-resources study years above, in Section 4.2.4.1, Harvest Data). Large land mammal harvests accounted for over half of the total subsistence harvest during the 1980s study years, providing between 89 and 134 pounds per capita. More recent data for Evansville alone show large land mammals providing 52 (in 1999) and 84 (in 1998) pounds per capita, with 0 harvests reported in 2002-03 for Bettles and Evansville combined (**Table E-38**). Salmon was generally the second most harvested resource, contributing between 11.4 and 25.2 percent of the total yearly harvest and providing between 14 and 66 pounds per capita (**Table E-37**). Other resources that contributed substantial quantities to the yearly harvest during these studies were non-salmon fish and vegetation (**Table E-37**).

Moose was the top harvested resource during both all-resources and large land mammal study years, providing between 32 and 96 pounds per capita during successful years (the 2002-03 study year shows no large land mammal harvests) (**Table E-39**). Chum salmon was the second most harvested species (in terms of percent of usable weight) during the 1980s study years, and was followed, in varying orders, by harvests of berries, caribou, and non-salmon fish species such as Arctic grayling, sheefish, whitefish, and lake trout. In 2002-03, when residents of Bettles and Evansville reported 0 harvests of large land mammals, 89 percent of households reported receiving moose (presumably from other communities).

Participation data are available from the 1980s Bettles and Evansville study years and from the Evansville large land mammal studies (**Tables E-38** and **E-39**). The 1980s data show over one-third of households harvesting moose (data on attempted harvests are not available), between 16 and 25 percent of households harvesting chum salmon, and over 50 percent of households harvesting berries and Arctic grayling. During the Evansville large land mammal studies, at least three-quarters of households reported using large land mammals, and at least one-third of households reported attempting harvests of large land mammals. In 1998, 75 percent of households participated in moose hunting. Sharing of large land mammals is an important aspect of subsistence in Evansville, with over half of the households receiving large land mammal shares during available study years (**Table E-38**).

E4.2.6.3 Seasonal Round

Seasonal round data for the community of Evansville are presented in **Table E-24** and are the same as described above for Alatna (see Section 4.2.1.3, Seasonal Round).

E4.2.7 Fort Yukon

Fort Yukon is located at the confluence of the Yukon and Porcupine rivers approximately 145 miles northeast of Fairbanks. The village was first established by Alexander Murray in 1847 as a Canadian outpost and quickly became an important trading center for the Athabascan Gwich'in groups living in the area. The outpost operated at Fort Yukon until 1869, when, following the Alaska Purchase in 1867, Fort Yukon was located in U.S. territory. Subsequently, the site continued as a trading post under different ownership. The community profited from the increase in exploration and exploitation of natural resources common during this period in Alaska history. In 1898 a post office was established in the community. Epidemics that struck the area from the 1860s through the 1950s affected the regional population and, in combination with increasing economic opportunities and compulsory education introduced in the 1950s, contributed to the centralization of people living throughout the Yukon Flats into the regional center of Fort Yukon. Although the community suffered from these episodes during the early 20th century, it was incorporated as a city in 1959 (ADCCED 2011). In 2010 the reported population of Fort Yukon was 583, 89.2 percent of which were Native (U.S. Census Bureau 2011). Fort Yukon's tribal council is a federally recognized tribe.

E4.2.7.1 Subsistence Use Areas

Figure E-70 depicts Fort Yukon subsistence use areas as documented by Caulfield (1983) for the lifetime (pre-1982) time period, Sumida and Andersen (1990) for the 1925-1987 time period, traplines as documented by Shimkin (1955) for the 1948-1949 time period, and SRB&A (2007) for the 1997-2006 time period. Caulfield's lifetime use areas are centered on the Yukon River between Fort Yukon, Beaver, and Birch Creek, and extend beyond Circle, Old Rampart, and Chalkyitsik. Sumida and Andersen's (1990) use areas for 1925-1987 show Fort Yukon residents utilizing a large area centered on the community and along the Yukon River between Beaver and Circle, but also to the north along the Christian River, and to the east along the Porcupine and Black river watersheds. SRB&A's (2007) more recent use areas for the 1997-2006 time period mostly correspond to those previously documented, though residents reported more extensive use of the Yukon River beyond Circle, an overland area south of Old Rampart, and along the Chandalar River near Venetie. The more recent subsistence use areas for the 1997-2006 time period do not show extensive overland use as documented by Sumida and Andersen (1990); the highest number of overlapping use areas are located along the Yukon River between the Lower Mouth Birch Creek and Circle as well as along the Porcupine River from its mouth to the mouth of the Sheenjek River. Shimkin's (1955) traplines document extensive use of a large area surrounding Fort Yukon during the 1948-1949 time period; traplines were reported beyond Circle to the south, east along the Kandik River, north along the Coleen River, and west as far as the Hadweenzic River just north of Beaver. Fort Yukon subsistence use areas for the lifetime (pre-1982), 1925-1987, and 1997-2006 time periods do not overlap with the APP corridor. The use area for all resources combined only extends to areas immediately downstream from the community of Beaver.

Resource-specific subsistence use area maps are depicted on **Figures E-71** through **E-79** for the lifetime (pre-1982), 1925-1987, 1948-1949, and 1997-2006 time periods. Caulfield (1983) documented Fort Yukon use areas for all fish for the lifetime (pre-1982) time period (**Figure E-71**). These use areas are mostly confined to the Yukon and Porcupine rivers, with one fishing location recorded a considerable distance from the community on the Black River. Fort Yukon salmon fishing areas for the 1925-1987 and 1997-2006 time periods are depicted on **Figure E-72** and show greater use of the Yukon and Sheenjek rivers during the more recent 1997-2006 study years than the 1925-1987 salmon use areas which are located closer to the community along the Yukon River. SRB&A (2007) documented non-salmon fish use areas (shown on **Figure E-71**) that occur in areas similar to those recorded by Caulfield (1983) for all fish, but which also extend north along the Sheenjek, Christian, and Porcupine rivers.

Fort Yukon subsistence use areas for large land mammals are shown on **Figures E-73** through **E-75**. **Figure E-73** displays Fort Yukon caribou use areas and indicates consistent use of areas along the Porcupine River near Old Rampart for the lifetime, 1925-1987, and 1997-2006 time periods. The greatest numbers of caribou use areas as documented by SRB&A (2007) occur between Old Rampart and the Canada border. Caulfield (1983) and SRB&A (2007) also documented more isolated caribou use areas near Birch Creek (pre-1982 time period) and near Venetie (1996-2007 time period). Fort Yukon moose use areas are depicted on **Figure E-74** for the lifetime, 1925-1987, and 1997-2006 time periods. While Caulfield's (1983) and SRB&A's (2007) use areas indicate heavy use of areas immediately adjacent to several major river systems, Sumida and Andersen's (1990) use areas show additional inland use areas to the north and south of the community. The highest number of moose use areas for the 1996-2007 time period are located along the Yukon River between the Lower Mouth Birch Creek and Fort Yukon as well as along the first 40 miles of the Porcupine River. Lifetime bear use areas (**Figure E-75**) are shown along the Yukon River mostly downstream from the community to a point beyond Beaver, and along Birch Creek; more recent (1997-2006) use area data on bear hunting areas show expanded use areas beyond Old Rampart along the Porcupine River, along the Yukon River to Circle, as well as areas along the Chandalar, Sheenjek, and Black rivers. The highest number of overlapping bear use areas are located along the Porcupine and Sheenjek rivers.

Fort Yukon hunting areas for small land mammals are depicted on **Figure E-76** for the lifetime, 1925-1987, and 1997-2006 time periods. Fort Yukon areas for small land mammal hunting and furbearer trapping (**Figure E-76**) show considerable contraction over time. While Shimkin's (1955) traplines include use of a large overland area in all directions from the community, more recent (lifetime to 1982; 1925-1987) use area data on trapping indicates less use of those areas farther from the community, which is reaffirmed by the most recent (1997-2006) trapline data that shows use of the Yukon and Porcupine river drainages, as well as smaller tributaries near Fort Yukon. Beside the traplines, other areas used for small land mammal hunting during the 1996-2007 time period were concentrated east of the community along the Porcupine River and west of Fort Yukon near the Upper and Lower Mouth Birch creeks.

Fort Yukon lifetime wildfowl harvests (including waterfowl and upland birds) (**Figure E-77**) occurred along the Yukon, Black, and Porcupine rivers as well as in the Birch Creek watershed; more recent (1997-2006) use area data for waterfowl and eggs show that residents more recently traveled as far as Chalkyitsik on the Black River, and did not use much of Birch Creek to harvest these resources. SRB&A's (2007) overlapping waterfowl and egg use areas indicate that the highest number of use areas occurred along the Yukon River, primarily between the Upper Mouth Birch Creek to an area approximately 10 miles upriver from Fort Yukon.

As shown on **Figure E-78**, Fort Yukon wildfowl use areas (see **Figures E-77** and **E-78**) for the lifetime time period show residents utilizing an area extending from Beaver in the west to the Black River in the east, and as far south as Circle, however, this use area included waterfowl and thus is not useful in comparing to the more recent 1996-2007 upland bird use areas (SRB&A 2007). Upland bird use areas for the 1996-2007 time period (**Figure E-78**) are concentrated in areas immediately surrounding the community and extending along the Porcupine River, with discontinuous use areas near Upper Mouth Birch Creek and Fishhook Bend. The greatest concentration of upland bird use areas occurs directly east of the community.

Vegetation use areas include those documented by Caulfield (1983) and SRB&A (2007) for the lifetime (pre-1982) and 1996-2007 time periods. Vegetation use areas (**Figure E-79**) for the lifetime time period show residents harvesting vegetation, fuel, and wood primarily in riparian zones near the community and along the Black River and Beaver Creek. For 1996-2007, Fort Yukon residents reported harvesting plants and wood mostly in areas immediately surrounding the community, and berries in discontinuous locations along the Yukon, Porcupine, and Black rivers, as well as near Circle and along the Steese Highway to the south.

E4.2.7.2 Harvest Data

Harvest data for Fort Yukon are provided in **Tables E-40** through **E-42**. The harvest data presented in these tables consist of seven comprehensive (i.e., all resource) study years (**Table E-40**), two single-resource study years for non-salmon fish and migratory birds, and various years of salmon harvest data from the ASFDB (**Tables E-41** and **E-42**).

All-resources harvest data for 1986-87 and from 1993 to 1998 are depicted in **Table E-40**. Residents of Fort Yukon rely primarily on harvests of salmon and large land mammals, with non-salmon fish, migratory birds, and small land mammals also contributing substantially to the subsistence harvest during certain years. Data on harvests of vegetation were not collected during the 1990s study years. Salmon was the primary resource harvested (in terms of percent of total harvest) during all but two study years (1994 and 1995), when large land mammals accounted for a greater portion of the harvest. Data on per capita harvests are only available for the 1986-87 study year and show residents harvesting 999 pounds of subsistence resources per capita, including 608 pounds of salmon, 200 pounds of large land mammals, and 121 pounds of non-salmon fish. Total pounds harvested by the community of Fort Yukon during the 1990s study years range from 3,133 (in 1998) to 96,060 (in 1995) and were influenced primarily by variations in salmon and large land mammal harvests (**Table E-40**). During all study years, salmon accounted for between 39.1 and 65.1 percent of the total harvest; large land mammals accounted for between 16.6 and 55.2 percent of the harvest; and non-salmon fish contributed from 0.6 to 12.1 percent of the harvest. The most recent data for non-salmon fish and migratory birds show substantially higher harvests than reported during earlier all-resource study years (78 pounds per capita of non-salmon fish and 18 pounds per capita of migratory birds) (**Table E-41**).

The primary species of salmon harvested in Fort Yukon are chum and Chinook, and the primary species of large land mammals harvested are moose and caribou (**Table E-42**). Chum and Chinook salmon harvests vary from year to year, with some years dominated by chum salmon and others by Chinook salmon. Harvests of moose and caribou are also highly variable, with **Table E-42** showing harvests ranging from 1 to 160 moose and between 10 and 156 caribou during available study years; a 5-year study conducted from 1993 to 1998 shows a total of 202 moose harvests during that time period. Other species that contributed large quantities to Fort Yukon's subsistence harvest during the study years included black and grizzly bear, ducks, geese, various species of whitefish, and snowshoe hare (**Table E-42**).

The ASFDB reports Fort Yukon residents harvesting salmon in the Yukon and Prince William Sound/Copper River management areas. The database reports annual harvest totals from 1992 to 2009 according to salmon fishery permits but does not include salmon harvested with methods such as rod-and-reel (**Tables E-41** and **E-42**). Estimated harvest numbers from the ASFDB shows somewhat lower harvests of salmon than during all-resources study years (**Tables E-40** and **E-41**). According to the ASFDB, residents harvested between 1,431 and 18,287 salmon during these years, with an average annual harvest of 10,670 (**Table E-41**). The primary salmon species harvested, in terms of number harvested, are chum and Chinook (**Table E-42**).

Household participation data are limited to the 1986-87 all-resource study year (**Table E-40**) and several single-resource study years (**Tables E-41** and **E-42**). In 1986-87, 100 percent of Fort Yukon households attempted to harvest at least 1 resource, and 88 percent reported successful harvests (**Table E-40**). More recent resource-specific data show 31 percent of households participating in harvests of non-salmon fish (in 2005), 51 percent harvesting migratory birds (in 2000), and 31 percent attempting harvests of moose (in 2003) (**Tables E-41** and **E-42**). Sharing of subsistence resources is also important, with 78 percent of the community sharing resources and 97 percent receiving in 1986-87 (**Table E-40**).

E4.2.7.3 Seasonal Round

Table E-43 depicts the annual cycle of subsistence activities at Fort Yukon circa 1987 as reported by Sumida and Andersen (1990). In 1990, Sumida and Andersen reported that the seasonal round as described for 1987 matched closely with that reported from 1970 to 1982 by Caulfield (1983). Several more recent sources of Fort Yukon seasonal round include Andersen and Jennings (2001a), SRB&A (2007), and Koskey and Mull (2011). The onset of spring in April and May in Fort Yukon marks the beginning of geese, duck, and crane hunting; hunting of black bears emerging from their winter dens; and the conclusion of muskrat hunting that had begun in earnest during February and March (Andersen and Jennings 2001a) (**Table E-43**). Non-salmon fish such as northern pike, sheefish, and whitefish are also harvested during the spring and continuously throughout the year with the exception of a few months during the late winter (Koskey and Mull 2011) (**Table E-43**).

The summer subsistence harvest season begins in June and continues through the end of August. Chinook salmon are harvested throughout the summer months, while chum salmon, a mainstay of Fort Yukon subsistence harvests, begins in July and continues into October (**Table E-43**). Coho salmon are harvested in the fall, but to a lesser extent than chum salmon. Porcupine and squirrel, as well as smaller numbers of waterfowl, upland game birds, and black bear are also harvested throughout the summer.

In addition to harvesting salmon and other fish, large mammals including caribou, black bear, and moose are harvested during the fall months of August and September. Unlike **Table E-43**, which showed high levels of caribou hunting activity in September, October, and March, more recent seasonal round data collected by SRB&A (2007) show that the peak of caribou activity for Fort Yukon residents occurs in September near the Canada border and very little caribou hunting occurs during other months of the year. Fort Yukon hunters continue to harvest waterfowl, small mammals (e.g., porcupine and ground squirrel) and ptarmigan and grouse as well as a variety of berries during the fall season.

As winter begins in November and December, Fort Yukon harvesters concentrate on small mammals, furbearers, fish, and game birds. Fishing during winter usually only extends through November and early December. Occasional moose and caribou harvests may also occur during the winter months (**Table E-43**).

E4.2.8 Livengood

Livengood is located approximately 50 miles northwest of Fairbanks, on the Dalton Highway at the Elliott Highway junction. The community was established as a mining camp in 1914 when gold was found on nearby Livengood Creek. During this time hundreds of people moved into the area, and in 1915 a post office was established in the community. By 1957 most of the population had left, and today most of the homes in Livengood are seasonally occupied (ADCCED 2011). In 2010 the year-round population of Livengood was estimated to be 13, of whom 23.1 percent were Native (U.S. Census Bureau 2011).

E4.2.8.1 Subsistence Use Areas

Subsistence use area data are not available for the community of Livengood.

E4.2.8.2 Harvest Data

Harvest data are not available for the community of Livengood.

E4.2.8.3 Seasonal Round

Seasonal round data are not available for the community of Livengood. Minto is the nearest study community with available seasonal round descriptions (see Section 4.3.10.3, Seasonal Round).

E4.2.9 Nolan

The community of Nolan is approximately 5 miles northwest of the community of Wiseman, near the Dalton Highway. No ADCCED or U.S. Census information exists for this community, but previous research by ADFG identified a few year-round residents living in the community.

E4.2.9.1 Subsistence Use Areas

Subsistence use area data are not available for the community of Nolan.

E4.2.9.2 Harvest Data

Harvest data are not available for the community of Nolan.

E4.2.9.3 Seasonal Round

Seasonal round data are not available for the community of Nolan. Wiseman is the nearest study community with available seasonal round descriptions (see Section 4.2.12.3, Seasonal Round).

E4.2.10 Rampart

The community of Rampart is located 100 miles northwest of Fairbanks on the south-bank of the Yukon River, approximately 75 miles upstream from the confluence of the Yukon and Tanana rivers. During the late 1800s the community, then called Rampart City, was established as a gold rush boomtown, which was populated by approximately 10,000 people at its height. During the short-lived boom, Rampart City had a number of services and businesses including hotels, a fire department, and a newspaper. By 1903 the mining population had abandoned Rampart, and by 1917 only a small population (approximately 60 people) remained. During the first half of the 20th century, a number of different projects were started in the community including a U.S. Department of Agriculture experimental farm, a sawmill and logging operation, a salmon cannery, as well as the continued mining of gold. The closure of the Rampart school in 1999 due to an insufficient student population led to a number of families leaving the community. The 2010 population was 24, with 96 percent of whom were Native (U.S. Census Bureau 2011). The Rampart Village Council is a federally recognized tribe.

E4.2.10.1 Subsistence Use Areas

Figure E-80 depicts Rampart subsistence use areas for the 1975-1995 time period as documented by Betts (1997). All-resources use areas are centered on the community and extend west along the Yukon River, overland to the south, and intersect the Dalton Highway where it crosses the Yukon River. Rampart subsistence use areas for the 1975-1995 time period overlap with the APP corridor near where the Dalton Highway crosses the Yukon River, and again roughly 10 miles south.

Subsistence use area maps depicting specific resources are displayed on **Figures E-81** through **E-86** for the same time period. Rampart residents harvested salmon (**Figure E-81**) along the Yukon River over 20 miles in either direction. Non-salmon fish use areas (**Figure E-82**) are also located along the Yukon River as well as in several small tributaries, including Hess and Minook creeks, in close proximity to the community.

Figure E-83 displays caribou, moose, and bear use areas for the 1975-1995 time period. During the 20 year timeframe, caribou were hunted while residents traveled upriver and downriver from the community with the greatest extent of caribou use areas located downriver from Rampart. Likewise, moose were largely harvested along the Yukon River and nearby tributaries such as Minook and Hess creeks as well as upland areas south of Rampart; moose use areas overlap with the APP corridor near the Dalton Highway. Bear hunting, which often occurs in conjunction with moose hunting, was documented along Minook and Hess creeks as well as directly around the community.

Documented small game and trapping areas (**Figure E-84**) covered perhaps the largest area of any resource, centered on the community and outward in an overland area north and south of the Yukon River. The eastern border of these use areas overlaps with the pipeline corridor just south of the Yukon River along the Dalton Highway. Small game (which include ptarmigan and grouse in addition to small land mammals) use areas were limited to the area directly surrounding the Rampart and Minook creek drainages.

Waterfowl use areas are depicted on **Figure E-85** and are confined to areas mostly upstream along the Yukon River as well as the lower portion of Hess Creek. Local lakes are also important waterfowl harvest areas. The eastern edge of Rampart waterfowl use areas overlap the APP corridor near the Dalton Highway.

Berries and wood (**Figure E-86**) were collected mostly along the Yukon River upstream from the community, overlapping with the APP corridor near the Dalton Highway. Other locations for berry and wood harvests include the Minook Creek drainage and several small areas south of the community along the Yukon River. The area directly surrounding the community is also used for berry gathering.

E4.2.10.2 Harvest Data

Harvest data for Rampart are provided in **Tables E-44** through **E-46**. Available harvest data include four comprehensive study years where all, or nearly all, resource categories are reported (**Table E-44**), as well as several non-comprehensive study years reporting one or more resource categories (e.g., large land mammals, salmon, migratory birds; **Tables E-45** and **E-46**).

The residents of Rampart rely heavily on subsistence hunting and between 1993 and 1997 harvested between 19,645 and 36,713 total pounds of subsistence resources, an average

30,069 pounds, annually. During all available study years (1993-1997) salmon accounted for the majority (between 78.5 and 86.3 percent) of subsistence foods harvested by the community in terms of edible pounds (**Table E-44**). During 3 of the 4 study years, large land mammals were the second most important resource, based on harvested pounds, contributing between 7.4 percent and 17.7 percent toward the total harvest. In 1993, non-salmon fish contributed 13.9 percent of the total harvest. All other resources constituted less than one percent of the reported subsistence harvest during the study years (**Table E-44**).

The primary species harvested in Rampart, according to available data (**Table E-46**), include Chinook, chum, and coho salmon; moose, and, during certain years, whitefish. While overall salmon harvests remained relatively stable over the available all-resources study years (between 2,766 and 3,090 individuals), moose harvests ranged from 1 harvested in 2005, to 13 harvested in 2001-02 (and a total of 26 for the 1993 to 1996 time period). Other species harvested by Rampart residents include black bear, ducks, geese, and wolves (**Table E-46**).

According to the ASFDB (ADFG 2009), Rampart residents harvest salmon in the Yukon Management Area only. The total number of salmon harvested under subsistence permits is reported for almost all years between 1992 until 2009. During this time the community harvested between 575 and 13,088 salmon, an average of 3,116, annually (**Table E-45**). This is similar to the numbers reported during all-resources study years (**Table E-44**). Harvest numbers during the 2000s generally fell below the average harvest of 3,116 (**Table E-45**). Chum and Chinook salmon are the primary salmon species, based on total number harvested. Coho salmon are also reported, but in smaller numbers and less often than the other two salmon species.

Little participation data are available for the community of Rampart. One large land mammal study from 2001-02 shows 53 percent of households in Rampart using large land mammals and 42 percent attempting harvests of large land mammals. In addition, 42 percent of households harvested migratory birds in 2000 (**Table E-45**). Sharing data are available for large land mammals during several study years (2001-02, 2003, and 2005) and show between 21 and 100 percent of households receiving large land mammal shares (**Table E-45**).

E4.2.10.3 Seasonal Round

Descriptions of seasonal subsistence activities for the community of Rampart are available in Betts (1997), with more recent data collected by Andersen and Jennings (2001a) for birds. **Table E-47** shows the annual cycle of subsistence activities for Rampart as reported by Betts (1997). Beginning in the spring (April and May), Rampart residents will occasionally take moose, caribou, and black bear, although small land mammals (e.g., hare and muskrat), game birds, waterfowl, and multiple types of non-salmon fish are harvesters' primary focus during this time (**Table E-47**) (Andersen and Jennings 2001a). With the exception of caribou, most small land mammals, and game birds, all of these resources continue to be harvested throughout the summer.

Beginning in June, Chinook salmon are actively harvested, followed by chum salmon, and finally coho salmon (**Table E-47**). Berry and plant harvests are also important gathering activities conducted in mid-summer and into fall.

Chum and coho salmon continue to be harvested into the fall months, coinciding with an intensification of harvest efforts for moose, waterfowl, and grouse. In addition to moose, other large land mammals such as black bear and caribou are occasionally harvested. Smaller land mammals including porcupine and hare may also be taken when available.

The winter months of November through March are spent harvesting furbearers and small land mammals in addition to game birds, moose, and denned black bears (**Table E-47**). Firewood is an important resource throughout the cold months of the year and is actively collected by Rampart harvesters starting in the fall and continuing on throughout the winter. Betts (1997) reports that Arctic grayling are the only fish taken during the late-winter month of March.

E4.2.11 Stevens Village

The community of Stevens Village is located 90 miles northwest of Fairbanks and is 17 miles upstream from the Dalton Highway Bridge on the northern bank of the Yukon River (ADCCED 2011). Ethnographic reports and notes suggest that prior to the establishment of Stevens Village in 1901, this area was the location of a Gwich'in village that was either abandoned or decimated by a contact-era epidemic. The current community was established by three Koyukon-speaking brothers who moved to this area with their families and others from the Kokrines and Koyukuk River area in the early 1900s (Sumida 1988). During the gold rush a trading post was opened in the community and the residents supplied wood to miners moving up and down the Yukon River. In 1939 a tribal government was formed under the Indian Reorganization Act of 1936; today the Native Village of Stevens maintains its status as a federally recognized tribe (Sumida 1988). In 2010 the population of Stevens Village was estimated to be 78, 85 percent of whom were Native (U.S. Census Bureau 2011).

E4.2.12 Subsistence Use Areas

Figure E-87 depicts Stevens Village subsistence use areas for all resources as documented by ADFG (1986b) and Sumida (1988) for the 1974-1984 time period. Stevens Village residents reported use of areas along the Yukon River between its confluence with the Big Salt River and the community of Beaver, as well as a large overland area mostly north of the community and east of the Dalton Highway. Stevens Village subsistence use areas for the 1974-1984 time period overlap with the APP corridor in two separate locations along the Dalton Highway to the west and northwest of the community.

Subsistence use area maps organized by resource are displayed on **Figures E-88** through **E-92** for the 1974-1984 time period. Stevens Village fish wheels/nets, permitted along the Yukon River for salmon harvests, are shown on **Figure E-88** for the 1984 time period, as are salmon use areas for the 1974-1984 time period. Recorded fish wheel and net sites occur upriver as far as Gull Island, but to a greater extent downriver as far as the confluence with the Ray River beyond the Dalton Highway and APP corridor. Salmon subsistence use areas from the 1974-1984 occur over a similar length of the Yukon River (**Figure E-88**).

Stevens Village black bear and moose use areas are displayed on **Figure E-89** for the 1974-1984 time period, showing residents harvesting moose and black bear along the Yukon River from Beaver to the Dalton Highway. The western boundaries of their moose and bear use areas overlap with the APP corridor. Moose use areas also extend overland continuously from Rogers Creek in the south to beyond Lone Mountain in the north. In addition to bear use areas along the Yukon River, two additional bear use areas were documented around Gushdoiman Lake and Rogers Creek.

Furbearer harvests (**Figure E-90**) occurred across a large overland area extending to Rogers Creek in the south, Hermit Ridge in the east, beyond Lone Mountain in the north, and beyond the Dalton Highway and APP corridor near Caribou Mountain and Ray River in the west. Many of these areas are accessed by an extensive network of trails throughout the Yukon Flats and surrounding hills (Sumida 1988). Furbearer use areas overlap the APP corridor in two locations: Near Caribou Mountain and the portion of the corridor that parallels the Ray River.

Similar to other subsistence resources, Stevens Village use areas for waterfowl (**Figure E-91**) for the 1974-1984 time period occur along the Yukon River from Beaver to the confluence of the Yukon and Big Salt rivers beyond the Dalton Highway and APP corridor. A large lake system located to the north of the Stevens Village is also included in the community's waterfowl use area. Sloughs off of the main river also are used for waterfowl hunting.

Figure E-92 depicts Stevens Village use areas for wood and berries. While wood harvests most commonly occurred along the Yukon River upstream from the community as far as Whirlpool Island, residents reported traveling downstream to harvest berries on both sides of the Yukon River from Chetlechak Island to beyond the Dalton Highway and APP corridor, as far as the mouth of Ray River. The area directly surrounding the community is also an important berry-gathering area.

E4.2.13 Harvest Data

Tables E-48 through **E-50** provide Stevens Village harvest data. Available data consists of three comprehensive (i.e., all resource) study years from 1984-1985, 1993, and 1994 (**Table E-48**) and a number of single-resource study years where one or more resource categories (e.g., non-salmon fish, large land mammals, migratory birds) are reported (**Tables E-49** and **E-50**). Subsistence salmon harvest data for Stevens Village are available from the ASFDB for years between 1992 and 2009 (**Table E-49**).

Stevens Village residents rely heavily on subsistence harvests, as evidenced in the estimated 1,139 pounds per capita harvested in 1984-85. Later all-resources study years (1993, 1994), which do not include estimated harvests of vegetation, show substantially lower harvests than in the 1980s, primarily due to a marked drop in salmon and non-salmon fish harvests. The composition of resource harvests in Stevens Village, in terms of percent of total harvest, is predominantly salmon (between 52.6 and 80.9 percent), followed by large land mammals (between 6.4 percent and 38.3 percent), and non-salmon fish (between 2.3 and 8.9 percent). Over the three all-resources study years, salmon's contribution toward the total harvest declined, while the contribution of large land mammals increased. In both cases, harvest numbers decreased over the three all-resources study years. Harvest data from the 1990s and 2000s (**Tables E-48** and **E-49**) show large land mammal harvests ranging from between 4 (in 1997) and 31 (in 2005).

As shown in **Table E-50**, the primary species harvested in Stevens Village include chum salmon, Chinook salmon, and moose, with whitefish, northern pike, black bear, ducks, and geese also contributing highly during a number of study years. Residents have reported harvesting between 3 and 17 moose annually and between 1 and 17 black bear annually. Harvests of whitefish and northern pike were substantially higher during the 1984-85 study year but continued to be important during more recent study years (**Table E-50**).

According to the ASFDB, Stevens Village residents fish in the Yukon Management Area where they harvest primarily chum salmon and Chinook salmon and, during some years, small numbers of coho salmon (**Tables E-49** and **E-50**). Salmon harvest numbers during the 1990s and 2000s ranged from 516 (in 2000) to 6,026 (in 1995), with an average harvest of 2,241 salmon annually (**Table E-49**).

Household participation data are limited for Stevens Village. During the 1984-85 study year, 100 percent of households reported harvesting at least one subsistence resource. In particular, over three-quarters of households reported harvesting non-salmon fish, migratory birds, upland game birds, and vegetation, and a slightly smaller percentage harvested salmon and small land mammals. In 2000, just over half (54 percent) of Stevens Village households reported successful harvests of migratory birds (**Table E-49**). Data on sharing are available for individual resource categories during the 1984-85 study year and show between 20 and 40 percent of households giving, and between 10 and 50 percent receiving subsistence resources where data are available (**Table E-48**). Similar percentages shared large land mammals during the 2003 and 2005 study years (**Table E-49**)

E4.2.14 Seasonal Round

Seasonal round data for Stevens Village are shown in **Table E-51** as reported by Sumida (1988); these data represent only a one-year period (1984), and may not adequately represent the general seasonal round for the community of Stevens Village. Additional seasonal round data include Andersen and Jennings (2001a) for birds and Sumida and Alexander (1985) for moose. Spring in Stevens Village is focused on the harvests of marten, fox, black bear, waterfowl, and the conclusion of beaver and muskrat hunting that had begun during the late winter months. Some non-salmon fishing, moose, porcupine, and ptarmigan hunting may also occur during April and May.

Stevens Village residents participate in an active salmon harvesting season from the middle of summer into the early fall, beginning with Chinook salmon in the months of June and July and ending with harvests of chum and coho salmon in August and September. Non-salmon fish (e.g., whitefish, sheefish, northern pike, burbot) are harvested with increasing intensity throughout the summer and into early winter (October and November). Berries are also a focus of residents' summer harvests.

In addition to the fish species described above, moose, black bear, waterfowl, and a number of small land mammal species are targeted resources during the fall season. Specifically, small land mammals include hare and porcupine. Firewood is also collected during the fall in anticipation of the upcoming winter (**Table E-51**).

Residents engage in fewer subsistence activities during the winter than in the summer and fall. Winter subsistence activities focus on furbearer harvests (particularly hare, lynx, and mink) as well as some non-salmon fishing in early winter, and short peaks of moose activity in December and February. Harvesting of firewood, which many households use to heat their homes, is a regular activity during the winter months.

E4.2.15 Wiseman

Wiseman is located on the Middle Fork of the Koyukuk River at its confluence with Wiseman Creek, some 260 miles north of Fairbanks off the Dalton Highway. The population in 2010 was 14, none of whom were Native (U.S. Census Bureau 2011). Wiseman is the successor city to Coldfoot, 13 miles south, and was established in 1907 in response to increased mining at Nolan Creek and on the Hammond River. The site was located at the end of a horse-drawn barge route to gold mines further upstream. Previously called Wright's and Nolan, the community was named Wiseman in 1923. Many structures from the peak occupation of the community are still present and standing. The school closed in 2002 due to insufficient student attendance. The community was first connected to the road system in 1974, when the Dalton Highway was built, and public access was allowed starting in 1994 (ADCCED 2011).

E4.2.16 Subsistence Use Areas

Figure E-93 displays Wiseman all-resources use areas for the year 1992 as documented by Scott (1998). Use areas are concentrated on either side of a long north-south stretch of the Dalton Highway, with the greatest lateral extent at the center of the Brooks Range. Other isolated use areas occur north of Stevens Village near the Yukon River, south of Bettles and Evansville, and along river drainages within the Brooks Range including the John, Alatna, and Kobuk rivers. Although not mapped, Scott (1998) also reported that the Colville River, lower parts of the Anaktuvuk and Chandalar rivers, Killik and Itkillik drainages, Dalton Highway to Franklin Bluffs, Help-Me-Jack Lake, and Chandler Lake were also used by Wiseman residents. Wiseman subsistence use areas for the 1992 time period overlap extensive portions of the APP corridor, including areas adjacent to the Dalton Highway for its entire north-south traverse of the Brooks Range.

E4.2.17 Harvest Data

Harvest data available for the community of Wiseman consist of a 1991 study addressing all subsistence resource categories for the community and various years of salmon harvest data from the ASFDB (**Table E-52**). The results of these studies are reported in **Tables E-52** and **E-53**.

Available data show residents of Wiseman harvesting salmon, non-salmon fish, large and small land mammals, migratory and upland birds, and vegetation. The ASFDB salmon data (all study years except 1991) report harvests in the Bristol Bay and Prince William Sound/Copper River management areas. Salmon harvest data for all available years show residents harvesting between 22 and 72 individual salmon annually. Two species of salmon were reported during these study years, sockeye and Chinook, with sockeye being reported as the dominant resource (**Table E-53**).

The 1991 study year shows Wiseman harvesting various subsistence species in addition to salmon, with small land mammals (227 individuals), upland game birds (169 individuals), and non-salmon fish (169) as the most common resource harvested in terms of number (estimated pounds are not available) (**Table E-52**). An estimated 20 large land mammals were harvested during 1991, including caribou, Dall sheep, and moose, and may represent a higher percentage of the total harvest (as a portion of total edible pounds) compared to other, smaller resources. The primary small mammals harvested during this study year, by number, were marten (84), snowshoe hare (53), lynx (24), and fox (21). Most small land mammals (possibly excluding hares, squirrel, lynx, and beaver) were likely harvested for their furs rather than as a meat source. Other species commonly harvested by Wiseman residents included Arctic grayling, grouse, ptarmigan, and berries (**Table E-53**).

No household subsistence participation or sharing data are available for the community of Wiseman.

E4.2.18 Seasonal Round

Limited seasonal round data are available for the community of Wiseman, however, Scott's (1998) research on Wiseman subsistence practices included seasonal round data for 1991-1993. Scott's research shows that the spring subsistence season is primarily spent harvesting large mammals including bear (black and grizzly) and caribou (**Table E-54**).

According to **Table E-54**, late May, June, and July are months of reduced subsistence activity. During August, in addition to the continued harvest of summer berries, Wiseman residents procure Dall sheep, caribou, and firewood. The fall months of September and October are a period of increased activity for the subsistence harvesters of the community of Wiseman. Large land mammals (e.g., caribou, moose, Dall sheep, and bear) are actively sought during these months as the weather cools. Firewood and berries are important resources as well as furbearers, which start to become a primary focus for subsistence hunters during late fall (**Table E-54**).

From November until March, residents of Wiseman focus their subsistence activities on harvesting furbearers and firewood. Resources including wolf, wolverine, lynx, and marten are important during the winter months. Occasional caribou and moose supplement the winter subsistence diet.

E4.3 TANANA RIVER REGION

The Tanana River region encompasses 16 study communities within the Tanana River drainage and is comprised of both the Upper and Lower Tanana regions. The Tanana River is formed by the confluence of the Chisana and Nabesna rivers and flows northwest to meet the Yukon River. At the southern and western boundaries of the Upper Tanana region lie the Wrangell Mountains and the Alaska Range, respectively, while the Tanana River and the Canada border form the northern and eastern borders. The Tanana River region is dominated by the Interior Forested Lowlands and Uplands and Interior Bottomlands ecoregions, and bordered by the Interior Highlands and Alaska Range (Gallant et al. 1995). The Tanana River region is largely comprised of flat, open expanses dotted with small lakes and areas of wetlands, owing to poor drainage in the lowlands (Haynes and Simeone 2007). Coniferous forests, mosses, grasses, and shrubs populate the landscape.

The people residing in this region are primarily descendants of Athabascan language-speaking groups with regional and linguistic distinctions. McKennan (1969a) considered the Goodpaster River a natural break in the Athabascan language area, which divided upriver speakers of the Tanacross and Upper Tanana languages from the Lower Tanana speakers that lived downriver (in Haynes and Simeone 2007). The Northern Athabascan language groups in the Tanana River region near APP include Tanana (or Lower Tanana), Upper Tanana, and Tanacross (**Figure E-4**). McKennan (1981) writes that the Tanana had no self-defined “tribal” identity, but rather “thought of themselves in terms of small local bands that constituted both social and geographical units.” McKennan (1969a) described these regional bands as being composed of several contiguous local bands united by marriage and sharing a common territory. Furthermore, Shinkwin et al. (1980) described social organization in the Upper Tanana area as “closely controlled by ecological considerations reflected in the land use patterns.”

A review of Athabascan literature (e.g., McKennan 1959, 1969a, 1969b, and 1981; Shinkwin et al. 1980; Andrews 1975; Simeone 1982 and 1995; VanStone 1974; Cook 1989; Mishler 1986) reveals that traditional Athabascan life was based on a high degree of mobility in pursuing subsistence resources throughout an annual subsistence cycle. Continuous travel to and from variously inhabited camps during particular harvesting seasons for specific resources typified Athabascan cultural life, however, some locations were used for longer periods of time than others. Seasonal resource availability dictated where the Tanana Athabascans were located at particular times of year and the number of seasons a site might be occupied (SRB&A 2002). According to Shinkwin et al. (1980), traditionally, Athabascan groups “were dispersed for most of the year, pursuing Dall sheep, moose, caribou, waterfowl, fish, muskrat” and other resources, then gathered at a “base camp along lakes and clearwater streams in late spring and summer for migratory waterfowl and whitefish runs, and in the fall in strategic areas to obtain migrating caribou.”

Today, Athabascan peoples in the Tanana River drainages rely on caribou, moose, fish, small land mammals, birds, and berries and plants for their subsistence harvests. As in most of Alaska, residents use snowmachines, planes, ATVs, road vehicles, and motorized boats to access subsistence hunting and harvesting areas. Time constrictions due to wage employment; federal and state regulations intended to manage fish, game, and migratory waterfowl populations; the costs of fuel and equipment needed to harvest game; and competition between local hunters and urban sport hunters are some of the limitations on subsistence harvests in the Tanana River region.

The 16 Tanana River Region study communities include Alcan Border, Chisana, Delta Junction, Dot Lake, Dry Creek, Fairbanks, Healy, Healy Lake, Manley Hot Springs, Minto, Nenana, Northway, Tanacross, Tanana, Tetlin, and Tok. Chisana, Dot Lake, Healy Lake, Minto, Northway, Tanacross, Tetlin, and Tok have use areas that overlap with the APP corridor (**Table E-1**). The following section provides a brief introduction of each of these study communities and a description of their subsistence use areas, harvest data, and seasonal round data as available.

E4.3.1 Alcan Border

The community of Alcan Border is located adjacent to the Canada border along the Alaska Highway. The community is populated by those working for the federal government at the border crossing (ADCCED 2011). In 2010 the population was estimated at 33, none of whom reported being Native (U.S. Census Bureau 2011).

E4.3.1.1 Subsistence Use Areas

Subsistence use area data are not available for the community of Alcan Border.

E4.3.1.2 Harvest Data

Harvest data are not available for the community of Alcan Border.

E4.3.1.3 Seasonal Round

Seasonal round data are not available for the community of Alcan Border.

E4.3.2 Chisana

The community of Chisana is located in Wrangell-St. Elias National Park approximately 30 miles southeast of Nabesna. Chisana is on the north-bank of Chathenda Creek, just east of its confluence with the Chisana River. The name Chisana is derived from an Athabascan word meaning “red river” (ADCCED 2011) and traditional Athabascan settlements were located in the area (Haynes and Simeone 2007). A gold strike in the area, the last of Alaska’s historic gold rush, led to the community’s establishment in 1913 (Stratton and Georgette 1984), with an estimated 2,000 to 8,000 people participating in the gold rush over the next decade (ADCCED 2011). Natives lived in the area and were drawn to Chisana for trading and economic opportunities while continuing their traditional hunting, trapping, and harvesting activities. Mining activities in the area continued but gradually declined until the beginning of World War II, when heavy equipment was needed for the war effort (Stratton and Georgette 1984).

Today, Chisana is a small community whose economy relies primarily on guiding and outfitting. The community is accessible only by plane. Its history as a gold rush community is evident in the remnants of numerous log cabins and mining artifacts. The U.S. Census Bureau (2011) reported no residents of the Chisana CDP in 2010, however, a big game guiding and outfitting business based in Chisana is still operational (Pioneer Outfitters 2011).

E4.3.2.1 Subsistence Use Areas

Chisana subsistence use areas for the 1964-1984 time period are shown on **Figure E-94** (ADFG 1985; Stratton and Georgette 1985). These use areas were documented from households in the Chisana area including those living at Ptarmigan Lake, Solo Lake, and North Fork Island. Chisana residents' all-resources use areas covered a continuous area from White River in the south to the lower portion of the Chisana River in the north, and from the Canada border in the east to the Nutzotin Mountains to the west. Other isolated use areas are located along the Nabesna Road, Copper River, and Alaska Highway. The use area along the Alaska Highway overlaps with the APP corridor.

Use area maps organized by individual resources are represented on **Figures E-95** through **E-100** and include the 1964-1984 time period. Chisana fishing areas are presented on **Figures E-95** and **E-96**. As salmon are not available in the Chisana area, residents travel to the Copper River to harvest salmon and reported use areas near the confluence of the Chistochina and Copper rivers as well as along the Copper River near Chitina (**Figure E-95**). Non-salmon fish use areas are isolated to various lakes and river drainages around Chisana, nearly all of which are located to the east of Chisana (**Figure E-96**). One non-salmon fish use area is located north of the community and east of Northway, near the APP corridor

Chisana large land mammal use areas for caribou, moose, and Dall sheep are shown on **Figure E-97**. Caribou and Dall sheep occupy similar areas and use areas for these species occur as far south as the White River area and extend throughout the Nutzotin Mountains that surround the community. In addition, Dall sheep use areas extend further into the higher elevations of the Nutzotin Mountains. Moose use areas occur in five distinct areas and include the area surrounding the community, north along the Chisana River, the flats north of the Nutzotin Mountains, an area along the Canada border, and two additional areas north of the White River.

Furbearer use areas for the 1964-1984 time period are shown on **Figure E-98**. The majority of these use areas appear to follow local river drainages, with Chisana and White rivers showing use. Furbearer use areas were also reported in the flats east of the Chisana River in addition to areas near the Canada border.

Because of their location within the Nutzotin Mountains, Chisana residents do not harvest waterfowl near the community (**Figure E-99**). For the 1964-1984 time period, waterfowl use areas were reported along the White River to the south and along the Tanana River area near the Alaska Highway. The waterfowl use area along the Tanana River and Alaska Highway overlaps with the APP corridor.

Vegetation use areas for Chisana residents are shown on **Figure E-100**. The majority of their vegetation-gathering occurs in the upper reaches of the Chisana River near the community. Isolated vegetation use areas also were reported during the 1964-1984 time period farther north and east of the community.

E4.3.2.2 Harvest Data

Harvest data for Chisana are provided in **Tables E-55** through **E-57** and consist of two comprehensive (i.e., all resources) study years from 1982-83 and 1987 (**Tables E-55** and **E-57**). Subsistence salmon harvest data are available for one study year (2002) from Fall et al. (2003) (**Table E-56**). The 1982-83 study year reported data for the North Wrangell Mountains region, which included the two occupied households in Chisana as well as several households in surrounding isolated settlements. The 1987 study was limited to Chisana residences.

The available data show the community of Chisana harvesting between 128 and 219 pounds per capita of subsistence resources annually. The estimated total harvest for Chisana was 2,894 pounds in 1982-83 (when surrounding settlements were included as part of the study) and 1,664 pounds in 1987 (**Table E-55**). Large land mammals comprised the largest portion of the total subsistence harvest during both study years, followed by non-salmon fish. Combined, these two resource categories accounted for 83.9 percent of the harvest in 1982-83 and 89.5 percent of the harvest in 1987. Moose, caribou, deer, and Dall sheep were the primary large land mammals harvested during the study years, with moose the top harvested species in 1982-83 and caribou the top species in 1987 (**Table E-57**). Non-salmon fish species harvested by Chisana during available study years include lake trout, northern pike, Arctic grayling, burbot, and whitefish. In particular, lake trout was the second most harvested subsistence species and burbot was among the top 10 harvested species during both study years (**Table E-57**).

Other resources harvested by Chisana residents include small land mammals (particularly hare, lynx, and muskrat), upland game birds (grouse and ptarmigan), a small number of migratory birds, and vegetation such as berries, wood, and wild plants (**Tables E-55** and **E-57**). Salmon is not readily available in the Chisana area and no harvests were reported in 1982-83, however, 7 salmon were harvested in 1987, and 77 in 2002 (**Tables E-55** and **E-56**).

E4.3.2.3 Seasonal Round

Seasonal round data are not available for the community of Chisana. Northway is the nearest study community with available seasonal round descriptions (see Section 4.3.12.3, Seasonal Round).

E4.3.3 Delta Junction

Due to their proximity to one another and their similar demographics, history, economic characteristics, and lack of subsistence documentation, the available data for five communities (Big Delta, Delta Junction, Deltana, Fort Greely, and Whitestone) were combined and reported as Delta Junction in this report. These communities are approximately 75 to 100 miles southeast of Fairbanks near the junction of the Alaska and Richardson highways and all lie within the state-designated Fairbanks nonsubsistence area. This area was utilized throughout much of the 19th and 20th centuries by Tanana Athabascans, and was also a hub of activity during the late 1800s during the Alaska gold rush. This area has undergone extensive development over the past 100 years, as historic trails were converted to the present highways and major development projects, such as TAPS, were constructed nearby (ADCCED 2011).

Big Delta and nearby Whitestone are located at the confluence of the Delta and Tanana rivers (ADCCED 2011). In 2010 the population of Big Delta was 591, 2 percent of whom reported being Native. The population of Whitestone in 2010 was estimated to be 97, none of whom were Native (U.S. Census Bureau 2011). Delta Junction, at the junction of the Alaska and Richardson highways, is located in an ideal location to service much of the tourist traffic in the region (ADCCED 2011). In 2010 the population was 958, 3 percent of whom were Native (U.S. Census Bureau 2011). Deltana is southeast of Delta Junction on the Alaska Highway (ADCCED 2011). The 2010 population was estimated by the U.S. Census Bureau (2011) to be 2,251, 2.5 percent of whom were Native. Fort Greely was primarily constructed as a military base in 1942, but military operations in the area have been active through a number of different projects, dating back over the last 100 years. The 2010 population was estimated to be 539, 1.8 percent of whom reported being Native (U.S. Census Bureau 2011).

E4.3.3.1 Subsistence Use Areas

Subsistence use area data are not available for the community of Delta Junction.

E4.3.3.2 Harvest Data

Harvest data are only available for two of the five Delta Junction communities (Delta Junction and Fort Greely). The ASFDB provides subsistence salmon harvest data for these two communities (**Table E-58** through **E-60**). Between the years of 1988 and 2009, reported harvests by residents of Delta Junction occurred in the Prince William Sound/Copper River, Southeast, and Yukon management areas. Harvests ranged from 3,102 to 8,976 salmon, with an average of 6,085 taken yearly (**Table E-58**). Residents reported harvesting all five Pacific salmon species during this time, with sockeye being the dominant species (**Table E-59**). Between 1988 and 2009 Fort Greely residents reported salmon harvests in the Prince William Sound/Copper River Management Area. Harvest totals ranged from 57 to 375, with an average yearly harvest of 186 (**Table E-58**). Based on number, sockeye are the primary salmon species harvested by Fort Greely residents. Residents reported harvesting Chinook and coho salmon as well (**Table E-60**).

E4.3.3.3 Seasonal Round

Seasonal round data are not available for the community of Delta Junction.

E4.3.4 Dot Lake

The communities of Dot Lake and Dot Lake Village are situated south of the Tanana River. Dot Lake is located adjacent to the Alaska Highway approximately 50 miles northwest of Tok. The 2010 population of Dot Lake was 13, 23.1 percent of whom were Native. Dot Lake Village is slightly removed from the highway (.2 mile to the southeast), has a larger Native population (82.3 percent), and is a federally recognized tribe. The 2010 population estimate for Dot Lake Village was 62 (U.S. Census Bureau 2011). Prior to the construction of the Alaskan Highway the area around Dot Lake was used by Athabascans from George Lake and Tanacross who established seasonal hunting and trapping camps there. A work camp was built in this location during the construction of the Alaska Highway, but was abandoned when this portion of the highway was complete. During the late 1940s and early 1950s, families from the nearby villages of Paul's Cabin, Tanacross, Sam Lake, and Lake George moved to the abandoned camp, now the site of Dot Lake Village (Martin 1983). The community of Dot Lake, adjacent to the highway, was established by Fred and Jackie Vogle in 1949. Since then other families have homesteaded in the area, and the community now provides services for the highway (ADCCED 2011).

E4.3.4.1 Subsistence Use Areas

Figure E-101 depicts Dot Lake subsistence use areas for the 1946-1982 time period as documented by ADFG (1986b) and Martin (1983). Being positioned near the Alaska Highway, Dot Lake subsistence uses were centered on the road and extended laterally along several drainages. Documented use areas include locations as far west as the Gerstle River, south to the West Fork Robertson River and foothills of the Alaska Range, east along the Alaska Highway near Tanacross, and north of the community along Sand and Billy creeks and in Lake George and Twelvemile Lake. Dot Lake subsistence use areas for the time period 1946-1982 overlap with the APP corridor along a stretch of the Alaska Highway that runs south of the Tanana River near the community.

Use area maps organized by individual resources are represented on **Figures E-102** through **E-106** and include the 1946-1982 time period. Dot Lake fishing activities for the 1946-1982 time period (**Figure E-102**) occurred mostly north of the Alaska Highway on the Tanana River and nearby lakes, as well as near tributaries such as Sand and Billy creeks and in Lake George. Fish use areas are also located in several small lakes south of the Alaska Highway. A small number of fish use areas overlap with the APP corridor.

Caribou hunting (**Figure E-103**) occurred mostly in an overland area between Macomb Plateau and Knob Ridge and in a narrow corridor between the Alaska Highway and the Tanana River northwest from the community. Also depicted on **Figure E-103** are moose use areas for the 1946-1982 time period, which occur along drainages such as Billy and Sand creeks, West Fork Robertson and Tanana rivers, and areas easily accessed by the Alaska Highway to the west and east of the community. Isolated Dall sheep use areas (**Figure E-103**) are located in more mountainous areas of the Alaska Range to the south of the Alaska Highway in locations south of Dry Creek and near and east of the West Fork Robertson River. Moose use areas and one isolated caribou use area overlap with the APP corridor.

Figure E-104 depicts Dot Lake furbearer subsistence use areas for the 1946-1982 time period. Furbearer use areas center on the community and extend along Billy and Sand creeks, West Fork Robertson River, and areas near the Tanana River. Discontinuous furbearer use areas are located west and south of Lake George and along the Dry Creek drainage. Furbearer use areas along the Alaska Highway are overlapped by the APP corridor.

Dot Lake waterfowl hunting (**Figure E-105**) occurred predominantly along the Tanana River and Sand and Billy creeks for the 1946-1982 time period. The area surrounding Lake George was also used for waterfowl hunting. All waterfowl use areas are located north of the Alaska Highway, with a few outer edges overlapping the APP corridor.

Plant use areas including berry and wood harvesting areas (**Figure E-106**) occur predominantly near the Alaska Highway. Other areas for plant harvesting included Lake George and Sand Creek. The majority of Dot Lake plant use areas are overlapped by the APP corridor.

E4.3.4.2 Harvest Data

Harvest data are available for Dot Lake and Dot Lake Village combined; this discussion refers to both communities as “Dot Lake.” Available data include one comprehensive study from 1987-88 (**Table E-61**) and two studies reporting the harvest of one or more resource categories (e.g., non-salmon fish, large land mammals, migratory birds). Salmon harvest data are also available from the ASFDB and provide harvest totals from 1988-2009 (**Table E-62**).

According to all-resources data from 1987-88, the community of Dot Lake relies primarily on harvests of large land mammals (accounting for 42.1 percent of the total harvest), followed by non-salmon fish (27.7 percent), salmon (17.6 percent), and vegetation (6.6 percent). Small land mammals and birds provided a smaller portion of the total edible harvest. Residents harvested 116 pounds per capita during the 1987-88 study year. Harvest data from the 2000s for Dot Lake reported the harvest of large and small land mammals, as well as non-salmon fish and migratory birds. Per capita harvests of large land mammals in 2004 amounted to 119 pounds, compared to 49 pounds in 1987-88. Per capita harvests of non-salmon fish, migratory birds, and small land mammals were similar during both study years (**Tables E-61** and **E-62**).

Moose and whitefish were consistently among the top three resources harvested during the available study years. The top species harvested during the 1987-88 study year, by percent of total harvest, were moose, whitefish, and coho salmon, providing 39, 12, and 11 edible pounds per capita, respectively. In 2004, moose, black bear, and whitefish were the primary species harvested (salmon harvests were not recorded during the 2004 study), providing 104, 15, and 17 pounds per capita of edible weight, respectively (**Table E-63**).

According to the ASFDB, residents of Dot Lake have reported subsistence salmon harvests in the Prince William Sound/Copper River and Yukon management areas. During the available study years (1988-2009) residents reported an annual harvest of between 1 and 278 salmon, with an average yearly harvest of 87 during successful years (**Table E-62**). Dot

Lake residents have reported harvesting four salmon species, with sockeye salmon as the dominant species harvested during some years, and chum salmon during others (**Table E-63**).

Household participation data for Dot Lake are available for the 1987-88 and 2004 study years. These data show 100 percent of households using, attempting to harvest, and harvesting at least one subsistence resource in 1987-88, with non-salmon fish, large land mammals, and edible plants all used by 93 percent of households (**Table E-61**). A similarly high-percentage of households used subsistence resources and participated in subsistence activities in 2004, with 63 percent of households attempting harvests of non-salmon fish, 75 percent attempting harvests of large land mammals, and 31 percent attempting harvests of small land mammals (**Table E-62**). Sharing, an important component of traditional Athabascan culture, was reported among the majority of households, with 87 percent receiving, and 60 percent giving away subsistence resources in 1987-88 (**Table E-61**).

E4.3.4.3 Seasonal Round

A general depiction of Dot Lake seasonal subsistence activities is shown in **Table E-64** as reported in Marcotte (1991) and collected by Martin (1983) for the 1980-1982 seasonal round. Additional seasonal round data are available from more recent sources (Andersen and Jennings 2001b). Dot Lake residents begin their subsistence season in the spring harvesting porcupine, Arctic grayling, and firewood (**Table E-64**).

During the summer months of June and July, fish comprise the bulk of harvest activities. Fishing activities are supplemented by large land mammal harvests including bear, caribou and Dall sheep in August. Berry gathering begins in early June and extends through the summer and into early fall.

As shown in **Table E-64**, the primary period of harvest for many subsistence species is August, September, and October. During these months, residents target caribou, moose, Dall sheep, and bear, as well as smaller game such as waterfowl, ptarmigan, hare, and squirrel. In addition to fall waterfowl harvests, Andersen and Jennings (2001b) reported spring waterfowl harvests by Dot Lake residents in 2000.

According to the data in **Table E-64**, Dot Lake residents' winter subsistence activities focus on the harvest of caribou and trapping and hunting of furbearers such as marten, mink, wolverine, lynx, red fox, wolf, and otter. Occasional harvests of small game, such as hare, porcupine, squirrel, and ptarmigan also occur during the winter. Longnose sucker, northern pike, and whitefish may also be occasionally taken during the early winter months of November and December.

E4.3.5 Dry Creek

The community of Dry Creek is located west of Dot Lake on the Alaska Highway, at the foot of Horn Mountain. The community was established during the building of the Alaska Highway by construction and maintenance workers (ADCCED 2011). Many residents in Dry Creek belong to the Living Word Ministries, Inc., which is a cooperative organization. In

2010 the population of Dry Creek was 94, none of whom were Native (U.S. Census Bureau 2011).

E4.3.5.1 Subsistence Use Areas

Subsistence use area data are not available for the community of Dry Creek.

E4.3.5.2 Harvest Data

Available harvest data for the community of Dry Creek are limited to one year of salmon harvest estimates from the ASFDB (**Table E-65** and **E-66**). According to this database, in 2008, 80 salmon (primarily sockeye) were harvested by Dry Creek residents in the Prince William Sound/Copper River Management Area (**Tables E-65** and **E-66**). No other harvest data are available for Dry Creek.

E4.3.5.3 Seasonal Round

Seasonal round data are not available for the community of Dry Creek.

E4.3.6 Fairbanks

This section discusses subsistence use data for Fairbanks, in combination with the surrounding CDPs of College, Eielson Air Force Base (AFB), North Pole, Ester, Fox, Moose Creek, Pleasant Valley, Two Rivers, and Salcha. Given the proximity of these CDPs to each other and their similar demographics, history, economic characteristics, and lack of subsistence documentation, as well as all being located within the Fairbanks nonrural area, the available data were combined and reported as Fairbanks in this report. Fairbanks is located on the Chena River near its confluence with the Tanana River some 358 miles north of Anchorage on the George Parks (Parks) Highway. Koyukon and/or Tanana Athabascan have used the Fairbanks vicinity historically, and the Campus Site on the University of Alaska campus is one of the older known Athabascan sites in the Interior (Mobley 1996). Fairbanks was established as Barnette’s Cache in 1901, where Captain E.T. Barnette established a trading post on the Chena River (ADCCED 2011). A year later, gold was discovered 16 miles north at Pedro Dome. The community was named for Indiana Senator Charles Fairbanks. In 1903, the district court from Eagle, on the Yukon River, was moved to Fairbanks. Barnette was mayor of Fairbanks and rapidly established a steam heat plant, electrical power plant, telephone service, fire, police, sanitation ordinances, and the Washington Alaska Bank. As Fairbanks continued to grow as the hub of the Interior, it became the county seat, home of the courthouse, jail, and other government services, and in 1923 the terminus of the Alaska Railroad (ADCCED 2011). Gold mining in surrounding areas and transportation of goods to mining towns on the river system continued to contribute to the local economy. During World War II, Fairbanks became a center of military aviation as aircraft were ferried through and transferred to Soviet pilots in the Lend-Lease program (U.S. Department of Defense, Department of the Air Force, n.d.). Construction of the Alaska Highway and other defense-based infrastructure helped Fairbanks grow through the Cold War years. In the 1970s Fairbanks was a construction hub for TAPS (ADCCED 2011). According to the U.S. Census Bureau (2011), 31,535 individuals lived in Fairbanks in

2010, and 10 percent of those individuals were Native. Fairbanks is the second most populated city in Alaska. Multiple small communities located around and near Fairbanks are considered to be suburbs of Fairbanks, or else directly associated with the community. These include (as listed above) College, Eielson AFB, North Pole, Ester, Fox, Moose Creek, Pleasant Valley, Two Rivers, and Salcha.

College is located 3 miles northwest of Fairbanks, where the University of Alaska was established in 1916 at MP 467 of the Alaska Railroad. The 2010 reported population was 12,964, of whom 9 percent were Native (U.S. Census Bureau 2011). College today is a suburb of Fairbanks.

Eielson AFB is a CDP located 26 miles south of Fairbanks on the Richardson Highway past the City of North Pole. The 2010 population was 2,647, of whom 1 percent were Native (U.S. Census Bureau 2011). Eielson was originally established as the 26 Mile Airfield, named for its distance from Fairbanks, during World War II as an alternative landing field for aircraft being ferried to Fairbanks for delivery to Russia as part of the Lend-Lease program. The base served the Air Force through the Korean, Vietnam, and Cold War periods and continues to host exercises and maintain the facilities as part of its current military mission (U.S. Department of Defense, Department of the Air Force n.d.).

North Pole is located 14 miles southeast of Fairbanks on the Richardson Highway. The 2010 population was 2,117, and 3 percent were Native (U.S. Census Bureau 2011). North Pole was homesteaded in 1944; this homestead was bought out and subdivided, with the subdivision named North Pole. Santa Claus House was established in 1953 and continues to be a popular attraction (ADCCED 2011).

Ester is located 8.5 miles west of Fairbanks on the Parks Highway and was originally a mining camp established before 1905 near Ester Creek. The 2010 recorded population was 2,422, of whom 7 percent were Native (U.S. Census Bureau 2011). The Ester Gold Camp was established in 1936. Today Ester is a suburban enclave of Fairbanks.

Fox is located on the bank of Fox Creek in the Goldstream Valley 10 miles northeast of Fairbanks. The 2010 population was 417, of whom 7 percent were Native (U.S. Census Bureau 2011). Fox was established as a mining camp and was later the site of a railroad station on the Tanana Valley Railroad on its route from Fairbanks to Chatanika. Today, Fox is on the road system and connected to Fairbanks (ADCCED 2011).

Moose Creek is located 20 miles southeast of Fairbanks and is adjacent to Eielson AFB. The community had a population of 747 in 2010, of whom 5 percent were Native (U.S. Census Bureau 2011). The Moose Creek area is a suburb of the larger Fairbanks area.

Pleasant Valley is located in the Fairbanks North Star Borough, located a few miles past Two Rivers on Chena Hot Springs Road. The 2010 population was 725, of whom 4 percent were Native (U.S. Census Bureau 2011). Development in the area is a result of population growth in the Fairbanks area.

Two Rivers is an unincorporated area of the Fairbanks North Star Borough and extends along the Chena Hot Springs Road from MP 13 to 25, on the banks of the upper Chena

River. The area had a population in 2010 of 719, of whom 4 percent were Native (U.S. Census Bureau 2011). Two Rivers was once the site of a territorial school.

Salcha in located in the Fairbanks North Star Borough at the mouth of the Salcha River. The 2010 population of Salcha was 1,095, of whom 4.3 percent were Native (U.S. Census Bureau 2011). The community was first reported as a village called “Salkachet,” an Athabascan word for “mouth of the Salcha” (ADCCED 2011).

E4.3.6.1 Subsistence Use Areas

Subsistence use area data are not available for the community of Fairbanks.

E4.3.6.2 Harvest Data

Harvest data for the 11 Fairbanks-area communities are restricted to subsistence salmon harvest data from the ASFDB. These data are reported for Eielson AFB, Ester, Fairbanks, Fox, North Pole, Salcha, and Two Rivers (**Table E-67**). No harvest data are available for College, Harding-Birch Lakes, Moose Creek, and Pleasant Valley. The ASFDB reports that between the years of 1983 and 2009, residents of the communities in the Fairbanks area harvested salmon in the Alaska Peninsula, Bristol Bay, Chignik, Prince William Sound/Copper River, Sitka, Southeast, Northwest, and Yukon management areas (ADFG 2009).

Residents of Eielson AFB harvested between 474 and 4,557 salmon during the 1983 through 2000 study years, for an average of 2,351 salmon annually (**Table E-67**). Residents reported harvesting all five species of Pacific salmon, with sockeye consistently as the dominant species, followed by coho (**Table E-68**). The 1983 and 2000 study years show the lowest estimated harvests of salmon for Eielson AFB, while the highest estimated harvests were in 1993 and 1994 (**Table E-67**).

Salmon harvest data for Ester are available from 1988 to 2009. During this time residents caught an average annual harvest of 915 salmon, ranging from a low of 83 salmon in 1988 to a high of 1,635 salmon in 2007. Residents reported harvesting a larger annual number of salmon (over 1,000) starting in 1997 (**Table E-67**). Harvests of all Pacific salmon species, except for pink salmon, were reported. Sockeye salmon have consistently been harvested in the largest numbers by Ester residents (**Table E-69**).

Salmon harvest data for Fairbanks are available from 1983 through 2009. The smallest recorded number of salmon harvested by the community of Fairbanks was during the first study year (1983), when 25 Chinook salmon were harvested. According to Borba and Hamner (1996), an increasing interest in dog mushing beginning in the early 1980s led to a greater need for salmon to feed dogs in communities along the Yukon River drainages. During the study years after 1983, recorded harvests of salmon by Fairbanks residents increased dramatically. In 1988, the number of salmon reported by Fairbanks residents increased to 18,624 and continued to increase into the late 2000s. The average number of salmon harvested by Fairbanks residents between 1988 and 2009 was 42,863. The largest numbers of salmon were harvested in 2005 (67,969; **Table E-67**). Residents reported harvesting all five species of Pacific salmon, with sockeye the dominant species (**Table E-70**).

Salmon harvest data for Fox residents are available for the 1988, 1992, 1993, 1996, 2000, and 2003 study years. During most of these years, harvests were limited to 10 or fewer salmon. Residents harvested 173 salmon in 1999 and 74 salmon in 2003 (**Table E-67**). Residents reported harvesting both sockeye and Chinook salmon, with sockeye the dominant species harvested (**Table E-71**).

Salmon harvest data for North Pole are available for the 1987 to 2009 study years. The first year of data (1987) shows an unusually low harvest (50) compared to the remaining years. Between the years of 1988 and 2009, residents of North Pole reported an annual salmon harvest between 7,091 and 20,550, for an average annual harvest of 12,271 salmon (**Table E-67**). All five species of Pacific salmon are harvested by the community, with sockeye as the dominant species every year (**Table E-72**).

Salmon harvest data for Salcha are available from 1989 through 2009. Residents of Salcha reported harvesting between 343 and 2,218 salmon annually during those years, an average of 1,267 salmon per year (**Table E-67**). Harvests of sockeye, chum, Chinook, and coho salmon were recorded for the community, with sockeye as the dominant species (**Table E-73**).

Two Rivers salmon harvest data are available for 1989 through 2009. Residents of Two Rivers reported harvesting between 154 and 524 salmon annually, an average of 330 salmon per year (**Table E-67**). Sockeye salmon was the primary species harvested, followed by coho and Chinook salmon (**Table E-74**).

E4.3.6.3 Seasonal Round

Seasonal round data are not available for the community of Fairbanks.

E4.3.7 Healy

The community of Healy (also called Healy Fork) is located 78 miles southwest of Fairbanks on a 2.5 mile spur-road off the Parks Highway, directly north of the entrance to Denali National Park. The community is located on the western bank of the Nenana River, at the mouth of Healy Creek and is located in the state-designated Fairbanks nonsubsistence area. The community was established in 1904 and is the location of Alaska's only operating coal mine, the Usibelli Coal Mine. The 2010 population of Healy was 1,021, of whom 2 percent were Native (U.S. Census Bureau 2011).

E4.3.7.1 Subsistence Use Areas

Healy subsistence use areas for all resources are shown on **Figure E-107** as documented by Wolfe et al. (Unpublished) for an unidentified time period. Healy residents accessed use areas along the Tanana and Kantishna Rivers, but mostly utilized areas off of the Parks and Denali highways, traveling inland along Healy Creek and to the west of the community. Due to its proximity to the Denali National Wilderness, where hunting is prohibited, a majority of

Healy use areas are located to the north and east of the community. Healy subsistence use areas (Wolfe et al. Unpublished) for the unidentified time period do not overlap with the APP corridor but extend to within 20 miles near Fox.

Resource-specific subsistence use area maps are shown on **Figures E-108** through **E-113**. Healy salmon and non-salmon fishing areas are displayed on **Figures E-108** and **E-109**, showing residents fishing for salmon primarily along the Tanana River with additional salmon harvest locations along the Kantishna River and near Healy Creek (**Figure E-108**). Non-salmon fish use areas are more extensive than salmon use areas and are located along several river systems accessed along the Parks and Denali highways and in the Tanana River watershed (**Figure E-109**).

Healy subsistence use areas for large land mammals are shown on **Figures E-110** and **Figure E-111**. Healy residents harvested caribou and Dall sheep (**Figure E-110**) in an area to the east of the Parks Highway centered on Healy Creek, and moose in the Tanana and Kantishna river watersheds and along the Parks and Denali highways. Many of Healy residents' bear use areas (**Figure E-111**) are located in the same areas as moose (**Figure E-110**) and may reflect concurrent harvest activities.

Healy furbearer use areas (**Figure E-112**) occur in a continuous area primarily west and east of the Parks Highway near the community. Other discontinuous furbearer use areas occur along the Kantishna River and south of Healy in areas east of the Parks Highway. Unlike many of the other resources, Healy residents did not report furbearer use areas along the Denali Highway.

Vegetation use areas are shown on **Figure E-113**. These gathering areas for various plant, berry, and wood resources occur along the Tanana River, along Healy Creek, and around other smaller drainages. Residents also gathered vegetation along the Parks and Denali highways.

E4.3.7.2 Harvest Data

Harvest data for Healy are presented in **Tables E-75** through **E-77**. Harvest data available for Healy consists of one comprehensive (i.e., all resources) study from 1987 (**Table E-75**) and subsistence salmon harvest data from 1988-2009 (**Table E-76**).

Harvest data from 1987 show residents of Healy harvesting 132 pounds of subsistence resources per capita. These harvests were comprised primarily of salmon (44.6 percent of the total edible pounds harvested), large land mammals (27.1 percent), and non-salmon fish (20.8 percent) (**Table E-75**). Vegetation, small land mammals, upland game birds, migratory birds, and marine invertebrates all provided a relatively limited portion of the total subsistence harvest during that study year in terms of pounds.

The primary subsistence species harvested in 1987 were chum salmon (37 pounds per capita), moose (30 pounds per capita), coho salmon (16 pounds per capita), and halibut (9 pounds per capita). Other species contributing highly to the 1987 harvest included non-salmon fish species such as northern pike, lake trout, Arctic grayling, and Dolly Varden; caribou, berries, and hare.

The ASFDB (ADFG 2009) documents salmon harvest data for Healy from 1988 through 2009 (**Table E-76**). During those years, Healy residents reported harvesting salmon for subsistence purposes in the Prince William Sound/Copper River and Yukon management areas. Annual harvests ranged from 190 to 5,859 (an average of 2,839 salmon per year). The smallest reported harvests (between 190 and 323) occurred in the late 1980s and early 1990s. In 1992, reported harvests rose to 2,462 salmon and remained at or above that number during the majority of remaining years. Residents reported harvesting coho, chum, sockeye, and Chinook salmon, with coho and chum salmon accounting for the greatest portion of salmon harvests by number.

During the 1987 study year, a high percentage of Healy households reported participating in subsistence harvests. In 1987, 97 percent of Healy households reported using, and 93 percent reported harvesting, subsistence resources. In particular, a high percentage of households (over 50 percent) reported participating in harvests of large land mammals, non-salmon fish, and vegetation (**Table E-75**). Rates of sharing were also high, with nearly half of households (46 percent) giving subsistence resources away in 1987, and 77 percent receiving them.

E4.3.7.3 Seasonal Round

Seasonal round data are not available for the community of Healy. Nenana is the nearest study community with available seasonal round descriptions (see Section 4.3.11.3, Seasonal Round).

E4.3.8 Healy Lake

The community of Healy Lake is located on the eastern shore of Healy Lake approximately 30 miles east of Delta Junction. Healy Lake is not connected to the road system and therefore access to the community is limited to transport by plane year-round, snowmachine in winter, boat in summer, and vehicle in winter (during years when the Tanana River ice bridge is constructed) (Korvola 2000). The U.S. Geological Survey first reported Healy Lake in 1914 (ADCCED 2011). Korvola (2000) reports that today the economy of Healy Lake is based on subsistence, and that some residents work periodically outside of the community. The 2010 population of Healy Lake was estimated to be 13, 84.6 percent of whom were Native (U.S. Census Bureau 2011).

E4.3.8.1 Subsistence Use Areas

Subsistence research conducted in 2001 documented Upper Tanana River Valley Athabascan historical and contemporary (1992-2001) subsistence use areas (SRB&A 2002). The research included mapping interviews with Healy Lake tribal members residing in Healy Lake, Dot Lake, Fairbanks, Tanacross, Northway, and Delta Junction (SRB&A 2002). The report documented contemporary use areas concentrated around the Healy Lake, Lake George, Delta Junction, and Shaw Creek Flats areas (SRB&A 2002). Portions of these use areas overlap the APP corridor. Lifetime (historical) uses encompass an even larger area including APP. These use areas were documented as background for the Pogo Mine Project and are unavailable for reproduction in this report.

E4.3.8.2 Harvest Data

Available harvest data for Healy Lake are limited to one migratory bird survey from 2000. During this year 29 percent of households reported harvesting 44 ducks. No other harvest data are available for this community.

E4.3.8.3 Seasonal Round

Healy Lake residents' contemporary seasonal round is similar to the seasonal round reported by Martin (1983) (**Table E-64**) for Dot Lake, the closest Native study community to Healy Lake (see Section 4.3.4.3, Seasonal Round). These data are generally consistent with information gathered by SRB&A (2002) in 2001 from Healy Lake residents with the exception that, according to SRB&A (2002), Healy Lake fishing extended year-round. Unlike the data reported for Dot Lake, SRB&A (2002) reported Healy Lake residents hunting for moose and waterfowl in the spring, and moose, caribou, and upland birds in the summer. Both Dot Lake and Healy Lake seasonal rounds indicate high levels of subsistence activity during the fall months.

E4.3.9 Manley Hot Springs

The community of Manley Hot Springs is located approximately 40 miles southwest of Minto and 5 miles north of the Tanana River. Originally named "Hot Springs," the community of Manley Hot Springs was established in the early 1900s as a supply point for miners in the Eureka and Tofty mining districts (ADCCED 2011). The Hot Springs Resort and Hotel was constructed by Frank Manley in 1907 that catered to guests taking overland stagecoaches from Fairbanks. The community prospered and a bakery, clothing stores, and other businesses were established (ADCCED 2011). At its height, the population of Hot Springs exceeded 500. In 1913 the Hot Springs Resort burned down. The closure of the resort, in combination with the decrease in mining activity, resulted in all but 29 residents leaving Hot Springs. The name of the town was officially changed to "Manley Hot Springs" in 1957, after which a small school was established. The U.S. Census Bureau (2011) reported that the 2010 population of Manley Hot Springs was 89, 13.5 percent of whom were Native. The Manley Hot Springs Village is a federally recognized tribe.

E4.3.9.1 Subsistence Use Areas

Figure E-114 depicts all-resources use areas for Manley Hot Springs as well as use areas for a few year-round households in the nearby historic mining town of Eureka, both of which were documented by Betts (1997) for the 1975-1995 time period. Use areas are centered on the community and Tanana River, with smaller disconnected use areas to the southwest of the community and to the north of Rampart along the Yukon River. Manley Hot Springs subsistence use areas (Betts 1997) for all resources do not overlap with the APP corridor, but come within 5 miles of where the Dalton Highway crosses the Yukon River downstream from Stevens Village.

Resource-specific subsistence use area maps are shown on **Figures E-115** through **E-120** for the 1975-1995 time period. Salmon fishing areas (**Figure E-115**) are mostly confined to the Tanana River, with an additional use area north of Rampart along the Yukon River. Non-salmon fishing (**Figure E-116**) occurs along a more extensive portion of the Tanana River from its confluence with the Yukon River to its confluence with the Kantishna River. Nearby lakes are also important for harvests of non-salmon fish, and additional use areas are located north of Rampart along the Yukon River and south of Rampart along the Minook Creek drainage. Non-salmon use areas are also accessed via the Elliott Highway.

Moose use areas occur along the Tanana River and smaller tributaries and in a lake system to the southwest of the community (**Figure E-117**). The Minto Flats as well as upland areas accessed from the Elliott Highway and other local roads and trails also provide important moose use areas. Bear use areas, which may be hunted in conjunction with moose, are located in within moose hunting areas closer to the community but do not extend to the farther removed moose use areas near the Yukon and Kantishna rivers nor along the Elliott Highway toward Minto.

Figure E-118 depicts Manley Hot Springs use areas for trapping and does not include use areas for small land mammal hunting. Trapping from 1975-1995 occurred near a lake system to the southwest of the community, in a small area north of Rampart, and within the Tanana River watershed. Trapping areas nearest the community were accessed via established trails and roads and along frozen waterways.

Manley Hot Springs 1975-1995 waterfowl use areas are generally confined to areas along the Tanana River between an area a few miles upstream from the confluence of the Tanana and Yukon rivers and an area approximately 15 miles south of Kantishna River (**Figure E-119**). Small ponds and lakes are also used for waterfowl hunting. Although not mapped, Betts (1997) reports that some residents hunted waterfowl during the study period in the Minto Flats as well.

Berry- and wood-gathering areas are nearly all located north and east of Manley Hot Springs (**Figure E-120**). The Elliot Highway and other local roads and trails were used for both berry-picking and wood harvests. One small vegetation use area is also located south of the Tanana River.

E4.3.9.2 Harvest Data

Harvest data available for Manley Hot Springs are limited to a single multi-resource category study from 2004 and salmon harvest data from the ASFDB for nearly all years from 1988 until 2009. The 2004 study reports harvests for non-salmon fish, large land mammals, and small land mammals (**Table E-80**). No comprehensive (i.e., all resources) data are available for Manley Hot Springs.

Of the three resource categories for which data were collected in 2004, large land mammals provided the greatest portion of edible pounds, followed by non-salmon fish and small land mammals. Large land mammals provided 90 pounds of edible resources per capita, while non-salmon fish provided 19 pounds per capita and small land mammals provided 12 pounds per capita (**Table E-80**). Large land mammal harvests were comprised solely of moose, and non-salmon fish harvests consisted of northern pike, burbot, sheefish, whitefish (humpback and broad), and Arctic grayling (**Table E-81**). In 2004, residents reported harvesting 34 beavers, which provided 26 pounds of meat on average to each household (**Table E-81**).

According to the ASFDB, residents of Manley Hot Springs have harvested salmon for subsistence purposes in the Prince William Sound/Copper River and Yukon management areas. Data are available for all years between 1988 and 2009, except for 1991, 1994, 1997, and 2001. These data show residents of Manley Hot Springs harvesting between 8 and 7,146 salmon annually, for an average harvest of 1,702 salmon. Prior to 2004, the data show Manley Hot Spring residents reporting harvests of salmon exclusively in the Prince William Sound/Copper River Management Area. During these years harvests were low (less than 100), and consisted mainly of sockeye and Chinook salmon (**Table E-80** and **E-81**). From 2004 until 2009, residents began reporting harvests in the Yukon Management Area, and the number of salmon harvested annually dramatically increased to well over 1,000 salmon during the remaining study years (**Table E-80**). During these later years, chum, coho, and Chinook were the primary species harvested (**Table E-81**).

As shown in **Table E-80**, 50 percent of the households in Manley Hot Springs reported using non-salmon fish and large land mammals in 2004, and similar percentages reported attempting harvests of these resources. Participation in small land mammal harvests was somewhat lower (31 percent of households). Data on sharing of subsistence resources are also shown in **Table E-80**. In 2004, 38 percent of Manley Hot Springs households received shares of large land mammals (moose), 31 percent received non-salmon fish, and 13 percent received small land mammals.

E4.3.9.3 Seasonal Round

Descriptions of seasonal subsistence activities for the community of Manley Hot Springs are available in Betts (1997). **Table E-82** depicts the seasonal round for a typical year as reported by Betts (1997). During the spring subsistence season, harvesters concentrate on non-salmon fish; waterfowl; furbearers such as beaver, muskrat, and otter; and black bear (**Table E-82**).

Harvests of non-salmon fish continue and intensify during the summer months (June through August) and other subsistence activities intensify as well with harvesters acquiring salmon, berries, and plants. Waterfowl may occasionally be harvested during the summer months. Porcupine are generally the only small land mammals taken during the summer.

During the fall months, Manley Hot Springs residents focus on moose, grouse, and waterfowl hunting with a gradual decline in the intensity of fish harvests (**Table E-82**). Black bear are also harvested, usually during moose hunting trips. Residents also begin to gather firewood in anticipation of the upcoming winter.

The winter months are highly active months for furbearer harvests with a continuation of fish, upland game birds, and moose harvesting in addition to firewood gathering. A wide variety of furbearers are harvested during the winter including marten, fox, mink, lynx, otter, weasel, wolf, and wolverine. While occasionally harvested in the winter, beaver are normally taken in March and into spring.

E4.3.10 Minto

The community of Minto is approximately 40 miles northwest of Fairbanks, on an 11-mile spur road off of the Elliott Highway (ADCCED 2011). It is currently located on the western bank of the Tolovana River, on the northwest limit of the Minto Flats. The community, once called Old Minto, was originally located about 40 miles to the south of its current location, on the Tanana River. Due to fear of flooding and erosion, residents began moving to the current location on the Tolovana River in the 1970 (Andrews 1988). This new location had been used as a fall and winter camp for the first half of the 1900s, and during the 1950s families began to settle there on a year-round basis. Initially the residents of Minto were from the Minto Band of Tanana Athabascans, but Nenana, Toklat, Crossjacket, and Chena families soon joined them. The 2010 population of Minto was estimated to be 210, 90.5 percent of whom were Alaska Native (U.S. Census Bureau 2011). The Native Village of Minto is a federally recognized tribe.

E4.3.10.1 Subsistence Use Areas

Figure E-121 shows Minto subsistence use areas for all resources as documented by ADFG (1986b) and Andrews (1988) for the 1960-1984 time period, and moose as documented by Andrews and Napoleon (1985) for the 1960-1985 time period. Collectively these two studies represent the maximum extent of documented subsistence use areas for Minto. Andrews' (1988) use areas show residents using a large area for subsistence purposes, including areas along the Kantishna River and the Parks Highway near Nenana in the south, south of Eureka Dome in the west, east of the Tatalina River, and north beyond the Elliott Highway. Minto subsistence use areas (Andrews 1988) overlap with the APP corridor near the Elliott Highway northeast of Minto.

Resource-specific subsistence use area maps are shown on **Figures E-122** through **E-128** for the 1960-1984 and 1960-1985 time periods. Minto salmon use areas (**Figure E-122**) for the 1960-1984 time period (Andrews 1988) show residents harvesting salmon primarily along the Tanana River north of the Parks Highway to the Swanneck Slough area, as well as on the opposite side of Swanneck Slough on the Tolovana River. Andrews' (1988) study also shows Minto residents fishing for non-salmon fish along the Tanana River as well as in isolated locations along the Chatanika and Tolovana rivers and in surrounding lakes and streams (**Figure E-123**).

Figure E-124 depicts Minto use areas for bear and moose as documented by Andrews (1988) for the 1960-1984 time period, and for moose as documented by Andrews and Napoleon (1985) for the 1960-1985 time period. Andrews and Napoleon's (1985) study shows residents harvesting moose across a large area centered on the community and the Minto Flats including the surrounding Tanana, Kantishna, Tolovana, Tatalina, and Chatanika river watersheds. Moose use areas documented by Andrews (1988) indicate use of similar areas but are somewhat more confined to areas immediately surrounding major river systems with additional moose use areas along the Elliott Highway. Bear use areas for the 1960-1984 time period occurred primarily along the Tolovana, Chatanika, Tatalina, and Tanana rivers in the vicinity of Minto.

Minto use areas for small land mammals and trapping are depicted on **Figure E-125** for the 1960-1984 time period. Small land mammal and trapping areas occur mostly north of the Tanana River across much of the Minto Flats, along the Elliott Highway, and to the east of Sawtooth Mountain; small land mammal use areas overlap with the APP corridor northeast of Minto near the Elliott Highway.

Waterfowl (**Figure E-126**) use areas documented for the 1960-1984 time period occur across the Minto Flats along several river drainages including the Tolovana, Tatalina, and Chatanika rivers. These rivers provide further access to surrounding lakes, sloughs, and ponds where waterfowl can be hunted. Some waterfowl harvesting also occurs south of the Tanana River. Minto upland bird use areas (**Figure E-127**) for the 1960-1984 time period occur along the Elliott Highway as well as near the Tatalina, Chatanika, and Tanana rivers.

Often harvested in conjunction with other subsistence resources, Minto residents reported harvesting berries along the Elliott Highway and several major river systems mostly south of Minto (**Figure E-128**). The Minto Road also provides access for nearby berry picking. Although not shown on the map, plant picking and harvests of wood are also important vegetation gathering activities.

E4.3.10.2 Harvest Data

Harvest data available for Minto consist of one comprehensive (i.e., all resources) study year from 1983-84 (**Table E-83**), and two studies reporting harvest totals for one or more resource categories from 1994 and 2004 (**Table E-84**). Salmon harvest data are available from the ASFDB for 1992 through 2009 (**Table E-84**).

During the 1983-84 study year, Minto households reported harvesting a total of 190,619 pounds of wild foods, providing 1,015 edible pounds per capita. Salmon, by weight, represented 67.6 percent of the total harvest and contributed 687 pounds per capita during the study year (**Table E-83**). Non-salmon fish and large land mammals were also important, based on edible weight, accounting for 17.1 percent and 8.9 percent of the total harvest, respectively (**Table E-83**). More recent harvest data show slightly higher harvests of large land mammals (131 pounds per capita in 2004 versus 90 in 1983-84) and lower harvests of non-salmon fish (10 pounds per capita versus 174 in 1983-84). In 1983-84, small land mammals, migratory birds, upland game birds, and vegetation were also harvested and contributed a relatively small portion toward the total subsistence harvest.

The primary species harvested during the 1983-84 study years included chum and Chinook salmon, northern pike, moose, and whitefish (**Table E-85**). These species (excluding salmon) were also the top harvested in 2004 and in 1994 (for non-salmon fish). Moose harvests alone provided 76 pounds per capita in 1983-84 and 129 edible pounds per capita in 2004. Northern pike remained the top harvested non-salmon fish species in recent years but was harvested in smaller quantities numbers (3,203 in 1983-84, 2,997 in 1994, and 216 in 2004).

According to the ASFDB, residents of Minto have reported salmon harvests in the Prince William Sound/Copper River and Yukon management areas. During the available data years, residents reported harvesting between one and 9,345 salmon, for an average of 2,483 salmon harvested annually. The available data show large fluctuations in the number of salmon harvested yearly; a recorded harvest of 1,442 salmon in 1999, for example, was followed by a reported harvest of 13 salmon during the following year (2000) (**Table E-84**). During most years of data, chum salmon were the primary species harvested in terms of number; however, Chinook and coho salmon were also harvested in high quantities during certain years.

Data on subsistence participation are available for the 1983-84 and 2004 study years, and data on sharing limited to the 2004 study year (**Tables E-83** and **E-84**). During the 1983-84 study year, 98 percent of Minto households reported attempting harvests of subsistence resources, and 96 percent were successful. For each resource category, over 70 percent of households participated, with the highest rates of participation (over 80 percent) reported for large land mammals, small land mammals, migratory birds, and vegetation. Data from 2004 show a smaller but still substantial percentage of households participating in subsistence activities, with 62 percent of households participating in large land mammal hunts, 40 percent in harvests of non-salmon fish, and 32 percent in harvests of small land mammals (**Table E-84**).

E4.3.10.3 Seasonal Round

Seasonal subsistence activities for the community of Minto, based on Andrews (1988) for the 1960-1984 study years, are provided in **Table E-86**. Other available seasonal round data for Minto include Andrews and Napoleon (1985). During the spring harvest season, Minto harvesters focus on hunting moose and bear, waterfowl, small mammals, and some non-salmon fish, particularly blackfish, whitefish, longnose sucker, and northern pike.

Waterfowl hunting continues through spring and into June. Throughout the summer months Minto harvest activities focus primarily on salmon as well as a variety of non-salmon fish including sheefish, northern pike, and whitefish (**Table E-86**). Moose, bear, and porcupine may be harvested throughout the summer months, although the focus of residents' moose and bear hunting occurs later in the fall. Porcupines are also harvested year-round, usually on an opportunistic basis.

Plants and berries are an important resource for residents of Minto beginning during the middle of June and extending into early fall. Harvest of salmon and other fish continues into fall, at which point residents begin actively pursuing upland game birds such as ptarmigan and grouse. In addition to late spring and early summer harvests of whitefish, September and October are another opportunity to harvest this important resource.

The winter months in Minto see a shift in subsistence activity to focus on the harvest of furbearers including marten, otter, fox, wolf, and mink. Ptarmigan are still actively harvested into December, with the grouse harvest ending during November. Moose continue to be hunted throughout the entire winter, with an increased level of harvest activity during January and February (**Table E-86**).

E4.3.11 Nenana

The community of Nenana is located 55 miles south of Fairbanks on the Parks Highway. It lies directly southeast of the confluence of the Tanana and Nenana rivers on the westernmost extent of Tanana Athabascan territory. Some of the oldest known archaeological sites in the state are found in the area and date to around 11,000 years ago. The current community was founded after the turn of the 20th century when three bands began living for some or all of the year near an Episcopalian mission (built in 1905) and a fur trading post (built in 1903) (ADCCED 2011; Shinkwin and Case 1984). The Euro-American population, drawn to the area by gold, began to increase in the early 1900s and increased dramatically with the construction of the Alaska Railroad beginning in 1916 (Shinkwin and Case 1984). In 1925, Nenana served as the starting place for the serum run to Nome, the inspiration for the Iditarod Trail Sled Dog Race (ADCCED 2011). The town continues to be a river port, rail depot, and highway stop for freight and tourists. The 2010 population was estimated to be 378, 37.6 percent of whom were Native (U.S. Census Bureau 2011). The Nenana Native Association is a federally recognized tribe.

E4.3.11.1 Subsistence Use Areas

Nenana all-resources use areas are displayed on **Figure E-129** for the 1981-1982 time period as documented by ADFG (1986b) and Shinkwin and Case (1984). Nenana residents used areas to the north beyond Minto to within 10 miles of the APP corridor and south along the Parks Highway beyond Cantwell. Use areas also extend west along the Tanana and Kantishna rivers as far as Lake Minchumina. Nenana subsistence use areas for the 1981-1982 time period do not overlap with the APP corridor. Use areas for the community extend to within 10 miles of the project corridor between Minto and Livengood.

Resource-specific subsistence use area maps are displayed on **Figures E-130** through **E-134** and include the 1981-1982 time period. Nenana salmon use areas (**Figure E-130**) occur at various locations along the Tanana River, both upstream and downstream from the community. One salmon use area is also located near the mouth of Bearpaw River, which drains into the Kantishna River. Non-salmon fish use areas are shown on **Figure E-131** and occur along the Tanana, Teklanika, Kantishna, and Bearpaw rivers, as well as in several lakes west of the Kantishna River.

Moose harvests (**Figure E-132**) occur over an extensive area including locations adjacent to the Parks Highway south beyond Cantwell, along the Kantishna and Tanana rivers, and along several drainages south of Minto. Shinkwin and Case (1984) noted that 95 percent of moose hunters for the 1981-1982 time period hunted for moose in the area between the Teklanika and Wood rivers. Linder Lakes were also noted as a popular moose hunting area.

Use areas for furbearers and small game (including hare, porcupine, grouse, and ptarmigan) are shown on **Figure E-133**. Small game hunting areas extend along roads and trails in the immediate Nenana area, west of the Parks Highway near Healy, and along the Kantishna River to just east of Lake Minchumina. Small game are also taken in conjunction with other subsistence activities such as moose and waterfowl hunting. Furbearers are harvested predominantly in the area between the Kantishna Rivers and Nenana (**Figure E-133**). The areas north of the community along the Tanana River and in the Minto Flats region are also used for trapping. Furbearers are also harvested in an overland area to the southeast of the community, just east of the Parks Highway.

Waterfowl use areas are depicted in **Figure E-134** and show Nenana residents using the Tanana and Kantishna rivers in addition to the Minto Flats to harvest these resources. Shinkwin and Case (1984) report that the Minto Flats area and Linder Lakes were the most heavily used by Nenana waterfowl harvesters. Other popular waterfowl hunting areas during the 1981-1982 study included the Wood River area and Kantishna River.

E4.3.11.2 Harvest Data

Harvest data for Nenana are provided in **Tables E-87** and **E-88**. No comprehensive harvest data are available for Nenana. One study from 2004 recorded harvest data for non-salmon fish, large land mammals, and small land mammals. Salmon harvest data for 1988 through 2009 are available from the ASFDB.

Of the three resource categories for which data were collected in 2004, large land mammals contributed the greatest amount toward the total subsistence harvest in terms of pounds of edible weight (85 pounds per capita), followed by non-salmon fish (10 pounds per capita), and small land mammals (4 pounds per capita) (**Table E-87**). Moose was the primary large land mammal harvested, accounting for 83 of the 85 pounds harvested per capita within this species group. Harvested non-salmon fish species included humpback whitefish and northern pike, and small land mammal species were beaver and snowshoe hare.

According to ASFDB data from 1988 through 2009, Nenana residents have reported harvesting salmon in the Prince William Sound/Copper River, Yukon, and Southeast management areas. Similar to ASFDB data for other communities, data years from the 1980s and early 1990s show substantially lower harvests when compared to the majority of harvest years from the 1990s and 2000s (**Table E-87**). Prior to 1992, reported subsistence harvests ranged from 155 to 334 annually. Starting in 1992, however, the number of recorded salmon harvests increased dramatically. Between 1992 and 2009, Nenana harvesters reported subsistence salmon harvests of between 3,458 (in 2000) and 32,752 (in 1992), with average harvests amounting to 18,591 salmon annually. Residents reported harvesting all species of Pacific salmon except for pink salmon. Chum were the dominant harvested species of salmon during most years, although coho and Chinook are also harvested in large quantities during certain years.

Harvest participation and sharing data for Nenana are available for the 2004 study year. A total of 64 percent of households reported using at least one of the three resource categories (non-salmon fish, large land mammals, and small land mammals) reported in the 2004 harvest study (ADFG 2011). In addition, nearly half (49 percent) attempted harvests of at least one of these resources (ADFG 2011). A higher percentage of households (41 and

44 percent, respectively) reported participating in harvests of non-salmon fish and large land mammals (**Table E-87**).

E4.3.11.3 Seasonal Round

Shinkwin and Case (1984) provided a brief description of Nenana residents' yearly cycle of subsistence harvest activities based on fieldwork conducted in 1981. Shinkwin and Case reported that salmon is the main focus of Nenana community members' summer harvest pursuits, with other fish, such as whitefish, sheefish, Arctic grayling, northern pike, and burbot harvested at other times. Berries and plants are also gathered throughout the summer months. Moose and waterfowl hunting occupy much of residents' subsistence activities during the fall season, whereas harvests of small game and furbearers are the primary focus during winter months (Shinkwin and Case 1984).

E4.3.12 Northway

Northway, Northway Junction, and Northway Village are three connected communities that are separately designated by the U.S. Census. These three communities, which are referred to as Northway here, are located near the Nabesna River in the Tetlin NWR. Northway Junction is located at the junction of the Alaska Highway and Northway Road, which continues approximately 9 miles southwest to the other two communities (ADCCED 2011). The population of Northway Junction was estimated in 2010 to be 54, 66.7 percent of whom were Native (U.S. Census Bureau 2011). Northway lies adjacent to the Northway Airport, which was constructed during World War II as a link in the Northwest Staging Route that consisted of a number of bases used to supply Alaska during this time period (ADCCED 2011). In 2010 the population of Northway was estimated to be 71, of whom 78.9 percent were Native (U.S. Census Bureau 2011). The last community on Northway Road is Northway Village, which is located on the eastern bank of the Nabesna River adjacent to Skate Lake (ADCCED 2011). In 2010 the population of Northway Village was estimated to be 98, 77.6 percent of whom were Native (U.S. Census Bureau 2011).

Traditionally, the Northway area was used by semi-nomadic Athabascans, who moved seasonally based on the availability of subsistence resources. Non-native explorers and traders entered the region in the late 1800s and early 1900s, and by 1920 trading posts were established at nearby Gardiner Creek as well as along the Nabesna River. The first settlement in the area was located on the western bank of the Nabesna River across from the current location of Northway Village. This village was abandoned in the 1940s due to flooding. People continued to live in the area as economic opportunities continued to arise, first with the building of the airport, then with the construction of the Alaska Highway. The Native Village of Northway is a federally recognized tribe (ADCCED 2011).

E4.3.12.1 Subsistence Use Areas

Figure E-135 displays Northway subsistence use areas for the 1974-1984 time period as documented by ADFG (1986b) and Case (1986). Use areas primarily follow three major road systems in the region, including the Alaska, Glenn, and Taylor highways. The largest area utilized by Northway residents occurs on either side of the Alaska Highway between the intersection of the Taylor and Alaska highways and the Canada border. Northway subsistence use areas for the 1974-1984 time periods overlap with a lengthy portion of the APP corridor. With the exception of a small area between Tok and Tanacross, the APP corridor overlaps with Northway use areas in a continuous area from Dot Lake to the Canada border.

Maps depicting use areas by resource are displayed in **Figures E-136** through **E-140,** and include the 1974-1984 time period. **Figure E-136** shows non-salmon fish use areas for Northway residents for the 1974-1984 time period. The primary fish use areas were documented along the lower Nabesna and Chisana rivers as well as near Tetlin. Although not included in the mapping study, Case (1986) notes that Northway residents also harvested salmon on the Copper and Yukon rivers.

Figure E-137 depicts use areas for large land mammals, including caribou, moose, and Dall sheep for the 1974-1984 time period. Caribou harvesting generally occurred northeast of the community on the opposite side of the Alaska Highway, and along the entire length of the Taylor Highway. Moose use areas correspond to areas adjacent to the Alaska, Glenn, and Taylor highways, as well as areas south of the Alaska Highway near the community. The Nabesna Road is also used for moose harvests. Dall sheep harvests occurred in isolated mountainous areas near the Glenn Highway between Tok and Slana, and along the Nabesna River near the community of Nabesna.

Figure E-138 depicts Northway use areas for furbearers for the 1974-1984 time period. Residents harvested furbearers along the Nabesna and Chisana rivers, as well as overland areas north of the Alaska Highway. Case (1986) reported that the lower Nabesna and Chisana rivers south of the Black Hills and hills north of the Alaska Highway were the most intensively used for furbearer harvests.

Waterfowl use areas during the 1974-1984 time period were all reported south of the Alaska Highway from Tetlin area east to the Canada border (**Figure E-139**). The greatest concentration of waterfowl hunting occurred within the immediate area within 5 miles of Northway and included local lakes, Moose Creek, and lower Nabesna and Chisana rivers (Case 1986). Other waterfowl use areas include the Scottie Creek drainage and Tanana and Tetlin rivers.

Plant and wood use areas generally correspond to those described for waterfowl, with the addition of use areas along the Alaska and Taylor highways (**Figure E-140**). According to Case (1986), many of the berries and plants consumed by local residents could be found within a 10-mile radius of the community. Wood-gathering areas are most common along the rivers and Alaska Highway and Paradise Hill.

E4.3.12.2 Harvest Data

Harvest data for Northway are presented in **Tables E-89** through **E-91**. These data consist of one comprehensive study from 1987-1988, as well as one study from 2004 reporting the harvest of non-salmon fish, large land mammals and small land mammals (**Table E-89**). The ASFDB reports subsistence salmon harvests from 1988 to 2009 for all three Northway communities combined (**Table E-90**). One study from 2000 reports the harvest of migratory birds for Northway Village only (**Table E-90**).

Harvests of subsistence resources in 1987-88 provided Northway residents with an estimated 278 pounds of wild foods per capita (**Table E-89**). The most important resources harvested, in terms of pounds of edible weight, were non-salmon fish (comprising 46.5 percent of the total harvest) and large land mammals (comprising 32.4 percent of the harvest). Non-salmon fish harvests alone accounted for 129 pounds per capita in 1987-88, somewhat higher than the 74 pounds per capita of non-salmon fish harvested in 2004. Harvests of large land mammals were somewhat higher in 2004, providing 155 pounds per capita versus 90 pounds in 1987-88. Small land mammals and salmon accounted for small percentages of the 1987-88 harvest but still provided a total of 42 pounds of edible resources per capita.

The primary species harvested in 1987-88 in terms of edible pounds were whitefish, followed by moose, hare, caribou, and muskrat (**Table E-91**). Moose, humpback whitefish, caribou, and hare were also among the top harvested species in 2004, in addition to beaver. Among land mammal species, moose provided the greater portion of edible pounds. Non-salmon fish harvests were predominantly whitefish, however, during the 1987-88 other important species included burbot, northern pike, and Arctic grayling. Other key species harvested during either one or both study years included berries, black bears, ducks, porcupine, Dall sheep, and longnose suckers.

The ASFDB reports that from 1988-2009, residents of the three Northway communities harvested salmon in the Prince William Sound/Copper River, Yukon, and Southeast management areas. During this time community members harvested between 35 and 1,263 salmon annually, with an average of 450 salmon harvested per year (**Table E-90**). While residents reported harvesting four of the five Pacific salmon species (excluding pink), sockeye salmon were consistently harvested in the largest numbers.

Participation in subsistence activities was high during both the 1987-88 and 2004 study years. In 1987-88, 96 percent of households participated in subsistence activities, with the highest rates of participation in harvests of non-salmon fish, large land mammals, small land mammals, and vegetation. Over 60 percent of households attempted harvests of non-salmon fish, large land mammals, and small land mammals in 2004. Sharing of subsistence resources was high in 1987-88, with 60 percent of households giving and 93 percent receiving subsistence resources (**Table E-89**). Although data are not available for all resources, the 2004 data shows a somewhat smaller percentage of households giving and receiving non-salmon fish, large land mammals, and small land mammals (**Table E-90**)

E4.3.12.3 Seasonal Round

A general depiction of Northway seasonal subsistence activities is shown in **Table E-92** as reported in Marcotte (1991) and based on information collected by Case (1986) for the 1983-1984 study years. Supporting data regarding the seasonal subsistence activities of Northway residents have been published in other sources including Haynes et al. (1984) and Andersen and Jennings (2001b). **Table E-92** depicts seasonal round data for a two-year period and, because the timing of various subsistence activities may fluctuate from year to year based on a variety of factors, may not adequately represent the general seasonal round for resource harvests in Northway. **Table E-92** indicates that during the spring months of April and May, residents of Northway are concluding their muskrat and beaver harvests that began in the late winter and focusing on harvests of fish such as northern pike, burbot, and Arctic grayling, as well as wild plants, porcupine, and hare.

As summer arrives, residents begin to harvest a wide variety of fish, including whitefish, longnose suckers, and salmon. Berries and plants are also gathered beginning in June and peaking in July and August. Black bear and brown bear are taken during the summer, particularly in June and August.

Residents continue harvesting fish and wild plants into fall, when harvests of small game, waterfowl, and moose are also common. Data collected by Andersen and Jennings (2001b) also show that in addition to waterfowl harvests in the fall, Northway residents also harvest these birds during the spring migration. Residents also begin to gather firewood in anticipation of the upcoming winter.

According to Marcotte (1991), the winter months represent a period of relatively high activity for Northway residents (**Table E-92**). Caribou are actively harvested during the winter months in addition to a variety of small mammals and furbearers. Ptarmigan remain important resources throughout these months as well as burbot and the gathering of firewood.

E4.3.13 Tanacross

The community of Tanacross is located 12 miles west of Tok on the Alaska Highway. Prior to the 1970s, the community was located on the northern side of the Tanana River and was named Tanana Crossing (Marcotte 1991). Due to problems with water contamination, the village was moved to the southern bank of the Tanana River, and is now connected to the Alaska Highway via a 1-mile road. Tanana Crossing was first established in 1912 when a small population was attracted from surrounding communities after the construction of a mission and trading post near the old village site. In 1920 a post office was built, and after the construction of a school in 1932, a larger population moved into the area. Around this time the name was changed to Tanacross. The airport, at the time located across the river, was used by the military during World War II as a deployment post. The 2010 population of Tanacross was 136, 80.2 percent of whom were Native (U.S. Census Bureau 2011). The Native Village of Tanacross is a federally recognized tribe.

E4.3.13.1 Subsistence Use Areas

Figure E-141 displays Tanacross subsistence use areas for the 1968-1988 time period as documented by Marcotte (1991). All-resources use areas cover a large overland area as far north as Eagle and following the Glenn Highway to Chistochina in the south, and the Alaska Highway toward Delta Junction in the west and to areas near Northway Junction and Alcan Border in the east. Tanacross subsistence use areas for the 1968-1988 time period overlap the APP corridor continuously from just east of Delta Junction to just west of Northway Junction.

Resource-specific subsistence use area maps are displayed in **Figures E-142** through **E-148** and include the 1968-1988 time period. Use areas for all fish, including salmon and non-salmon fish, are shown on **Figure E-142**, and use areas for salmon alone are on **Figure E-143**. Tanacross residents reported harvesting salmon (including landlocked salmon) in several nearby lakes and along the Tanana River approximately 10 to 20 miles east and west of the community. All fish use areas occur in the same salmon fishing areas near the community in addition to areas as far west as Lake George, south along the Glenn Highway's Tok Cut-Off to Slana, and east along the Alaska Highway in a few locations near Tetlin, Northway Junction, and Gardiner Creek. The APP corridor parallels Tanacross fish use areas along the Tanana River and, in several isolated use areas where APP crosses a waterway (e.g., Tanana River, Gardiner Creek), bisects through non-salmon fish use areas.

Tanacross subsistence use areas for large land mammals are shown on **Figures E-144** and **E-145**. Tanacross caribou, moose, and Dall sheep use areas are shown on **Figure E-144**, indicating heavy use of areas near the Alaska, Glenn, and Taylor highways for moose, and a large overland area north of the community for both moose and caribou. Tanacross residents also reported moose hunting along the Nabesna Road and an isolated caribou use area south of the Alaska Highway to the west of the community. Bear use areas are nearly identical to those of moose and reflect concurrent hunting activities (**Figure E-145**). Residents use more mountainous areas of the Alaska Range south of Tanacross to harvest Dall sheep. The APP corridor overlaps moose and bear use areas along the Alaska Highway and border the outer-edge of Tanacross caribou use areas.

Small game and trapping (**Figure E-146**) use areas for Tanacross residents indicate use of the Glenn, Alaska, and Taylor highways, the Nabesna Road, and an overland area north of the community. Furbearer trapping also occurs over a large overland area north of Tanacross and northwest toward Dot Lake. Both trapping and small game use areas overlap the APP corridor between the area just east of Dot Lake to the intersection of the Taylor and Alaska highways.

Figure E-147 displays Tanacross use areas for waterfowl, which occurred mostly along the Tanana River. Waterfowl hunting also occurred in lake systems, including the Lake Mansfield area and lakes south of the Alaska Highway near Tetlin. Waterfowl hunting along the Tanana River and in lake systems off the Alaska Highway are bordered by the APP corridor.

Use areas for berries, vegetation, and wood (**Figure E-148**) mostly correspond to the access provided by the Alaska and Glenn highways. In addition, the area directly north of the community provides nearby berry, plant, and wood-gathering areas. Berry and vegetation use areas were also documented along the Taylor Highway as far as Chicken, and vegetation use areas occur along the Nabesna Road. Berry, vegetation, and wood use areas along the Alaska Highway overlap APP from Delta Junction to the Taylor and Alaska highway intersection.

E4.3.13.2 Harvest Data

Harvest data for Tanacross are provided in **Tables E-93** through **E-95**. These data consist of one comprehensive (i.e., all resources) study year from 1987 (**Table E-93**), and a 2004 study reporting only non-salmon fish, large land mammal, and small land mammal harvest data. Subsistence salmon harvest data are available from the ASFDB for several years between 1994 and 2009 (**Table E-94**).

During the 1987-88 study year, Tanacross households reported harvesting an estimated 250 pounds of subsistence resources per capita (**Table E-93**). Large land mammals and non-salmon fish were the top harvested resources in terms of pounds of edible weight, accounting for 39.7 and 35.3 percent of the total harvest, respectively, followed by salmon (15.5 percent). During the 1987-88 and 2004 study years, large land mammal harvests provided 99 and 125 pounds per capita, and non-salmon fish provided 88 and 34 pounds per capita, respectively. Residents of Tanacross also rely on harvests of small land mammals, vegetation, upland game birds, and migratory birds, with these four resources providing an estimated 24 pounds of subsistence foods per capita in 1987-88.

The primary species harvested both during the 1987-88 and 2004 (partial) study years were moose and whitefish (specifically humpback and broad whitefish in 2004). These two species comprised over 60 percent of the community's total harvest by weight in 1987-88 and provided a total of 155 pounds of food in 1987-88 and 132 pounds of food in 2004. In addition, coho salmon contributed another 8.5 percent to the harvest, or 21 pounds per capita (**Table E-95**). Other key subsistence resources harvested by Tanacross residents during the study years include caribou, northern pike, Arctic grayling, burbot, hare, porcupine, beaver, and berries (**Table E-95**).

The ASFDB provides salmon harvest data for Tanacross for various years between 1994 and 2009 (**Table E-94**), and reports residents of Tanacross harvesting salmon in the Prince William Sound/Copper River and Yukon management areas (ADFG 2009). During the available data years, residents reported harvesting between 6 and 556 salmon, for an average of 111 salmon annually (**Table E-94**). Sockeye salmon were the primary species harvested during the study years, with Chinook, coho, and chum also harvested during certain years (**Table E-95**).

In 1987-88, 96 percent of households reported using at least one subsistence resource and the same percentage reported participating in subsistence harvests (**Table E-93**). Over 70 percent of households reported attempting harvests of non-salmon fish, large land mammals, small land mammals, and vegetation. A similar percentage of households (68 percent) reported attempting harvests of large land mammals in 2004, with a smaller percentage (43 percent) harvesting non-salmon fish. A high percentage of households reported sharing subsistence resources in 1987-88, with 63 percent giving and 96 percent receiving at least 1 resource (**Table E-93**). Sharing of large land mammals, non-salmon fish, and small land mammals occurred among a smaller percentage of households in 2004 (**Table E-94**).

E4.3.13.3 Seasonal Round

Marcotte (1991) described the seasonal round of selected subsistence resources for the community of Tanacross based on fieldwork conducted in 1984 (**Table E-96**) (see also Haynes et al., 1984). Other available seasonal round data for Tanacross include Andersen and Jennings (2001b). **Table E-96** indicates that during the spring months in Tanacross, subsistence harvesters primarily focus on fishing for Arctic grayling and gathering plants and wood, with occasional upland game bird and duck harvests.

The summer months in Tanacross are characterized by a higher level of activity in regard to procuring resources. Marcotte (1991) reported active harvesting of bear in July, caribou in August, and occasional moose harvests in June and July. Additionally, small mammals such as hare and porcupine are harvested along with upland game birds, salmon, non-salmon fish, and berries and other plants (**Table E-96**).

Residents intensify their subsistence activities during September, which is the usual month of harvest for moose, caribou, northern pike, geese, ducks, and ptarmigan. Primary harvests of northern pike also continue into October. Community members continue to harvest porcupine, berries, and plants during the fall months and begin to harvest their winter supply of wood (**Table E-96**).

During the winter months from November to March, residents harvest a variety of furbearers including hare, marten, mink, fox, lynx, wolf, wolverine, coyote, and otter. Additionally, Marcotte (1991) reports residents fishing for burbot. Wood gathering continues through the early winter months.

E4.3.14 Tanana

The community of Tanana is located approximately 2 miles west of the confluence of the Tanana and Yukon rivers. The confluence of these rivers was the location of a pre-contact Koyukon and Tanana Athabascan trade settlement. The construction of Harper’s Station, a European trading post approximately 13 miles downriver, attracted Europeans to the area in the late 1800s. This was followed by further development, including the construction of several missions, a hospital, Fort Gibbon, and a school. During the 1920s the fort was abandoned and the U.S. Government and Bureau of Indian Affairs took control of many of the facilities in Tanana. Subsistence hunting and gathering are important activities for the community but some residents do have full-time jobs working for the city, school district, Native council, and BLM (ADCCED 2011). In 2010 the population of Tanana was 246, of whom 87 percent were Native (U.S. Census Bureau 2011). The Native Village of Tanana is a federally recognized tribe (ADCCED 2011).

E4.3.14.1 Subsistence Use Areas

Figure E-149 depicts Tanana subsistence use areas as documented by Case and Halpin (1990) for the 1968-1988 time period. Tanana residents reported use areas that centered on the Yukon and Tanana rivers and smaller tributaries, as well as inland areas to the north and south of the community. Use areas were reported as far west as Ruby, to the south along the Susulatna River, east beyond Rampart along the Yukon River, and past the Ray

Mountains in the north. Tanana subsistence use areas for the 1968-1988 time period do not overlap with the APP corridor; Case and Halpin's (1990) use areas extend to just beyond Rampart along the Yukon River.

Resource-specific subsistence use area maps are shown on **Figures E-150** through **E-154** for the 1968-1988 time period. Tanana fishing areas (including salmon and non-salmon fish) are depicted on **Figure E-150**. These use areas show residents primarily harvesting fish along the Yukon River, as well as smaller tributaries including the Nowitna (non-salmon fish; Case and Halpin 1990), Tanana, and Tozitna rivers. Residents also reported harvesting fish in Fish Lake to the southeast of the community as well as in several sloughs along the Tanana and Yukon rivers (Case and Halpin 1990).

Large land mammal use areas, including those for caribou, moose, and bear, are shown on **Figure E-151**. Tanana residents reported several discontinuous caribou use areas to the north of the Yukon River near the community with the most intensively used are north of the community in the Ptarmigan Creek drainage uplands (Case and Halpin 1990). The majority of moose and bear use areas occurred along the Yukon, Nowitna, Tanana, and Tozitna rivers. Inland use areas for moose and bear were also reported to the north of Tanana and to the south of Ruby. Most bear hunting is concurrent with moose hunting.

Tanana small land mammal use areas, including those for small game and trapping, are shown on **Figure E-152**. Non-contiguous small game (including hare, porcupine, grouse, and ptarmigan) use areas were reported along the Yukon, Tanana, and Tozitna rivers near the community, and along the Nowitna River to the southwest. Likewise, trapping areas were reported inland to the north and south of the Yukon River, and along the Nowitna River.

Figure E-153 displays waterfowl use areas for the 1968-1988 time period. The figure shows Tanana residents traveling along the Yukon, Tanana, Nowitna, and Tozitna rivers to harvest these resources. Case and Halpin (1990) report that specific early spring areas for duck and geese hunting included Fish Lake, several islands on the Yukon River near the community, and near the mouth of the Tanana River, and that these areas expanded once breakup had occurred.

Similar to other Tanana use areas, **Figure E-154** depicts Tanana use areas for vegetation and wood mostly along the Yukon and Tanana rivers, but also along the Nowitna and Tozitna rivers. Much of the berry and wood harvesting occurred in nearby areas around the community and along local roads. Additional vegetation use areas were centered on fishing or trapping camps (Case and Halpin 1990).

E4.3.14.2 Harvest Data

Harvest data for Tanana are provided in **Tables E-97** through **E-99**. These data consist of one comprehensive (i.e., all resources) study from 1987 (**Table E-97**), as well as single-resource study years from 1996, 1997, 1998, 1999, and 2002-03 (for large land mammals), and 2006 (for non-salmon fish) (**Table E-98**). Subsistence salmon harvest data for 1992 through 2009 are available from the ASFDB (**Table E-98**).

Data from 1987 show residents harvesting 2,157 pounds of subsistence resources per capita. The vast majority of this harvest came from salmon (74.2 percent, 1,600 pounds per capita) and was also supported by harvests of non-salmon fish (358 pounds per capita) and large land mammals (141 pounds per capita). Case and Halpin (1990) noted that of the two, 157 pounds per capita, 1,357 pounds were fed to dogs. Recent data on non-salmon fish and large land mammals show similarly high harvests of these resources, with residents harvesting 261 pounds per capita of non-salmon fish in 2006 and between 198 and 338 pounds per capita of large land mammals during the 1996-1999 and 2002-03 study years. Harvests of small land mammals, migratory birds, upland game birds, and vegetation contribute less to the total harvest in terms of pounds but are still important.

Chum salmon was the top species harvested in 1987, by weight, followed by whitefish, Chinook and coho salmon, moose, sheefish, and beaver (**Table E-99**). Moose was also the top large land mammal species harvested during 1996-1999 and 2002-03, and whitefish and sheefish were the top non-salmon fish species during the 2006 study year, indicating that the general makeup of subsistence harvests in Tanana has remained the same over time. Residents also reported harvests of black bear, caribou, and brown bear during more recent study years, providing between 3 and 10 pounds per capita (**Table E-99**).

The ASFDB reports that from 1992 until 2009 residents of Tanana harvested salmon in the Prince William Sound/Copper River and Yukon management areas. During these years between 13,987 and 57,513 salmon were harvested each year, with a mean harvest of 33,983 (**Table E-98**). These estimated harvests are somewhat lower than the 1987 estimated harvest of 86,554 salmon. Case and Halpin (1990) notes that in 1987 ownership of dogs was substantially higher than other communities in the region, which may explain the relatively high harvests of salmon that year. All five species of Pacific salmon are harvested by Tanana residents, however, chum salmon is the most harvested species in terms of numbers (**Table E-99**).

One-hundred percent of the households in Tanana reported using at least one wild resource in 1987, and 93 percent reported attempting harvests of subsistence resources (**Tables E-97**). In particular, a high percentage of households (over 70 percent) participated in harvests of salmon, non-salmon fish, large land mammals, and upland game birds in 1987. More recent data show a similarly high percentage (between 68 and 72 percent) of households attempting harvests of large land mammals in 1998, 1999, and 2002-03, however, participation in non-salmon fish harvests was limited to 18 percent of households in 2006. Sharing of subsistence resources was high in 1987, with 84 percent of households giving and 98 percent receiving subsistence resources. Sharing was particularly common with harvests of large land mammals; 85 percent of households reported receiving this resource in 1987 and 88 percent in 2002-03 (**Tables E-97** and **E-98**).

E4.3.14.3 Seasonal Round

A comprehensive depiction of seasonal round for Tanana is provided in Case and Halpin (1990) (**Table E-100**). This table depicts the seasonal round data for only one year, 1987, and therefore may not be an adequate representation of the general seasonal round for the harvesters of Tanana. Additional seasonal round data for Tanana are also available in more recent sources (Brown et al. 2004 and 2010). **Table E-100** indicates that during the spring subsistence period Tanana hunters focus on harvesting small mammals, waterfowl, game birds such as ptarmigan, wood, and various types of fish. In contrast to the data reported by Case and Halpin (1990) in **Table E-100**, Brown et al. (2010) reports all non-salmon fish were harvested between the months of May and September, however these data are also only based on one year's survey results.

In addition to non-salmon fish, the summer season is spent focusing on Chinook and chum harvests. Berry picking is also a primary subsistence activity during the late summer and into fall. Bear, porcupine, waterfowl, and wood are occasionally harvested during the summer (**Table E-100**).

September and October are a time of increased levels of fishing activities, as well as intensification in the harvesting of large land mammals such as bear and moose. Small mammals (e.g., hare and porcupine), waterfowl, upland game birds, berries, and wood are all harvested during the fall in preparation for the upcoming winter months. According to Brown et al. (2004), almost all moose hunting occurs during the month of September, with opportunistic harvests throughout the rest of the year.

Winter in Tanana is an important season for the harvest of furbearers as well as other small mammals including beaver and hare. According to **Table E-100**, caribou, upland game birds, and wood are also actively harvested during the winter months, however, Brown et al. (2004) do not report any caribou being harvested during the 2002-03 winter.

E4.3.15 Tetlin

The community of Tetlin is located 20 miles southeast of Tok, almost directly south of Tetlin Junction, where the Alaska Highway and Taylor Highway meet. The community is located between the Tanana River and Tetlin Lake in an area once used by semi-nomadic Athabascan people who lived in small groups and seasonally hunted game throughout the area. After the construction of trading posts in Tetlin in 1920, a number of families moved to Tetlin and by the 1950s a school, post office, and airstrip had been built. Those living in Tetlin today participate in a number of subsistence activities, and some work for the school, tribe, health clinic, BLM or post office. The Native Village of Tetlin is a federally recognized tribe and owns the surface and subsurface rights to 743,000 acres once included in the Tetlin Indian Reserve (ADCCED 2011). In 2010 the population of Tetlin was estimated to be 127, of whom 89.8 percent were Native (U.S. Census Bureau 2011).

E4.3.15.1 Subsistence Use Areas

Tetlin subsistence use areas for all resources are displayed on **Figure E-155** as documented by Halpin (1987) for the 1974-1984 time period. Use areas are located mostly south of the Alaska Highway and east of the Tok Cut-Off, centered on the Tetlin River, extending as far south as Tetlin Lake. Tetlin subsistence use areas for the 1974-1984 time period overlap with the APP corridor north of the Tanana River along the Alaska Highway, east of the Taylor Highway.

Subsistence use area maps organized by resource are displayed on **Figures E-156** through E-160 for the 1974-1984 time period. Tetlin non-salmon fishing areas (**Figure E-156**) occur primarily along the Tetlin and Kalutna rivers and in Tetlin Lake. One isolated fish use area is located along the Tanana River, which overlaps with the APP corridor. Halpin (1987) notes that some Tetlin residents traveled by car to the Copper River Region to harvest salmon as this resource was not available in the Tetlin area.

Tetlin moose use areas are depicted on **Figure E-157**, covering overland areas around and between the Tetlin, Kalutna, and Tanana rivers. The use areas near the Tanana River extend over the Alaska Highway and APP corridor between Northway Junction and the intersection of the Alaska and Taylor highways. Most moose were harvested along the shores of local lakes and rivers or within a mile inland of the shores to limit the packing distance (Halpin 1987).

Figure E-158 shows Tetlin trapping and trapline use areas for the 1974-1984 time period, showing use of areas surrounding the community. Traplines extended from the community through the Tetlin Hills in the west, to the Alaska Highway in the north, toward Northway Village in the east, and into the Alaska Range in the south. Trapping areas occur over a similar area but are somewhat more confined to the Tetlin, Kalutna, and Tanana river drainages. A small portion of 1974-1984 Tetlin trapping areas overlap the APP corridor.

Waterfowl hunting occurs predominantly around local lakes, including Tetlin Lake, and along Tetlin and Tanana rivers (**Figure E-159**). A small portion of waterfowl use areas along the Tanana River borders the APP corridor. The Tetlin area is well known as an important waterfowl habitat area and during Halpin's (1987) study, Tetlin residents harvested both ducks and geese as well as eggs in this area.

Plant gathering occurs along the Tetlin and Tanana rivers, the shoreline of Tetlin Lake, and along the Alaska Highway between Northway Junction and the Taylor Highway (**Figure E-160**). Plants were also harvested around a few other local lakes and along the lower portion of the Kalutna River. The entire plant use area along the Alaska Highway overlaps with the APP corridor.

E4.3.15.2 Harvest Data

Harvest data for Tetlin are provided in **Tables E-101** through **E-103**. Harvest data available for Tetlin consists of a single comprehensive (i.e., all resources) study year from 1987-1988 (**Table E-101**) along with two study years reporting the harvests of single or multiple resource categories. Subsistence salmon harvest data for Tetlin are available from the ASFDB for 1992 and 1993 only (**Table E-102**).

The 1987-88 study reporting all-resources harvest data shows Tetlin households harvesting an estimated 214 pounds of subsistence resources per capita. Non-salmon fish provided the greatest portion of the harvest by weight, at 58 percent of the harvest or 124 pounds per capita. Large land mammals were the second most harvested resource, providing 30.4 percent of the total harvest or 65 pounds per capita (**Table E-101** and **E-103**). Data from 2004 show a higher harvest of large land mammals (158 pounds per capita) and a lower harvest of non-salmon fish (77 pounds per capita) and indicate a continued importance of these resources. Small land mammals, salmon, and vegetation also contributed to the 1987 harvest but in relatively small quantities (between 2 and 5 pounds per capita).

As indicated in **Table E-103**, whitefish (specifically humpback whitefish in 2004) was the primary non-salmon fish species and moose the primary large land mammal species harvested during both the 1987-88 and 2004 study years. Combined, these two species provided 169 (in 1987-88) and 204 (in 2004) pounds of wild foods per capita during the two study years. Other species contributing over one percent of the total harvest in 1987-88 by weight, included northern pike, hare, ducks, muskrat, berries, salmon, and longnose suckers (**Table E-103**). In addition, caribou was a top large land mammal species harvested in 2004, providing 15 pounds per capita.

The ASFDB reports that Tetlin residents harvested salmon in the Prince William Sound/Copper River Management Area. Harvest data are available for two years only (1992 and 1993). During these years residents harvested a total of seven sockeye salmon (**Table E-102** and **E-103**). The harvest numbers are lower than the estimated 70 salmon harvested in 1987-88.

In 1987, 100 percent of households used subsistence resources and 90 percent participated in subsistence activities (**Table E-101**). In particular, a high percentage of households attempted harvests of non-salmon fish (90 percent), small land mammals (79 percent), and vegetation (69 percent). Just over half (59 percent) of households went hunting for large land mammals. Data from 2004 show even higher levels of participation in harvests of non-salmon fish (97 percent) and large land mammals (81 percent). Harvests and participation in harvests of caribou was substantially higher in 2004 compared to 1987. Halpin (1987) attributed low caribou harvests that year to the variability of caribou populations; changing migration routes; and expanding winter range of caribou from the Nelchina and Mentasta herds. Sharing was high among Tetlin households in 1987-88, with 79 percent of households giving and 90 percent receiving subsistence resources. The continued importance of sharing is evident in the 74 percent of households who received large land mammal shares in 2004 (**Table E-102**).

E4.3.15.3 Seasonal Round

Marcotte (1991) reported the seasonal round of Tetlin residents based on fieldwork conducted in 1983 through 1984 (**Table E-104**) (see Halpin, 1987). This table provides seasonal round data for only a one-year period and therefore may not be an adequate representation of the general seasonal round for the community of Tetlin. Additional seasonal round data for Tetlin are also available in other sources (Haynes et al., 1984; and Andersen and Jennings, 2001b). **Table E-104** indicates that the spring harvest season for Tetlin residents is a time of lower activity levels than the rest of the year. Residents focus on harvesting waterfowl and ptarmigan, as well as small mammals including hare and muskrat during the spring.

Throughout the summer, residents actively harvest a greater variety of resources, particularly several species of fish and berries. These summer months are the primary period of harvest for whitefish, Arctic grayling, northern pike, and salmon as well as berries and other plants. Occasional harvests during the summer include moose, small mammals, waterfowl, ptarmigan, and wood.

A number of resources harvested during the summer are harvested into the fall season with an increasing focus on moose, hare, waterfowl, ptarmigan, and wood (**Table E-104**). Burbot are primarily harvested in late fall and early winter. Other fish resources harvested from the summer into the fall include whitefish, northern pike, and longnose sucker.

The winter months, November through March, are spent harvesting furbearers including fox, lynx, marten, mink and wolverine. Small mammals and wood are also regularly harvested. Moose and fish are harvested during the winter months, but not as actively as during the fall season.

E4.3.16 Tok

The community of Tok is located at the junction of the Alaska Highway and the Tok Cut-Off. Considered the “Gateway to Alaska,” Tok is the first major community encountered when entering Alaska from Canada. The community is 93 miles from the Canada border. The community is likely named after the nearby Tokai River, and was first created in 1942 as an Alaska Road Commission camp. By the middle of the century the community included a number of small businesses, a post office, and a school (ADCCED 2011). The area is located in traditional Athabascan territory, however, the current population is mostly non-native (12.2 percent were Native in 2010 [U.S. Census Bureau 2011]). Tok is the transportation, business, service, and government center for the Upper Tanana region, and many of the residents find work in these fields. Tourism is also important and Tok has become known as the “Sled Dog Capital of Alaska” (ADCCED 2011). In 2010 the population of Tok was 1,258 (U.S. Census Bureau 2011).

E4.3.16.1 Subsistence Use Areas

Figure E-161 depicts Tok all-resources use areas for the time period 1968-1988 as documented by Marcotte (1991), showing use of an extensive area. Centered on Tok, use areas for the community extend to the north and south of the Alaska Highway covering large overland areas, including areas south of Nabesna, as far east as the Canada border, west to Paxson, and north as far as Eagle. Tok residents’ documented use areas are more extensive than other Upper Tanana communities. This may be attributed in part to larger community size, greater availability of aircraft and motor vehicles for access to resources, and the more recent settlement of the community without any long-term ties to particular use areas (Marcotte 1991). Tok subsistence use areas for the 1968-1988 time period continuously overlap the APP corridor from Big Delta to the Canada border.

Resource-specific subsistence use area maps for the 1968-1988 time period are shown on **Figures E-162** through **E-168**. Tok residents’ salmon and non-salmon fish use areas are depicted on **Figures E-162** and **E-163**. Salmon use areas (**E-162**) are limited to the Gulkana and Copper rivers, with one use area reported near Mentasta Lake. Non-salmon fish use areas (**Figure E-163**) occur over a much more extensive area along the Tanana, Gulkana, and Copper drainages and in various tributaries and lakes along the Glenn, Richardson, Alaska, and Taylor highways.

Tok subsistence use areas for large land mammals are shown on **Figures E-164** and **E-165**. Large land mammal use areas, including those for caribou, moose, and Dall sheep, are depicted on **Figure E-164**. Use areas cover a large area to the north and south of the Alaska Highway. Moose use areas north of the Alaska Highway are accessed primarily via the Taylor Highway. The Tok Cut-Off as well as various rivers, including the Tanana and Nabesna rivers, provide access to moose hunting areas south of the Alaska Highway. As noted above, Tok residents also have greater availability to aircraft to access their use areas. Caribou use areas north of the Alaska Highway closely resemble those for moose; use areas for caribou south of the highway, however, are more concentrated to the southwest of the community in the Alaska Range as well as along the road to Nabesna. Dall sheep use areas are primarily confined to mountainous areas of the Alaska Range and the northern Wrangell Mountains. Bear use areas (**Figure E-165**) closely correspond to those for caribou and moose, as they are often hunted in conjunction with one another. Moose use areas along the Alaska Highway continuously overlap the APP corridor from Delta Junction to the Canada border. Bear use areas are also overlapped by APP along a major section of the Alaska Highway; only small edges of Tok caribou and Dall sheep use areas overlap with APP.

According to **Figure E-166**, trapping is most predominant in overland areas to the north of Tok and south of Chicken. The Tok River and other drainages of the Alaska Range are also used for trapping. Small game use areas are generally linked to areas immediately adjacent to the Alaska, Glenn (Tok Cut-Off), and Taylor highways. Both trapping and small game use areas overlap the APP corridor.

Waterfowl use areas are shown on **Figure E-167** for the 1968-1988 time period. Tok residents generally harvest waterfowl within the riparian zone of the Tanana River as it runs along the Alaska Highway. The majority of their waterfowl use areas for the 1968-1988 time period overlap with the APP corridor.

Tok residents utilize the Alaska, Glenn, and Taylor highways to access use areas for vegetation (**Figure E-168**). Vegetation use areas occur as far west as Dot Lake, east to Northway Junction, south to Slana, and north to West Fork along the Taylor Highway. Vegetation use areas along the Alaska Highway are overlapped by the APP corridor from Dot Lake to Northway Junction.

E4.3.16.2 Harvest Data

Harvest data for the community of Tok are provided in **Tables E-105** through **E-107**. These data consist of one comprehensive (i.e., all resources) study year from 1987-88 (**Table E-105**) as well as two studies reporting harvest estimates for one or more resource categories (**Table E-106**). Subsistence salmon harvest data are available from the ASFDB for the 1988 through 2009 data years (**Table E-106**).

In 1987-88, Tok residents harvested an estimated 149 pounds of subsistence resources per capita. Large land mammals contributed 44.7 percent of the total harvest by weight (**Table**

E-105), providing 67 pounds per capita; residents harvested 89 pounds per capita of this resource in 2004. Salmon and non-salmon fish were the second and third most harvested resources by Tok residents, contributing almost equal percentages (23.6 and 23.2 percent, respectively) toward the total harvest by weight (**Table E-106**). Both provided an estimated 35 pounds of wild foods per capita in 1987-88; in 2004, harvests of non-salmon fish provided 19 pounds per capita. Harvests of small land mammals, vegetation, upland game birds, and migratory birds accounted for approximately 8.4 percent of the total harvest and provided a total of 13 pounds per capita.

Major species harvested in Tok, in terms of pounds are moose, sockeye salmon, caribou, and whitefish (**Table E-107**). The top large land mammal species harvested in 1987-88 and 2004 were, in descending order, moose, caribou, and black bear. Moose provided the majority of the large land mammal harvest in terms of weight. Whitefish was the primary non-salmon fish species harvested during both study years, however, Tok households reported harvesting a variety of other species as well. Whitefish, burbot, rainbow trout, halibut, and northern pike each provided, on average, more than 10 pounds per household and more than 3 pounds per capita during the 1987-1988 study year.

Between the years of 1988 and 2009, residents of Tok reported subsistence salmon harvests in the Prince William Sound/Copper River, Yukon, Southeast, and Bristol Bay management areas (ADFG 2009). During these years residents harvested between 1,237 and 7,401 salmon, with an average yearly catch of 3,700. Recorded harvests include all five salmon species, however, sockeye salmon is the dominant species harvested.

The majority of Tok households participate in subsistence activities. In 1987-88, 88 percent of households attempted harvests of at least one resource. In particular, over half of households attempted harvests of non-salmon fish, large land mammals, upland game birds, and vegetation. Similarly, over half of households reported attempting harvests of large land mammals and non-salmon fish in 2004. Sharing of subsistence resources occurred primarily for harvests of salmon and large land mammals in 1987-88, with 58 and 49 percent of households, respectively, receiving these resources. In 2004 less than 10 percent of households reported giving or receiving any one resource (**Table E-107**).

E4.3.16.3 Seasonal Round

Marcotte (1991) provides the most recent description of the Tok seasonal round, based on research conducted from October 1983 to September 1984 (**Table E-108**) (see also Haynes et al., 1984). Because this table only depicts the seasonal round for a 12-month period, it may not adequately represent the general seasonal round for the residents of Tok. Additional seasonal round data for Tok are also available in Andersen and Jennings (2001b). As illustrated in **Table E-108**, the spring months of April and May are spent fishing for northern pike and Arctic grayling as well as hunting for bear.

Salmon fishing also begins during the late spring and continues throughout the summer and into early winter. In addition to salmon, residents continue to harvest bear and the abovementioned fish species through the summer as well as whitefish and burbot. Plant and berry harvesting occur during the summer and into August and September.

Large game including moose, bear, caribou, and Dall sheep, are the focus of residents' subsistence pursuits during August and September. Hunting for waterfowl and ptarmigan primarily occurs in September and continues into October. Although not shown in **Table E-108**, Andersen and Jennings (2001b) also report that Tok residents harvest migratory birds during April, May, and June.

Table E-108 shows that throughout the winter months, furbearers are one of the most sought after resources, with marten, mink, fox, lynx, wolf, wolverine, coyote, otter, and hare being actively harvested from November to February. Residents also harvest caribou in the early winter (November and December). Residents of Tok gather wood year round.

E4.4 COPPER RIVER REGION

The Copper River Region includes 12 study communities within the Copper River drainage. The Copper River Basin lies primarily within the Copper Plateau ecoregion. The region is surrounded by the Wrangell-Saint Elias Mountains to the east, the Alaska Range to the north, the Chugach Mountains to the south, and the Talkeetna Mountains to the west. During glacial times this area was covered by a large lake, and today is comprised of level to rolling terrain interspersed with lakes, wetlands, and black spruce forests (Gallant et al. 1995). This area has a similar climate and ecology to that of the Yukon River drainages, with a continental climate, seasonal temperature extremes, and limited precipitation.

The Ahtna-speaking peoples that lived in the Copper River Basin were very similar to the Yukon River drainage peoples save for language, and they had close relationships with the Upper Tanana and Tanana peoples and Dena'ina people in Cook Inlet (**Figure E-4**). The Ahtna people were particularly close to the Dena'ina in both the Upper Susitna valley and the Matanuska River valley (de Laguna and McClellan 1981). Family-centered bands formerly pursued game in their territories, gathering to harvest salmon during the summer and fall runs in the Copper River and its tributaries, and then dispersing to harvest resources in the mountains in the fall and winter, with families staying in central winter villages and men often in hunting and trapping camps. Early in the 20th century people began centralizing at missions and communities for part of the year, and following World War II nearly all Ahtna people lived in one of several communities along the road system of the Copper River Basin (de Laguna and McClellan 1981).

Subsistence patterns today of the Ahtna and other subsistence users in the Copper River Basin are very similar to those described for other subsistence groups in the Yukon and Tanana river regions (see Section 4.2 and 4.3, Yukon River Region and Tanana River Region). Their subsistence patterns include a reliance on a variety of resources including salmon, caribou, moose, freshwater fish, small mammals and birds, and seasonal vegetation. Modern transportation such as snowmachines, planes, ATVs, and boats are used to access subsistence use areas. Many communities are characterized by a mixed subsistence and wage economy. Because all the study communities in this area are accessible by road, competition from non-local hunters is higher than other more remote areas of the state and access issues are also a subsistence concern.

For APP, 12 communities have been identified within the Copper River Region including Chistochina, Chitina, Copper Center, Gakona, Glennallen, Gulkana, Kenny Lake, Mentasta Lake, Nabesna, Paxson, Slana, and Tonsina. Only Mentasta Lake has use areas that overlap with the APP corridor; all other Copper River Region communities' use areas are either within 15 or 30 miles (**Table E-1**). The following section provides a brief introduction of each of these study communities and a description of their subsistence use areas, harvest data, and seasonal round data as available.

E4.4.1 Chistochina

Chistochina is a historic Ahtna community located approximately 38 miles southwest of the community of Mentasta Lake, near the confluence of the Chistochina River and the Copper River (ADCCED 2011). Originally an Ahtna fish camp and travel stop, Euro-American explorers accessed the region from Cook Inlet and Prince William Sound, and by the time of the Gold Rush, Chistochina became part of the All-American Route to the goldfields of the Yukon (Marcotte 1991). A trail from Valdez to Eagle was soon constructed through the community, with the Washington-Military Cable and Telegraph System (WAMCATS) telegraph line and station built in 1901. The road was later rerouted to the gold rush town of Fairbanks and connected many Upper Tanana and Copper Valley communities previously only accessible by river. WAMCATS was replaced in 1910 with wireless communication by radio, but the route continued in its importance. The Cheesh-Na Tribe of Chistochina is a federally recognized tribe. The U.S. Census Bureau (2011) reported a 2010 Chistochina population of 93, 53.8 percent of whom were Native. The economy of Chistochina is primarily reliant on subsistence activities. Sources of wage employment include seasonal construction and local office and administrative work.

E4.4.1.1 Subsistence Use Areas

Figure E-169 shows Chistochina subsistence use areas for the 1964-1984 time period as documented by Stratton and Georgette (1985) and ADFG (1985). Chistochina residents predominantly utilized large overland areas on both sides of the Copper and Chistochina rivers, as well as mountainous areas north of Nabesna, traveling as far as the Gakona River in the west, north to Slana Dry Creek, extending past the Nabesna River in the east, and as far south as areas to the east of Mount Sanford. Chistochina subsistence use areas for the 1964-1984 time period do not overlap with the APP corridor.

Subsistence use area maps specific to each resource are displayed on **Figures E-170** through **E-175** for the 1964-1984 time period. Chistochina salmon use areas are depicted on **Figure E-170** and show residents fishing for salmon in the Copper River north of the community and near Slana. Non-salmon fish use areas (**Figure E-171**) occur in various nearby lakes and smaller tributaries of the Copper River. Residents also fished for non-salmon fish along the Nabesna River and Slana rivers, along the Nabesna Road, in Mankomen Lake and Mentasta Lake, and near Nabesna.

Figure E-172 depicts use areas for large land mammals for the 1964-1984 time period. Moose and caribou use areas are generally centered on the community and include a large area between the Gakona and Slana rivers and along the Nabesna road. Chistochina residents reported harvesting Dall sheep near Slana Dry Creek, in mountainous areas near the Nabesna River, and in an isolated area north of Mount Sanford. Stratton and Georgette's (1985) study shows Chistochina residents utilized an area north of Nabesna to harvest caribou, moose, and Dall sheep.

Chistochina small land mammal (furbearer) use areas (**Figure E-173**) are mostly defined by areas surrounding the Copper and Chistochina rivers near the community and areas within the Nabesna River valley. Use areas also occur south of Nabesna and along the Nabesna Road. A smaller separate use area was also documented north of Slana along the Glenn Highway and around Mentasta Lake.

Waterfowl harvests (**Figure E-174**) predominantly occur adjacent to the Glenn Highway as it borders the Slana River and in areas along the highway farther south along the Copper River. The Nabesna Road also provided access to waterfowl use areas along the road north of Jack Lake. Additional use areas were recorded to the east of the Gakona River, south of Mentasta Lake, and south of Jack Lake.

Chistochina residents harvested vegetation (**Figure E-175**) along the Glenn Highway and Nabesna Road. Similar to other communities, the area directly surrounding the community is an important vegetation-gathering area. Overland areas near the Gakona and Chistochina rivers were also used for harvests of vegetation.

E4.4.1.2 Harvest Data

Harvest data for Chistochina are provided in **Tables E-109** through **E-111**. The available data consist of two comprehensive (i.e., all resources) studies from 1982-83 and 1987 (**Table E-109**), as well as two single-resource studies (for non-salmon fish and birds) from 2001 and 2000 (**Table E-110**). The ASFDB reports Chistochina subsistence salmon harvests for 2002 and 2003 (**Table E-110**).

All-resources data from 1982-83 and 1987 show Chistochina residents harvesting 115 and 262 pounds per capita of subsistence resources, respectively. The primary resources harvested during both study years, in terms of edible weight, were salmon and large land mammals, followed by vegetation in 1982-83 and non-salmon fish in 1987. Harvests of both salmon and large land mammals in 1987 were nearly double that of the previous study year (1982-83), with salmon accounting for a greater portion of the total harvest. Salmon harvests provided 43 and 130 pounds in 1982-83 and 1987, respectively, and large land mammals provided 43 and 84 pounds per capita during the two study years. Vegetation contributed 11.1 percent of the total harvest by weight in 1982-83 (13 pounds per capita), and non-salmon fish contributed 10.7 percent of the total harvest in 1987 (29 pounds per capita). (**Table E-109**). Recent data from 2001 show a smaller harvest of non-salmon fish, at 7 pounds per capita (**Table E-110**). Harvests of migratory and upland birds provided between 1 and 2 pounds of edible foods per capita during all three available study years (1982-83, 1987, and 2000)

The two top species, in terms of edible pounds, during all-resources study years were sockeye salmon and moose, which provided a combined 62 pounds per capita in 1982-83 and 142 pounds per capita in 1987 (**Table E-111**). Also important are harvests of other species of salmon, including Chinook and coho; large land mammals including caribou and black bear; various species of non-salmon fish such as Arctic grayling, whitefish, Arctic char, lake trout, and burbot; berries; and small land mammals including beaver and hare (**Table E-111**). Data from 2000 show the primary birds harvested in term of pounds are ducks, ptarmigan, and grouse.

The ASFDB reports that in 2002 and 2003, residents of Chistochina harvested salmon in the Prince William Sound/Copper River management areas. During the two years, community members harvested 77 and 192 salmon, respectively, with an average of 135 salmon annually (**Table E-110**). Residents reported harvesting sockeye and, to a lesser extent, Chinook salmon (**Table E-111**).

All households reported the use and harvest of one or more wild resources during the 1982-1983 and 1987 study years. Data on participation in subsistence activities (as the percentage of households attempting harvests) are available for the 1987 study year and show more than 50 percent of households attempting harvests of salmon, non-salmon fish, large land mammals, and vegetation (**Table E-109**). In addition, more than 50 percent participated in harvests of non-salmon fish and migratory birds during more recent (2000 and 2001) study years (**Table E-110**). Sharing of harvested resources is important in Chistochina, with over one-third of households receiving salmon, non-salmon fish, and large land mammals in 1987 (**Table E-109**).

E4.4.1.3 Seasonal Round

Seasonal round data descriptions for individual communities within the Copper River Basin are not available. McMillan and Cuccarese (1988) describe the general seasonal round for the Copper River Region. Their report showed that the contemporary seasonal round closely reflected hunting and fishing regulations in 1984, and while fishing harvest activities are relatively the same as in the past, hunting patterns have shifted to relatively more restricted time periods (McMillan and Cuccarese 1988). **Table E-112** summarizes the seasonal round for the Copper River area. Spring includes the first harvests of black bear emerging from their winter dens as well as the conclusion of winter hunting for muskrat, beaver, and upland birds.

During the summer, Copper River Basin residents partake in intensive harvesting of both salmon (Chinook and sockeye) and certain species of non-salmon fish such as Arctic grayling, lake trout, and, to a lesser extent, whitefish. Black bear are also harvested throughout the summer and into fall. Berries and plants are gathered throughout the summer.

After the fishing season, residents turn their focus to harvesting moose and caribou, waterfowl, ptarmigan and grouse, and berries, with the peak of these activities occurring in August and continuing through September. Coho salmon are the only salmon species harvested during this time. Less harvest activity occurs in October, but certain fish species, particularly whitefish, may be targeted.

November signals the beginning of winter subsistence activities and residents turn their focus to the trapping and hunting of furbearers as well as ice fishing. Later in the winter, caribou are also taken in January and February. Certain subsistence resources may be taken year-round and include Dolly Varden, rainbow trout, hare, porcupine, and wood gathering (**Table E-112**).

E4.4.2 Chitina

Chitina is located approximately 22 miles southeast of the community of Kenny Lake, at the confluence of the Copper and Chitina rivers (ADCCED 2011). The community of Chitina is located in a region that has archaeological evidence of occupation by Athabascan Indians for the last 5,000-7,000 years. Originally the site of a large Native village, the population of Chitina has fluctuated dramatically over the years as a result of disease and population booms brought on by the influx of homesteaders and prospectors in the region (ADCCED 2011). The present-day community began in the early 1900s as a copper mining boomtown associated with the Kennecott mines. The town was owned by Otto Nelson, who was employed by Kennecott Mines as a survey engineer. In 1910 a road connected Chitina, which had a rail connection to Cordova, to Tonsina, providing an alternative route to the Copper River Basin that avoided Thompson Pass (Stratton and Georgette 1984). When the mines closed in 1938, the town was nearly abandoned. The Nelson estate was purchased in 1963 by bush pilot “Mudhole” Smith, who eventually sold the townsite and buildings (ADCCED 2011).

Today, Chitina is the center of sport and subsistence salmon fishing on the Copper River, including fish wheels and dipnets. The U.S. Census Bureau reported that the 2010 population of Chitina was 126, 19.8 percent of whom were Native. Primary sources of employment in the community of Chitina are through the village council, the village corporation, and NPS (ADCCED 2011). The Native Village of Chitina is a federally recognized tribe.

E4.4.2.1 Subsistence Use Areas

Figure E-176 depicts Chitina subsistence use areas for the 1964-1984 time period as documented by ADFG (1985) and Stratton and Georgette (1985). Chitina use areas are concentrated along the Copper and Chitina rivers, within the Wrangell Mountains north of the Chitina River and along several major road systems in the region. Chitina subsistence use areas for the 1964-1984 time period do not overlap with the APP corridor and extend as far north as Mentasta Lake along the Glenn Highway.

Resource-specific subsistence use area maps are shown on **Figures E-177** through **E-182** and include the 1964-1984 time period. Chitina subsistence salmon fishing areas, represented on **Figure E-177**, show Chitina residents fishing for salmon predominantly near the confluence of the Copper and Chitina rivers. Subsistence use areas for non-salmon fish (**Figure E-178**) occur over a more extensive area along the Gulkana River and in various lakes to the north and south of Glennallen. Additional non-salmon fishing use areas were reported along the Glenn and Richardson highways, and in or near the Nabesna, Copper, Chitina, and Gakona rivers.

Subsistence use areas for large land mammals, including caribou, moose, and Dall sheep, are depicted on **Figure E-179** and indicate heavy use of the McCarthy Road in order to access moose and Dall sheep use areas in the Wrangell and Chugach mountains. Moose use areas also occur to the south of Tonsina along the Richardson Highway. Caribou use areas are confined to areas easily accessed along the Richardson and Glenn highways, as well as along the Nabesna Road. Chitina residents also reported hunting caribou along the road to Lake Louise.

Figure E-180 displays Chitina use areas for furbearers and shows Chitina residents utilizing the Copper and Chitina river valleys to hunt/trap furbearers in the Wrangell and Chugach mountains. Use areas occur to the south of the community; along the Copper River to the north of its confluence with the Tasnuna River; in isolated areas within the Chugach Mountains along the Bremner River; and in mountainous areas to the southeast of the community. A large area north of the McCarthy Road in the Wrangell Mountains was also documented as a furbearer use area for the 1964-1984 time period.

Waterfowl use areas for the 1964-1984 time period are shown on **Figure E-181**. Chitina residents identified five discontinuous waterfowl use areas. These use areas occur near the confluence of the Copper and Tasnuna rivers, in a small area just north of the community, and along the McCarthy Road.

Residents reported harvesting vegetation along road systems near the community, including south along the Copper River valley, and along a corridor to the north of the McCarthy Road (**Figure E-182**). Residents also reported vegetation use areas northwest of the community along the Edgerton Highway. Additional plant-gathering areas were documented to the south of Lake Louise, and along the Richardson Highway to the south of Paxson.

E4.4.2.2 Harvest Data

Harvest data for the community of Chitina are provided in **Tables E-113** and **E-115**. These data consist of two comprehensive (i.e., all resources) studies from 1982-83 and 1987 (**Table E-113**), as well as a 2000 bird harvest study and a 2001 non-salmon fish study (**Table E-114**). The ASFDB reports Chitina subsistence salmon harvests for 1988 through 2009 (**Table E-114**).

The community of Chitina harvested an estimated 191 and 342 pounds per capita of subsistence resources during the 1982-83 and 1987 study years, respectively. Salmon accounted for the greatest portion of the harvest in terms of edible weight during both study years, contributing between 60 and 70 percent (**Table E-113**). The amount of salmon harvested by Chitina residents doubled from 116 pounds per capita in 1982-83 to 239 pounds per capita in 1987 (**Table E-113**). Large land mammals were the second most harvested resource during both study years, providing 43 pounds per capita in 1982-83 and 53 pounds in 1987. Other resources contributing to Chitina’s subsistence harvest include non-salmon fish, vegetation, and small land mammals. Migratory birds and upland game birds were also harvested during the study years in small quantities (**Table E-113**).

Sockeye salmon was the top species harvested during both study years, providing 82 (in 1982-83) and 172 (in 1987) pounds per capita (**Table E-115**). In addition to sockeye salmon, residents harvested Chinook salmon in large quantities (28 pounds per capita in 1982-83 and 56 pounds per capita in 1987). Moose was the second and third most harvested species during the two study years, providing 37 and 41 pounds per capita. Other species contributing over one percent of the total subsistence harvest during the study years included berries, hare, coho salmon, Arctic grayling, rainbow trout, and vegetation (**Table E-115**).

The ASFDB reports that between the years of 1988 and 2009, residents of Chitina reported subsistence salmon harvests in the Prince William Sound/Copper River Management Area. During these years residents harvested between 1,446 and 4,705 salmon with an average yearly catch of 2,519 (**Table E-114**). Residents reported harvesting Chinook, sockeye, and coho salmon, with sockeye salmon the predominant species (**Table E-115**).

Table E-113 shows over 90 percent of households using one or more subsistence resources in 1982-83 and 1987, and over 80 percent participating in the harvest of at least one resource. In particular, over 50 percent of households attempted harvests of salmon, non-salmon fish, and large land mammals in 1987, and over 80 percent harvested vegetation (**Table E-113**). More recently, half of Chitina households attempted harvests of non-salmon fish in 2001 (**Table E-114**). Sharing of salmon, non-salmon fish, large land mammals, and vegetation occurred frequently in 1987, with between 6 and 33 percent of households giving these resources and between 17 and 39 percent of households receiving them (**Table E-113**).

E4.4.2.3 Seasonal Round

Seasonal round data are not available for the community of Chitina. For a description of the general seasonal round for the Copper River Region see Section 4.4.1.3, Seasonal Round and **Table E-112**.

E4.4.3 Copper Center

Copper Center (also known as Kluti-Kaah) is located approximately 14 miles southeast of the community of Glennallen on the west-bank of the Copper River at its confluence with the Klutina River (ADCCED 2011). Copper Center was a small trading post established in 1896 that boomed with the 1898 Gold Rush and its incorporation on the Valdez-Eagle Trail. The population of Copper Center continued to grow with the addition of a WAMCATS telegraph station, school, and post office (Stratton and Georgette 1984). Several small Ahtna settlements in the area relocated to the new community, combining with the Euro-American population. The community's population peaked at 500 during the Gold Rush but declined to 20 by 1907 (Stratton and Georgette 1984). The Richardson and Glenn highways facilitated ongoing settlement in the area in the 1930s and 1940s, and the construction of TAPS brought new economic opportunity in the 1970s (Stratton and Georgette 1984). Much of the local economy for the community of Copper Center is based on local services and businesses as well as highway-related tourism (ADCCED 2011). The U.S. Census Bureau (2011) reported the population of Copper Center in 2010 to be 328, of whom 48.5 percent were Alaska Native. The Native Village of Kluti-Kaah is a federally recognized tribe.

E4.4.3.1 Subsistence Use Areas

Figure E-183 depicts Copper Center subsistence use areas for all resources (ADFG 1985; Stratton and Georgette 1985) for the 1964-1984 time period and for non-salmon fish (Haley and Nemeth 2005) for the 2001 time period. Use areas cover a large, discontinuous area that is largely defined by several major road systems including as far north as Delta Junction along the Richardson Highway, west along the Denali Highway to Cantwell, just beyond the end of the Nabesna Road in the east, and south along the Richardson Highway toward Valdez. Copper Center subsistence use areas for the 1964-1984 (Stratton and Georgette 1985) time period borders the APP corridor near Lake George and extends to just south of Delta Junction along the Richardson Highway, while non-salmon use areas documented for 2001 (Haley and Nemeth 2005) are more distant from the APP corridor.

Subsistence use area maps specific to individual resources are depicted on **Figures E-184** through **E-190** for the 1964-1984 and 2001 time periods. Copper Center salmon use areas are displayed on **Figure E-184** for the 1964-1984 (Stratton and Georgette 1985) time period. Copper Center residents indicated harvesting salmon in Klutina Lake, near the community along the Copper River, and along the Gulkana River west of the Richardson Highway. Salmon use areas were also reported near Tazlina Lake, Lake Louise, in the Copper River south of Chitina, and along the Glenn Highway north of Chistochina. Use areas for non-salmon fish for the 1964-1984 time period (**Figure E-185**) show use of the Gulkana and Copper rivers, extensive lake systems west of the Richardson Highway, in various locations along the Glenn Highway (Tok Cut-Off), near Nabesna, and in Lake George off of the Alaska Highway. Haley and Nemeth's non-salmon fish use areas (**Figure E-185**) for the 2001 time period are similar to those for the 1964-1984 time period but show more continuous use of the Copper River fishery from Chitina to Slana and in isolated areas near Mentasta Lake and just north of Paxson and less extensive use of some lake and dispersed harvest areas.

Large land mammal use areas (**Figure E-186** and **E-187**) for the 1964-1984 time period, show use of an extensive area for these resources. While Dall sheep use areas are mostly confined to areas south of Copper Center within the Wrangell and Chugach mountain ranges, a few additional areas for Dall sheep are located east of Nabesna as well as in the Alaska Range along the Richardson Highway. Moose and caribou use areas occur primarily along several major road systems and near large lakes to the west of the Richardson Highway from south of Tonsina to Paxson. No caribou use areas were documented south of Copper Center, however, moose subsistence use areas cover a wide area south of Copper Center. Residents also reported using a large overland area surrounding Lake Louise and Ewan Lake to harvest caribou and moose.

Figure E-188 displays Copper Center furbearer use areas for the 1964-1984 time period. These areas extend mostly west of the Richardson Highway to the north and south of Glennallen, as well as in overland areas to the southwest of Mount Drum. Additional use areas were reported north of Chitina within the Wrangell Mountains and as far as Mendeltna along the Glenn Highway to the west.

Copper Center bird use areas are shown on **Figure E-189** and include use areas for both migratory birds and upland game birds. These wildfowl use areas occurred mostly along nearby road systems, and near Lake Louise and Ewan Lake. Residents also reported harvesting these resources along more distant roads including the Edgerton Highway, Richardson Highway near Paxson, and along the Denali Highway.

Figure E-190 depicts Copper Center use areas for vegetation. This figure shows residents collecting plants along several road systems in the region including along large portions of the Richardson Highway from Paxson to beyond Tonsina, along the Denali Highway just west of Paxson, and in isolated locations along the Glenn Highway from near Mendeltna to Mentasta Lake. Areas adjacent to the Nabesna Road from Slana to Nabesna were also reported as vegetation use areas.

E4.4.3.2 Harvest Data

Harvest data for Copper Center are provided in **Tables E-116** through **E-118**. These data include two comprehensive (i.e., all resource) studies from 1982-1983 and 1987 (**Table E-116**), a 2000 bird harvest study, and a 2001 non-salmon fish study (**Table E-117**). In addition, the ASFDB reports the Copper Center subsistence salmon harvests for all years between 1988 and 2009 (**Table E-117**).

Residents of Copper Center harvested 114 and 174 pounds per capita during the two all-resources study years (1982-83 and 1987) (**Table E-116**). In terms of edible pounds, these harvests consisted primarily of salmon (approximately 60 percent), followed either by harvests of non-salmon fish or large land mammals. Harvests of non-salmon fish during the three available study years (1982-83, 1987, and 2001) ranged from 7 pounds per capita (in 1987) to 23 pounds per capita (in 1982-83) (**Tables E-116** and **E-117**). The number of non-salmon fish reported in the 2001 study is less than that reported in the 1982-83 all-resources studies (**Tables E-116** and **E-117**). This difference is likely due to the exclusion of marine fish from the Simeone and Kari (2005) 2001 study of non-salmon fish in Copper Center. Large land mammal harvests were notably higher in 1987 (58 pounds per capita) compared to the earlier study year in 1982-83 (13 pounds per capita). Other resources harvested by Copper Center included small land mammals, migratory birds, upland game birds, and vegetation, and provided no more than 7 pounds per capita combined (**Table E-116**).

Top species harvested by Copper Center residents during both study years included sockeye, Chinook, and coho salmon; caribou; berries; and Arctic grayling. Combined, these top species were harvested in slightly greater numbers in 1987 (128 pounds per capita) compared to 1982-83 (82 pounds per capita) (**Table E-118**). In 1987, moose was the second most harvested species in terms of edible pounds. In addition, certain species of non-salmon fish (burbot, halibut – taken in marine waters outside of the Copper Basin) and land mammals (moose, Dall sheep, hare) contributed at least one percent of the total harvest during one of the two study years (**Table E-118**).

The ASFDB reports 1988 through 2009 Copper Center subsistence salmon harvests occurring in the Prince William Sound/Copper River, Bristol Bay, and Kodiak management areas. Residents of Copper Center reported harvesting between 6,454 and 14,065 salmon, with an average yearly catch of 10,777 (**Table E-117**). Residents reported harvesting sockeye, Chinook, and coho salmon, with sockeye the primary species in terms of number harvested (**Table E-118**).

All households in Copper Center reported the use of at least one subsistence resource in 1982-1983 and 1987. Data on participation in subsistence activities (measured as the percent of households attempting harvest) and sharing (percent of households giving/receiving) are available for the 1987, 2000, and 2001 study years. All households participated in at least one subsistence activity in 1987, with especially high participation rates (over 70 percent) in salmon, large land mammal, and vegetation harvests (**Table E-116**). Participation in non-salmon fish harvests was slightly lower in 2001 (47 percent) compared to 1987 (61 percent). Nearly all households (93 percent) received shares of at least one subsistence resource in 1987, with salmon, non-salmon fish, and large land mammals the most widely distributed resources. The 2001 and 2000 data show between 2 and 11 percent of households receiving shares of non-salmon fish, migratory birds, and upland game birds during those study years.

E4.4.3.3 Seasonal Round

Seasonal round data are not available for the community of Copper Center. For a description of the general seasonal round for the Copper River Region see Section 4.4.1.3, Seasonal Round and in **Table E-112**.

E4.4.4 Gakona

Gakona is a community located at the confluence of the Copper and Gakona rivers approximately 6 miles northeast of Gulkana on the Tok Cut-Off (ADCCED 2011). Gakona was originally an Ahtna camp and later a permanent village. During the Gold Rush, Gakona was the junction between the Valdez-Eagle and Valdez-Fairbanks trail, and in 1904 Doyle's Roadhouse was built. The Gakona Lodge, which contains many relics from the gold rush period, was built in 1929 and is now listed on the National Register of Historic Places (ADCCED 2011). The economy of Gakona is mainly dependent on the seasonal tourist market and local businesses including a restaurant, bar, motel, and sawmill, as well as a local dog-sled maker. The U.S. Census Bureau (2011) reports a 2010 Gakona population of 218, with 19.7 percent of the population as Native. The Native Village of Gakona is a federally recognized tribe.

E4.4.4.1 Subsistence Use Areas

Figure E-191 depicts Gakona subsistence use areas for all resources (ADFG 1985; Stratton and Georgette 1985) during the 1964-1984 time period and for non-salmon fish (Haley and Nemeth 2005) for the 2001 time period. Gakona use areas cover a large geographic area, which is concentrated north of the community on either side of the Richardson Highway and to a lesser extent southeast of the community as far as the Chitina, Tasnuna, and Bremner rivers. Gakona subsistence use areas for the 1964-1984 (Stratton and Georgette 1985) and 2001 (Haley and Nemeth 2005) time periods do not overlap with the APP corridor, extending only to the Alaska Range in the north.

Resource-specific subsistence use area maps are shown on **Figures E-192** through **E-197** and include the 1964-1984 and 2001 time periods. **Figure E-192** depicts salmon use areas for the 1964-1984 time period. Gakona residents indicated they fished for salmon along the Gulkana, Copper, and Klutina rivers. **Figure E-193** depicts Gakona non-salmon fishing areas for the 1964-1984 time period (Stratton and Georgette 1985) and non-salmon fishing areas for the 2001 time period (Haley and Nemeth 2005). For the 1964-1984 time period, non-salmon fish use areas occur along the Gulkana River; in various lakes along the road system north of the community; at numerous locations along the Copper River drainage; and in lake systems west of the Richardson Highway. For the 2001 time period, Gakona residents reported fishing for non-salmon fish in similar, but less extensive, areas along the Gulkana and Klutina rivers, as well as in various lakes to the west of the Richardson Highway, in the Susitna River, and near Mentasta Lake.

Gakona large land mammal use areas, including those for caribou, moose, and Dall sheep for the 1964-1984 time period, are depicted on **Figure E-194**. Use areas for caribou are generally limited to areas accessed by the Richardson, Denali, and Glenn highways, as well as the Nabesna Road. Caribou use areas were also reported between Gakona and Mount Drum, and overland areas north of Nelchina and Chistochina. Moose use areas are mostly confined to areas along the Gakona River between the Richardson and Glenn Highways, along the Gulkana River to the west of the Richardson Highway, and north of the McCarthy Road. Discontinuous moose use areas occur near Mentasta Lake and east of Slana within the Wrangell Mountains. Dall sheep use areas extend throughout several mountain ranges in the region, including isolated locations in the Chugach Mountains west of Tonsina, east of McCarthy in the Wrangell Mountains, and north of Nabesna in the Alaska Range.

Figure E-195 shows Gakona subsistence use areas for furbearers extending north from the community along the Gakona River and west of the Richardson Highway in areas south of the Denali Highway. Isolated use areas were also reported in the Wrangell Mountains south of McCarthy, and along the Copper, Tasnuna, and Bremner rivers to the south of Chitina.

Gakona waterfowl use areas for the 1964-1984 time period are shown **Figure E-196**. Gakona residents' waterfowl use areas include locations along the Richardson Highway between Gakona and Paxson and along the Tok Cut-Off between Gakona and Mentasta Lake. Additional use areas occurred near Willow Creek and just east of Tazlina Lake.

Figure E-197 depicts Gakona residents' reported vegetation use areas for the 1964-1984 time periods. Use areas for vegetation occur in areas adjacent to the Richardson and Glenn highways. Use areas were also reported to the north of Chitina, just west of McCarthy, near the Nabesna Road, and in areas near the Gakona River to the east of Paxson.

E4.4.4.2 Harvest Data

Harvest data for Gakona are provided in **Tables E-119** through **E-121**. These data consist of two comprehensive (i.e., all resource) studies from 1982-1983 and 1987 (**Table E-119**), a non-salmon fish harvest study for 2001, and salmon harvest data from the ASFDB (**Table E-120**). The ASFDB reports Gakona subsistence salmon harvests for all years between 1988 and 2009 (**Table E-120**).

During the two all-resources study years (1982-83 and 1987), Gakona residents harvested between 95 (in 1987) and 202 (in 1982-83) pounds of wild resources per capita (**Table E-119**). The lower harvest levels in 1987 were due almost entirely to a decreased harvest of salmon. Salmon was the top harvested resource in 1982-83, contributing 57.6 percent of the total harvest and providing 116 pounds per capita, and large land mammals were the primary resources harvested in 1987, accounting for approximately 50 percent of the total harvest and providing 48 pounds per capita (**Table E-119**). Per capita harvests of large land mammals were similar during both study years. Harvests of non-salmon fish during the available study years (1982-83, 1987, and 2001) ranged from 12 pounds per capita in 1987 to 26 pounds per capita in 1982-83 (**Tables E-119** and **E-120**); the 2001 harvest estimate of 24 pounds per capita did not include harvests of halibut taken in marine waters outside of the Copper Basin. Vegetation, small land mammal, and bird harvests also accounted for a small percentage of subsistence harvest during both study years.

Sockeye and Chinook salmon, moose, and caribou were the top four species harvested, by edible pounds, during both the 1982-83 and 1987 study years, but in different sequences (**Table E-121**). Other large land mammals contributing one percent or more to the total harvest during one or both study years included deer, black bear, and Dall sheep. Gakona households harvest various species of non-salmon fish, including burbot, Arctic grayling, halibut, whitefish, lake trout, rainbow trout, and Dolly Varden. Berries were also among the top 10 resources harvested, in terms of edible weight, during both study years (**Table E-121**).

The ASFDB reports Gakona residents harvesting salmon between 1988 and 2009 in the Prince William Sound/Copper River Management Area. During this time residents reported harvesting between 1,429 and 8,446 salmon, with an average of 5,192 salmon harvested annually. Harvested species include sockeye and Chinook salmon, with coho salmon also harvested during certain years (**Table E-121**). Sockeye salmon accounts for the greatest portion of salmon harvests across the study years.

As shown in **Table E-119**, between 90 and 100 percent of Gakona households reported using subsistence resources during the 1980s study years. Over 70 percent of households reported attempting harvests of non-salmon fish, large land mammals, and vegetation in 1987 (**Table E-119**). More recent data show a similar percentage of households attempting harvests of non-salmon fish in 2001 (72 percent compared to 74 percent in 1987), indicating continued levels of participation in subsistence activities (**Table E-120**). Eighty-three percent of the households in Gakona reported receiving shares of wild resources in 1987, and 52 percent report giving shares of resources. In 1987, halibut shares were received by 52 percent of the community (**Table E-121**), the largest percentage of households receiving any single resource. The number of households receiving shares of non-salmon fish was 64 percent in 1987 and 16 percent in 2001.

E4.4.4.3 Seasonal Round

Seasonal round data are not available for the community of Gakona. For a description of the general seasonal round for the Copper River Region see Section 4.4.1.3, Seasonal Round and **Table E-112**.

E4.4.5 Glennallen

Glennallen is located at the junction of the Glenn Highway with the Richardson Highway approximately 14 miles northwest of Copper Center. Glennallen was named for two U.S. Army officers, Major Edwin Glenn and Lieutenant Henry Allen, who explored the Copper River Basin in the late 1800s. It is one of a few communities in the Copper River Region not built on the site of a previously existing Native village (ADCCED 2011). Glennallen originated in the 1940s when army troops were stationed there to build a road and airfield. Glennallen boomed during pipeline construction, and TAPS passes through the town and provides employment year-round for many residents (Stratton and Georgette 1984). Glennallen continues to be a regional economic and services center with several federal and state agency offices, schools, medical and legal offices as well as highway services for travelers (Stratton and Georgette 1984). The U.S. Census Bureau (2011) reports that the 2010 population for Glennallen was 483 individuals, of whom 7.7 percent were Native. While the area of and around Glennallen has historically been occupied by the Ahtna, Glennallen is now a primarily non-Native community (ADCCED 2011).

E4.4.5.1 Subsistence Use Areas

Figure E-198 displays Glennallen subsistence use areas for the 1964-1984 time period as documented by ADFG (1985) and Stratton and Georgette (1985). The community of Glennallen being located at the junction of several major road systems, these studies documented residents traveling across a large, discontinuous area to harvest subsistence resources, including along the Glenn Highway to Chickaloon, the Denali Highway toward Cantwell in the west, along the Richardson Highway toward Valdez in the south, toward Fort Greely in the north, and beyond McCarthy in the east. Glennallen subsistence use areas for the 1964-1984 time period do not overlap with the APP corridor, extending only to the Alaska Range in the north.

Subsistence use area maps organized by resource are shown on **Figures E-199** through **E-204** and include the 1964-1984 time period. Glennallen salmon use areas (**Figure E-199**) are located north and south of the community along the Copper, Gulkana, Klutina, and Tazlina rivers. Non-salmon fish areas (**Figure E-200**) extend across a larger area centered on the community, including several river and lake systems throughout the region. These include the Gulkana, Copper, Tazlina, and Klutina rivers as well as numerous lakes surrounding those rivers and northwest of Lake Louise.

Figure E-201 depicts Glennallen use areas for large land mammals, including those for caribou, moose, and Dall sheep. Residents harvested caribou in an overland area northwest of Glennallen, areas surrounding Paxson and along the Denali Highway, and south of the Nabesna Road; isolated caribou use areas were also recorded in lake and river systems northwest of Lake Louise. Moose use areas are spread somewhat evenly to the east and west of the Richardson Highway from south of Tonsina to Paxson, while Dall sheep use areas are located in more mountainous areas near Nabesna, Chitina, Chisana, Mentasta Lake, and southwest of Mount Sanford.

Figure E-202 depicts Glennallen use areas for furbearers for the 1964-1984 time period. These areas extend overland on the east and west side of the Richardson Highway to the north and south of the community. Residents also reported harvesting these resources along the Richardson Highway south of Tonsina, and in discontinuous areas near Tazlina Lake, southwest of McCarthy, and south of Slana.

Glennallen use areas for waterfowl are shown on **Figure E-203**. Waterfowl use areas include locations adjacent to the Glenn Highway from Glennallen to Slana and along the Richardson Highway near Paxson and north of Gakona to Kenny Lake. The Denali Highway and the Lake Louise road also provide access to waterfowl use areas.

Vegetation use areas, which include berries, plants, and wood, are depicted on **Figure E-204** for the 1964-1984 time period. Vegetation use areas a located primarily near the Glenn, Richardson, and Denali highways, as well as in areas surrounding Lake Louise and Ewan Lake. Additional use areas were reported near Slana and in areas surrounding Chitina.

E4.4.5.2 Harvest Data

Harvest data for Glennallen are provided in **Tables E-122** through **E-124**. These data consist of two comprehensive (i.e., all resource) studies from 1982-1983 and 1987 (**Table E-122**), a non-salmon fish harvest study from 2001, and various years of salmon harvest data from the ASFDB (**Table E-123**). The ASFDB reports Glennallen subsistence salmon harvests for all years between 1986 and 2009 (**Table E-123**).

Subsistence harvests in Glennallen provided between 67 and 99 edible pounds per capita during the 1982-83 and 1987 study years. In both years salmon and large land mammals accounted for the greatest portion of the harvest by weight. These resources were harvested in relatively equal numbers and, combined, accounted for approximately 84 percent of the harvest during both study years. Non-salmon fish contributed between 7 and 13 pounds of edible resources per capita and was the third most harvested resource during the study years by edible weight. A 2001 study on non-salmon fish harvests recorded a smaller per capita harvest of 3 pounds (**Table E-123**); this may in part be due to 2001 study not including estimated harvests of halibut taken in marine waters outside the Copper Basin (Simeone and Kari 2005). Harvests of other resources, including small land mammals, migratory and upland game birds, and vegetation, accounted for between 3 and 6.2 percent of the total harvest during the 1980s study years (**Table E-122**)

As shown in **Table E-124**, the top four species harvested during the 1980s comprehensive study years, by edible pounds, were sockeye salmon, moose, caribou, and Chinook salmon. Important large land mammal species include moose and caribou which contribute the largest number of pounds to the total harvest (**Table E-123**). While total harvested pounds of sockeye and moose were lower in 1987, per capita harvests of these species were slightly higher that year. Various species of non-salmon fish contribute to the total subsistence harvest of Glennallen, including halibut, Arctic grayling, rainbow trout, lake trout, burbot, and Dolly Varden. Halibut taken in marine waters outside the Copper Basin contributed between 3.5 and 4.3 percent of the total harvest by weight during both 1980s studies. Other species that appear in the top harvested species during either or both all-resources study years include berries, hare, deer, and plants/greens/mushrooms (**Table E-124**).

The ASFDB reports Glennallen residents harvesting salmon in the Prince William Sound/Copper River and (during two years) the Bristol Bay management areas during the 1986 to 2009 time period (ADFG 2009). During these years residents reported harvesting between 51 and 13,650 salmon annually (**Table E-123**). As with other study communities, early data years show markedly lower harvests than the remaining years. During the first two years of data (1986 and 1987), residents reported harvesting an average of 63 salmon, whereas the remaining years (between 1988 and 2009) show an average annual harvest of 8,654 salmon. While sockeye are the primary species of salmon harvested during all study years, Chinook and coho salmon are also harvested in smaller quantities (**Table E-124**).

All Glennallen households reported using subsistence resources during the 1980s study years, and in 1987, 92 percent of households reported attempting harvests of one or more subsistence resources (**Table E-122**). Over 50 percent of Glennallen households participated in harvests of salmon and vegetation in 1987, and just under half participated in harvests of non-salmon fish and large land mammals (**Table E-122**). A similar percentage of households (45 percent) participated in non-salmon fish harvests in 2001 (**Table E-123**). Data reporting the sharing of resources by Glennallen residents are limited to the comprehensive study from 1987 and the harvest study from 2001 (**Table E-122** and **E-123**). During the earlier study 86 percent of households reported receiving wild resources from others and 64 percent reported giving resources away. Salmon and large land mammals were received by at least half of the households in Glennallen (**Table E-122**). Twenty-seven percent of households received non-salmon fish in 1987, compared to 10 percent in 2001 (**Tables E-122** and **E-123**).

E4.4.5.3 Seasonal Round

Seasonal round data are not available for the community of Glennallen. For a description of the general seasonal round for the Copper River Region see Section 4.4.1.3, Seasonal Round and in **Table E-112**.

E4.4.6 Gulkana

The community of Gulkana is located approximately 10 miles northeast of Glennallen on the east-bank of the Gulkana River, at its confluence with the Copper River (ADCCED 2011). Like many other communities in the Copper River Basin, Gulkana was established in 1903 as a telegraph station at a site that was originally a seasonally-used Ahtna camp and later became a year-round village (ADCCED 2011). A roadhouse, stage station, and store soon followed the telegraph station. The Native village was bisected by the present location of the Richardson Highway, and moved one-quarter mile south in the 1950s (Stratton and Georgette 1984). The economy for the community of Gulkana is partially dependent on subsistence activities as employment opportunities are limited (ADCCED 2011). The U.S. Census Bureau (2011) reports the 2010 population of Gulkana as 119, with 76.5 percent of the population being Alaska Native. The Gulkana Village is a federally recognized tribe.

E4.4.6.1 Subsistence Use Areas

Figure E-205 shows Gulkana subsistence use areas for all resources (ADFG 1985; Stratton and Georgette 1985) during the 1964-1984 time period and for non-salmon fish (Haley and Nemeth 2005) for the 2001 time period. Similar to other communities within the Copper River Basin, Gulkana residents utilized several intersecting road systems to access subsistence use areas in multiple directions. In addition to the Glenn, Richardson, and Denali highways, Gulkana residents used a large overland area west of the Richardson Highway and south of the Denali Highway; the Nabesna and McCarthy roads offer access to more mountainous areas. Gulkana subsistence use areas for the 1964-1984 and 2001 time period do not overlap with the APP corridor. Subsistence use areas have not been documented beyond Paxson along the Richardson Highway or beyond Mentasta Lake along the Tok Cut-Off.

Resource-specific subsistence use area maps are shown on **Figures E-206** through **E-211**. **Figure E-206** shows salmon use areas for the 1964-1984 time period occurring along the Copper River south of Gulkana and north of the community along the Gulkana River. **Figure E-206** depicts Gulkana non-salmon fishing areas for the 1964-1984 time period (Stratton and Georgette 1985) and for the 2001 time period (Haley and Nemeth 2005). Non-salmon fish use areas (**Figure E-207**) for the 2001 time period occur in Ewan Lake and at several locations on the Gulkana River. Use areas during the 1964-1984 time period occur over a larger area in various lakes west of the Richardson Highway and near the communities of Gulkana, Glennallen, and Mentasta Lake.

Figure E-208 displays 1964-1984 Gulkana use areas for large land mammals; caribou and moose harvests occurred primarily along the Glenn Highway from Nelchina to Mentasta Lake and along the Richardson Highway from Glennallen to Paxson. Gulkana residents also hunted caribou and moose in the flats surrounding Lake Louise and Ewan Lake, and moose were hunted near Chitina and beyond Tonsina along the Richardson Highway to the south of the community. Dall sheep use areas occur mostly in the Wrangell Mountains southeast of Mount Drum and southwest of Nabesna.

Figure E-209 depicts subsistence use areas for furbearers for the 1964-1984 time period. Gulkana residents used river and lake systems west of the Richardson Highway between Paxson and Gulkana, as well as areas near the Gakona River north of the community. Additional use areas were reported to the east of the Richardson Highway north of the community and in areas just west of Lake Louise.

Gulkana use areas for waterfowl are shown on **Figure E-210**. Use areas primarily occur along the Richardson Highway south of Paxson and to the west along the Denali Highway. Residents also reported harvesting these resources near the Gakona River north of the community as well as in the immediate area east of the community.

Figure E-211 shows Gulkana use areas for vegetation for the 1964-1984 time period. These use areas include areas along the Glenn, Richardson, and Denali highways, and areas near Ewan Lake. Residents reported using areas adjacent to the Richardson Highway from Gulkana to Paxson and along the Tok Cut-Off to Slana.

E4.4.6.2 Harvest Data

Harvest data for Gulkana are provided in **Tables E-125** through **E-127**. The available data consist of two comprehensive (i.e., all resource) studies from 1982-1983 and 1987 (**Table E-125**), two single-resource studies from 2000 (for migratory birds) and 2001 (for non-salmon fish), and salmon harvest data for various years from the ASFDB (**Table E-126**). The ASFDB provides Gulkana subsistence salmon harvest estimates for 1996, 1999, 2002-2004, 2008, and 2009 (**Table E-126**).

In 1982-83 and 1987, Gulkana residents harvested an estimated 111 and 153 edible pounds of subsistence resources per capita, respectively (**Table E-125**). Salmon contributed the largest percentage of the total harvest (over 50 percent), by weight, during both of these years, providing between 57 and 86 pounds per capita (**Table E-125**). Large land mammals accounted for approximately 30 percent of the harvest during both study years and provided between 33 and 45 pounds per capita. Non-salmon fish, small land mammals, and vegetation all contributed large quantities to the subsistence harvest during the 1980s study years. Non-salmon fish harvests provided between 7 and 12 pounds of edible resources per capita during all available study years (1982-83, 1987, and 2001) (**Tables E-125** and **E-126**). Migratory birds and upland birds accounted for less than one percent of the total harvest in the 1980s (**Table E-125**), and in 2000, Gulkana reported no successful harvests of migratory birds (**Table E-126**).

Sockeye salmon and moose were the top species harvested during both the 1982-83 and 1987 study years, with salmon accounting for between 32.6 and 49.7 percent of the total harvest and moose accounting for between 19.3 and 22.1 percent of the harvest (**Table E-127**). During the two study years, Chinook salmon was the second most harvested species of salmon, providing between 9 and 19 pounds per capita; and caribou was the second most harvested species of large land mammals, providing between 8 and 15 pounds per capita (**Table E-127**). The primary non-salmon fish species harvested by Gulkana residents during the study years include halibut, Arctic grayling, whitefish, rainbow trout, and longnose suckers. Other species contributing at least one percent toward Gulkana's harvests include berries, hare, muskrat, and beaver (**Table E-127**).

During years with available data (**Table E-126**), the ASFDB reported residents of Gulkana harvesting salmon in the Prince William Sound/Copper River Management Area (ADFG 2009). Residents reported harvesting between 8 and 1,544 salmon during the study years. During the 2000s residents reported larger salmon harvests, averaging 980 salmon annually (**Table E-126**). Residents harvest primarily sockeye salmon, with substantial harvests of Chinook also reported during certain years (**Table E-127**).

Gulkana participation in subsistence activities is high, with 89 percent of households harvesting at least one resource in 1982-83 and 90 percent harvesting one or more resources in 1987 (**Table E-125**). In 1987 over 50 percent of households reported the use of all reported resource categories except migratory birds and upland game birds. Furthermore, 70 percent of households reported attempting harvests of salmon, non-salmon fish, large land mammals, and vegetation. In 2001, 55 percent of households (compared to 70 percent in 1987) reported attempting harvests of non-salmon fish. Data reporting the sharing of resources within the Gulkana community are limited to the 1987 study year and the harvest studies from 2000 and 2001 (**Tables E-125** and **E-126**). The 1987 study reports that 80 percent of the households received shares of resources that year and 40 percent gave shares away. The resources received by the highest percentage of households included salmon, large land mammals, and vegetation. A similar percentage of households shared non-salmon fish during both the 1987 and 2001 study years (**Tables E-125** and **E-126**).

E4.4.6.3 Seasonal Round

Seasonal round data are not available for the community of Gulkana. For a description of the general seasonal round for the Copper River Region see Section 4.4.1.3, Seasonal Round and **Table E-112**.

E4.4.7 Kenny Lake

Kenny Lake, spelled “Kenney Lake” on U.S. Geological Survey topographic maps, is located off of the Richardson Highway approximately 9 miles northeast of the community of Tonsina. The community of Kenny Lake was settled in the 1950s and 1960s as a homestead community. It has no readily identifiable town center, rather it consists of an array of farms and residences spread along the Edgerton Highway between miles 1.5 and 15 on a bluff dividing the Copper and Tonsina rivers (Stratton and Georgette 1984). The U.S. Census Bureau (2011) reports that the population of Kenny Lake during 2010 was 355, of whom 8.2 percent were Native. Kenny Lake was established as an agricultural-based community and does not support a federally recognized tribe.

E4.4.7.1 Subsistence Use Areas

Figure E-212 displays Kenny Lake subsistence use areas for the 1964-1984 time period as documented by ADFG (1985) and Stratton and Georgette (1985). Kenny Lake use areas are concentrated in the area bounded between the Wrangell and Chugach mountains and drained by the Tonsina, Copper, and Chitina rivers. Several larger discontinuous use areas northwest of Glennallen and along the Nabesna Road are also used by Kenny Lake residents. Kenny Lake subsistence use areas for the 1964-1984 time period do not overlap with the APP corridor, extending only to the Alaska Range in the north.

Subsistence use area maps organized by resource are depicted on **Figures E-213** through **E-218**. Kenny Lake salmon use areas are shown on **Figure E-213**. Salmon use areas occurred along the Copper River near Chitina and Willow Creek, along the Little Tonsina River south of Tonsina, and along upper Klutina River near Klutina Lake. Non-salmon fish use areas (**Figure E-214**) occur over a larger area along the Chitina, Gulkana, Little Tonsina, and Copper rivers, and along the Richardson Highway south of Tonsina. Non-salmon fish use areas also occur in Lake Louise and in several locations along the Glenn Highway including the Tok Cut-Off.

Figure E-215 shows Kenny Lake large land mammal use areas for the 1964-1984 time period. Caribou use areas were accessed via several road systems including the

Richardson Highway between Paxson and Glennallen, the Glenn Highway between Gakona and Slana, and along the entire Denali Highway between Paxson and Cantwell. Caribou were also hunted near Lake Louise and Ewan Lake, east of Chistochina, and along the Nabesna Road. Moose were also hunted along several road systems, but to a greater extent north of the McCarthy Road and east and west of the Richardson Highway south of Copper Center. Dall sheep use areas are all located in the Chugach and Wrangell Mountains, except for an isolated area in the Alaska Range north of Paxson and two locations around Nabesna.

Figure E-216 shows Kenny Lake harvests of furbearers for the 1964-1984 time period. Furbearer areas extend into the Chugach and Wrangell mountains along the Richardson Highway, McCarthy Road, and Copper River valley. Furbearer use areas were recorded as far north as Willow Creek areas and as far south as the Copper River confluence with the Tasnuna and Bremner rivers.

Waterfowl use areas are depicted on **Figure E-217** for the 1964-1984 time period. Kenny Lake residents hunted for waterfowl in discontinuous areas along the Richardson Highway. Use areas were also recorded just east of Kenny Lake along the Edgerton Highway and west of the community along the Copper River.

Vegetation use areas, resources that are often harvested in conjunction with other subsistence activities, are mostly confined to major road systems and overland areas northeast of Chitina (**Figure E-218**). Vegetation use areas were reported along the road system as far west and north as Cantwell along the Denali Highway, east to Nabesna, and as far south as Valdez. Except for the areas northeast of Chitina, all vegetation use areas are accessible via a highway or major road.

E4.4.7.2 Harvest Data

Harvest data available for the community of Kenny Lake are provided in **Tables E-128** through **E-130**. These data consist of two comprehensive (i.e., all resources) studies for 1982-83 and 1987 study periods (**Table E-128**), and multiple study years with data for salmon and non-salmon fish (**Table E-130**). The ASFDB provides Kenny Lake salmon harvest data for various years between 1996 and 2008 (**Table E-130**).

Available all-resources harvest data for Kenny Lake from the 1980s shows residents harvesting between 75 and 136 pounds of subsistence resources per capita (**Table E-128**). Salmon and large land mammals comprised the majority of the annual subsistence harvest, accounting for approximately 84 percent of the total harvest during both study years. Non-salmon fish provided between 3 and 16 pounds per capita during the 1982-83, 1987, and 2001 study years; and vegetation provided between 4 and 5 pounds per capita during the 1982-83 and 1987 study years. Other resources harvested in smaller quantities include small land mammals and migratory and upland birds (**Table E-128**).

As noted above, salmon and large land mammals constitute the majority of yearly harvests in Kenny Lake. Specifically, sockeye salmon, Chinook salmon, moose, and caribou were the top four species harvested during both all-resources study years (**Table E-130**). Moose was the primary large land mammal species harvested, followed by caribou, and black bear.

Sockeye salmon was the primary salmon species harvested. Non-salmon fish species harvested during the three available study years (1982-83, 1987, and 2001) include Arctic grayling, lake trout, rainbow trout, halibut, and Dolly Varden (**Table E-130**). Berries, hare, lynx, and deer were also harvested by Kenny Lake residents, contributing at least one percent toward the total harvest.

The ASFDB reports Kenny Lake subsistence salmon harvests in the Prince William Sound/Copper River Management Area, where they harvest sockeye, Chinook, and coho salmon (**Table E-130**). Salmon harvest data was collected for the years 1996, 1998, 2002 to 2004, and 2008 and ranged from 96 salmon harvested in 1996, to 3,628 salmon in 2003 (**Table E-129**). Reported harvests in the 2000s were higher than during previous data years and represent an average annual harvest of 2,759 salmon.

During the 1982-83 and 1987 study periods, 100 percent of Kenny Lake households reported using and harvesting at least one subsistence resource. In 1987, over half of all households reported participating in harvests of salmon, non-salmon fish, large land mammals, and vegetation (**Table E-128**). The 2001 study reports 68 percent of households attempting harvests of non-salmon fish (**Table E-129**). Sharing of subsistence resources is common among Kenny Lake residents, with 65 percent of households receiving subsistence resources during the 1987 study year. The most commonly shared resources during that year were large land mammals, salmon, and non-salmon fish (**Table E-130**).

E4.4.7.3 Seasonal Round

Seasonal round data are not available for the community of Kenny Lake. For a description of the general seasonal round for the Copper River Region see Section 4.4.1.3, Seasonal Round and **Table E-112**.

E4.4.8 Mentasta Lake

Mentasta Lake is located approximately 38 miles northeast of the community of Chistochina, 6 miles off the Tok Cut-Off in Mentasta Pass (ADCCED 2011). The community of Mentasta Lake is the northernmost Ahtna village (Stratton and Georgette 1984). Several villages were at one time located at strategic locations around Mentasta Lake for harvesting salmon (Stratton and Georgette 1984). A lack of available firewood as well as poor road access caused the community to relocate across the lake from its previous location in 1950 (Stratton and Georgette 1984). Today, Mentasta Lake is a predominantly Native village on the road system with seasonal employment supporting year-round subsistence activity (ADCCED 2011). The U.S. Census Bureau reports that the population of Mentasta Lake during 2010 was 112, 75.9 percent of whom were Native. The Mentasta Traditional Council is a federally recognized tribe.

E4.4.8.1 Subsistence Use Areas

Figure E-219 depicts Mentasta Lake all-resources subsistence use areas for the 1964-1984 time period as documented by ADFG (1985) and Stratton and Georgette (1985). The majority of Mentasta Lake use areas are located along the Tok Cut-Off and Nabesna Road and along the flats and rivers that can be accessed from these roads. Other isolated use areas are located near the U.S.-Canada border and south of the community along the Copper River east of the Edgerton Highway. Mentasta Lake subsistence use areas for the 1964-1984 time period overlap the APP corridor along the Alaska Highway near the U.S.-Canada border.

Resource-specific subsistence use area maps are shown on **Figures E-220** through **E-225**. Mentasta Lake salmon use areas are displayed on **Figure E-220**, showing use of the Copper River for salmon southeast of Slana. **Figure E-221** depicts use areas for non-salmon fish occurring along the Tok and Little Tok rivers between Slana and Tok. Additional non-salmon fish use areas were reported along the Nabesna Road, near the headwaters of the Copper and Tanana rivers, and along the Nabesna River.

Large land mammal use areas, including those for caribou and moose, are bounded by the Wrangell Mountains to the south and the Alaska Range to the north (**Figure E-222**). Moose use areas include a continuous area from just south of Tanacross to Nabesna. Caribou use areas (**Figure E-222**) for the 1964-1984 time period show use of the Alaska Range to the north of the community and mountainous areas to the west of Nabesna; the Glenn Highway from north of Slana to Chistochina was also used to hunt caribou and moose. Dall sheep use areas are depicted on **Figure E-222**, showing extensive use of the Alaska Range surrounding the community, as well as areas north of the Nabesna Road and on either side of the Nabesna River.

Figure E-223 displays Mentasta Lake use areas for furbearers for the 1964-1984 time period. These areas show use of overland locations on the east and west sides of the Glenn Highway as far south as Slana. Mentasta Lake residents also reported using the Nabesna River valley to hunt and trap furbearers as well as the area along the Alaska Highway just west of the U.S.-Canada border.

Waterfowl harvests for the 1964-1984 time period are shown on **Figure E-224**. Mentasta Lake residents' waterfowl hunting mostly occurred near the community along the Glenn Highway. Other isolated waterfowl use areas occur along the Nabesna Road, Nabesna River valley, and along the upper Tanana River near the U.S.-Canada border.

Mentasta Lake use areas for vegetation are shown on **Figure E-225**. Vegetation-gathering areas occur adjacent to the Glenn Highway to the north and south of the community. Two isolated use areas were documented along the Nabesna Road and north of Chistochina.

E4.4.8.2 Harvest Data

Harvest data for Mentasta Lake are provided in **Tables E-131** through **E-133**. Data include two comprehensive (i.e., all resources) studies from Mentasta Lake (reported as Mentasta) from 1982-1983 and 1987 and a similar study for Mentasta Pass from 1987 (**Table E-131**). A single study from Mentasta Lake (reported as Mentasta) reports the harvest of non-salmon fish from 2001 (**Table E-132**). The ASFDB reports the Mentasta Lake subsistence harvest data from 1989 to 2009 (**Table E-132**).

As shown in **Table E-131**, estimated harvests for the community of Mentasta Lake range from 115 pounds per capita in 1982-83 to 125 pounds per capita in 1987. The 1987 Mentasta Pass harvest study shows a slightly higher harvest estimate of 188 pounds per capita. Of the resource categories, large land mammals accounted for the highest percentage of the total harvest, in terms of edible pounds, during each available study year. Large land mammal harvests provided between 40 and 60 pounds per capita in Mentasta Lake and 97 pounds per capita during the 1987 Mentasta Pass study year. Salmon, non-salmon fish, and vegetation also contributed large quantities to Mentasta Lake harvests during the study years, with harvest amounts varying from year to year. A recent per capita harvest estimate of 7 pounds of non-salmon fish in 2001 is on the lower end of the range of estimated harvests in the 1980s (between 6 and 37 pounds per capita). Combined, small land mammals, migratory birds, and upland game birds accounted for between 4.6 and 6.9 percent of the community's subsistence harvests during the study years (**Table E-131**)

Moose and sockeye salmon were the top two species harvested during the 1982-83 and 1987 Mentasta Lake study years; Mentasta Pass harvest estimates for 1987 show moose and caribou as the top species harvested. Berries were the third most harvested species in 1982-83 and whitefish was the third most harvested species during both 1987 harvest studies (**Table E-133**). In addition to moose and caribou, Mentasta Lake residents also reported harvesting other large land mammals including black bear, Dall sheep, and deer. Primary non-salmon fish species harvested during the study years (including the 2001 non-salmon fish study) include whitefish, Arctic grayling, and burbot. Other species contributing one percent or more toward the total Mentasta Lake harvest during the 1980s study years include small land mammals such as beaver, hare, and porcupine; bird species such as ducks and ptarmigan; and vegetation including wild plants and berries (**Table E-133**).

The ASFDB reports Mentasta Lake subsistence salmon harvests in the Prince William Sound/Copper River Management Area, however, harvest data were collected for the 1989 to 2009 time period, excluding the years 1994, 1996, 2000, and 2007. During the available data years residents reported harvests of between 27 and 595, for an average annual harvest of 218 salmon (**Table E-132**). Sockeye is the dominant salmon species for Mentasta Lake residents in terms of number harvested, though residents have also reported harvesting coho and Chinook salmon during certain years (**Table E-133**).

Mentasta Lake residents have reported high levels of participation in subsistence activities, with between 90 and 100 percent of households harvesting 1 or more subsistence resources during the 1980s study years. The 1987 data for Mentasta Lake shows at least half of the households attempting harvests of non-salmon fish, large land mammals, small land mammals, upland game birds, and vegetation (**Table E-131**). Data for Mentasta Pass for the same year show similar but slightly higher rates of participation, and also show half of households fishing for salmon (compared to 29 percent in the Mentasta Lake study) (**Table E-131**). In 2001, 69 percent of Mentasta Lake households attempted harvests of non-salmon fish, compared to 67 percent in 1987 (**Tables E-131** and **E-132**). According to data from 1987, 83 percent of Mentasta Lake households received shares of at least one resource that year, with 58 percent giving shares of subsistence resources. The most commonly distributed resources were large land mammals, salmon, and non-salmon fish.

E4.4.8.3 Seasonal Round

Seasonal round data are not available for the community of Mentasta Lake. For a description of the general seasonal round for the Copper River Region see Section 4.4.1.3, Seasonal Round and **Table E-112**.

E4.4.9 Nabesna

Nabesna is located along the Nabesna Road, which travels deep into the Wrangell-St. Elias National Park and Preserve from its junction with the Glenn Highway at Slana. The community is located at the base of White Mountain in the Wrangell Mountains, and west of the Nabesna River. Nabesna is a former gold mining town at the end of a road named for the local glacier and river. Nabesna as a Native village was located across the Nabesna River from Northway (Stratton and Georgette 1984). The 2010 U.S. Census found a population of five residents in the area, none of whom were Native (U.S. Census Bureau 2011).

E4.4.9.1 Subsistence Use Areas

Nearly all of Nabesna use areas for the 1964-1984 time period as documented by ADFG (1985) and Stratton and Georgette (1985) are located east of the Tok Cut-Off in areas that are located to the north and south of the Nabesna Road (**Figure E-226**). The Slana River drainage west of the Glenn Highway was also used for subsistence harvesting. Residents also harvested from the flats to the north of the community that are drained by the Nabesna River. Nabesna subsistence use areas for the 1964-1984 time period do not overlap with the APP corridor, reaching only as far as the Glenn Highway beyond Mentasta Lake.

Nabesna subsistence use area maps specific to resources are depicted on **Figures E-227** through **E-232**. Nabesna salmon use areas occur along the Copper River near Slana (**Figure E-227**). Non-salmon fish use areas (**Figure E-228**) are located in various drainages and lakes near the Nabesna Road, in the Nabesna River, and in lakes and drainages east and west of the Glenn Highway near Mentasta Lake.

Nabesna residents use a large area for harvests of large land mammals (caribou, moose, and Dall sheep) (**Figure E-229**) located primarily between the Wrangell and Nutzotin mountains and centered on the community. Moose were primarily hunted along the Nabesna Road, west of Mentasta Lake, and north and east of the community along the Nabesna River drainage. Caribou were mostly harvested within the Nabesna and Copper river valleys. Most caribou use areas occur south of the Nabesna Road and east of Chistochina. Dall sheep, preferring craggier high-altitude areas, were mostly harvested within the Wrangell and Nutzotin mountain ranges.

Figure E-230 shows Nabesna small land mammal use areas for the 1964-1984 time period. Nabesna residents pursued furbearers in areas that extend southward from the Nabesna Road and along the northern foothills of the Nutzotin Mountains. Use areas were recorded as far east as the Canada border, as well as along several valleys north of Slana and east of Mentasta Lake.

Nabesna bird use areas are depicted on **Figure E-231**. Because of the community's mountainous location, very few areas are suitable for waterfowl hunting. The few wildfowl use areas are confined to discontinuous areas south of the Nabesna Road and east of the Nabesna River to the north of the Nutzotin Mountains.

Figure E-232 shows vegetation use areas for the 1964-1984 time period. A continuous use area for vegetation was recorded from south of Slana on the Glenn Highway to Nabesna along the Nabesna Road. Additional discontinuous use areas occur to the east of Nabesna and east of the Nabesna River just north of the Nutzotin Mountains.

E4.4.9.2 Harvest Data

Harvest data for Nabesna are provided in **Tables E-134** through **E-136**. These data consist of two comprehensive (i.e., all resources) studies for 1982-1983 and 1987 (**Table E-134**), and multiple years of subsistence salmon harvest data from the ASFDB (**Table E-135**). The ASFDB reports Nabesna salmon harvests for various years between 1994 and 2004 (**Table E-135**).

During the 1982-83 and 1987 study years, Nabesna residents reported harvesting an estimated 250 and 280 pounds per capita of subsistence resources, respectively (**Table E-134**). During both years, large land mammals accounted for the greatest portion (between 41.5 and 44.8 percent) of the subsistence harvest, providing between 112 and 116 pounds per capita (**Table E-134**). Harvests of large land mammals were followed by salmon (between 79 and 93 pounds per capita) and non-salmon fish (between 34 and 66 pounds per capita). Residents of Nabesna reported harvests of small land mammals, upland game birds, and vegetation during the two study years; combined, these resource categories accounted for between 4.4 and 6.6 percent of the harvest and provided between 11 and 18 pounds per capita.

While large land mammals were the top harvested resource category during both study years in terms of edible pounds, the top harvested species was sockeye salmon and provided approximately 80 pounds per capita during both years (**Table E-136**). Moose and caribou were the primary species of large land mammals harvested and were both among the top four species during the study years; combined, harvests of these species provided an estimated 104 edible pounds per capita during both years. Dall sheep was also an important large land mammal species, with an average of five Dall sheep harvested in the two available data years. Non-salmon fish species harvested by Nabesna residents during the study years included whitefish (the third most harvested species in 1982-83), burbot, lake trout, and Arctic grayling.

All-resources harvest data from the 1982-83 study period show that large land mammals including moose, caribou, and Dall sheep, comprised the majority (41.5 percent) of the annual subsistence harvest during that period (**Table E-136**). This was followed by sockeye salmon (28.3 percent) and non-salmon fish which contributed 23.6 percent of the total harvest. Similarly, the 1987 study year produced similar data to that from 1983-82, with large land mammals (44.8 percent), salmon (37.3 percent), and non-salmon fish (13.6 percent) comprising the vast majority of subsistence resources harvested. Other species contributing at least one percent toward Nabesna's subsistence harvest included berries, Chinook and coho salmon, and lynx (**Table E-136**). The community harvested a relatively high number of furbearing species during the study years, including fox, marten, mink, coyote, and muskrat, however, because these species do not provide edible pounds they are not included in **Table E-136**.

The ASFDB recorded Nabesna subsistence salmon harvests occurring in the Prince William Sound/Copper River Management Area and reported harvests in 1994, 1997, 2000, and 2002-2004 (**Table E-135**). During these years, Nabesna reported harvests ranged from 5 to 268 salmon; harvests were substantially higher in 2003 and 2004 (**Table E-135**). For the study years 1994, 1997, 2000, and 2002, the average annual harvest of salmon was 23, while from 2003 to 2004 the average annual harvest was 190. Sockeye was the dominant species harvested, with a small number of Chinook salmon harvested during two years (**Table E-136**).

Household participation data are available for both the 1982-83 and 1987 study periods. In both studies, it was reported that 100 percent of households used at least one subsistence resource, and between 92 and 100 percent of households harvested one or more resources (**Table E-134**). In 1987, at least 50 percent of households participated in harvests of salmon, non-salmon fish, large land mammals, small land mammals, upland game birds, and vegetation. Participation rates were particularly high in harvests of vegetation, non-salmon fish, and large land mammals (**Table E-134**). Sharing of subsistence resources is important, with 92 percent of Nabesna households receiving subsistence resources in 1987 and 67 percent giving subsistence resources. The majority of resource sharing occurred for salmon, non-salmon fish, vegetation, and large land mammals, particularly moose, caribou, and Dall sheep (**Tables E-134** and **E-136**).

E4.4.9.3 Seasonal Round

Seasonal round data are not available for the community of Nabesna. For a description of the general seasonal round for the Copper River Region see Section 4.4.1.3, Seasonal Round and **Table E-112**.

E4.4.10 Paxson

Paxson is located on Paxson Lake at the junction of the Denali and Richardson highways, approximately 42 miles northwest of the community of Chistochina. The nearby Tangle Lakes Archaeological District managed by the BLM shows evidence of human use for at least 10,000 years. Paxson is primarily a highway maintenance base with lodges serving hunters and other backcountry users accessing wilderness areas via the Denali Highway, Summit Lake, and Tangle Lakes Recreation Area (ADCCED 2011). The U.S. Census Bureau (2011) reports a 2010 population of 40 residents in Paxson. Paxson is occupied primarily by state highway maintenance personnel and their families and does not support a federally recognized tribe (ADCCED 2011).

E4.4.10.1 Subsistence Use Areas

Paxson subsistence use areas for the 1964-1984 time period are displayed on **Figure E-233** as documented by ADFG (1985) and Stratton and Georgette (1985). Paxson use areas are concentrated in the area north of Lake Louise and Ewan Lake and south of the Alaska Range. Use areas extend west along the Denali Highway, and a discontinuous use area is located as far east as the Nabesna area, although the majority of use areas only go as far east as the Gakona River area. Paxson subsistence use areas for the 1964-1984 time period do not overlap with the APP corridor but come to within 10 miles of the Alaska Highway.

Subsistence use area maps organized by resource are displayed on **Figures E-234** through **E-239**. Paxson salmon use areas (**Figure E-234**) occur south of the community along the Gulkana River to the Copper River. Non-salmon fish use areas are located along various drainages and in a number of lakes to the west of the Richardson Highway, from north of its intersection with the Denali Highway to Gulkana (**Figure E-235**). Non-salmon fish use areas also occur to the east of the Richardson Highway near Paxson and to the west of Mentasta Lake.

Figure E-236 represents Paxson subsistence use areas for large land mammals, including caribou, moose, and Dall sheep. Caribou and moose use areas are centered on the community and include overland areas on either side of the Richardson and Denali highways as far south as Gakona. Dall sheep harvests occurred in the Alaska Range and in the Wrangell Mountains southwest of Nabesna.

Furbearer use areas for the 1964-1984 time period are displayed on **Figure E-237**. Similar to other resources, Paxson use areas for furbearers include areas on either side of the Richardson Highway from just north of Gakona to beyond Paxson. Additional furbearer use areas are located to the north and south of the Denali Highway.

Migratory bird use areas are shown on **Figure E-238**. Paxson residents reported hunting waterfowl in discontinuous areas north and south of the Denali Highway to the west of the community. Use areas were also reported along the Richardson Highway to the east of Ewan Lake and in locations near the community.

Figure E-239 depicts Paxson vegetation use areas for the 1964-1984 time period. Paxson residents reported harvesting vegetation solely in locations south of the community. These vegetation gathering areas occur in isolated locations along the Richardson Highway north of Gakona, and along the Glenn Highway north of Gakona.

E4.4.10.2 Harvest Data

Harvest data for the community of Paxson are provided in **Tables E-137** through **E-139**. Available data consist of two comprehensive (i.e., all resources) studies from 1982-83 and 1987 (**Table E-137**), a 2001 non-salmon fish study year, and multiple study years of salmon harvest data from the ASFDB (**Table E-138**). The ASFDB provides Paxson harvest data for various years between 1985 and 2009 (**Table E-138**).

In 1982-83 and 1987, Paxson residents harvested an estimated 124 and 289 pounds per capita, respectively (**Table E-137**). Large land mammals were the primary resources harvested during these years. While their contribution toward the harvest was similar during both study years (between 44.8 and 48.1 percent), harvest amounts of large land mammals more than doubled in 1987, from 56 pounds per capita to 139 pounds per capita. The harvests of large land mammals were followed in importance (in terms of edible pounds) by non-salmon fish and salmon, which, combined, constituted between 37 and 39.1 percent of Paxson subsistence harvests. Harvests of these resources were also higher in 1987 (108 pounds per capita compared to 48 pounds per capita in 1982-83) (**Table E-137**). Other resources, such as small land mammals, vegetation, migratory birds, and upland game birds, are also important, and contributed varying amounts to the subsistence harvest during the two study years (**Table E-137**).

Moose was the top species harvested, as measured by edible pounds, by Paxson residents during both 1980s study years, providing between 40 and 84 pounds per capita (**Table E-139**). Other large land mammal species harvested by Paxson residents include caribou, bison, and Dall sheep. Non-salmon fish species contributed a substantial amount to the total harvest in both study years, and harvests of these species during the 1980s and 2001 study years included whitefish, burbot, Arctic grayling, lake trout, Dolly Varden, and halibut (**Table E-139**). Other species contributing to Paxson's yearly subsistence harvests include sockeye and Chinook salmon; small land mammals such as lynx and beaver; birds such as ducks, ptarmigan, and crane; and berries.

The ASFDB reports Paxson subsistence salmon harvests occurring in the Prince William Sound/Copper River, Bristol Bay, and Southeast management areas. The database reports annual harvest totals for 1985 and for all years from 1989 to 2009. Residents harvested between 4 and 409 salmon during these study years, with an average annual harvest of 172 salmon (**Table E-138**). Overall harvests varied widely from year to year. The most commonly harvested salmon species, in terms of number, is sockeye, although residents also reported harvesting Chinook, coho, pink, and chum salmon (**Table E-139**).

As shown in **Table E-137**, a high percentage of Paxson households participate in subsistence activities. Between 93 and 100 percent of Paxson households reported using one or more subsistence resources during the 1980s study years, and the same number reported harvesting one or more resources. In 1987, over 50 percent of households reported attempting harvests of resources within every resource category except migratory birds (for which 43 percent attempted harvests) (**Table E-137**). The 2001 non-salmon fish study shows a continued interest in subsistence activities, with 70 percent attempting harvests of those resources (**Table E-138**). As reported during the 1987 study year, sharing of subsistence resources is important, with 57 percent of Paxson households giving subsistence resources and 71 percent receiving subsistence resources. A particularly high percentage of households received shares of large land mammals (57 percent) (**Table E-137**).

E4.4.10.3 Seasonal Round

Seasonal round data are not available for the community of Paxson. For a description of the general seasonal round for the Copper River Region see Section 4.4.1.3, Seasonal Round and **Table E-112**.

E4.4.11 Slana

The community of Slana is located at the confluence of the Slana and Copper rivers, approximately 16 miles southwest of Mentasta Lake. Slana was the location of a major Ahtna village at one time and was on the route of the 1902 telegraph line and road from Valdez to Eagle (Stratton and Georgette 1984). Like other communities on the trail, Slana had a telegraph station, roadhouse, and trading post serving local people and travelers en route to Eagle and later Fairbanks (Stratton and Georgette 1984). As the trading post became more important to the local economy, Natives from smaller dispersed communities settled near the trading post (Stratton and Georgette 1984). Mining activity in the Nabesna area in the 1930s led to the improvement of the Nabesna road through Slana to the Richardson Highway (Stratton and Georgette 1984). The federal government began offering homesteads in the Slana area in the 1980s, and today, the population is comprised primarily of homesteaders. The U.S. Census Bureau (2011) reported that in 2010 the population of Slana was 147, 12.9 percent of whom are Native. The community of Slana does not support a federally recognized tribe (ADCCED 2011).

E4.4.11.1 Subsistence Use Areas

Slana subsistence use areas are depicted on **Figure E-240** as documented by ADFG (1985) and Stratton and Georgette (1985) for the 1964-1984 time period. Slana use areas are primarily located along the Glenn Highway and south of the Nabesna Road. Slana residents also harvest from the upper portion of Slana and Chistochina river drainages and in a large use area to the east near the Canada border. Slana subsistence use areas for the 1964-1984 time period do not overlap with the APP corridor, reaching only as far as the Glenn Highway beyond Mentasta Lake.

Resource-specific Slana subsistence use area maps are displayed on **Figures E-241** through **E-246**. Slana salmon use areas are shown on **Figure E-241** and are located along the Copper River near the community of Slana and near Mentasta Lake. Non-salmon fish use areas (**Figure E-242**) occur primarily along drainages accessed along the Glenn Highway to the north of the community, north of Chistochina, south of the Nabesna Road, and at several locations along the Nabesna River.

Large land mammal harvests, including caribou, moose, and Dall sheep, are shown on **Figure E-243**. Caribou use areas are primarily located to the north and south of the Nabesna Road, while moose use areas are confined to locations adjacent to the Glenn Highway north of the community. Caribou use areas also occur in mountainous areas near Chisana, and within the Alaska Range northwest of Mentasta Lake. Dall sheep harvest areas were recorded in the Wrangell and Nutzotin mountains as well as the Alaska Range.

The most expansive Dall sheep use areas occur south of Nabesna and north of the Nabesna Road.

Small land mammal use areas are depicted on **Figure E-244** for the 1964-1984 time period. Use areas occur in a continuous area on either side of the Glenn Highway from Chistochina to Mentasta Lake and south of the Nabesna Road. An additional furbearer use area was documented near the Canada border just north of the Nutzotin Mountains.

Slana use areas for birds are shown on **Figure E-245** for the 1964-1984 time period. These use areas include areas hunted for both waterfowl and upland game birds. Slana residents reported their use area for birds along the Glenn Highway from Slana to just south of Mentasta Lake.

Figure E-246 shows Slana residents' vegetation use area along two road systems. Vegetation gathering areas occur to the north and south of the community along the Glenn Highway, as well as along the Nabesna Road. Residents also reported harvesting plants along the Copper River south of the Nabesna Road and along the trail to Mentasta Lake.

E4.4.11.2 Harvest Data

Harvest data for the community of Slana are provided in **Tables E-140** through **E-142**. These data consist of two comprehensive (i.e., all resources) study from 1982-1983 and 1987 and two other all-resources studies from 1987 reporting harvest data from Slana Homestead North (referred to here as Slana North) and Slana Homestead South (referred to here as Slana South) (**Table E-140**). In addition, a 2001 study reported non-salmon harvest data for Slana and subsistence salmon harvest data for all years between 1988 and 2009 are provided in the ASFDB (**Table E-141**).

Data on Slana subsistence harvests in 1982-83 and 1987 show a per capita harvest of approximately 250 pounds during both study years. Separate 1987 data for nearby Slana homesteads show a lower harvest, at 121 (Slana South) and 174 (Slana North) pounds per capita. During all studies, large land mammals were the primary resource, accounting for between 39 and 61.9 percent of the total harvest and providing between 47 and 110 pounds per capita. The Slana harvest data from 1982-83 and 1987 show identical per capita harvests (110 pounds) of large land mammals during the two study years (**Table E-140**). Salmon was the second most harvested resource in terms of edible pounds during all studies, providing between 31.2 and 42 percent of the harvest, except for the 1987 Slana North study, when small land mammals comprised 20.8 percent of the harvest, and salmon only 7.2 percent. In general, the Slana North and Slana South studies show higher harvests of small land mammals in 1987 (between 1,015 and 1,739 animals accounting for between 10 and 36 pounds per capita). Non-salmon fish were also important and contributed between 2.3 percent (for Slana North 1987) and 17.3 percent (for Slana South 1987) toward the total subsistence harvest.

Important large land mammal species in all three Slana communities during the two study years (1982-83 and 1987) include moose, caribou, Dall sheep, and (during Slana North's 1987 study) black bear (**Table E-142**). Moose and caribou were among the top three species harvested, in terms of edible weight, during all studies. In addition, sockeye salmon was among the top two species during all but one study (Slana North's 1987 study). Slana North's 1987 study shows harvests of hare and beaver providing 36 pounds per capita of edible foods that year, compared to only 3 pounds per capita of salmon. Top non-salmon fish species harvested during the studies (including a 2001 non-salmon fish study for Slana) included Arctic grayling, lake trout, whitefish, burbot, and Dolly Varden. Other key species contributing at least one percent toward the total harvest during one or more studies included berries, grouse, and ptarmigan.

The ASFDB reports that between the years of 1988 and 2009, Slana residents reported subsistence salmon harvests in the Prince William Sound/Copper River Management Area. During these years residents harvested between 675 and 2,916 salmon with an average yearly catch of 1,644. Sockeye salmon contributed the largest numbers to the total harvests (**Table E-142**). Residents also reported harvesting Chinook salmon in smaller numbers.

During the 1982-83 study period 100 percent of the households in Slana reported the use and successful harvest of at least one resource; similarly, between 94 and 100 percent of Slana, Slana North, and Slana South households reported the use, attempted harvest, and successful harvest of subsistence resources in 1987. During the 1987 studies, over 50 percent of households reported attempting harvests of non-salmon fish, large land mammals, and vegetation. In Slana North and South, over 50 percent hunted for upland game birds in 1987, and in Slana and Slana South, over 50 percent participated in salmon harvests. Sharing data for Slana, Slana North, and Slana South are reported in the 1987 all-resources study. During this year between 73 and 88 percent of the households in the three communities reported receiving shares of subsistence resources. Over 50 percent of the households in all communities reported giving shares of at least one resource to other households. In each community non-salmon fish, salmon, and large land mammals were the most commonly shared resources (**Table E-140**).

E4.4.11.3 Seasonal Round

Seasonal round data are not available for the community of Slana. For a description of the general seasonal round for the Copper River Region see Section 4.4.1.3, Seasonal Round and **Table E-112**.

E4.4.12 Tonsina

The community of Tonsina is located at mile 79 on the Richardson Highway, south of the Tonsina River and 9 miles southwest of Kenny Lake. Like many other Copper River Basin communities, Tonsina grew around a telegraph station built in 1902 on the Eagle-Valdez trail, and soon grew to have a post office, stage stop, general store, and several lodges (ADCCED 2011). Tonsina is also the location of TAPS Pump Station 12 (ADCCED 2011). The U.S. Census Bureau (2011) reports a 2010 population in Tonsina of 78 individuals, of whom 9 percent are Native. There are no specific boundary parameters for the community of Tonsina and it is best considered an occupied geographic area (ADCCED 2011).

E4.4.12.1 Subsistence Use Areas

Figure E-247 depicts Tonsina all-resources use areas for the 1964-1984 time period as documented by ADFG (1985) and Stratton and Georgette (1985). Use areas are located throughout the Copper River Basin and include areas along all major highways in the region from the Denali Highway in the north to the Richardson Highway and Chugach Mountains in the south, and from the Glenn Highway and Talkeetna Mountains in the west to the Edgerton Highway and Wrangell Mountains in the east. Tonsina subsistence use areas for the 1964-1984 time period do not overlap with the APP corridor, extending only as far as the Alaska Range in the north.

Resource-specific subsistence use area maps are displayed on **Figures E-248** through **E-253** for the 1964-1984 time period. Tonsina salmon use areas (**Figure E-248**) occur mostly along the Gulkana, Copper, Tonsina, and Klutina rivers. Non-salmon fish use areas (**Figure E-249**) are located in the Gulkana, Copper, Tonsina, Chitina, Tazlina, and Klutina rivers, as well as in various lakes and drainages to the west of the Richardson Highway between Glennallen and Paxson, south of Tonsina along the Richardson Highway, and near Nabesna.

Large land mammals, including caribou, moose, and Dall sheep, were also harvested across a large area for the 1964-1984 time period (**Figure E-250**). Caribou were primarily harvested near Lake Louise and south of the Nabesna Road; residents also hunted along the Richardson Highway between Gulkana and Paxson, and along the Glenn Highway between Gakona and Slana. Moose use areas occur in areas surrounding Tonsina, and on either side of the Chitina River in the Wrangell Mountains; additional use areas were reported north of Chistochina, along the Nabesna Road, and in areas surrounding Glennallen. Residents reported harvesting Dall sheep across a large mountainous area, including locations to the south of Nabesna, east of Mount Drum, and several areas to the north and south of the McCarthy Road.

Small land mammal use areas are shown on **Figure E-251** for the 1964-1984 time period and only for furbearer species. Furbearer use areas mostly occur north of Kenny Lake, south of McCarthy, in the Copper River valley south of Chitina, and along the Richardson Highway south of the community. Residents also harvested these resources to the west of Copper Center and north of Klutina Lake.

Waterfowl harvests are depicted on **Figure E-252**. Tonsina waterfowl use areas are mostly confined to areas just east of Chitina, near Willow Creek, and south of Lake Louise. Other use areas were recorded north of Klutina Lake, and along tributaries of the Copper River to the east of Valdez.

Tonsina use areas for vegetation during the 1964-1984 time period are shown on **Figure E-253**. These areas include discontinuous locations along the Richardson Highway, near Chitina, and south of Lake Louise. Residents also reported collecting berries and plants along the Glenn Highway north of Chistochina and in areas to the east and west of the Richardson Highway near the community.

E4.4.12.2 Harvest Data

Harvest data for Tonsina are provided in **Tables E-143** through **E-145**. These data consist of two comprehensive (i.e., all resources) studies for 1982-83, which report data separately for Upper and Lower Tonsina, and a comprehensive study for 1987, which reports data for Tonsina (**Table E-143**). A 2001 study provides non-salmon fish data for Tonsina, and the ASFDB provides subsistence salmon harvest data for multiple study years in the 2000s (**Table E-144**).

As depicted in **Table E-143**, reported per capita harvests of subsistence resources in Tonsina range from 99 and 128 pounds in 1982-83 to a slightly higher 156 pounds per capita in 1987. Data from 1982-83 show salmon as the primary resource harvested, by percent of total harvest, in both Upper and Lower Tonsina; in 1987, large land mammals accounted for a slightly greater portion of the harvest than salmon (**Table E-143**). The difference in harvest composition between the two study years was primarily due to an increase in harvests of large land mammals (from 24 pounds per capita in 1982-83 to 74 pounds per capita in 1987). Harvests of salmon were relatively similar across the three studies (between 55 and 73 pounds per capita harvested). During all three studies, non-salmon fish comprised the third highest percentage of the total harvest, between 5.4 and 10.5 percent, and provided between 8 and 14 pounds per capita; a recent 2001 study shows a slightly lower non-salmon fish harvest of 5 pounds per capita (**Table E-144**). Residents also harvested substantial quantities of vegetation (between 4 and 9 pounds per capita) during the study years. Harvests of small land mammals were smaller in 1987 compared to the previous 1982-83 study year, and upland game birds and migratory birds were harvested in minimal quantities during all study years (**Table E-145**).

As noted above, Tonsina residents rely on large land mammals, salmon, and non-salmon fish for the majority of their subsistence harvests. Moose and caribou are the primary species comprising large land mammal harvests in the community and were among the top three species harvested during the Upper Tonsina 1982-83 study year and in 1987. Lower Tonsina reported no successful harvests of moose in 1982-83 (**Table E-145**). Other large land mammals harvested during the study years included goat, deer, and Dall sheep. Sockeye salmon was the top harvested species during all three studies, providing between 42 and 63 pounds per capita; sockeye salmon harvests were also supplemented by harvests of chum, Chinook, and coho salmon (**Table E-145**). Tonsina residents harvest a variety of non-salmon fish species, notably lake trout, Arctic grayling, rainbow trout, Dolly Varden, and halibut. The 2001 non-salmon fish study in Tonsina indicated a similar composition of non-salmon fish harvests, with rainbow trout, Dolly Varden, and Arctic grayling the most commonly harvested species. Other species contributing at least one percent toward Tonsina's subsistence harvest during the study years include berries (among the top six species harvested during all study years) and plants/greens/mushrooms (**Table E-145**).

The ASFDB reported residents of Tonsina harvesting salmon in the Prince William Sound/Copper River Management Area. During the available data years of 2002-2004 and 2008-2009, residents reported harvesting between 48 and 365 salmon, with an average annual harvest of 156 (**Table E-144**). Harvest numbers were substantially higher during the

2003, 2004, and 2008 study years. For those study years, the average annual harvest of salmon was 236. Sockeye salmon was the largest contributor to salmon harvests during the study years, with a small number of Chinook harvests also reported during the study years (**Table E-145**)

Household participation data are available for both the 1982-83 and 1987 study periods, although only the 1987 study provides data on households attempting harvests (**Table E-143**). During the 1982-83 and 1987 study years, between 92 and 100 percent of households reported harvesting one or more subsistence resources (**Table E-143**). In 1987, at least 50 percent of households participated in salmon, non-salmon fish, large land mammal, small land mammal, and vegetation harvesting activities (**Table E-143**). In particular, 82 percent of households attempted harvests of large land mammal, with 78 percent attempting harvests of moose (**Tables E-143** and **E-145**). Sharing of subsistence resources is common in the community of Tonsina, with sharing data reported for the 1987 study year (**Table E-143**). Eighty percent of Tonsina residents reported receiving at least one type of subsistence resource that year and 62 percent gave shares of at least one resource. The most commonly shared resources in 1987 were large land mammals (46 percent receiving) including moose and caribou, and salmon (37 percent receiving) (**Table E-143** and **E-145**).

E4.4.12.3 Seasonal Round

Seasonal round data are not available for the community of Tonsina. For a description of the general seasonal round for the Copper River Region see Section 4.4.1.3, Seasonal Round and **Table E-112**.

E5.0 SPATIAL AND TEMPORAL TRENDS IN SUBSISTENCE

An analysis of spatial and temporal trends in subsistence is dependent on the availability of adequate and appropriate data to enable such an analysis. Ideally, time series data are available for a suite of indicators that are useful in helping understand community subsistence patterns over time, including the identification of key resources harvested and areas regularly used. Analysis of spatial and temporal trends in Alaska communities' subsistence uses is often difficult due to several factors. Trends are best analyzed using multiple data points through time, and many subsistence communities have had only a few studies that document their subsistence uses; many of these studies also often occurred within a few years of each other and thus do not show trends over a longer timespan (e.g., multi-decade). Trend analysis is also subject to multiple environmental, biological, economic, social, and other factors that make it difficult to ascertain the cause of a change in subsistence use area or harvest amount or whether the change constitutes a trend or, rather, was the result of anomalous circumstances. For example, during years when certain resources (e.g., caribou) are unavailable, residents may compensate for these low harvests by increasing their harvests of other more available resources. Only multiple datasets that measured caribou harvests over time would show whether this decreased use of caribou was a one-time anomaly or the result of some other long-term biological change in caribou population, hunter effort, or migration patterns. For many of the study communities there are not enough data to adequately identify spatial and temporal trends in subsistence patterns and any apparent trends identified in this section based on a limited number of datasets should be viewed with this limitation in mind.

Of the 12 subsistence baseline indicators (see Section 3.2), subsistence use areas and harvest amounts are key in examining changes in subsistence uses over time and are the most commonly available indicators across the 45 study communities. Subsistence use areas mapped over time are needed for accurate spatial trend analysis. Based on a review of time periods for which existing subsistence use area data are available for the APP study communities, subsistence mapping studies generally occurred in the 1970s and 1980s and an additional few communities have had more recent studies that mapped use areas from the 1990s and 2000s. Based on this limited information, two sets of subsistence use area data are discussed to represent spatial trends for the APP study communities: Pre-1990 use areas and post-1990 use areas. Only communities having all-resources use area data from both time periods were included in this analysis (i.e., if a community only had all-resources use areas mapped in the 1980s they were excluded from this analysis because they did not have comparative use areas from a second post-1990s study). Of the 45 study communities, only the North Slope Region communities of Anaktuvuk Pass, Barrow, Kaktovik, and Nuiqsut and the Yukon River Region communities of Fort Yukon and Beaver had data from both time periods (pre-1990s and post-1990s). A spatial trend analysis for the Yukon River Region was not conducted, however, because only 2 of the 12 Yukon River Region study communities have adequate spatial data to conduct a trend analysis and these two communities do not adequately characterize subsistence use areas for the entire region. Thus this report only provides a discussion of spatial trends for the North Slope Region pre-

1990 and post-1990 use areas. Additional subsistence use area mapping studies would be required to conduct any meaningful spatial trend analysis for the Yukon River, Tanana River, and Copper River regions.

Based on the available data for the APP study communities, four datasets are useful in examining overall changes in harvest amounts: 1) pounds per capita harvested for all resources, 2) pounds per capita harvested for key species, 3) harvest number for salmon from the ASFDB (for communities lacking per capita data), and 4) percent of harvest by major resource category. Pounds per capita (i.e., pounds harvested per person) is an indicator for trends because it accounts for both changes in harvests and in community population, whereas total community harvest number or harvest pound estimates do not address changes in community population. Data on per capita harvests are useful in both temporal analysis (i.e., changes over time) and spatial analysis (differences between communities). Per capita data for key species (e.g., caribou, moose, and salmon) are useful because species that are particularly important to communities in terms of pounds harvested are often the most likely to be affected by development; identifying and assessing these key species can facilitate minimizing or mitigating potential effects on them. ASFDB data for salmon, although not as useful as per capita data because they do not account for community population levels, are useful because these data are available for most study communities, they characterize overall use through time, and because salmon is an important resource for many of the study communities. Finally, percent of total harvest by major resource category provides an overview of changes in resource contributions for a region over time. While percent of harvest is useful in showing variability in harvest compositions through time, an increases or decrease in a resource category's percent of total harvest should not be interpreted as an increase or decrease in actual harvest amount (see the Nuiqsut example in the North Slope Region discussion below). In other words, a change in percent of total harvest for a resource category (e.g., non-salmon fish) may be due to an actual increase in the community's harvest of non-salmon fish, or may simply be the result of a decrease in the harvest of another resource category (e.g., the community did not harvest as many marine mammals).

Figure E-254 provides a general overview of the average per capita harvest amount for the four study regions. The average per capita harvest ranged from a low of 168 pounds per person for the Copper River Region to a high of 466 pounds per person for the Tanana River Region. The average per capita harvest for the North Slope, based on the available data, was 436 pounds, and the average per capita harvest for the Yukon River Region was 317 pounds. **Figure E-255** shows the average percent of total harvest for each resource category over the available study years for the four study regions (see **Table E-3** for the list of sources for all-resources harvest data). As shown on the figure, non-salmon fish and large land mammal harvests are important contributors to the overall subsistence harvest in all four study regions. Salmon contributes a large percentage to the overall harvest in all study regions except for the North Slope, in which marine mammals play an equivalent role in the region's harvests. The remaining resource categories (e.g., small land mammals, migratory birds, upland birds, and vegetation) on average account for less than 10 percent of the total combined harvest.

E5.1 NORTH SLOPE REGION

E5.1.1 Subsistence Use Area

The North Slope Region is comprised of the following five study communities: Anaktuvuk Pass, Barrow, Kaktovik, Nuiqsut, and Prudhoe Bay. North Slope pre-1990 and post-1990 subsistence use areas for the four study communities of Anaktuvuk Pass, Barrow, Kaktovik, and Nuiqsut are shown on **Figure E-256**. Pre-1990 use areas include all mapping studies conducted within the four communities prior to 1990 merged as a single polygon. Post-1990s use areas include all mapping studies for the four communities merged as a single polygon as well. In general, the spatial trend on the North Slope appears to be one of expanding use areas, particularly inland toward the Brooks Range as well as extending farther offshore into the Beaufort and Chukchi seas. Improved means of transportation (e.g., bigger boats with more powerful motors and faster and more powerful snowmachines) are one likely explanation for this increase in use area extent. Two areas that show use pre-1990 but have not been documented in post-1990 mapping studies include the use area west of Anaktuvuk Pass that extends toward Ambler and the region south of Prudhoe Bay and Kaktovik near the Brooks Range. The presence of these use areas may reflect the semi-nomadic lifestyle of Anaktuvuk Pass residents prior to establishment of the community in the 1950s or caribou population declines in the Anaktuvuk Pass area that resulted in residents traveling farther to successfully harvest this resource.

Pre-1990 and post-1990 caribou use areas for the North Slope Region are also available for comparison (**Figure E-257**). Post-1990 caribou use areas have expanded farther into the foothills of the Brooks Range and cover a larger area directly surrounding Anaktuvuk Pass. Pre-1990 use areas that were not documented as North Slope use areas in later studies include the area west of Anaktuvuk Pass near Ambler and smaller areas southwest of Wainwright and south of Prudhoe Bay and Kaktovik.

E5.1.2 Harvest Data

Figure E-258 shows the available pounds per capita data for three North Slope study communities; pounds per capita data have not been calculated for the Anaktuvuk Pass harvest surveys, and no comprehensive harvest surveys have been conducted in Prudhoe Bay. Based on the limited time series data for these communities, each community experienced a general increase in pounds per capita. In 1983, Kaktovik harvested 328 pounds per capita; in 1992 the community harvested 886 pounds per capita. In 1987, 1988, and 1999, Barrow harvested 206, 204, and 289 pounds per capita, respectively. In 1985 and 1993, Nuiqsut harvested 399 and 742 pounds per capita, respectively. As noted above, subsistence harvests are highly variable from year to year and depend on a multitude of factors. For example, in Nuiqsut, per capita pounds harvested ranged from 399 pounds (in 1985, when the community did not harvest a bowhead whale) to 742 per capita pounds (in 1993, when the community harvested three bowhead whales).

Per capita pounds for caribou, one of the most important North Slope subsistence resources in terms of contribution to overall harvest amount, are shown on **Figure E-259** for Anaktuvuk

Pass (five data years), Barrow (eight data years), Kaktovik (six data years), and Nuiqsut (seven data years). Anaktuvuk Pass, which does not have access to the marine mammal resource base so important to other North Slope study communities, has the highest reliance on caribou, harvesting 219 to 299 pounds per capita during the available study years. Except for a low of 219 pounds in 1993, Anaktuvuk Pass caribou harvests have generally increased during the five documented study years. Barrow per capita caribou pounds have also generally increased over the eight data years with harvests ranging from 59 to 64 pounds per person in the late 1980s to 82 to 123 pounds per person in the mid-2000s. Data on both Kaktovik and Nuiqsut pounds per capita for caribou have shown a slight decrease over available study years, with Kaktovik's being most noticeable.

Figure E-260 shows the percent of total harvest that each major resource category contributes to North Slope study communities' overall harvests for available study years. Anaktuvuk Pass harvests are predominately large land mammals (between 77 to 96 percent of total harvest), followed by non-salmon fish (between three to 21 percent), with additional contributions from migratory birds and vegetation. Barrow, Kaktovik, and Nuiqsut harvests, unlike Anaktuvuk Pass, show a more evenly distributed reliance on marine mammals, large land mammals, and non-salmon fish, which comprise the bulk of their subsistence harvests (over 90 percent). Less than 10 percent of the three communities' harvests come from the remaining resource categories of salmon, migratory birds, upland game birds, and vegetation. Of these three study communities, Barrow shows the most stability in terms of marine mammals harvests with a maximum variation of 30 percent between available study years, whereas Kaktovik and Nuiqsut both have a maximum variation in marine mammal contributions of over 60 percent between available study years. This large variation in Kaktovik and Nuiqsut is due to years (1985 and 1994-95 for Nuiqsut, and 1985 for Kaktovik) in which the communities did not harvest a bowhead whale. At first glance it appears that both communities compensated for the decrease in marine mammals by increasing their harvests of different resources. As shown on **Figure E-260**, in 1985 Kaktovik's large land mammal harvest percentage was the highest recorded (57 percent of total harvest); whereas in Nuiqsut during the 1985 and 1994-95 study years, non-salmon fish harvests were the highest recorded (43 and 56 percent of total harvest respectively). Examining Kaktovik's large land mammal per capita harvests between 1985 and the other study years of 1986 and 1992 (when Kaktovik did harvest bowhead whales) shows Kaktovik residents did have the highest per capita large land mammals harvest amount in 1985 (188 pounds per person) versus 1986 (128 pounds per person) and 1992 (149 pounds per person) (**Table E-12**). However, a similar analysis in Nuiqsut shows that even though non-salmon fish were the highest recorded (43 percent of the total harvest in 1985; 173 pounds per person) as well as in 1994-95 (56 percent of total harvest), the actual harvests of non-salmon fish during these years were lower than in 1993 (248 pounds per person) when the community harvested three bowhead whales (**Table E-16**). The increase in the contribution of non-salmon fish to Nuiqsut's total harvest in 1985 and 1994-95 is simply the result of the lack of a marine mammal harvest and not an actual increase in the harvest of non-salmon fish.

For the North Slope region, marine mammal and large land mammal harvests comprise the majority of the total subsistence catch (approximately 40 percent each), with the remaining harvest coming from non-salmon fish (13 percent), migratory birds (2 percent) and upland game birds and vegetation (less than 1 percent each) (**Figure E-260**). It should be noted that furbearers are also caught for subsistence purposes but their meat is rarely consumed and thus their total contribution to the percent of total harvest is not shown on **Figure E-260**.

E5.2 YUKON RIVER REGION

E5.2.1 Harvest Data

The Yukon River Region contains the 12 study communities of Alatna, Allakaket, Beaver, Bettles, Coldfoot, Evansville, Fort Yukon, Livengood, Nolan, Rampart, Stevens Village, and Wiseman. **Figure E-261** shows the pounds per capita for the seven Yukon River Region study communities for which the data are available. The remaining five study communities in this region have either not had pounds per capita data calculated for the community or have not had any comprehensive harvest surveys completed to date. Furthermore, three of the study communities (Beaver, Fort Yukon, and Stevens Village) in **Figure E-261** have pounds per capita for only one study year and thus no temporal trends can be discussed for these communities. Based on the limited time series data only Alatna/Allakaket and Bettles/Evansville have had more than one study providing pounds per capita for all resources. As shown on **Figure E-261**, both of these communities' pounds per capita decreased from 1981 to 1984 (906 to 629 pounds for Alatna/Allakaket and 260 to 123 pounds for Bettles/Evansville), however, given the small time span between these studies (i.e., less than four years), this observed decrease may have been the result of seasonal variability in resource abundance rather than an overall community change in subsistence harvest practices. Other contributing factors that may explain the difference between these two study years include possible method and reporting anomalies. More data would be necessary to ascertain whether this short three-year decrease in per capita harvest amounts continued into the 1990s and 2000s.

Pounds per capita for moose, one of the highest contributors to Yukon River Region study communities' overall harvests, are shown on **Figure E-262** for seven communities. Beaver, Fort Yukon, and Stevens Village have only one year of per capita data and thus no temporal trends in moose harvests can be discussed. Alatna, Allakaket, Bettles, and Evansville moose pounds per capita are available for multiple study years.[8] Alatna moose harvests for four years show an increase in moose per capita harvests in 1997 (from 102 during the previous study year to 194 pounds) with lower harvests in the late 1990s (96 pounds) and higher harvests in the early 2000s (between 125 and 180 pounds). Nearby Allakaket (eight data years) shows a similar increase in harvests from the early 1980s to 1997 (70 to 133 pounds), however, since 1997 estimated moose per capita harvests have been lower (from

8 Alatna and Allakaket moose per capita harvest amounts in **Figure E-262** for 1981, 1982, and 1983 were for both communities combined. Bettles and Evansville moose per capita harvests amounts for 1981, 1983, and 1984 were for both communities combined.

118 to 73 pounds). Except for a spike in Bettles 1998 moose per capita pounds (127 pounds) the five data years for Bettles, as well as nearby Evansville, indicate decreased moose harvests in more recent years (**Figure E-262**).

Pounds per capita for salmon, another high contributor to Yukon River Region study communities' overall harvest amount, are shown on **Figure E-263** for seven communities. Beaver, Fort Yukon, and Stevens Village have only one year of per capita data and thus no temporal trends in salmon harvests can be discussed for these communities. Alatna, Allakaket, Bettles, and Evansville salmon pounds per capita are available for multiple study years.[9] Alatna and Allakaket harvests show a decrease in salmon per capita harvests between 1981 and 1983 (from 554 to 376 pounds). Nearby Bettles and Evansville show a similar decrease (from 66 to 14 pounds) during the 1981, 1983, and 1984 study years. Given the small time span of these studies (i.e., four years in the early 1980s and not spread out over multiple decades), this decrease may have been the result of seasonal variability in salmon abundance rather than an overall community change in salmon harvest practices. More data would be necessary to ascertain whether this short three-year trend continued into the 1990s and 2000s.

Nine Yukon River Region study communities have salmon harvest numbers available from the ASFDB for the years between 1988 and 2009 (**Figure E-264**). As shown on the figure, there is much variability in salmon harvests between communities and within a community from year to year. While certain communities (e.g., Rampart, Stevens Village, Beaver) appear to have a decrease in total salmon harvest over the available study years, others have remained relatively stable or increased (e.g., Fort Yukon). While useful in showing annual variability, this figure does not take into account other factors such as community population changes (which are captured in per capita data in other harvest surveys) and thus more research on community populations would be necessary to determine whether the change in harvest is due to an increase or decrease in resident populations of study communities or to other biological, environmental, or regulatory factors.

Figure E-265 shows the percent that each major resource category contributes to Yukon River Region study communities' overall harvest for available study years. For the early 1980s study years, the resource composition of Alatna/Allakaket harvests remained relatively stable. The majority of the harvest (approximately 60 percent) came from salmon, followed by non-salmon fish and large land mammals (approximately 20 percent), and with additional contributions from small land mammals and migratory birds. Bettles/Evansville, which also had early 1980s harvest surveys conducted in their communities, had relatively stable harvests as well, although the majority of their harvests came from large land mammals, followed by salmon and non-salmon fish, with additional harvests from small land mammals, migratory birds, upland game birds, and vegetation. Again, these data represent only three successive years in the 1980s and thus the examination of long-term trends is not possible. Communities with harvest data that span greater time periods (i.e., having data

9 Alatna and Allakaket salmon per capita harvest amounts in **Figure E-263** for 1981, 1982, and 1983 were for both communities combined. Bettles and Evansville salmon per capita harvests amounts for 1981, 1983, and 1984 were for both communities combined.

from more than one decade) include Beaver, Fort Yukon, and Stevens Village; each of these communities have a harvest study from the 1980s as well as several in the 1990s. Comparing the 1980s study with the early studies from the 1990s, one apparent trend is the decrease in salmon contribution to the total harvest. In Beaver the salmon percent of total harvest went from 57 to 29 percent, Fort Yukon salmon harvest went from 61 to 39 percent, and Stevens Village went from 81 to 53 percent, however, including the later 1990s studies (e.g., 1996, 1997, and 1998) in the analysis for Fort Yukon, shows that the salmon percent of total harvest increased to the highest levels of all study years (approximately 65 percent) during those later studies (**Figure E-265**). The salmon harvest data from Fort Yukon provide an excellent example of the pitfalls of trying to ascertain trends on only a few years of data. Whereas it appears that the contribution of salmon toward Beaver and Stevens Village harvests were declining in the early 1990s, these communities could have also experienced an increase in salmon contribution to the total harvest in the late 1990s similar to neighboring Fort Yukon, however, the data to make such a determination are not available for these communities. Of all the communities with available data in the Yukon River Region, Rampart has the greatest reliance on salmon, with this resource contributing between 79 to 86 percent of the total harvest, followed by large land mammals, non-salmon fish, and minor contributions from upland game birds and marine invertebrates. For the region as a whole, salmon and large land mammals provide the majority of the subsistence harvest (57 and 29 percent respectively); non-salmon fish provide seven percent of the total harvest, and no other resource contributes more than five percent (**Figure E-265**).

E5.3 TANANA RIVER REGION

E5.3.1 Harvest Data

The Tanana River Region includes the following 16 study communities: Alcan Border, Chisana, Delta Junction, Dot Lake, Dry Creek, Fairbanks, Healy, Healy Lake, Manley Hot Springs, Minto, Nenana, Northway, Tanacross, Tanana, Tetlin, and Tok. **Figure E-266** shows the pounds per capita for nine Tanana River Region study communities. The remaining seven study communities in this region have either not had pounds per capita data calculated for the community or have not had any comprehensive harvest surveys completed to-date. Of the nine communities that have pounds per capita harvest data, eight have one study year of data and thus no temporal trends can be discussed for these communities. Chisana is the only Tanana River Region study community with all-resources per capita data for more than one year. In 1982, Chisana residents harvested 220 pounds per person and in 1987, they harvested 128 pounds per person (**Figure E-266**).

Pounds per capita for moose, one of the highest contributors to Tanana River Region study communities' overall harvest amounts, are shown on **Figure E-267** for 11 study communities. Healy, Manley Hot Springs, and Nenana have only one year of per capita data and thus no temporal trends in moose harvests can be discussed. All study communities with available data, except for Chisana, show an increase in moose per capita harvest pounds from the first study year (1983 or 1987) and the latest 2004 study. Chisana moose per capita harvests were 91 pounds per person in 1982 and 0 pounds per person in

1987. Tanana, the only community with more than two years of data, shows that moose harvests have varied over time with the highest per capita harvests in 1987 and 2004 and slightly lower harvests during the mid- to late-1990s.

In addition to moose, salmon and non-salmon fish are high contributors to Tanana River Region study communities' overall harvest amounts (**Figure E-268** and **E-269**). Of the nine communities that have salmon pounds per capita data, eight only have one study year of data and thus no temporal trends can be discussed for these communities. Chisana residents reported harvest of 4 to 0 pounds of salmon per person for the 1982 and 1987 study years. Non-salmon per capita harvest data are also available for nine Tanana River Region study communities, although Healy only has one year of data. For the two data years available for the remaining communities, all eight reported harvesting fewer pounds of non-salmon fish per person during the second study year. While for some communities (e.g., Dot Lake and Tok) the decrease was fewer than 20 pounds per person, other communities, such as Minto and Tanana, had decreases of over 160 and 240 pounds respectively. Given the limited number of data points it is unclear whether this lower amount in the mid-2000s was an anomaly or part of a general decrease in non-salmon harvests.

Fourteen Tanana River Region study communities have salmon harvest numbers available from the ASFDB for the years between 1983 and 2009 (**Figure E-270**). As shown on the figure, there is much variability in salmon harvests between communities and within a community from year to year. Many of the communities' first years of reported salmon harvests are lower than later harvests in the 1990s and 2000s, although this could be partly due to fewer people using the permit system in the earlier years of reporting rather than an actual decrease in salmon abundance. Several communities show an overall increase in salmon harvests in the mid-1990s followed by lower harvests in the late 1990s and early 2000s and resurgence toward higher harvests in the mid-2000s. Both 2008 and 2009 appear to drop off considerably from mid-2000s harvest numbers. As described above for the Yukon River Region, while useful in showing annual variability, this figure does not take into account other factors such as community population change (which is captured in per capita data in other harvest surveys) and thus more research on community populations would be necessary to determine whether the change in harvest is due to an increase or decrease in resident populations of study communities or to other biological, environmental, or regulatory factors.

Figure E-271 shows the percent that each major resource category contributes to Tanana River Region study communities' overall harvests for available study years. Of the nine communities that have harvest data by percent of total harvest, eight only have one study year of data and thus no temporal trends can be discussed for these communities. Chisana is the only community with data for more than one year. For the 1982-83 and 1987 study years the greatest change in the communities' resource harvest composition was the decrease of small land mammals from 13 to 3 percent of the total harvest and increase of non-salmon fish from 34 to 43 percent. All other resources contributed relatively equal amounts between the two study years. Healy, Minto, and Nenana, which are all located along the lower portion of the Tanana River, show a higher reliance on salmon in the 1980s (between 45 to 74 percent of total harvest) than the other five study communities of Dot

Lake, Northway, Tanacross, Tetlin, and Tok, which are all located along the upper portion of the Tanana River and thus do not have easy access to salmon resources. The upper Tanana River communities' non-salmon harvests accounted for 23 to 58 percent of the total harvest, whereas salmon harvests accounted for 1 to 24 percent. Except for Minto and Tanana, large land mammal harvests in the Tanana River Region accounted for between 29 and 45 percent of the total harvest. All of the other resource categories accounted for less than 5 percent of the total harvest except for small land mammals in Northway (10 percent) and Chisana (13 percent) and vegetation in Dot Lake (7 percent). Again it should be emphasized that these characterizations are based on one study year's data from the 1980s, which may not represent current harvest patterns. For the Tanana River Region as a whole, salmon, non-salmon fish, and large land mammals comprised approximately one-third of the total harvests, with small land mammals and vegetation contributing five and two percent of the harvest, and no other resource category contributing more than one percent to the total harvest (**Figure E-271**).

E5.4 COPPER RIVER REGION

E5.4.1 Harvest Data

The Copper River Region includes the 12 study communities of Chistochina, Chitina, Copper Center, Gakona, Glennallen, Gulkana, Kenny Lake, Mentasta Lake, Nabesna, Paxson, Slana, and Tonsina. **Figure E-272** shows the pounds per capita for all 12 Copper River Region study communities for which the data are available. Each of these study communities has two years (1982 and 1987)[10] of all-resources per capita harvest data. Of the 12 communities, Gakona, Nabesna, and Slana all reported a smaller per capita harvest amount in 1987; Gakona's harvests decreased by over 50 percent. The remaining 9 communities reported a larger per capita harvest in 1987; Paxson and Chistochina both reported an increase of over 125 percent in per capita harvests between the 1982 and 1987 study years, however, given the small 5-year time span of these studies, these changes may have been the result of seasonal variability in resource abundance rather than an overall community change in subsistence harvest practices. Other contributing factors that may explain the difference between these two study years include possible method and reporting anomalies. More data would be necessary to ascertain whether these changes in per capita harvest amounts continued into the 1990s and 2000s.

Pounds per capita for moose, one of the highest contributors to Copper River Region study communities' overall harvest amounts, are shown on **Figure E-273** for 12 communities. Copper Center has only one year of per capita moose data and thus no temporal trends in moose harvests can be discussed for this community. The remaining 11 communities have moose per capita data for the same time period (1982 and 1987) as the all-resources discussed above. Tonsina reported an increase of over 500 percent of their moose per

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[10] Mentasta Lake 1987 per capita pounds are an average of Mentasta Lake and Mentasta Pass 1987 studies. Slana 1987 per capita pounds are an average of Slana, Slana Homestead North, and Slana Homestead South 1987 studies.

capita harvest amounts between 1982 and 1987, and Paxson and Chistochina both reported increases of over 110 percent of their moose per capita harvest amounts between the study years. Chitina, Gakona, Glennallen and Gulkana also reported increases of between 5 and 35 percent. Kenny Lake, Mentasta Lake, Nabesna, and Slana all reported a decrease in moose per capita harvests of between 7 and 46 percent.

Pounds per capita for salmon, another high contributor to Copper River Region study communities' overall harvest amounts, are shown on **Figure E-274** for all 12 of the region's study communities. Ten of the 12 study communities reported larger salmon per capita harvests in 1987 compared to the 1982 study year; Chitina, Kenny Lake, and Paxson all reported over a 100 percent increase in salmon per capita harvests, and Chistochina reported an increase of 202 percent. Gakona and Slana reported decreases in salmon per capita harvests of 75 percent and 57 percent respectively. As discussed above, given the small five-year time span of these studies, these changes may have been the result of seasonal variability in salmon abundance rather than an overall community change in subsistence harvest practices. More data would be necessary to ascertain whether these changes in salmon per capita harvests continued into the 1990s and 2000s.

Twelve Copper River Region study communities have salmon harvest numbers available from the ASFDB for the years between 1985 and 2009 (**Figure E-275**). As shown on the figure, there is much variability in salmon harvests between communities and within a community from year to year. Similar to the Tanana River Region, several communities show an overall increase in salmon harvests in the mid to late-1990s followed by lower harvests in the early 2000s and higher harvests again in the mid-2000s. Both 2008 and 2009 appear to drop off considerably from mid-2000s harvest numbers. Of communities with higher reported harvests numbers, Glennallen, Chitina, and Kenny Lake show gradual increases overall, whereas Copper Center, Gakona, and Slana appear to decline overall. As described above for the Tanana River Region, while useful in showing annual variability, this figure does not take into account other factors such as community population change (which is captured in per capita data in other harvest surveys) and thus more research on community populations would be necessary to first determine whether the change in harvest is due to an increase or decrease in resident populations of study communities or to other biological, environmental, or regulatory factors.

Figure E-276 shows the percent that each major resource category contributes to Copper River Region study communities' overall harvests for the 1982 and 1987 study years. Chistochina, Chitina, Kenny Lake, and Mentasta Lake showed an increase in the contribution of salmon and non-salmon fish to the total harvest and a corresponding decrease in the contribution of large land mammals and vegetation from 1982 to 1987. Conversely, Gakona, Slana, and Tonsina show a decrease in the contribution of salmon and an increase in the contribution of large land mammals to the overall harvest. Glennallen, Gulkana, Paxson, and Nabesna resource harvest compositions were relatively stable between the 1982 and 1987 study years. For the Copper River Region as a whole, salmon (42 percent) and large land mammals (37 percent) provide the majority of the subsistence harvest. Non-salmon fish (12 percent) and vegetation (5 percent) contribute the next largest amounts, and no other resource category provides more than three percent of the total harvest.

E6.0 ROLE OF TRADITIONAL KNOWLEDGE

Traditional knowledge has been referred to under a variety of names, including traditional ecological knowledge and/or traditional environmental knowledge (TEK), traditional knowledge, local knowledge, community knowledge, and indigenous knowledge. For brevity and consistency, this report will use the term “traditional knowledge” to encompass these various terms. Generally discussions of traditional knowledge are based on the acknowledgement that indigenous peoples who live on the land and harvest its resources have an intimate understanding of their environment grounded in a long-term relationship with the surrounding land, ocean, rivers, ice, and resources (Stevenson 1996). This understanding includes knowledge of the anatomy and biology of resources based on centuries of harvesting and processing, distribution of resources, animal behavior, seasons, weather and climate, hydrology, sea ice, currents, ecosystem dynamics and functions, and the relationship between the environment and the local culture. This knowledge is based on the “multi-generational sharing and building on direct observations made on the daily processes of safely and successfully obtaining food and satisfying material needs” (Whiting et al. 2011). Traditional knowledge also contains a spiritual dimension that is evidenced in part in values and practices such as conservation, non-waste, and sharing. Many of the practices that are informed by traditional knowledge are reflected in the documentation of subsistence use areas, seasonal round, and harvest data and are reported for each community and region as the data are available (see Section 4.0, Subsistence-Affected Environment). While the traditional knowledge discussed in this section may not always be directly applicable to impacts of APP, this section provides the context of customary and traditional uses that are described in Section 4.0.

Traditional knowledge, which is learned through experience and passed on through generations, is a key component of the subsistence way of life. In many ways, traditional knowledge is what makes subsistence possible. Without such knowledge, subsistence users would be unable to make informed choices to ensure a safe and successful harvest, to safely prepare and store subsistence foods, and to adequately provide for the community. Traditional knowledge provides subsistence users with the means to answer the following questions.

- Where do you go? (Subsistence Use Areas)
- When do you go? (Seasonal Round)
- How much do you harvest? (Harvest Methods)
- How do you process? (Processing Methods)
- How much and with whom do you share? (Methods of Distribution)
- Who participates? (Social Roles: Teacher, Processor, Hunter, Distributor)
- Have the above activities changed? (Changes over Time)

Subsistence Use Areas. Where subsistence users hunt and harvest subsistence resources is based on traditional knowledge about the seasonal distribution and habitat of subsistence resources; environmental factors that may affect access, safety, and resource availability; use of an area by previous generations or family ties to an area; suitability of an area for access and camping; proximity of the area to multiple resource bases; and additional factors that have been learned and passed down between generations.

Seasonal Round. The timing of subsistence activities is guided by traditional knowledge about the seasonal availability of subsistence resources in accessible locations; the quality of subsistence resources at different times of the year and the ability to retrieve these resources without risk of spoilage due to heat or insects; seasonal weather or environmental conditions that may hinder resource availability or safe access to hunting and harvesting locations; and traditional ceremonies and celebrations centered around harvests and sharing of subsistence resources (e.g., *Nalukataq, Kivgik,* First Salmon ceremony).

Harvest Methods. Traditional knowledge about subsistence harvest methods include techniques for locating and stalking subsistence resources in traditionally used areas; techniques for efficient harvests of game that maximize harvest numbers or reduce the waste of edible parts; selective harvest and stewardship traditions; and adhering to Alaska Native ethics and values associated with harvest amounts and treatment of subsistence resources that will ensure successful harvests in the future.

Processing Methods. Methods of butchering and processing subsistence resources are often complex processes with specific rules that are based on generations of traditional knowledge. Subsistence harvesters use numerous ways to process and prepare each subsistence resource for consumption, including drying, smoking, aging, fermenting, freezing, boiling, and storing in oil. Use of traditional knowledge about processing subsistence foods is particularly important in avoiding food-borne illnesses. In addition, specific butchering techniques are used to avoid spoilage of the meat and reduce damage or loss of edible parts. Knowledge about processing methods includes traditional knowledge about the appropriate celebrations, ceremonies, or venues for serving different types of subsistence foods.

Methods of Distribution. Sharing is a central subsistence value and the methods for sharing are in many ways based upon traditional knowledge about the appropriate ways to distribute subsistence foods throughout the community. Adhering to prescribed methods of distributing subsistence foods ensures that social and family ties are maintained and supports overall community well-being.

Social Roles. Subsistence activities, including hunting, harvesting, processing, and distribution, are in many ways organized around social roles. Traditional knowledge informs the expected behaviors and actions of individuals in a subsistence society, including those with particular subsistence roles. Subsistence roles include boat captains, boat captains' wives, crew members, active harvesters of particular resources (e.g., wolf and wolverine hunters, fishermen), sewers, and processers. Social roles are often determined based on kinship relationships but may also develop through friendships, partnerships (i.e., hunting partners), or adopted kin.

Changes over Time. Traditional knowledge passed on through generations of subsistence users, in addition to personal experiences and time on the land, informs a harvester's understanding of the physical and biological environment. This understanding guides an individual's methods of hunting, harvesting, and processing subsistence resources. Thus, subsistence harvesters are keenly aware of changes that affect their subsistence activities. These include changes in temperatures; ocean currents; the frequency and severity of storms; water levels in local rivers and lakes; precipitation levels; ice conditions; river channels and shore lines; and subsistence resource distribution, migration, quality, and habitat.

This section discusses the role of traditional knowledge, as described above, in identifying subsistence use patterns and trends as well as the importance of traditional knowledge in guiding subsistence activities in the four study regions (North Slope, Yukon River, Tanana River, and Copper River). While the four study regions are inhabited by different cultural groups (e.g., Iñupiat, Athabascan) who have adapted to different environments and resources bases, the role of traditional knowledge across regions is in many ways similar despite different applications. The Iñupiaq speakers of the North Slope Region share a language, but are divided into two distinct groups: The Taremiut who are dependent upon whaling, and the Nunamiut who are dependent upon caribou for subsistence (Minc 1986). North Slope peoples traded with Athabascan speakers from the Yukon River Region to the south, however, conflicts within and between groups as described in traditional knowledge highlight the differences in traditions between the Iñupiat, and Koyukon- and Gwich'in-speaking Athabascans (Raboff 2001). There is more continuity between the Yukon River Region Athabascans and those in the neighboring Tanana River Region and their neighbors in the Copper River Region. People of the Tanana River Region spoke Tanana, Upper Tanana, Han, and Tanacross languages along the length of the river, but share broad similarities in subsistence, material culture, stories, and songs with their neighbors. The Upper Tanana area shares connections with the Copper River Region, where the Ahtna language is spoken (Kari 1996). In the historic past the divisions between peoples were greater due to difficulties in travel and fears of intergroup hostility, however, for those communities connected by the road system there has evolved a greater homogeneity between dialects and broader connections between groups that in the past would have met rarely if ever (Kari 1996). This discussion is not an exhaustive review of the existing suite of traditional knowledge for the study communities but provides specific examples of how traditional knowledge informs use areas, seasonal round, harvest methods, processing methods, methods of distribution, social roles, and changes over time, in each of the four study regions.

E6.1 NORTH SLOPE REGION

North Slope traditional knowledge is available from a number of sources, including federal, North Slope Borough, and other publications. These include documents from the North Slope Borough Iñupiat History, Language, and Culture Division; the Alaska Traditional Knowledge and Native Foods Database (Alaska Native Science Commission and ISER 2002); federal EIS and Environmental Assessment documents (including public testimony);

BOEM-funded studies from their environmental studies program; and various other ethnographic and traditional knowledge-focused studies. Sources of traditional knowledge for the North Slope, including three of the five North Slope communities addressed in this report (Barrow, Kaktovik, and Nuiqsut) are summarized in SRB&A (2010b). Because of the cultural importance of bowhead whales and the recent increase in interest on offshore oil and gas development, many sources of North Slope traditional knowledge focus on the offshore environment and, specifically, the bowhead whale hunt. While APP is not expected to have effects on offshore subsistence uses, examples provided in this section include those related to bowhead whales and other marine mammals. Traditional knowledge on the North Slope as it informs use areas; seasonal round; harvest, processing, and distribution methods; social roles; and changes over time is discussed in the following sections.

E6.1.1 Use Areas

As noted above, subsistence users frequent harvest areas that were used by previous generations. North Slope residents continue to travel to hunting and harvest areas used by their Iñupiaq ancestors, because these locations were often originally selected based on knowledge about the predictable availability of subsistence resources at times when these locations are accessible to local harvesters. One Barrow harvester described the location of his cabin as one that is particularly conducive to harvests of fish and caribou:

> *A preferable place I would go is where my cabin is located at Nauyalik. There are fish all the time in that creek, caribou coming from the south, north, and west. You can stay there and not even move a mile and the caribou will always come to you.* (SRB&A 2010a)

Residents also choose their hunting and harvesting areas based on their knowledge about resource habitat areas as well as the distribution of subsistence resources under various conditions including the location and quality of ocean ice; ocean and river currents and depths; and the presence of indicator species that signal the availability of subsistence resources. One Nuiqsut harvester described using his knowledge about seal behavior and ice conditions when hunting for seals, saying,

> *Look for bearded and spotted seal,* natchiq *and* ugruk*. Spotted seal. No walrus, I look when I am out, but I never see them; they tend to be out here [farther offshore]. Most of the [seals] we catch are in the water. The only time [they are] on the ice floes is on a sunny day, June and July, August, whenever there is time. The ice, it lingers here [just outside delta] until the second week of July, and then it breaks up and moves out. It is all shallow water, and seals won't go to shallow water. They have breathing holes to stay out there, and we have fish coming through here through Colville, Fish Creek, and Nigliq Channel; that is where the seals feed year around.* (SRB&A 2010a)

Barrow marine mammal hunters have noted offshore fronts in the Chukchi and Beaufort seas, where food for marine life is abundant; they use their knowledge about the location and nature of these fronts to guide their hunting activities. One individual described,

> *Yeah, especially where the two currents meet each other, we see a lot of [whales]; we see a lot! It's right on top of the ocean, and you'll see lots of that stuff [krill]. Some of that current will go three, four feet wide, and you'll see a lot of [bowhead whales]. And we see a lot of bearded seals, walrus, whales, and fish [in that area]…. . I mostly use that as a way point as where the whales might be feeding, where the two currents meet. Most of the time, they're on the cleaner side of the ocean. So I follow where the two currents meet.* (SRB&A Unpublished-b)

Harvesters have also reported that the presence of some species indicate the availability of subsistence resources that have similar feeding patterns. One North Slope bowhead whale hunter noted that certain species of sea birds feed on the same krill that the bowhead whales feed on; these birds are a sign that whales may be in the area:

> *We see a lot of birds, too. When we see particular birds, we know that they're feeding on the same thing that the whales are feeding on. A lot of those petrels… All the other boats might be going real fast, but if you just hang around and turn off your motor [you'll see whales].* (SRB&A Unpublished-b)

In addition to their knowledge about resource distribution and behavior, North Slope hunters consider environmental factors that may affect access and safety when choosing hunting areas. One individual described the reasoning behind his preferred walrus hunting area, taught to him by his elders, based on the direction and speed of currents in the Chukchi Sea:

> *My preferred location for walrus hunting is west from Barrow, anywhere west. Because the south current is so fast, that while you're butchering them, you're on your way back to Barrow. That's the safest way we learned from the old-timers. They purposefully went west, because their boats were much slower then.* (SRB&A 2010a)

Because of the shallow and braided nature of area rivers, Kaktovik residents' inland travel is often limited to the winter months when they can travel by snowmachine. Winter fishing activities occur at specific locations on the Hulahula River where residents know the ice is not grounded and therefore where Arctic char and Arctic grayling are available during the winter months:

> *We go out fishing winter time to Hulahula, First, Second, and Third [Fishing holes], ice fishing. Just those Arctic chars, and what they call those grayling. We only catch those. When you go up those rivers, not First, but Second and Third, always are open, so that is how you go ice fishing. But you have to drill it or chop the ice. [You can go] any time as long as you reach it. As long as you can cross Barter Island you can reach. November to May or June.* (SRB&A 2010a)

The exact locations of North Slope residents' hunting and harvesting activities often vary from year to year or from trip to trip based on factors related to weather, resource availability, and access. When traveling by boat, residents use their knowledge of the coastline as well as currents, weather and ice conditions, and tides to determine appropriate travel routes as well as safe places to anchor their boats and access resources:

> *We're selective, we're picky; we want to find the best place to anchor the boat, the strong herds. We're looking for the males, the young males, and those are up farther inland. If there's a good place to anchor the boat, and they're not too far from the coast line, then we'll come in and get some.* (SRB&A 2010a)

> *Sometimes we get out about five miles, all the way across, and come over here to Atigaru, keeping about a mile off [from shore]. We can go into the ice. Sometimes it will be broken up enough [that] if you don't see any seals on the open edge you can go in and scout, and I don't try to go in more than half a mile; if the wind changes the ice will close up on you. You have to pay attention.* (SRB&A 2010a)

Other factors may affect where residents harvest subsistence resources. For example, residents often prefer the taste or quality of resources from particular areas. One Kaktovik harvester noted his preference for hunting caribou west of the community, saying,

> *To Konganevik, I been over on this side of the map [west], sometimes we hunt caribous on the east side, they been skinny [in the east] that's why we go west, [the caribou are] fatter.* (SRB&A 2010a)

Traditional knowledge about subsistence hunting and harvesting areas is constantly evolving based on changes in the physical, biological, and social environment. These include changes in the distribution or migration of subsistence resources, changes in the landscape (e.g., industrial development, erosion), and social and economic changes within a community (see Section 6.1.7, Changes over Time).

E6.1.2 Seasonal Round

As noted above (Section 6.1.1, Use Areas), many North Slope subsistence activities are limited by the seasonal availability of the resources and ability of local hunters to access them. Bowhead whales, for example, migrate past the community of Barrow during the spring and fall and are otherwise beyond the area considered to be within safe traveling distance by local hunters. In addition, local hunters use traditional knowledge to further refine the timing of their bowhead whale harvests. Residents generally focus on harvesting smaller bowhead whales because they are easier to butcher in a timely manner (without the risk of meat spoilage), and because they are considered to be better quality. As one Barrow resident indicated, the smaller whales generally show up later in the fall and therefore most crews focus their efforts on late September and October:

> *Some people try to whale in September, but in the fall time, the whales that are migrating, the big whales come in late August and they're along in here all the time [along the islands]. Then later in October, the small ones are showing up.* (SRB&A 2010a)

In Kaktovik, while bowhead whales begin migrating past the community in August, whaling crews generally wait until September to begin harvesting them, when temperatures are cooler and there is less of a risk for meat spoilage.

North Slope residents also base the timing of their subsistence harvesting efforts on their knowledge about variations in resource quality throughout the year. In some cases, these choices are a matter of personal preference and experience. One Barrow individual reported preferring the taste of caribou harvested in the fall for the following reason:

> *The caribou are eating the greens, and they taste like them. That is why I hunt in the fall time because they are eating the tall grass and the lichen.* (SRB&A 2010a)

Nuiqsut residents base the timing of their yearly burbot harvest on knowledge about seasonal changes in the burbot liver, considered a delicacy to many in the community:

> *Usually the best time to get those is in later part of this month and January, February, March and April. That is when their liver becomes almost half their body weight. It is just rich, we don't even need seal oil [while eating burbot]. The way we have our fish is frozen and dipped in seal oil, and with the* tittaaliq *you don't even need seal oil [while eating it]. But if you have too much of that liver you will get sick, and if it is just right you will catch a little buzz and get tired and nice.* (SRB&A 2010a)

While the seasonal round of North Slope communities is relatively consistent from year to year, the exact timing of an activity varies based on residents' observations and knowledge about the relationship of various environmental factors with the availability of subsistence resources. For example, if ice is not present in the ocean when residents usually hunt seals in the summer, harvesters will wait until the wind and currents bring the ice closer to shore. One individual explained,

> *We don't hunt the bearded seal when there is no ice. Ice not only brings in the nutrients and the fish are under the ice, but the bearded seals have to haul out on the ice. They like to sunbathe. It moves in and out, we don't bother going out if the ice is not out there.* (SRB&A 2010a)

Nuiqsut harvesters have reported that the availability of Arctic cisco, or *qaaktaq*, in the Colville River, is based heavily on environmental factors such as wind, salinity in the river, and river ice conditions. These factors often affect the timing and length of their fishing season. One *qaaktaq* fisherman noted,

> *When it snows before it freezes, it causes slush to block the mouth of the river; we move [our] nets; the current pushes the slush toward mouth, the mouth is shallow; it leaves snow at the mouth of river when the wind comes from the west.* (ABR, Inc. et al. 2007)

The seasonal round may also be affected by regulations imposed by federal or state wildlife management agencies. The seasons given by game managers and agencies for hunting moose and other resources may conflict with traditional knowledge about appropriate hunting seasons. In 1998 Nelson Ahvakana of Nuiqsut stated,

> *When the moose season opens in 26(A), the village here goes for moose hunting, but in accordance with that EIS, it stated that the people hunt moose from July to October. The regulations states in 26(A), under Alaska Fish and Game, that the village residents would hunt moose in the month of August by boat only and then in September. But when September comes around, the people here usually don't hunt by boat because the winds are so severe that the river is not available to go hunting up in that area. They don't hunt if the river is shallow.* (DOI, BLM 1998)

E6.1.3 Harvest Methods

As with use areas and seasonal round (see descriptions above), North Slope residents' methods of locating and harvesting subsistence resources are based on traditional knowledge about the physical and biological environment. Knowledge about resource behavior is particularly useful in locating game. One Barrow marine mammal hunter described a method for locating bearded seal (*ugruk*) as taught by his father:

> *I have noticed real big ice goes way down in the water. It is like a flashlight to the game swimming in the water. It attracts all the game underneath. My dad said if [there is a] big ice floe and thick, he said go around and there is ugruk [bearded seal] around it. And it is sporadic now [because of lack of big ice]….that is why when my dad taught me, he said go by big icebergs and [the] flat spot at end of it and it attracts sunlight and whales could see it from far, but you don't see it.* (SRB&A 2011a)

Residents also employ techniques based on traditional knowledge and experience to ensure efficient harvests. Examples of these techniques include choosing rifle or shotgun calibers that will ensure minimal loss of meat or prevent marine mammals from sinking before they can be retrieved; harvesting resources in areas where they can be easily retrieved; setting nets in areas and at times when fish harvests can be maximized; and choosing appropriate resources to harvest (e.g., not shooting the first caribou in a herd, the "leader," so as not to disrupt the herd's migration). North Slope residents provided the following descriptions of their techniques for harvesting and retrieving subsistence resources:

> *After whaling, when they come early, I put a net out near the cabin at Nigliq. Down there first, then when [the ice] starts getting thicker, I move mine down here [closer to the village]. I have three different spots for Arctic cisco. After they slow down at the mouth, I move further up, then they slow down, and I move it further up and start catching them there. (SRB&A 2010a)*

> *The fish are coming out in October. Anywhere you set your net you will get some, especially in our area, in this bend there by the cabin. The female's belly's stomach is so full of eggs and they get caught in the net and they release their eggs. The grayling is attracted to something and they come to the net and you start jigging. That is in October. It doesn't take you long.*

> *You have to quit because you got too many, I only have so much family.* (SRB&A 2010a)

> *Most people like me like to hunt in the shallow water because they don't stay down as long. Thirty feet of water, you have a better chance of harvesting a whale in the shallow water, the majority of the whale we get is in the shallow water. If we were to go into the deep water and we were to strike a whale it could go deep forever. In deep water the chance of losing is greater because of the depth.* (SRB&A Unpublished-b)

> *No wind is better. We prefer the east wind, so we can haul in the whales all the way to where we're going to butcher them. If it's westerly wind, we can't bring them all the way across because the waves are pounding us. If it's west wind, we'll bring them in through here [Plover Point].* (SRB&A Unpublished-b)

Traditional knowledge also provides guidance regarding the relationship between the Iñupiat and the subsistence resources they harvest. In particular, Iñupiat believe that their actions throughout the bowhead whale hunt and in their personal lives affect their success as bowhead whale hunters. Two bowhead whale hunters described the importance of showing respect to the bowhead whale:

> *If you have a clean skin [for the* umiaq*], the whale knows that. The whales know when things are right, when they are in order. If they are, the whale will make itself a gift to you. … You put the whale skull back in the ocean. We believe when we do that, the whale's spirit goes back and the whale is reborn. The elders taught us these things for whaling. Only God gives the whale. That is how the whale sees us, through God.* (EDAW, Inc. 2008)

> *The bowhead is our brother. Our elders tell us that the whales present themselves to us so that we may continue to live. If we dishonor our brother or disturb his home, he will not come to us anymore.* (EDAW, Inc. 2008)

E6.1.4 Processing Methods

Traditional knowledge informs North Slope processing methods such as proper techniques for butchering marine and terrestrial resources; preparation of traditional Iñupiaq foods; and appropriate times and places to consume these foods. One North Slope harvester described a specific method for butchering, processing, and consuming caribou as follows:

> *But my favorite place to go is these three lakes [south of Teshekpuk]. That's where I make my* piåuraq *caribou. I bury it in the snow for three days and then take it out and butcher it. You have to eat it frozen.* (SRB&A 2010a)

Another North Slope elder described the various methods used in the past to process and utilize caribou, saying,

> *We use them for the tent outside, to make it warm. And we use them for mattress. Clothing, the legs, mukluks, and make a mitten. Take their skin and put it water, to make skin masks. They take all the skin off. You could*

> *use it for when you make mukluks. [Tendons] for the string for the mukluks. The caribou is used everything for parka, for winter, make Eskimo coveralls…. We are ready to get the fur for the parka after August 15. Those we get in August, they are fat, we make ice cream.* Agutuq*. We always eat everything…bone, we cut up for the stew, we don't throw them [away]. When a caribou is no good, we checking on its liver. We like those bugs [found in caribou], we eat them when they are moving, when we were small. Then we boil them. When they getting big, it's good. You could boil them and eat them. We eat anything, even stomach. We eat that. We use that [stomach] for the vegetables. They ate that thing first, in the winter time they cover the caribou and cut it up and the stomach they save it and eat all of them [stored vegetation in the caribou stomach to eat during the winter]. That was long time ago when there were no stores. We don't throw anything [away], bone we cut up and the dogs will eat the bone. Even the feet, we cut them right here and put them in summertime in the pond. Keep them there for a while and after they age they eat them. They put it in a pond for two months and then we eat the feet.* (SRB&A 2010c)

Iñupiaq methods for butchering the bowhead whale in preparation for distribution throughout the community take into account knowledge about the distribution of various parts to specific community members; the rate of spoiling for specific organs; and the need to protect edible parts from damage or from being tainted by dirt, grit, or other inedible whale parts (EDAW, Inc. 2008). The large body of knowledge related to butchering and processing the bowhead whale is transmitted to residents of various ages and backgrounds through communal participation in these activities.

E6.1.5 Methods of Distribution

When harvesting subsistence resources, Iñupiat consider not only how much they need for their own household, but they consider the needs of the community as a whole. In certain cases, such as Barrow's spring bowhead whale hunt and subsequent goose hunt, subsistence activities are communal and are geared toward providing for the entire community. For an organized harvest like the whale hunt, a surplus must be accumulated to feed the whalers and crews, typically by the boat captain or *umialiq* and his wife through a geographically and socially broad network over the course of a year. One Barrow whaling captain described the detailed methods of bowhead whale distribution in his community as follows:

> *As soon as a crew has caught a whale, word goes out and the other crews rush to help tow the whale to the edge of the lead, they and many community members help to land it on the ice and crews then help to butcher it. The captain and his wife must feed all the crews who help to butcher the whale—usually with boiled maktak, coffee and or tea in order to keep everyone as warm as possible. The next day, the captain and his wife must feed the entire town. A third of the uati, or Community share, is served to the community at this time, along with half of the heart, kidney, a quarter of the tongue, and half of the small intestines. The tavsi (the share of the successful crew) is divided among the captain and his crew. The rest of the*

> *whale is shared in very specific ways—some to the successful crew; some to all of the crews; some set aside for community feasts. Finally comes pilianiaq—when women who are present at the end of the butchering are invited to remove whatever meat is left.* (EDAW, Inc. 2008)

Other rules regarding methods of distribution in North Slope communities include the tradition of a hunter giving his first catch to a community elder. As one North Slope hunter observed, "Last year I did shoot that *ugrugaq*, a younger smaller one. If you shoot your first seal, you've got to give it away," (SRB&A 2010a). Certain individuals in a community, including active hunters and whaling crew captains, are expected or obligated to provide for either the community as a whole or for a network of households or family members. Hunters generally harvest enough of a resource to provide for their own family as well residents in other households, including extended family, elders, and friends, who do not have a hunter to provide for them. Harvesters also consider ceremonies and celebrations, which often center on the sharing of certain subsistence foods. Several North Slope harvesters articulated these traditions as follows:

> *You have to quit [harvesting fish] because you got too many; I only have so much family. I get six sacks and share it with our families and our crew. These guys that are whaling are eating fish frozen in seal oil and you are cold for a little while and after that it warms you for the rest of the day. Before they go out [whaling] my son goes out and distributes the sacks.* (SRB&A 2010a)

> *What we do is try to get at least 100* aanaakliqs *in July and cut and hang the racks and dry fish three-quarters of that and the rest in the [ice] cellar. I like to get at least 100, sometimes a little bit more. I find that a lot of times [there] will be funerals and so what we do, any fish we will cut up and bring to the families [of the deceased], because they have a lot of people who come in for the funerals, and we try to keep that in mind, for my neighbors too.* (SRB&A 2010a)

> *One day I got 30 burbots in five hours. I give it away, I'm a whaler. That's my job is to give it away.* (SRB&A 2010a)

According to Iñupiaq beliefs, sharing one's subsistence catch according to prescribed Iñupiaq methods and rules not only strengthens social and family ties within a community but also ensures a successful harvest in the following year. Thus, passing on traditional knowledge about these traditions is crucial to the survival and well-being of North Slope communities.

E6.1.6 Social Roles

An example of the importance of social roles in North Slope subsistence activities is the bowhead whale hunt. Whaling captains provide the primary financial support for their whaling crews; oversee whaling preparations; make informed decisions about the location, timing, and methods of the bowhead whale hunt; and ensure the safety of their crew. Whaling captains' wives and other women from community sew the skins for the boat, prepare food for the whaling crew, and oversee the processing of the whale into traditional foods. In addition, the whaling crew is comprised of individuals with special roles, including the harpooner (striker), steersman (or paddler), and boyer, who together ensure an efficient and successful hunt. Others in the community assist in butchering, processing, and distributing the harvested whale. Adhering to the expected behaviors of ones' social role elevates their standing in the community and ensures successful harvests.

One Barrow resident elaborated on the specific role of a whaling captain during the bowhead whale hunt as follows:

> *You also have to know how to select the right whale, the correct length and size. That is the job of the captain. He also has to know about weather and climate change, and ice conditions. The ice is thinning and captains have to know about ice to keep their crew safe. The sounds in the ocean are changing too, especially with seismic activity, ships moving back and forth, and the noise from our newer ways of life. When you go out there, it is a life threatening situation. Storms, big rolling waves, and towing a whale make it very dangerous. Our captains have to know about those things in the future to preserve whaling and keep their crews safe.* (EDAW, Inc. 2008)

Another Barrow resident described the importance of bowhead whale hunting roles in strengthening ties within his family:

> *Whaling knits our family together. It is such a big task [whaling] that it takes all of us to whale. The extended family has to stay healthy to whale. If people only took care of themselves, then someone is being selfish and everyone would suffer. Socially, whaling keeps us stitched together. Our family has some problems, but when spring comes we work through that and whaling becomes a healing process for us. We are a family then and without whaling I don't know how that healing would happen.* (EDAW, Inc. 2008)

E6.1.7 Changes over Time

In recent years, residents of the North Slope region have reported changes in their environment related to climate change, oil and gas exploration and development, and natural variations or cycles. Elders and active harvesters are particularly able to identify changes over time. A commonly reported change across North Slope communities is the decreasing amount of sea ice in recent years and the resulting effects on subsistence resources and harvesters:

> *If someone were to monitor for 80 years compared to today, we have no ice. The North Slope no longer has multi-year ice. What we hunt off of now is first year ice, and it is not very stable. It breaks up with current.* (SRB&A 2011a)

> *You don't get multiyear ice anymore. First year ice every year. Kind of scary. [Started changing] maybe 10 years ago. Once in a while scattered [multi-year ice is seen]. Blue ice is multi-year ice and higher than building. We don't see no more. We used to go over ice higher than this building. It is all flat ice [now].* (SRB&A 2011a)

> *Well it affects walrus because [there is] less ice now during the summer time. It used to be common to wake up in the summer time and there would be nothing but ice. Throughout all the ocean, it would be ice. This is summer time and you wake up and it is all ice and no water and then that ice would linger back and forth five to 15 miles from Barrow and we hunt off of it and catch bearded seal and walrus. Now that ice once it breaks free it seems like it lingers for a week or two and then poof it is gone, and we don't see it until cold weather makes more ice.* (SRB&A 2011a)

North Slope harvesters have also reported changes in the timing of resource availability due to warmer temperatures in recent years. One North Slope resident provided this description of observed changes in the caribou migration:

> *We start going up there [to hunt caribou] in mid July to early September; we go back and forth. It used to be about the 20th of August to Labor Day, but the last few years it has been to the 15th of September. The last 10 years the caribou migration has moved back farther in time. They have started migrating later because the weather is warmer. They stay north longer and leave later. The year before, they didn't start moving before the first week of September. Last year I don't know where they were. The migration behavior has changed because the weather is warmer. It used to be the early part of September [when] the ice starts forming on the lakes, and we had to get home before Labor Day weekend, but last year we stayed to the 15th and the ice hadn't formed yet. We had been going up there since the mid 70s, and we have been noticing the change in the last 10 or 12 years. (*SRB&A 2010a*)*

Harvesters also note changes in the quality of subsistence resources, including their size, taste, and appearance. During a study on the variation of the abundance of Arctic cisco, or *qaaktaq*, in the Colville River (ABR, Inc. et al. 2007), local harvesters and elders provided observations about long-term changes in the quality of the fish:

> *Food for* qaaktaq *is less. They used to have shrimp in their stomach in the past; now it is like they are eating mud.* (ABR, Inc. et al. 2007)

> *In the 1970s [the] fish were healthy and you could cook all of those fish and [the] taste was good most the time; now, the fish has changed, the taste has changed; even the fresh fish they catch today tastes like it has been in the freezer for a long time, freezer burn.* (ABR, Inc. et al. 2007)

Due to the prevalence of oil and gas development on the North Slope, harvesters' observations of changes in resources are often related to experiences with industrial activities. Observed impacts reported by North Slope harvesters related to oil and gas development include displacement or disruption of wildlife, declines in wildlife populations, a decrease in wildlife habitat, and reduced health of wildlife, as well as impacts on subsistence harvesters causing changes in subsistence use patterns (SRB&A 2009a). Examples of harvester observations of industry impacts on subsistence resources include the following:

> *Before industry came, they [Arctic cisco] were always healthy: Size was larger, the amount of fat was higher. After the causeway, they are smaller, unhealthy, their food is unhealthy; they are eating something different. In the*

> *past, they had shrimp in the stomachs, when they were caught before the causeways were built.* (ABR, Inc. et al. 2007)

> *Right now it is hard to get caribou here. They going to up there, the mountains. [Translator] When they first come [to Nuiqsut], they were all over this area, they roam over there by the village. Nowadays they hardly in this area because of the pipelines. Hardly catch any caribou in this area. The pipeline has diverted the caribou.* (SRB&A 2010c)

> *There's a lot of changes. There's too much pipeline on that other side [east]. They're starting to have their young on that side. Usually had them down toward Teshekpuk. Yeah, over here on this side, cause of this pipeline they couldn't go. I seen quite a few in that area…. They been impacted by the oil companies, yes, true…. No caribou from the east. You gotta keep telling them there's no caribou from the east in Nuiqsut anymore. When me and my buddies used to catch them, the ones from the east and west joined together and come up. They meet and start going up. By Nechelik, right close and they start going up. Yeah, quite a few [come from west]. In the mosquito harassment area here [on the coast east of Colville], they got closed out by the pipeline. They should put an easement, about a half mile, to let them cross. I seen some turned back, about 100, back by that pipeline from Meltwater. They stay by Prudhoe nowadays. That Meltwater pipeline. When they first put this pipeline, the shine from that, they seen it and started running around back.* (SRB&A 2010c)

The use of traditional knowledge in identifying changes in the environment, as well as in determining the causes of those changes, has become more common in Alaska and on the North Slope in recent years, although the lack of traditional knowledge in influencing agency decisions is still a concern to many Iñupiat (SRB&A 2009a). The combination of North Slope traditional knowledge and scientific knowledge is a valuable tool for developers, decision-makers, and stakeholders in implementing policies to reduce impacts to subsistence users and resources.

E6.2 YUKON RIVER REGION

Sources of traditional knowledge for the Yukon River Region include several ADFG and FWS reports on traditional knowledge of subsistence fish species in the Koyukuk River and the Yukon Flats NWR, baseline studies providing descriptions of subsistence uses and traditional knowledge about the physical and biological environment, scoping testimony from EIS scoping meetings, and numerous oral histories of regional elders.

E6.2.1 Use Areas

For Yukon River Region subsistence users, subsistence use areas tend to center around the Yukon and Koyukuk rivers and their numerous sloughs, lakes, and tributaries where subsistence resources are known to be abundant. Before World War II, people tended to live out on the land with their traditional tools and food supplemented periodically with trade items from stores in Fort Yukon and Tanana. Once the mandatory school attendance laws were enforced in the 1950s, people relocated to centralized villages; however, the

Athabascans of the Yukon River region were and are still drawn back to the traditional hunting and harvesting areas of their youth and their ancestors. In addition, residents use traditional knowledge about the environment to establish new harvest areas convenient to their communities.

There is a significant portion of knowledge transmitted through use of family territories as generations learn from predecessors and teach their successors. In particular, traplines in this region are passed down through generations and are still identified through their original owner:

> *That trapline is my great, great grandfather's trapline that I just inherited. It's been used for I don't know how long now, before the 1900s. And I'm still using that today.* (SRB&A 2007)

Traditional knowledge about the distribution of subsistence resources is key in identifying subsistence areas. The most crucial resource for sustenance on the Yukon River is salmon. Salmon harvesting locations are chosen based on residents' knowledge about the distribution and abundance of salmon in local waterways; in particular, residents use knowledge about the presence of channels, currents, and eddies. As one Yukon River harvester noted, fish camps are chosen specifically based on traditional knowledge about the distribution of salmon:

> *See my camp is right there, in that little slough right there. Across from my fish camp, that's where I get those salmon, silver. Yeah, right there, too. This is not there anymore; it's all connected into one [channel]. He's got a camp right there. There's another fish camp right in the main channel. You'd think fish could go anywhere, but they don't.* (SRB&A 2007)

Currents and channels in local rivers are constantly changing and subsistence users must use traditional knowledge to adapt to these changes and identify new fishing areas. Two Beaver residents noted,

> *But sometimes the channel changes, so you have to move those nets around. Sometimes you get more, sometimes less.* (SRB&A 2007)

> *We used to set net right across here, on the other side of this bar. But it's not too good now, so we found that place down there. We have been fishing every year, wherever we could find a good eddy.* (SRB&A 2007)

People in the Yukon River Region also fish for a variety of non-salmon fish at certain locations based on knowledge about where the fish will be congregating with eddies, open water, and accumulations of food:

> *[I fish] right at that river mouth, right in front of that cabin for grayling, jackfish [northern pike], sheefish, lush [burbot], and whitefish. [There are] lots of them. It's always good for whitefish there. Especially in the spring time, you could get thousands of them if you want.* (SRB&A 2007)

As the ice breaks up in the main channels of the Yukon, people take their boats out to harvest waterfowl. Hunting locations are chosen based on traditional knowledge regarding the location of waterfowl at specific times in areas within a convenient distance from the community:

> *Last spring [I hunted waterfowl] just to Willow Point or so, just here and there in islands, from Willow Point up to Fort Yukon. That is right when the ice goes out. I go with boat; just stay mostly out in the open that is where they fly. Very common to get 30 to 40 each trip; that is all you need for all winter.* (SRB&A 2007)

Hunting areas for some animals are tied deeply into the habitat needs of that animal as recorded in traditional knowledge. Moose habitat tends to be on the margins of mixed hardwood forest, especially on stream banks where willows grow, providing an opportunity to harvest multiple resources efficiently:

> *When moose season was open I go up Indian Creek… That's when I find really good birch. That's the one that I built two pairs snowshoes from one tree.* (Joe Beetus *in* Yarber and Madison 1980a)

According to traditional knowledge from the region, moose move seasonally between the hills and the lowlands, calving and feeding along river banks and on islands for protection from predators. One resident of the Yukon River Region noted a particular location where the moose often congregate during the fall, saying,

> *Just in fall time, it is pretty good down there [at] upper mouth of Birch [Creek]. Lower mouth of Birch Creek, they come down from the hills and breed in islands and sloughs. It is getting to be a popular place to hunt now; I see a lot of boats.* (SRB&A 2007)

Traditional knowledge about waterfowl habitat, particularly nesting habitat, informs residents of good egg gathering areas. Residents use their own observations about waterfowl behavior, as well as traditional knowledge passed on to them by others, to identify nesting areas:

> *[I gather eggs] from the river, the big grassy place all the way around [Chloya Lake], walking. Sometime I get geese eggs; sometime I get the black duck eggs. From May, almost up to June, take a boat down and walk in there. Every year depends on how the flocks are going. You've got to watch and see how many are going by. You've got to be smart in the head. When it's like a dark cloud coming this way, that's how we know. If we don't see that much going by, we won't go.* (SRB&A 2007)

> *Up on Canvasback [Lake], that's a good place for [nesting]. When I was younger that's where we used to get eggs, that's the only place I know, and around this island, in the middle of it, all kinds [of birds].* (SRB&A 2007)

Evidence of traditional use areas based in traditional knowledge includes the presence of infrastructure in remote areas used for resource harvests rather than for strictly residential purposes. In the challenging environment of the Yukon River Basin, infrastructure such as camps and cabins are located in areas where day travel to and from the community is not possible, in between communities or remote harvest locations, or where environmental conditions could cause harvesters to be stranded for extended periods. One individual noted the presence of such a cabin between Fort Yukon and Chalkyitsik and reported that he limits his winter travels to areas with safe ice conditions:

> *We usually go up past 10 mile; then we camp at his cabin and go back to Chalkyitsik. There are some good lakes up that way. But we usually get moose about 25 miles out of town. We don't usually have to go that far. I never go up the Yukon in winter because the ice is always dangerous in the winter.* (SRB&A 2007)

The distance traveled by a subsistence hunter depends on the distribution of resources within his or her region. Iñupiat from the Kobuk and Colville drainages historically lived together with Koyukon speaking Athabascans on the Koyukuk River. Both Iñupiat and Koyukon people traveled up the Koyukuk and Alatna rivers for the caribou and Dall sheep known to reside in the Brooks Range. Frank Tobuk, an Athabascan who had lived in Evansville, Alatna, and Allakaket during his lifetime, noted that resources from these locations were particularly desirable because of their fat content:

> *People used to hunt up Noatak and get lots of fat caribou and sheep. Bring all the fat back and make* akutuq *out of it.* (Yarber and Madison 1980b)

Some harvests require a substantial expenditure of time, money, and materials. Multitasking on subsistence trips maximizes the efficiency and productivity of harvests. Harvesting multiple resources at once is especially common when hunting resources, such as ptarmigan and hare, which are supplemental to primary subsistence foods (e.g., salmon, moose):

> *I stay closer to town and do day trips, just between Grass River and Seventeenmile, and Eightmile Slough area. Every year, because wood road is out there, and [you can] multi-task and set snares while you gather wood with a truck.* (SRB&A 2007)

E6.2.2 Seasonal Round

Traditional knowledge about the annual round of subsistence activities is based on knowledge about seasonal availability and quality of subsistence resources as well as environmental conditions that permit access to those resources. As one resident from the region described, Athabascan words for different months of the year translate to events and conditions that affect the availability of and access to subsistence resources:

> *Like,* Mininh tots'eeyh liyaayee *is May, spring when you put canoe in the water. And pretty soon is* Ggaał nogha'*, King salmon eye, that's the time king salmon come, June. Another one is* Mininh k'ikkidlee*, that's when ducks got no feather, or shake their feather, July. August is* Mininh daak'ilk'ilee*, moose always take the skin off their horns. September I forgot. October is* Mininh didteeyee*, they call that freeze-up time. And November is* Sooga zo'o'*, marten sun, that's when they start to trap martens.* (Edwin Simon *in* Yarber and Madison 1981)

Subsistence activities are timed to maximize harvests of available resources during each season in order to provide enough food until the next peak in resource availability. One Koyukon Athabascan described the seasonal cycle of subsistence activities during her childhood as follows:

> *I'll tell you how Dad [Oscar Nictune] made living for us after our mother died. In the winter time he would trap and buy groceries. He would hunt caribou and we would make clothing with the caribou leg skins. In the spring time we would have garden. Mother always had garden and we learned from her. A little garden. Enough to give us vegetables during the summer. We used to have cabbage, carrots, turnips, lettuce, spinach, beets and potatoes. In fall time it would last a little while. And in fall time we would pick berries and roots. Summers, Dad would take us to fish camp. If he's not working on boat, he would stay in fish camp with us. Fall time he would hunt and get meat.* (Bertha Moses *in* Yarber and Madison 1979a)

Subsistence users time their harvesting activities to take full advantage of different seasons. Spring begins in the Interior in March when days are longer, temperatures begin to moderate, and people have more opportunities to look for fresh food and game.

In the Yukon River Region, spring begins with the arrival of migratory waterfowl as people wait for the rivers and sloughs to break up. A system of reconnaissance and information sharing supplements traditional knowledge about migratory bird behavior. Certain resources are migratory and only available for a short period of time. Residents must use traditional knowledge about environmental factors that affect the timing of resource availability in order to ensure successful harvests:

> *[I hunt] before the snow is gone. When they first start coming in, that's when we go out there; about the last part of April, until they all start going north. [I hunt] for two or three weeks, and then they are all gone.* (SRB&A 2007)

Summer on the Yukon River is consumed by the harvesting and processing of salmon for the winter during available openings for subsistence and commercial fishing. Traditional knowledge informs the timing of the salmon run as well as the type of salmon available during different times throughout the summer. Residents harvest different species of salmon for different purposes. Two individuals described the timing of their salmon harvests as follows:

> *Kings, [then] silvers and then in late fall you get chum, dog salmon. You're looking at the first part of June [for kings]. Silver are right after kings, you'll get a few mixed in, [and that is in] July. Then chum [come] in August.* (SRB&A 2007)

> *Sometimes when we fish a little later, sometimes at the end of the run we'll get dog salmon. We dry them for our dogs, don't throw them away. End of June and July [for kings] and toward the end of July we start getting dogs.* (SRB&A 2007)

Moose hunting is important in the fall; harvest timing is dictated by game regulations, but intimate knowledge of moose behavior and habitats are key to successful harvests. One individual reported choosing the timing and location of his moose hunt based on knowledge about their movement into the area during the fall:

> *They come from the mountains, they come down into the flats [in] fall time - September, October. They move just back and forth. They go back to the mountains after they rut, in October.* (SRB&A 2007)

In addition to timing their activities based on the availability of resources, subsistence users must also consider and be aware of changing environmental conditions that could affect their access to and from harvest locations. This is especially true around freeze-up and break-up. One individual reported harvesting grizzly bears in the late fall when they are feeding on spawned-out salmon:

> *[I hunt] grizzly bears, mainly. They're all over up in there. Your chances are better in the late fall. The salmon are dying in there all over the banks. They're just everywhere. [I go] late September, early October, just one trip. It's real late in the year usually; you don't want to get caught up there when the river is freezing.* (SRB&A 2007)

Residents also use traditional knowledge about the quality of subsistence resources during specific times of the year to determine whether a resource is harvestable. For example, berries may be available for much of the summer but are only considered edible during certain times. One Fort Yukon resident observed,

> *In August usually we go for berries. There is a season for everything. Like I say, I don't have a plane, I can't fly up there. I go with the boat. When the high bush is good, we go then. And then when the blueberries are ripe we go again. In September we get low bush, and July for blueberries. You can get lots. I cast my bucket in the woods and reel it in full.* (SRB&A 2007)

Residents often time certain subsistence activities to coincide with the harvest of other resources; ptarmigan and grouse, for example, are often harvested while residents pursue other resources that are available for shorter time periods. As two residents from the Yukon River Region observed,

> *[Get wood] kind of like in fall time when you get bunnies, grouse and ducks, [and get them] when I am hauling wood for winter. The wood road goes clean out to here and anywhere in that area.* (SRB&A 2007)

> *There is grouse; we always keep an eye out for grouse, any time, about the same time as rabbit. Winter is ptarmigan, usually [while] hauling wood or cruising around. When people drive around they carry their guns. Just [harvest them] if you see them.* (SRB&A 2007)

Suitable times to harvest subsistence resources are also determined by additional environmental factors that take into account meat spoilage, suitable conditions for certain harvest methods, and factors that affect one's ability to spot game. For example, residents snare hares in the fall when it is cold enough for the hares to freeze after being snared, but not too cold to prevent residents from properly setting the snares. The hares are harvested before it snows so that their white fur is visible against the bare ground:

> *Get lots of them [rabbits] in fall time; that is all it is. We snare rabbit [then] because winter time it is too cold, much too cold and we can't go out. We do that with our hand and snare; we can't do that in cold weather. [We go] in October and November and half of September.* (SRB&A 2007)

> *[Hare] was September, after it gets cold. Rabbits will keep. Every night some times, every other night. October, early October before it snows, we could see them because they're white before it snows.* (SRB&A 2007)

Certain subsistence activities and harvests are timed based on traditional ceremonial activities and celebrations. In the case of the Athabascans of the Interior, potlatches often necessitate the need to harvest particular resources. Winter moose harvests for potlatches are allowed outside the normal regulatory seasons, and one individual noted that the majority of winter moose harvests are for these feasts:

> *The winter harvest, a high percentage of that is a potlatch moose, something like that…a holiday, a funeral. That's what most of the winter harvest is.* (SRB&A 2007)

E6.2.3 Harvest Method

Methods associated with harvests of subsistence resources are based on traditional knowledge about tools and technologies, necessary harvest amounts, game management, and appropriate treatment of resources. Various rules exist that pertain to the relationship between harvesters and the wildlife on which they rely. First and foremost among these traditional rules is the avoidance of waste when harvesting resources. Specifically, subsistence users are expected to abide by the rule that one should harvest only what they need:

> *You know, with my traditional knowledge, I've never been taught but it's always in me that we don't waste animals. You know, there's 10,000 caribou out there. I'm only going to go after what I need. I'm not going to shoot 20, not going to shoot 30. I take whatever I need. That's the kind of knowledge I have in my system. It's been there and maybe continues there. Yeah, and the Gwich'in people play major role with the caribou. We are connected. If one goes down, they both go down, you know.* (Ricky Frank *in* EPA 2002)

> *Like they told us, 'if you take more than what you can take, then it will spoil and it won't do you any good.'* (Wolfe and Scott 2010)

Following traditional Athabascan rules about how much one harvests and at what times not only maintains one's relationship with that resource and ensures future successful harvests, but it also serves as a game management tool. As one individual described,

> *A long time ago, when there was no [Department of] Fish and Game around, we hunted according to our own rules. We know when…the moose; we never get cows because we know the cow will have calves. And we don't have to have [Department of] Fish and Game tell us when to get moose and when not to. We know when to hunt beaver, muskrat, moose, king salmon. All our subsistence foods, we know when to get them and when not to get*

> *them. That's how come these many, many years we always have something to eat out there.* (SRB&A 2007)

One Yukon fisherman described how local practices influenced by traditional knowledge have regulated the appropriate number of fish to harvest long before the introduction of ADFG regulations:

> *In the past, traditionally, those old people regulated like they knew that. That's how come they didn't starve a long time ago. Otherwise, if they didn't regulate themselves, we would have died out long ago. Traditionally, a long, long time ago, people regulated their own fishing. It was the elders who told the young people when to fish, where to fish, how much to catch, when to quit, to take what they need and nothing else.* (Wolfe and Scott 2010)

Residents use specific knowledge about techniques for harvesting resources to ensure successful and efficient harvests. Setting nets for fish is a long-used strategy for producing subsistence foods in needed quantities. Users employ traditional knowledge about successful techniques for the specific area where they intend to attempt harvests:

> *Fish nets [at] Seventeenmile Slough, and right on main channel you put a fish wheel. He changes it around all the time, they move it around. I usually go with my brother and take care of my uncles.* (SRB&A 2007)

Knowledge about the best types of gear, such as hooks, lures, and baits, for harvesting different sizes and species of fish is also a necessity for successful harvests. One individual described requiring specific gear types at certain harvest locations:

> *There is a certain place at Old John Lake that's steep and they use this big fish hook (łą'h giiyahnyaa reh, they call it lush hook). That's what they put in the lake. They set it in the water. That's how they get huge fish. If you just put grayling fish hook in the water, through the ice, you will get a small fish. Depends on what kind you use. They put a little whitefish on the hook as bait to trick the fish.* (Gustafson 2004)

Other harvest methods used by residents of the Yukon River Region include the fish wheel, a device that captures fish in rotating baskets driven by the river's current, placed in locations where migrating salmon pass or rest. Operating fishwheels requires specific knowledge about the appropriate locations and conditions in which to place them. One Fort Yukon resident described moving their fishwheel to different locations each year depending on the availability of fish, saying,

> *I set a fish wheel right there. I move it all over. I fish at Twentymile, too…. Right around there and down here. Right there at the long island. [I set a fish wheel in] different places, different years.* (SRB&A 2007)

People formerly used game fences, corrals, and snare lines to harvest caribou, moose, and Dall sheep. These devices haven't been used for decades, but traditional knowledge regarding their use and their association with patterns of animal behavior, habitats, and seasonality persist and inform contemporary hunting methods:

> *Anazhrak's caribou fence is right here. It's around here. It come through Old John Lake down that way and this way, past mountain and down. That's why*

> *they made fence here long ago. They go after sheep from Anazhrak's caribou fence to Old John Lake.* (Gustafson 2004)

> *There are sheep fences on Heart Mountain, and up Junjik River about twenty miles up from here. There is a lot of sheep up that way.* (Gustafson 2004)

Trapping in the Interior requires knowledge about the locations and ownership of traplines as well as appropriate methods of managing resource populations in one's trapping area. Intimate knowledge of particular landscapes is passed on generationally with the user's rights to harvest resources from that territory. Part of that connection is reflected in traditional knowledge about appropriate stewardship of that land as described in harvest quantities suited to the carrying capacity of the land:

> *My father trapped that country before me, and I trapped there all my life. But if you go there now, it's still good ground-still lots of beaver in there, plenty of mink and otter, marten; good bear country. I took care of it, see. You have to do that; don't take too much out of it right now or you'll get nothing later on.* (Nelson 1983)

Residents' methods of tracking and harvesting subsistence resources are also based on knowledge about animal behavior and thought processes. One individual noted the differences in behavioral patterns between the black bear and grizzly bear:

> *The black bear is like a dog; he doesn't care what you're doing. The grizzly is smart. He's hard to find around. I try to get them in the fall. I try to get as many as I can... Black bear, I get one every year.* (SRB&A 2007)

Harvest methods in the Yukon River Region have evolved with the introduction of various new technologies since European contact. These include modern firearms, harvest gear, and transportation methods, such as snowmachines and motorized boats, which allow for quicker and more efficient subsistence pursuits. The use of new technologies, as well as the changing landscape brought on by new technologies, requires the adaptation of traditional knowledge to identify new patterns in resource distribution. As one Yukon River hunter described,

> *Sometimes the moose are there, they're just back there rutting or whatever. If you fly over with a plane, by god you see them everywhere. Late season, late fall, that's when you see them. A lot of people are running up and down the river with their 90 hp motors and they just buzz by the moose, and the moose is off in the willows laughing at them.* (SRB&A 2007)

E6.2.4 Processing Methods

Traditional knowledge regarding the appropriate methods of processing and treating harvested game is a deeply integrated component of culture for Koyukuk and Yukon River residents. Residents of the Yukon River Region depend heavily on runs of salmon returning to spawn. This and other harvests take place at critical times and require immediate processing at the harvest location in order to ensure they can be used later when resources are not as plentiful or localized:

> *I remember, they dry fish there and then we leave and at the same time, they dry caribou meat too. That's where they gather all the time. In those days, we don't stay in one place but in fall time, I remember, we live up there and make a lot of dry meat and fish.* (Gustafson 2004)

Once resources are harvested, traditional knowledge instructs a subsistence user about the proper methods to butcher, process, preserve, and prepare them for later consumption. As one resident of the region described, a number of resources that were eaten together were harvested, processed, and preserved concurrently:

> *They have a lot of stories and they go up there for* dandaih *(bearberry). My mother say there's a lot of it growing on that side or this side. They take those berries and use it for a lot of things. When they catch fish, it is clean and all the guts is taken out. The guts liver is cleaned and with all the fat on, it is fried alone with* dandaih *(bearberry). They put* dandaih *in it. That's why they always go on the side to pick up* dandaih *too, and other side.* (Gustafson 2004)

The effort put into harvesting game sometimes necessitates that multiple individuals besides or in addition to the hunter recover the harvest for processing. Frank Tobuk described his methods of preparing harvested game for retrieval by other community members, saying,

> *When I leave meat out where I kill it, I just clean the guts out and the insides a little. Put some spruce on top of it and leave it. It wouldn't take very long for people to come back and haul it.* (Yarber and Madison 1980b)

In order to harvest and butcher a large land mammal a hunter must possess a suite of skills, strategies, and treatments for the harvested animal that involve coordination and planning between the hunter and his extended kin group. Ritual treatments such as joint cutting are part of the appropriate treatment of a harvested animal, as are more practical concerns, such as how to maneuver the animal, where to process the harvest, how to cool the meat and organs sufficiently so that they do not begin to spoil, and how to treat the hide depending upon whether and how it is to be further utilized:

> *First time I shot moose, Oh, big animal. I hunt with people lots before I was out with myself. I must be about nineteen or eighteen years old. It look pretty big. First thing I do is dig down in snow on one side with snowshoe and tip him over. Tip him over easily in snow. Then cut the head off and cut him all around. Skin him. And cut in every joint. Clean the stomach, everything. Then shovel the snow off in there down to the ground. Put him in there and throw lot of snow in that meat. Cool it off. If you don't throw snow in there it going to get kind of spoiled. Then put the skin over and pile snow on top. Next day we haul it.* (Edwin Simon *in* Yarber and Madison 1981)

Processing activities often require the participation of multiple individuals who act according to expected roles. For example, processing a hide for use in clothing is a complex task requiring the efforts of the individual who harvested the animal as well as his spouse and other family members. Traditional knowledge about processing the hide includes methods for keeping it clean and dry:

> *After they scrape the meat off they turn it over and shave off all the hair. Then if it's cold weather they take it outside and stretch it on the snow. They make holes on the edge and use stakes to hold it stretched out. After it freezes they tip a sleigh over, put the moose skin on top, and scrape it. A bunch of women do that and they get all done in one hour. When its' all clean and just white they hang it up in the wind. Then my mother used to tie it good and put it away in a gunny sack. They keep it clean. If the moose skin gets dirty then it's hard to tan. If it gets wet it's hard to tan.* (Edwin Simon *in* Yarber and Madison 1981)

Once the hide is initially cleaned, stretched, and scraped, a multi-month tanning process is undertaken to treat it for use. Traditional knowledge for this process ranges from recipes for organic ingredients needed to preserve and color the hide, to appropriate temperatures and woods for final treatment using rotten wood smoke:

> *In the spring they start to tan the skin. They got the moose brain they keep in a can for a long time. It gets kind of sour. They put the brains in a washtub or basket with some water and the moose skin. There's just a certain way to do everything and if you make a mistake on that then it's hard time. Some women put moose skin in just one end, and twist it till all the water run out. Then before it dry they hang it up and scrape it with a rock to make it soft. Then they make a little willow fence put a couple moose skin over it, and make smoke under it. Dry, rotten wood. That helps it tan too.* (Edwin Simon *in* Yarber and Madison 1981)

Fats are crucial to survival in the Interior as a source of energy and residents' traditional knowledge about proper methods of processing and preserving subsistence resources often include specific proscriptions for maximizing the extraction of fats and oils. Some resources are elevated in importance despite their relatively small size due to their fat content; muskrat, beaver, white and black fish, northern pike, trout and Arctic char all provide harvestable fats. In addition, many resources are harvested when they are considered fattest. Muskrats are a locally used fur resource and a food source; one individual from Allakaket described processing them as follows:

> *When we start to hunt muskrat, that's good eating for us in them days. We clean it first. And lots of times when it's fat, you just cleanout the guts and leave all the fat inside. Then with willow stick, you poke it through and hang it up by the fire. That fat boils right inside the stomach. It's good that way.* (Moses Henzie *in* Yarber and Madison 1979b)

E6.2.5 Methods of Distribution

For people in the Yukon River Region, the sharing of resource harvests is a critical component of the subsistence lifestyle and the basis of cultural and social organization. Following traditional knowledge about the appropriate times, circumstances, and methods for sharing ensures an even distribution of resources and reinforces social, family, and community ties. There is a strong tradition of moderating resource shortages in the community through sharing. As one harvester described,

> *Kings…like I said, people are having a hard time fishing for their kings sometimes, but we get all we want. There are other families having a hard time fishing, so I share fish with that family, no problem.* (SRB&A 2007)

Athabascans in the region abide by a set of traditional expectations regarding sharing within and between families, moieties (social groups or networks), and communities. The traditional social organization of regional groups revolved around a leader with demonstrated abilities to produce resource surpluses and distribute them to those in need. More recent methods of reciprocity include those where people with more access to cash may provide hunters with tools and supplies in exchange for products of the harvest:

> *That is strength of our culture, to share with elders or those at disadvantage. It is a concept still very well practiced, whether fishing, hunting or ducks or geese. Yeah, [younger generations] tend to share with elders and elders tend to buy them ammunition.* (SRB&A 2007)

> *I share with my elders. Like my godmother, I used her trap line and shared beaver meat with her.* (SRB&A 2007)

Potlatches and other communal social functions are an important aspect of redistribution of harvested resources that cross cultural, language, and family lines. One purpose of these gatherings was to redistribute resources not available in certain regions. Joe Beetus, of Hughes and Allakaket, described such a gathering:

> *I remember when I was little boy in Allakaket we had food parties in the dance hall. Everybody get together, bring their dishes and all the food. Eskimo people bring frozen fish and cut it up right there. And if we got visitors, somebody start making speech. They always thank each other for all the work of getting the food together. Lot of work to go out hunting, go out trapping, and buying groceries.* (Yarber and Madison 1980a)

Because the system of potlatching requires family groups along moiety lines to collectively gather food and gifts to contribute to the public gathering, there are rules about saving resources. Potlatches do not necessarily occur for each group at specified intervals, but upon the occasion of a death, marriage, or a young man's first harvest. The public nature of a potlatch was a traditionally central function of social life for the widely dispersed people of the region and remains important in the region today. Failure to save and provide resources for such a gathering could reflect badly on an individual or group:

> *If you're hungry you can eat it. But if you got other food you got to save it for potlatch. You have to donate it when people come around. That's the way they do. When they bring that fats in the hall, they say where it came from. Who got it. In 1915, the year I was born my mother make potlatch after Leon, my dad. Uncle Billy used to tell me they had thirteen fat in the dance hall. They kill thirteen black bear for that. They make speech about it too.* (Joe Beetus *in* Yarber and Madison 1980a)

Certain foods are of traditional importance and value at potlatches, and one must take this knowledge into consideration when butchering and processing subsistence resources for later consumption:

> *After the speech they chop 'em up and give it to us. When get home we cut it in small parts, fry it and save the grease. We eat that grease with dry fish or meat, anything. In the fall the bear has lot of fat and you can get fat off other parts, but you have to save the main fat from the back for potlatch.* (Joe Beetus *in* Yarber and Madison 1980a)

Potlatching is a means of broader sharing that contributes to extending the web of kin and non-kin relations that allow for appropriate marriage partners, advantageous trading relationships, access to lands and resources in times of hardship, and reinforcement of group identities.

E6.2.6 Social Roles

For the people of the Yukon River Region, social roles support subsistence activities and are based on nuclear and extended kin groups. Social roles are informed by traditional knowledge about one's expected actions, behavior, and relationships. The role of the active hunter, who provides not only for his own group but produces surplus for others and provides tutelage for soon-to-be producers, is a crucial one for continuing the subsistence way of life:

> *I may go out the first day and harvest my moose, then in a couple days get my mother's [moose]. And a lot of my friends don't have boats and snowmachines and stuff, so I take them. I enjoy helping people. Like…my neighbor, my buddy, I took him out this fall. It's not all just my harvest, I guess [it is] a community harvest.* (SRB&A 2007)

> *We camp a lot; my dad is a die hard, so what my dad does, we have to do. It's a lot; it's hard to pack out and everything. But you've got to stay up for days hunting geese. My dad kind of hunts for the whole village.* (SRB&A 2007)

Social roles such as the one described above are often passed on to family members, with the following Beaver resident indicating that he has taken on his father's responsibility as a community provider:

> *I do more for the community now than 10 years ago. My father's no longer here, he was here 10 years ago. He helped harvest for mother, sisters, more of the family. Now I've taken that [responsibility].* (SRB&A 2007)

Social roles are frequently based on gender. Women are often considered the owners of the fish camp and strongly identify with the role of fisherperson. They are often the ones responsible for overseeing fish camp activities, including harvesting and processing of the fish. As two women of the Yukon River Region described,

> *Oh yeah, I'm a fisher – fisherwoman. We have a little camp like two miles down [from Beaver].* (SRB&A 2007)

> *[I use] my mom's fish camp. We have a fish net right there [in the Yukon River], right there [pointing on the map], and right there [in Hodzana Slough]. Three fish nets.* (SRB&A 2007)

Women's roles in other harvests and subsistence activities are still governed by traditional knowledge, although to varying degrees. Women were traditionally not to harvest, touch, consume, or even look at certain kinds of large land mammals lest some essence from the animals affect them or their children or the contact cause bad luck for the harvester. Some women in the region continue to observe such traditions. As one individual described,

> *I can't eat [bear] until I'm married or have a kid…. That's a Native thing, tradition. I don't go; I can't even go around a bear when it's killed. It's bad luck. It's just Athabascan traditions; I don't know what it is. But that's why my dad and my brothers won't let me eat bear. It's just part of the tradition.* (SRB&A 2007)

Another important social role in Yukon River subsistence societies is that of the teacher. Passing on traditional knowledge about the appropriate methods of hunting, harvesting, processing, and distributing subsistence resources is key to the survival of the subsistence lifestyle in rural Alaska. A father's role was to teach his children basic subsistence tasks, however, because of the moiety system in use by Athabascans of the region, his children were to be taught important subsistence tasks by and would inherit the territory of the mother's moiety. The mother's brother or father was traditionally responsible for advising a young man on the necessary skills to become a competent subsistence harvester. Moses Henzie of Allakaket described following his grandfather to learn the subsistence way of life:

> *I hope people don't forget how to make that fish trap. That's really important. Someday we might have to use that again. I think I could make one easy. How I learn is with Billy Bergman. He's my grandpa. He told me go with him, with canoe. We just travel in summertime. We go back little ways in mouth of Oldman River. He never even say what we're gonna do. I just have to watch. Pretty soon he go tie up his canoe on the bank. I get out too. Then he takes his axe out. Big axe. He tell me to cut that tree down. Good tree. I don't even know what he's going to make, but I see him take out his wooden hammers. Hammer just like I use now for making snowshoes.* (Yarber and Madison 1979b)

E6.2.7 Changes over Time

Residents of the Yukon River Region use traditional knowledge about the physical and biological environment to detect changes in their environment as well as in the subsistence resources that inhabit their region. Residents' traditional knowledge not only informs their subsistence activities but makes them particularly sensitive to changes that affect these activities and uses. Two resources upon which Yukon River communities rely are salmon and caribou. Yukon communities have expressed a number of strong concerns about changes to the caribou herds harvested by people of the upper Yukon and Porcupine rivers. Traditional knowledge has informed current productive hunters about perceived changes in caribou condition, behavior, and distribution that are sometimes attributed to disturbances taking place beyond their immediate locale.

> *And when our Elders telling us when we were kids, you know, they tell us don't let the caribou get disturbed. It's shown now that our caribou is getting disturbed. And when I heard -- I talked to the Elders about what I ought to*

> *do, I said what's happening, because our caribou don't come back. They turn around. They went back to Canada. I believe they're getting disturbed and I'm still following my grandfather's words and my Elders. Our caribou is getting disturbed. Our main issue is our caribou. If we don't see caribou, we don't see meat.* (John Erick *in* EPA 2002)

Knowledge about migration patterns, including the expected timing and route of caribou's seasonal movements, is necessary for successful harvests of these resources. When the caribou do not arrive at the expected times and in the expected places, residents must alter their hunting patterns:

> *They have been crossing further on Canadian side in last three or four years. There used to be a lot here [Canyon Village area]. Now just a few there. I think it is their feeding pattern, because one spring they came all the way to Twentymile [25 years ago], and so they are wherever the feed is.* (SRB&A 2007)

> *For the last couple of years they've been coming about a week or two later; that global warming, I guess. Since that hit, they're lagging back about a week to two weeks.* (SRB&A 2007)

As processers and consumers of subsistence products, residents in subsistence-based communities are keenly aware of changes to the taste, fat content, and health of resources. One individual noted a perceived change in the quality of caribou since his youth, saying,

> *Even the caribou is way different then as I remember as younger. Every fall, the caribou had about two inches thick layer of fat on them. Now when they come back, they don't even have nothing. Some of them are puss. There's definitely something needs to be done.* (Gustafson 2004)

In addition to direct changes in resources, residents of the Yukon River Region have noted changes in the physical environment and in the climate. These observations are particularly common when the changes affect subsistence activities. There is a broad consensus in communities of this region that warming temperatures have occurred recently and that these temperatures are having an adverse effect on subsistence practices. Residents frequently compare current conditions to those from their childhood or to those described to them by their elders:

> *The weather has definitely changed since I first moved here. We would have 85 below and then gradually it got 75 below and then it was 65 below and now in February it got 60 below one day, and there is a big difference. And every year it seems to be getting warmer and our cold weather seems to last shorter. This year it came later; usually [the cold weather comes] after Christmas, but this year [it came] in February. Sixty below in February, in 1970, was nothing, but in 2007 it is like 'Whoa, what is this?'* (SRB&A 2007)

A major effect tied to warming and cited frequently by subsistence users is the hydrological effects of the loss of permafrost, which formerly filled the river valley basins and retained surface waters, creating vast seasonal wetlands that served as waterfowl, furbearer, and moose habitat. Residents rely on the health of these habitats to produce abundant resource bases. Two individuals described the effects on lakes and wetlands as follows:

> *I think the air temperature is getting warmer. That's what I mean. Lakes have drainage. All that is drying up so the lake drains out. All the lakes are getting ruined around the surrounding area. Old John Lake is very important lake. There are many changes. It's not too cold in winter. It's very warm nowadays. Very different, the weather is changing, I think. That's what I'm saying, the permafrost is thawing and draining the lakes out.* (Gustafson 2004)

> *Noah's lake dried up. This one we found dried up too.* Luk vagarah'aii *dried up too. Airport Lake that dried up too. I don't know what is going on. I don't know.* Luk vizhit agarah'aii *had fish in it. Look lake too. Hoah's lake was good for muskrat. It went bad.* (Gustafson 2004)

Changes in the lakes, sloughs, and tributaries of the Yukon have resulted in adverse effects to relationships between the people and the land and resources they are part of and rely upon for sustenance. An increase in certain species in the region, particularly, beaver, are a cause of concern to residents of the Yukon River drainages. Beaver dams are blocking waterways and resulting in decreased productivity in traditionally used areas:

> *Beaver: There used to be a place back here when you just put a net across the creek and fish come out and we would catch pikes. But since there is low water there is hardly pikes in there.* (Koskey and Mull 2011)

> *You know they used to go along these water streams and they used to cut and keep them open—the beaver dams—and allow the fish to come out. But people don't do that anymore; they clean it out and that is why the water is so low. In the early days we used to catch a lot of fish even in winter and fall time, like in September the fish come out of there. And all of these sloughs are all connected but now it looks like it's going out the other way. The water is cutting into different sloughs and are draining out in different areas.* (Koskey and Mull 2011)

> *Where I used to have fish trap was right there in Fish Creek. They [whitefish] just go right inside that, fill up in no time…fall time. Now, after so many beaver dams, fish don't run like that anymore. When we used to have dogs, everybody used to trap beaver…..nowadays when we have snogo, we catch a few beaver all right, but not like old days. There used to be no beaver around here when I was small. Since around 1940 the beaver start to grow up around here*. (Andersen 2007)

E6.3 TANANA RIVER REGION

Sources of traditional knowledge for the Tanana River Region include a number of published oral histories and ethnographies, including, Thomas (2005), John (1996), and Yarber and Madison (1983, 1986a, 1986b). These documents include traditional knowledge from residents who resided in the Tanana River Region, including Tanacross, Tanana, Minto, Dot Lake, Tetlin, and Big Delta. Various additional publications funded by federal and state agencies provide subsistence use and ethnographic data based on traditional knowledge for communities of the Tanana River Region (Andersen and Jennings 2001b; Andrews 1988; Betts 1997; Haynes and Simeone 2007; Simeone 1995; DOI, NPS 1994;

Shinkwin and Case 1984) but are not direct sources of traditional knowledge from residents of the region.

E6.3.1 Use Areas

Residents of the Tanana River Region have described using the subsistence hunting and harvesting areas of their ancestors, areas which were chosen based on the abundant seasonal availability of multiple resources. Particularly important to the inhabitants of this region were areas where both fish, a key resource of the region, and terrestrial resources, including moose, caribou, and Dall sheep, were accessible. Places that had suitable access to subsistence resources at different times of the year were often the sites of traditional camps. One Tanana resident described a traditional camping area used by multiple families, which was in an advantageous location for harvests of fish, moose, furbearers, ducks, and berries:

> *My father in law, Adam Minook, had a camp right across from Kallands. It was a good winter and summer camp. Good year round place. We fished there some summers and trapped there. There was a log tower and we'd watch the lake. Watch the moose feeding back there, hours at a time. Lots of ducks back there too. We used to go with a canoe and maybe shoot three or four. We have our meat that way. After a while you get tired of fish every day. Then duck soup really tastes good…. Quite a few camps around Kallands in the 40s…. When we wanted to go berry picking we just go to the next camp and ask who wants to go. We used to go down in Mason slough for blueberries. Right below Tom Butler's camp. Now we call it John R.'s camp but he's dead too. We pick low bush cranberries in the slough right below our camp. And salmon berries behind the cabin, but they say it's all overgrown now.* (Josephine Roberts *in* Yarber and Madison 1983)

More permanent villages or camps were often chosen based on their proximity to fish-bearing drainages, fish being the most reliable staple for residents of the Tanana River Region. Al Wright, a resident of Minto, described the reasoning behind many Tanana River settlements as follows:

> *They'd have a big fish trap and catch salmon. Take it easy all summer. Then come fall they'd pack up their gear, each family, and head out. Take what they could with them and try to make a living through the winter…. That's how those caches in the Minto Flats got built. It was a place everybody gathered in the spring to catch fish. They'd put in a weir across the creek and the whole village would come there. They'd catch fish in a cooperative effort and put them away. If you'll look at any village in the country you'll find that they stopped where they can get fish. Because they could always depend on getting fish. Other game would be scarce a lot of the times but they knew they could get fish.* (Al Wright *in* Yarber and Madison 1986b)

Athabascans from the Tanana River Region also relied on traditional knowledge about the seasonal movements and habitats of subsistence resources in determining where to hunt.

Kenny Thomas described hunting caribou in a particular area during their fall migration into Canada, when the caribou were both healthy and abundant:

> *About fifty miles from here, the Big Hill. Anywhere from the Big Hill all the way to Long Cabin. That's another fifteen miles from Big Hill. Anyway, why we all move up there in August when the caribou start moving back to Canada. Anyway they are in really good shape and we pick up twenty to twenty five caribou maybe for the big family. Well, they do as much as they can anyway, and at the same time while they are drying meat they can pick berries there too. And that's what we put up.* (Thomas 2005)

Thomas went on to identify a mountain where Athabascans from the region traditionally harvested Dall sheep; the mountain was named and chosen based on the presence of a salt lick where large quantities of Dall sheep would congregate. He described,

> *Up here on the mountain. We got sheep up here right now today. But there's a law for that. We can't do that no more. We got place down here they call Sheep Place. People used to go there all the time. In my Dad's days, they kill it with a bow and arrow. Anywhere from thirty to forty sheep come through that place where they lick salt. They call it,* Ch'entaaga. Ch'entaaga *is a place where all the animals go for the salt. When a whole bunch of sheep come there, then the people get behind it, get over the hill.* (Thomas 2005)

Residents also choose harvest locations based on differences in the quality and abundance of subsistence resources. The taste and quality of a resource may vary based on factors such as the drainage from which it is harvested, its feeding habits, geographic range, health, or energy expenditure. Residents may prefer resources harvested from a particular location for various reasons. Josephine Roberts of Tanana described using such knowledge when fishing for salmon, saying,

> *For some reason the kings that run on the north bank are much richer than those on the south bank. So most people try to fish on the north side for the kings. Then in the fall we switch to the south side because dog salmon run so much heavier there. My father still has his camp there to this day.* (Yarber and Madison 1983)

E6.3.2 Seasonal Round

The timing of subsistence activities in the Tanana River Region is guided by knowledge about the availability of key resources in seasonally accessible places. Appropriate conditions for harvesting and processing subsistence foods are also taken into consideration when choosing the timing of subsistence activities. One Tanana resident described the various seasonal activities that she engaged in during her younger years. She described how her family would harvest multiple resources at a time and then process those resources before moving on to the next seasonal activity. Spring muskrat, fish, duck, and beaver hunting was followed by processing of the furs and meat, which was followed by the summer and fall fish harvest. Each subsistence activity helped sustain the family through the following season:

> *Springtime we have to go to spring camp to hunt muskrats, ducks, and beaver. And fish. Then we have to take care of it. Cut fish and take care of meat. Pluck all the ducks, dry it, and salt some in rock salt. And, boy, skinning muskrats is work! But after a while you to be expert even though you are young. When I think about it there was nothing else for us to do anyway. For me, anyway. Just help my folks…. After muskrat hunting we get back to Galena and get ready to go fishing. We had two camps. The first one was at Old Louden. We stayed here from June till August. Then we go to our other camp just above Galena on the south bank [for salmon]…. In the fall when the ice is not too thick we; put our net under the ice for whitefish.* (Josephine Roberts *in* Yarber and Madison 1983)

The quality of subsistence resources varies depending on the season in which they are taken. Subsistence harvesters from the Tanana River Region use this knowledge to time their subsistence harvests. Knowledge about the annual cycle of different fish and wildlife species informs the best time to harvest them. Moose, for example, are not harvested during the fall rutting season when their taste is strong and undesirable. Resources are often preferred when they are fat and are therefore harvested at the end of their peak feeding season. Some fish resources are more desirable when they are full of eggs prior to spawning, the timing of which varies by species. Certain subsistence products are derived from a particular organ or part of an animal (e.g., liver, fat) and therefore the animal is harvested when that part of the animal is best. Two residents of the Tanana River Region provided the following examples of using traditional knowledge to determine the most desirable time to harvest certain resources:

> *It's really good to see all the, with fish coming out of the net. Fresh fish. Fall time is good because we get fish eggs, too. Lush especially is good. That's the only kind my sister Angela likes.* (Josephine Roberts *in* Yarber and Madison 1983)

> *And then in the fall time, late in the fall, my Dad and them goes out for bear. Just [for] tallow, you know…. Anyway, why my dad hunted bear in the fall time, just for that tallow, for the fat. And what my Mom does, is she cut it up in small pieces and she fries [it] and makes grease, and that what she takes, is grease. She mix that up with berries sometime and most of the time we eat it with dry meat and stuff like that.* (Thomas 2005)

Hunting and other regulations enforced by federal or state agencies sometimes conflict with residents' knowledge about the best time to harvest a resource. One individual from Minto noted such a conflict with moose hunting regulations and traditional Athabascan potlatches in the 1980s. He observed,

> *Carlos Frank shot a moose for a potlatch out of season. I think it was stupid of Fish and Game to arrest him for that. People have been getting moose for potlatch ever since time started. Course when they make a law, I guess you're supposed to live by it. But if there's a potlatch I don't care how many laws the government makes they ain't going to stop people from going and getting a moose. All these laws are made for a purpose, I'll grant you. But when you try to change somebody's way of life with a law, that ain't going to stop them from doing something.* (Al Wright *in* Yarber and Madison 1986b)

E6.3.3 Harvest Method

Tanana River Region traditional knowledge about harvest methods included the proper tools to use for various subsistence activities; the proper methods of using those tools to ensure an efficient and abundant harvest; techniques for finding and successfully harvesting subsistence resources; and appropriate treatment of an animal before, during, or after the harvest.

Kenny Thomas, Sr., of the Tanacross area, described his time as a trapper. He used knowledge given to him by his elders, as well as his own observations of animal behavior, to develop successful trapping techniques. He described,

> *At that time I found a place where this thing goes back and forth, this marten. As I go I'm setting traps up that creek…. I went about halfway up and gee whiz, I'm missing something and I don't know what in the heck it was. Ahhh, all of a sudden [I remembered] David told me, "Build a smoke. Some kind. Build a smoke." I see a dry spruce limb. I got a whole bunch of 'em together and I put matches [to it]. It don't have to be on the ground; [you can] put it up in the tree and put the fire to it. And what that does is the marten get the scent of that. Then they go look around for it. They go back and forth for it. They travel to find out what the hell it is…. So I remember that, and that's what I did. That's what I did in two places, that first time [trapping]. And I went home and on the way back, I already got one marten in my set. Gee whiz, I was all excited, and the next day I went back and got three.* (Thomas 2005)

Thomas went on to stress the importance of learning hunting and harvesting techniques from one's elders.

> *That's the way it goes. If you listen to the elders today, you'll get a hell of a lot farther. If you're trying to do things on your own you'll never get anywhere. What can you use? The people that talk to us, the elders that talk to us, they already have the experience that they're going by.* (Thomas 2005)

As illustrated in the above quotes, residents use knowledge about animal behavior to attract game to harvest locations. Both Peter John and Kenny Thomas, Sr. of the Tanana River Region described using specific techniques for calling wildlife:

> *During my days, during the seasons like this is when moose is start running, looking for one another, mate. When I go out what I'd use is a shoulder blade, the shoulder blade [scapula] from a moose. It's about yay long and about that wide [gestures]. I use that all the time to call them in. I get their attention by doing that. If you go down like this, then they wouldn't know [gestures downward]. What you do is, you go up, like that [gestures upward]. Up, all the time, up, when you use that shoulder blade bone. You use it to go up. If you go down this way they'll hear it different.* (Thomas 2005)

> *When I first learning hunting I went with other people. I could look at them. See them, and do what they try to teach me. I understand it, then I go out alone and do it…. People tell me how to call animals so I copy it and do it.*

> *My wife was with me once at a big lake, wintertime. We see a fox way over on the other side. I tell her to sit behind some grass and watch the fox. I went over in another little patch of grass and sit there. I start calling him. I went over in another little patch of grass and sit there. I start calling him. He lift up his head to me. He listen. Finally he started to jump. All the way across the lake. Come right up to us. I shot him. I just use a little squeak like mouse. He can hear it that far.* (Peter John *in* Yarber and Madison 1986a)

People of the Tanana River Region have developed various different methods and tools for harvesting fish, a major staple of the region. Methods used by contemporary residents include fish wheels, dipnets, set nets, jigging through the ice, and rod-and-reel. Josephine Roberts, of Tanana, described specific methods for harvesting whitefish under the ice during the fall:

> *We take a stick about twenty feet long and tie a rope to one end. Then we chop holes about fifteen feet apart and push the stick under the ice from hole to hole. Four or five holes anyway. That way we get the line stretched fifty or sixty feet. When we put the net in we have to hang it kind of low so it wouldn't freeze to the ice.* (Josephine Roberts *in* Yarber and Madison 1983)

As noted above, the proper and ethical treatment of subsistence resources according to Athabascan values is necessary for successful harvests in the future. Vitt (1971) cited Oscar Isaac of Tanacross, who provided the following observation of appropriate actions taken after a successful moose harvest:

> *After a moose was killed, its ears and head skin were placed high in a tree to give thanks to its spirit and to insure future hunting success.* (Vitt 1971)

E6.3.4 Processing Methods

Methods of processing subsistence foods are based on traditional knowledge about how to properly butcher an animal, preparation of traditional foods, the uses of different subsistence products, and traditional times and places to consume subsistence foods. Oscar Isaac of Tanacross provided a detailed description of the traditional methods of processing moose into subsistence foods. Methods of butchering the moose focused on avoiding contamination of the edible parts of the animal:

> *The moose was laid on its back or side on a slight natural incline and skinning proceeded from the throat area down to the groin with cuts extending to each knee joint. The hide was then stripped with the meat kept on it to prevent it from being soiled by dirt or hair which taints the meat rapidly. Next the head was cut off at the joint where it is attached to the body. The body was placed on its left side and the meat dissected from along the back and ribs-this produced the brisket and rib cuts from one side. The animal was then reversed and the same cuts taken from this position. The stomachs were carefully taken out being careful not to cut into its contents. The windpipe was cut close to the throat and along with the intestines were [sic] washed, taken out and set aside. The windpipe was discarded while the intestines were washed, cleaned, turned out and hung to*

> *dry. Later they were rendered out for their fat content. The stomachs consist of three separate digestive systems; all three were cleaned and saved with the third or last stomach later used to store grease.* (Vitt 1971)

Isaac also described how different parts of moose were prepared, which parts were favored, and noted that consumption of certain parts of the moose was limited to particular situations or people:

> *The fat around the kidneys was carefully put aside to be later rendered into high-quality grease for cooking. The heart, liver, stomach linings and large intestines were prepared by roasting. The lungs were not eaten unless a period of starvation was present…. Favorite portions of the moose were the head, the ribs, the marrow, as well as the embryo. The head, with all its parts, was the most favored and was reserved solely for men-it being taboo for women unless she was old and could have no more children.* (Vitt 1971)

Traditional knowledge about processing includes knowledge of the edible and non-edible parts of an animal, areas with large quantities of meat and fat, and parts considered delicacies by elders and other community residents. Much of this knowledge informs contemporary practices. Kenny Thomas, Sr. described a traditional preparation of moose that is still practiced by the residents of the Tanana River Region.

> *You wouldn't believe this, but [Indian] people when they get a damn moose they don't waste nothing. They even take the skin in them days. They take the head. They take all the eyes. They eyeball they take it out and throw it away. But what's behind that eyeball, there's a lot of fat in there. And there's a lot of meat on the jaw and back here [gestures], and all that tongue, and they chop it up into small pieces. And same thing with the nose. They throw it in the fire and then burn it and scrape it and clean it up good. Then they slice it. Then they dice it up, and they throw it together, put it together like this. That's what you call a moose head soup nowadays. You heard about it.* (Thomas 2005)

Processing of subsistence resources is frequently described as part of the seasonal round, as climate and other environmental factors are important considerations in preparation of certain foods or products (see Section 6.3.2, Seasonal Round). One Athabascan provided the following descriptions of traditional processing methods as they pertained to his seasonal round:

> *This spring, I stay in my dad's camp, Last Tetlin. Ducks are coming in May. June time, fish run, we dry fish, moose, caribou, all year. Caribou are coming back springtime. We make dry meat for winter. Better [to make dry meat] in August time. In September, it's too late-too cold…. Roots, we get in September, October.* Ts'u *root, take off and leave for winter by this time. This woman, she gave us that* Ts'u, *cut it fry in grease, keep for winter, taste sweet and good…. Fall time, October, we get fish at Last Tetlin. Fish grease we use for some berries. Wintertime you use fish grease; summertime you cannot; it tastes something; you got to let it in a fresh place. Wintertime, we trap,* q'indak, *birch bark; they leave berries in it. They don't use caches [made of logs] like now, but they dig big holes, make clean inside with bark.*

> *They leave food in there, berries, grease, everything,* Tc'ician*, marrow, my mom use to take that* tc'ician *out, put in bag. Then they take dry meat, put inside; we eat it wintertime, all good…. Rotten fish, they do that too. Good for old time people; my grandma, my mother's mother, used to do that. By this time, September, they clean fish, put in cache in ground. Take off October time, make grease with that thing' save it for winter.* (Guédon 1974)

E6.3.5 Methods of Distribution

Sharing is an integral part of the social and cultural identity of the Tanana River Region. Methods of distributing subsistence foods are based on knowledge of social networks within one's community, region, and beyond; and the times, ceremonies (e.g., Tanacross potlatch [Simeone 1995]), and situations, during which Athabascans are expected to share. David Paul, from Tanacross, described the importance of knowing one's kin in determining how one interacts with others, including interaction through sharing:

> *My mother and father almost the same tribe [clan], not quite, but I belong to my mother's people. All children belong to mother's tribe [clan]. Young people must know these things to know who are his friends; who fight with him in war; who he must give meat when hunger come; and who he can marry.* (David Paul *in* Haynes and Simeone 2007)

Sharing is not limited to kin, but also occurs between friends; hunting or trapping partners; and between those who are fortunate and those who are less fortunate. As one Athabascan man observed,

> *We have to be proud about, like Gene [Henry]. He is our friend, Indian way* sch'leng*. We are not supposed to talk against* sch'leng*. We really trust the* sch'leng*. Really proud about the friend in Indian way, trust them, treat them right. Happen if they comin' in our village, our trap line we give room to stay, if he got dog with them, got to feed that dog too. This is one way, Indian way, Indian, Athabascan Indian really proud about trust their partner. Don't talk bad against it [the partner]; don't treat bad, take care of them.* (Simeone n.d *in* Haynes and Simeone 2007).

The potlatch is a traditional Athabascan ceremonial feast that is centered on the concept of sharing and healing the community. Potlatches follow strict rules about giving, including what residents should share, and with whom they should share these things. Kenny Thomas, Sr., provided the following description of methods of distribution according to the potlatch tradition:

> *What we do, is when someone had died, we just put them away. We bury them. Then we give away what we have. Lot of people will donate. My relations will donate stuff to me. If my brother died or something like that, people related to me will donate to me. I'll give [my brother's possessions] to the people. It's a gift. Sometimes we have to give to our own relations, but we have to tell them that you got to use this as the* "kaii" *[gift].* "Kaii," *they call it. Just like my gift to you to remember [the deceased] by….The first gift is, sometime we give to my relation. If my brother or sister died, then I can give some to my relation, but I have to use this to tell them, "Take this as a* kaii*."*

> *It's the only way…. In potlatch you can't do that. No* kaii *in potlatch."* (Thomas 2005)

In Thomas (2005), Mishler noted the importance of adhering to traditional knowledge about proper distribution methods among Athabascans of the Tanana River Region:

> *Only a few elders, such as Kenny, have a detailed knowledge of kinship and family history. This knowledge allows them to advise persons about what gifts should be given and to whom. Many rules must be strictly observed before, during, and after the potlatch, and any mistake in protocol can be disastrous and lead to hard feelings between relatives of the same or opposite clan…. Potlatches that are done correctly help to heal the family and the community, especially following a death or recovery from a major illness.* (Thomas 2005)

Simeone (1995) also noted the importance of distribution as evidenced in the potlatch among Tanana River Athabascans as being an integral part in reinforcing Athabascan identity:

> *Through singing, dancing, oratory, and the distribution of gifts and food, people also show their love and respect for kin who form a web of relationships extending far beyond the immediate family and village. In this respect the central act of distribution is a key symbol of resistance. By continuing to distribute accumulated goods, Native people maintain a distinct image of themselves in opposition to what they perceive as a self-centered and non-reciprocating white society.*

E6.3.6 Social Roles

Athabascans of the Tanana River Region have traditionally adhered to social roles that influence subsistence activities, including the hunting, harvesting, processing, consumption, and distribution of subsistence resources. One of the central social roles in traditional Athabascan communities was the chief, who was instrumental in organizing and supervising subsistence activities and ensuring that others in his village or clan did not go hungry. Two residents of the Tanana River Region described the traditional role of the chief as follows:

> *Old Chief Healy, I hear story. He was living yet in the country when I was growing up. When his family eats, he does not eat. He eats all by himself.... His wife cooks for him special way. Poor looking clothes, hard working. He goes out hunting, moose, everything. All hard works. He hunts fish, ducks, all kinds; he kills rabbits, cuts spruce tree, puts them in cache. When poor people, he just gives away to them. Lazy people got poor living. Only certain day, one day, he (Chief Healy) dresses good; maybe once a year. Puts on all rich clothes, walks around. Sometimes, he would look for the whole village. That's the only time he would dress. Also when potlatch, 3 days.... walks around, does nothing, visits friends* (Guédon 1974).
>
> *When people start being hungry, the "boss" go out, he talks. He let them know where to go. One hunter goes, let the chief know where he goes; next one, next other one. Some men, two, three, they go before daylight. They all go, but they scatter around someplace. What way they gonna take to*

> *come back, they let him know. Also, who shoots, he'll be there. He knows; he watches over. Then they all come back, but one is still gone. They check around again to find him. They know each other* (Guédon 1974).

Kenny Thomas of Tanacross described his grandfather as having a role similar to that of an Athabascan chief:

> *Everybody helps everybody at that time. They were good people; people were really good. What my grandpa and the people whoever were head of the people, they watch whoever is getting all the fish down there [at the creek], and if this person gets enough fish, why they'll tell the next person to go down and fish. And [when] he gets enough then the next person will go down and fish. That's how my grandpa and them-Annie Denny's Dad is my grandpa. They called him, Old Sam, old Moses Thomas's Dad. Well them boys I guess were the head of people. My grandpa was the head of everybody. He is the head of all the people.* (Thomas 2005)

In addition to specific social roles as described above, one's relationship with another individual (i.e., are they direct kin? Are they part of the same clan? Are they from opposing clans?) determines how they should interact (Thomas 2005).

E6.3.7 Changes over Time

Changes that have been noted by residents of the Tanana River Region in the available literature include decreased or increased wildlife populations; changes in water quality and river and lake depths; and altered distribution or migration patterns among subsistence resources. Observations of change are possible because of residents' longstanding relationship with the land; residents either observe changes based on their own experiences (e.g., comparing current conditions with earlier memories) or based on their knowledge about how things used to be, as described by elders.

Al Wright of Minto described changes in the Minto Flats area, including decreasing muskrat, fish, and duck populations, in his view related to discharges from mining activities. His observations were based on knowledge about the habitat needs of these subsistence resources:

> *There used to be a big rat population in Minto Flats. I hauled five or six thousand skins a year out of there. Now they get maybe three or four hundred. Mining contributed a lot to the downfall of the rats. They poured mud into the Chatanika and Goldstream and it just filled up the lakes killing off the feed. They're still dumping that mud in there…. All that silt has a tremendous effect on the ducks and muskrats. Beaver are doing good because they move around quite a bit and they [like] willows so it doesn't bother them. Actually it's good for them as long as they got enough water to build a house. But for the muskrats and waterfowl it is a different story. Silt destroys all their feed. Lakes fill in so the muskrat grass takes over. Then the lakes shallow up and freeze to the bottom so the muskrats freeze out. Some lakes that used to have fish in them are barren now because the fish die from lack of oxygen. Naturally this affects the people in Minto a lot. It means there is less food.* (Al Wright *in* Yarber and Madison 1986b)

In addition to changes in resource abundance, subsistence users are also keenly aware of changes to the quality of subsistence resources, including changes in the health of subsistence resources, their taste and appearance, and the texture of the meat and other organs. Kenny Thomas, Sr. reported long-term changes in the quality of caribou since his earlier years, saying,

> *Yeah, long time ago that is the only way we made a living up here about fifty miles, where the caribou used to go across all the time, same route. They come and then they come back in August. Gee whiz, them things is fat. Caribou has fat on their back about that thick [gesturing] and you don't see that no more! No more that kind of shape of caribou.* (Thomas 2005)

Local observations of changes in the physical and biological environment can be useful to federal and state agencies when making game management and permitting decisions, as well as in understanding subsistence harvest and resource population trends. A survey of the 2000 harvest of migratory birds in Upper Tanana River communities (Andersen and Jennings 2001b) reviewed comments from hunters on project survey forms and noted that almost 50 percent of the comments noted poor hunting success caused by high water conditions. Residents' observed waterfowl were unavailable or less concentrated in traditional hunting areas. Their comments included the following:

> *Terrible year. Too high water and ducks too far back for us to get to them.*
>
> *No ducks where we usually go – water too high.*
>
> *High water, so no concentration in one area, so hunting not as good this year.*
>
> *In some areas like Northway, there seemed to be fewer birds – wondering why. Could it be the two most available lakes are being flooded out by river water?* (Andersen and Jennings 2001b)

The comments provided useful context for the reported harvest numbers in 2000 and highlighted the limitations of using a single year of harvest data in making regulatory decisions.

E6.4 COPPER RIVER REGION

Copper River Region traditional knowledge is available in the form of reports produced by federal and state agencies and oral histories recorded by anthropologists and linguists working with Native peoples in the region. The ADFG, Division of Subsistence, has worked cooperatively with the FWS, OSM and the Wrangell-St. Elias National Park and Preserve to record traditional knowledge regarding local uses of salmon, non-salmon fish, and large land mammals.

E6.4.1 Use Areas

Key areas for intercepting seasonally abundant resources at appropriate times for harvest and processing are based on direct and transmitted knowledge of the environment, have prehistoric and historic roots, and continue to be significant to harvesters today. Four regional groups divided the Copper River Basin in the past, and the reciprocal connections between bands in each of these areas exist today in the form of game-sharing, familial relationships, and land access privileges (Simeone 2006). In the past each band had a community-recognized hunting territory; some rarely had caribou and moose in their territory, relying more on Dall sheep, while other areas had both migrating and resident caribou. As one couple observed, "Each village had to go different place; had own hunting ground," (Joe and Martha Goodlataw 1968, *in* Simeone 2006).

Perhaps best known today are locations where salmon are harvested in the Copper River by dipnet or fish wheel. Traditional knowledge of salmon and non-salmon fish movement, behavior, habitat needs, and run-timing as well as strategies for efficient harvest logistics are crucial to successful harvests. Copper River salmon are important in the Copper River Basin and in neighboring areas like the Upper Tanana with poorer salmon runs. Fish camps are focal points of staple food harvests, storage places for preserved food and goods, and geographically central to the array of subsistence resources available for harvest.

> *Any time you see any Indian village over here, you gotta see, maybe just 100 years 200 years. Just as long as they get food, some kind a fish. Where they get fish easy, that's where they always stay.* (Fred John Sr. in Simeone and Kari 2002)

Wallya Hobson described this from her experience, noting the need for clear freshwater when choosing a village and fish camp location:

> *Across the river from Lower Tonsina, that's where grandparents used to fish. All the villages were along the river and right near the creek. You have to have the water nearby because people don't have a well, you have to have way to get water, so that way don't have to have (separate) fish camp. Just right in your own village.* (Simeone and Kari 2002)

Fish wheel locations are often former dipnet locations, typically at eddies where clear streams enter the sediment-filled waters of the Copper River. These eddies concentrate food for non-salmon fish and provide rest and staging areas for migrating salmon. These prime locations are recognized by the communities as owned by certain families:

> *Fish wheel locations belong to the families in the area. This fish spot down there where my mom's place is, they used that fish wheel area until the '80s, maybe '90s; Dad, of course, got too old. My brothers used to build the fish wheel with some of the people from here, in the village here, and then they'd put a wheel in and then share with family they put the wheel in with. For the last several years now, mom's been loaning that area to the village to use, but everyone still respects it as her place.* (Pauly Jerue *in* Simeone et al. 2007)

Different locations were perceived by users to have different runs of salmon with unique qualities. Harvest locations and efforts are chosen to take advantage of these perceived qualities, which could include fat content, suitability for processing, and suitability for harvest by available means.

> *That's a last one. At the very end. She [Katie] say, it's bigger, it's fatter, and it looks little bit different. They were like, no, there's no species like that. And, they kept that weir in late in the season and sure enough Batzulnetas fish hit. And the other thing though is that the elders down this way, they catch fish in their wheel, they know where those fish are going to spawn.* (Kathryn Martin *in* Simeone et al. 2007)

Users in some areas of the Copper River Region distinguish between migratory caribou and resident caribou; barren ground caribou (*Rangifer arcticus*) and woodland caribou (*Rangifer tarandus*) (Simeone 2006). These caribou are available at unique places and times, and, like the salmon, are believed to have different qualities.

Use areas are tied to traditional knowledge about the habitat needs of subsistence resource species. Large land mammals are hunted away from the Copper River, with Dall sheep and some caribou in the higher mountains. Caribou and moose also live on the plateaus above the drainages (Simeone 2006). Knowledge about locations of mineral licks are important when harvesting Dall sheep, both for their availability and quality. As one resident of the region noted,

> *...but we had, they said the sweetest sheep came from [areas near] salt licks. The same thing over towards McCarthy there's, some place over there and over in White River there's another [salt] lick of some kind where they said they're a delicacy, they were prized for their taste.* (Wilson Justin *in* Simeone 2006)

Knowledge about caribou migration routes and feeding areas also inform where residents of the Copper River Region harvest this resource. Caribou are an important source of food and hides, with some reporting having seen thousands at places like Crosswind Lake, Sanford River, and Mount Drum (Simeone 2006).

Knowledge of where animals may go in response to predators, sport and other hunting activities is also important to successful harvests:

> *They never had been around. Most of the sheep in our area, which is Mentasta Mountains where we took at least a dozen, rams, usually 10 rams every season. Except they got over-hunted – not shot, if those people could actually hunt, if they had any skills they'd keep their sheep and they wouldn't have to come back year after year. Like what they did when they just moved in and started camping on every ridge, and the sheep just got up and left. Moved over here, moved back over towards Canada.* (Wilson Justin *in* Simeone 2006)

Residents of the Copper River Region developed habitat management techniques, such as predator control or the former practice of burning lands in order to stimulate new plant growth, to support large mammal numbers and harvests within their hunting areas:

> *Sheep stay up high – burn down the bottom where they coming down to eat. Father used to burn up the creeks in the mountains – winter time moose go there – open place – and brush grow there better – burn there and next year all new stuff coming out. Tetlin – big burn – more moose now – fresh food.*

> *But old brush no good for them. Any place forest fire good place to eat.* (Katie John *in* Simeone 2006)

E6.4.2 Seasonal Round

For the Copper River Basin communities there are several peaks in the seasonal round, when resources are particularly available to subsistence users. The timing of subsistence activities is based both on need and availability. Spring formerly was a period of hardship as people's winter stocks dwindled and residents anticipated spring migrations:

> *Springtime was the hard time. They got ducks, everything. When caribou coming, that's time my daddy start killing caribou and they start smoking for summer.* (Katie John *in* Simeone and Kari 2002)

Certain resources are available to local harvesters for only a short period of time. Therefore, knowledge about the environmental factors that affect a resource's arrival in traditional use areas is crucial to timely and efficient harvests. A resident from Gulkana noted that certain species of non-salmon fish are only available for a short time after spring breakup:

> *Spring time right after break up, big grayling. Big grayling, black, use to come up, in springtime. That [the grayling] went by then, the sucker come up. Big sucker too. That's pretty good. But they don't last, only springtime. Only time, [May month].* (Ben Neeley *in* Simeone and Kari 2005)

Migratory resources arrive at different times in different places within a region, and therefore a subsistence user's knowledge must be specific to their present location. In the Copper River Region, people closer to the ocean have earlier access to salmon runs:

> *But they had to wait until June 25 to start fishing because of debris floating down the river, "logs and turf' that sometimes carried their fish wheels away. Chief Billum noted that the Ahtna from Chitina had fewer problems catching fish because they were able to intercept the early runs whereas he was not.* (Simeone and Kari 2002)

Residents have noted that in order to most efficiently and respectfully make use of the salmon resource, it is necessary to harvest, process, and preserve the salmon efficiently and quickly in light of the limited window of favorable environmental conditions for achieving those goals. In addition, caribou are harvested at times when it would be most likely possible to preserve the meat by drying or freezing. Therefore, the timing of subsistence activities is based not only on knowledge about the availability of certain resources, but on knowledge about appropriate environmental conditions for processing those resources:

> *Chief Billum told Baker that there are only about three weeks in July when the weather is favorable for curing salmon. Baker reported that the Ahtna made no effort to cure salmon after the first of August because they tended to lose all of their fish to the damp weather.* (Simeone and Kari 2002)

Formerly the people of the Copper River Basin needed to harvest and dry salmon to feed both themselves and their working dogs for the year. The timing of the runs and knowledge of weather patterns were crucial to harvesting and drying enough fish for the year:

> *[In] June two big hit come in and July same way, August same way - then no more..... [In] August another hit coming, [that is the] last one. Fish don't run all of the time. Sometimes [for a] week no fish.* (Katie John *in* Simeone et al. 2007)

The timing of harvests also depends on the varying quality of subsistence resources at different times of the year. For example, residents of the region generally gauge the quality of a harvested caribou by its fat content in addition to other factors. Wilson Justin of Chistochina observed that migratory caribou that have been traveling long distances are less desirable than those that have been feeding or wintering in the area:

> *Around 20th of June they started getting 1/2 inch of fat, and I'm talking about those big bulls that we used to have up there, not the Nelchina ones. I don't remember anyone hardly chasing the migratory caribou, because they were too thin. But stationary bulls that we had up there, by mid-June/end of June they were beginning to get a pretty good layer of fat and they're the ones you look for, and sometimes you spend a whole couple of weeks before you ran across one and you took one.* (Wilson Justin *in* Simeone 2006)

One elder explained a method for determining when to fish in what areas, based on the presence and condition of aquatic and riparian plant life:

> *Those old people long time ago. They watch everything that grow out there. Grass, foxtail, fireweed. By that plant grow they know which creek to go fishing. "That creek got fishing now," they say. Good fish there. They usually go there. Leaves turn yellow, that creek got good fish now. They start running. That's the last one from Crosswind Lake,* Niygge. Niygge du' *(lake located NE of Tyone Lake) when leaves all go down they go up there. They know which one got fish.* (Andy Tyone *in* Simeone and Kari 2005).

In winter there has been a history of fur trapping and hunting black and brown bear, moose, and caribou. The timing of some of these activities today are controlled more by regulations than by traditional knowledge about the appropriate seasons in which to harvest resources.

E6.4.3 Harvest Method

Residents of the Copper River Region have developed and transmitted knowledge about various techniques and tools for the efficient harvests of subsistence resources, most notably fish. Salmon and non-salmon fish were formerly harvested by the use of fish traps and weirs as well as dipnets and spears (Simeone and Kari 2005). One individual described,

> *In summer in August when we go back up from this side [Gulkana side], after working on salmon. At that time when we start to hunt again, we put the weir across again at 'outlet.' Always there is a weir extending across. We but the vertical stakes within it. The vertical stakes stick in there. Across and*

> *beneath is the weir grating. Then we put in bundled brush in the water in back. That is a whitefish trap.* (Frank Stickwan *in* Simeone and Kari 2005).

Weirs and traps allowed for selective harvests by species and size; because users have an ownership stake in the resources they have also developed management techniques to prevent overharvesting from any particular area:

> *Just like game warden, (his dad) watch, control, just control everything, fish too. We got too much one night, have to move the basket.* Tez'aani*, fish trap. Then we lift it up and we let it go for 4 or 5 days.* (Fred Stickwan *in* Simeone and Kari 2002)

As one Chistochina resident described, harvest management for weirs and traps was the same for salmon and non-salmon fish.

> *If you're fishing all the day, you get a lot of fish all right, at night you let them go. Then tomorrow morning you use them again. Then you get so many fish, then you let go again. That's the way he used to run. And right now the [Fish &] Game all they think we close everything. No, the Indian they got to have it, you know, the young salmon got to be, to go up to the lake the rest of the salmon. That's the way he used to run a long time ago. Same thing white fish. Lot of white fish coming all right they get about hundred anyway, and he let them go. Let the rest of them go out. And that's the way they used to fishing.* (Bell Joe *in* Simeone and Kari 2002)

Traditional knowledge also informs the selection of certain resources over others. As discussed in Section 6.4.1, Use Areas, some Copper River Region residents distinguish between caribou from different regions or between those who are migratory and resident. They select preferred caribou based on this knowledge. Katie John described the manner and reasoning for selecting for male fish over female fish with eggs in weir harvests, both as a method of population management and for preferences of taste:

> *Katie: When they get the females they put them back in the water on the upstream side [of the weir). They knew that these are the ones with the eggs. When they go on upland into 'water that moves lake', they put all their eggs in there.*
>
> *Q: If they got 100 fish, how many would be female?*
>
> *Katie: Probably about 30. Gotta be big one too, the small (female) one they don't care to get when they got enough fish. If they are short of fish, all right, then they get* k'uun'i.
>
> *Q: Why do they want* tl'edzi *(males)?*
>
> *Katie: Tl'*edzi *is bigger and more greasy, and* k'uun'i *not too good to eat.*
>
> (Katie John *in* Simeone and Kari 2002)

Different harvesting techniques are used during different times of the year based on environmental and other conditions; the time for dipnetting salmon, for example, is traditionally in spring when water levels are high:

> *When water get higher, when salmon coming that's when they use dip net, use dip net in river.* (Katie John *in* Simeone et al. 2007)

Methods of harvesting subsistence resources include knowledge about appropriate harvest amounts to sustain one's family through the winter without waste. Specific numbers of fish are prepared and preserved using different methods. Katie John of Mentasta noted that a good harvest was nearly a thousand dried fish for a family:

> tuk'ae *we get probably a thousand, that's all* ba', *I don't count the* dzenax *(fermented fish) fish we use. We had forty fish in a bale. We dry forty fish,* ba', *and we make bale. We tie up with brush, we put 20 this side and 20 this side and we put together and we tie up. And my mother and my daddy they use to have about 80 bale, 40 (fish) each. And some time if they got good year, they get about 80 bales. In a bad year some time about 40 or 50 bales. That's not enough for winter.* (Katie John *in* Simeone and Kari 2002)

Another individual indicated that Athabascans from the region traditionally harvested only small numbers of caribou as needed, rather than harvesting more caribou than they could handle at one time:

> *They wouldn't kill ten or twelve caribou. No, it was one caribou here, three, no maybe two caribou there, then move on to another place. Get another caribou. Just keep going to the end. Then they stopped to put them up, dry it for the winter. They don't know how many they killed…. No they don't get what they want, [they get] what they can handle.* (Ben Neely *in* Simeone 2006)

Caribou and moose were formerly harvested using corrals, drive lines, and brush beating to drive animals into snares or impoundments where they could be dispatched by hunters (Simeone 2006). Bears were snared or killed with short spears after teasing. Methods of locating, stalking, and harvesting subsistence resources are based on traditional knowledge about usual animal behaviors and responses:

> *Keep teasing it and pretty soon the bear will stand up and you move into it, but you have to wait until the bear is down, you cannot stab bear when he is standing up, stick the spear in the neck. The bear will charge and you jab in the neck.* (Robert Marshall *in* Simeone 2006).

Contemporary harvest methods continue to rely on traditional knowledge of the locations, habits, and behavior of animals on the landscape, however, harvest methods have evolved to include firearms and more modern forms of transportation and technology.

E6.4.4 Processing Methods

Processing harvested fish and game in the Copper River Region follows specific rules meant to ensure that subsistence resources are butchered, preserved, and prepared appropriately. These rules also specify proper treatment of animals to ensure the well-being and future success of a community. The first rule of the harvest is respect for the animals that sacrificed themselves so the people can eat:

> *[i]f we don't treat the animal right that's been teached to us, we will not get so easy animals…. if you don't treat animal, anything right, the fishing, you will never get fish [or caribou] no more*…. (Pete Ewan *in* Simeone 2006)

Traditional knowledge indicates that salmon, like other subsistence species, have to be treated with respect and courtesy at all times. One measure of this respect is how the animals are harvested and processed:

> *Thus now the salmon run well only for those who work on them carefully. Only then do they swim to someone. If the people work on them badly, if they do not work on them nicely, or if a person is lazy towards them, then they (the fish) will not run to him. It is because of the people who work on them (the salmon) well, that the salmon still exist now. They work on them well, and that is the only reason that the salmon exist. The ones who are lazy, or whose gear is not good, do not have fish running to them at this time.* (Martha Jackson *in* Simeone and Kari 2002).

Simeone (2006) notes that traditionally, moose were processed in the field in a manner that respected the notion that the harvested animal would consider how it was treated for three days after its demise, and based on that treatment would decide to return reborn to the hunter or tell other animals to avoid the hunter. Nothing was to be wasted and other traditional rules of treatment (*engii*) were to be followed in processing and dividing the meat (Simeone 2006).

Processing methods are dependent on the time of year and account for environmental conditions and the presence of flies and bears that could destroy the catch. The traditional means of preparing salmon is to bury the fish up to three days, then string them together in the river the next day to remove the sediment. Residents use smoke and other methods to deter flies:

> *Dry fish and salt fish. We usually put in the ground; cover it up for the night. Then put it in the water in the early morning. Right now we cannot do that, too many bears. Have to bring it back here to the house. Cut it. Slime is still on. Then we have to smoke it. The Indian way, not the White man's way. No salt. Just smoke and keep the flies off.* (Unknown *in* Simeone and Kari 2002)

Residents use knowledge about proper preservation methods to ensure that food will remain edible for some time. A portion of the catch is processed in a manner that it will keep through the winter. A Dot Lake resident described storing dried salmon for use over the winter as human and dog food:

> *After he dry we tighten together forty salmon. We leave it for winter. That's the way we do it. Besides that we got them fish bone [dried backbones], all we use them too, everything out of the fish wheels.* (Gene Henry *in* Simeone and Kari 2002)

Another Mentasta Lake resident described methods of rejuvenating dried fish in the spring to extend its use, saying,

> *That 'one for spring weather' is* ba' *(dry fish) that has gotten dried out. This is dry fish that they had not previously eaten. They had not eaten this yet. It is dry and hard for them to use like that. So as the weather warms up (in March), they would heat some water for it, and they would cut it into pieces, and put it in the water. It would be kept in the water for two nights. They would boil it then. They boiled the dry fish.* (Katie John *in* Simeone and Kari 2002)

For fish, rules about processing and cleaning vary by species. For example, one resident of the Copper River Region indicated that some fish are considered "clean" due to their feeding habits and therefore do not require washing and cleaning the innards:

> *Salmon just as good as that, like whitefish. But different way we take guts off. Whitefish we cut the guts off first. And then stomach you pull it out whole thing you know. Everything inside. Eggs and everything inside you don't have to bother them. Just the stomach is what you pull out. Everything in there is clean as can be inside [in the whitefish stomach] Grayling you have to do it [wash the insides]. He [grayling] eat dirty stuff. Not dirty stuff but grass and things. But whitefish I don't know what he eat. Water he got. He eats some kinda food in the water. Clean as can be, you don't have to clean it. Maybe grass in there or something. We fry up the guts for grease (*tsabaey ghe'*). We take the guts out first. That stomach in there.* (Fred Ewan *in* Simeone and Kari 2005).

While some manners of processing have evolved over time with the increasing use of modern processing technologies (e.g., freezers or foodsavers), residents continue to prepare many subsistence foods using the methods and tools passed on to them by their ancestors.

E6.4.5 Methods of Distribution

Distribution and redistribution of subsistence resources is a very important aspect of traditional culture and is considered essential to Athabascan survival. A complex set of relationships and rules govern how resources are distributed at different times and under certain circumstances. The most important prescription is sharing to prevent waste:

> *We tell somebody, we got fish that we can't use down there. We got too much to work on, get the fish. Okay they come and get them. That's what we do, it's against our ruling, we can't waste them, we can't waste anything. We gotta have somebody use the meat and fish. Somebody gotta use, somebody gotta eat, some family.* (Pete Ewan *in* Simeone and Kari 2002)

Sharing ensures the survival and success of a community or social network, and adhering to certain rules about when and with whom to share ensures that no one group or family is omitted from the benefits of sharing and distribution. Sharing is not limited to a community but extends across social and family ties to communities throughout a region and beyond. Traditionally, family structures crossed language and territorial boundaries as a means of reinforcing the web of relations that could support a family or band in the case of a harvest failure in their area. Katie John's mother would send bales of *ba'* from Mentasta to relatives in Tanacross when they had a harvest failure:

> *Q: When did they give some to Tanana people? Katie: If they got 80 bales, all right then they send some over there, Tanacross used to be hard time, I see my mother sometime she send two three bale they send over. And dry meat. And I don't know how many sack they send over. Over there they pass around to people. Sometime they got nothing to eat.* (Katie John *in* Simeone and Kari 2002).

This relation works in reverse as well, with products and resources from other regions coming in through exchanges with relatives. Sharing across regions allows for the import of resources not locally available to subsistence users:

> *Q: Did you get dry fish from the Tanana? Katie: Yeah, Emma Jonathan's mom is my daddy's aunt. Their mom are first cousin, so she always went over the two aunt and one uncle at Tanacross, and he bring dry fish, and he bring whitefish grease.* Tsabaey ghe' *[whitefish grease]. And they put those berries, they call denes, (bear berry) they mix up with that one, they mix up with wild* gguus *(celery). They put them in birch bark baskets and they mix in the bearberries. And my daddy bring it back, boy I use to like that. That come from Tanana River.* (Katie John *in* Simeone and Kari 2002)

Sharing one's catch is a culturally expected tradition in the Copper River Region and elevates one's status in a community. Traditionally, certain individuals who could provide for others achieved a community status, *denae,* as a person worthy of respect for their industry and generosity (Simeone 2006):

> *Sanford Charley (a* denae*) used to take care of a lot of people, take care of food, give them something to eat all the time. Not only one place, Mentasta do that, Copper Center, Chitina, any place. He just, (those) who got nothing, they know, they give so much food to people, them days no work you know.* (Simeone and Kari 2002)

In addition to guiding who should share with whom, traditional knowledge also informs the appropriate times and places for community-wide sharing. Special occasions are marked with public redistributions of gifts and feasting on traditional foods, called a potlatch. Today these events have continued significance for distribution of wild foods; a more informal and less directed system of redistribution of fish and game continues to provide food for elders, orphans, and those unable to hunt or fish.

Evidence of continued redistribution is illustrated in harvest-sharing data recorded by ADFG and discussed in Section 4.0, Subsistence-Affected Environment.

E6.4.6 Social Roles

Members of subsistence communities in the Copper River Region adhere to certain social roles, which guide their contributions to the harvesting, processing, and distribution of subsistence foods. Traditionally, men in a band or family would provide the means of harvesting resources, and the wife of that man would be responsible for processing and distributing the products of subsistence harvesting. In hunting large land mammals, the traditional roles were described by Gene Henry of Dot Lake as follows:

> *Oh, yeah we all go out sheep hunting but, family stay in the camp but me and old man go out get game, me and my father go out. My brother is too small them days, but he goes out to get meat with us though. He does a lot of different work. She [his mother] was cutting meat, drying, old lady working on cutting meat, everything. Making them sheepskin,* c'eggan *you know, tan.* (Gene Henry *in* Simeone 2006)

Older women were considered safe to process game once they had passed menopause. Older women were more experienced, more skilled, and had more authority in the fish camp:

> *My grandmother used to cut sixty fish an hour-a salmon every single minute. She was real fast with her knife. She'd cut it for us to hang and dry on the* daxi*, our drying rack. We had a big line. Someone would hand grandma a fish and then get another one while she'd cut the salmon. When she was done someone else took it up to a person working the* daxi*. Only adults were allowed to dipnet for salmon or work the fishwheel. It was hard work, especially on hot days*. (Bacile Jackson *in* Simeone and Kari 2002)

Women's roles in hunting and fishing camps were part of traditional rules for behavior based on the notion that some things were *engii*, a kind of taboo or sign of bad luck. These rules have persisted:

> *Last time my dad got moose [at] 3 mile. That was his last moose, 1986. And we, just me and Markel was with them. My mom said we got to get help, we cannot move this big thing. My dad said tell your son-in-law to come up but don't tell them girls to come up. You think they would listen? Don't tell them to come up here, it's* engii*! Got moose in September, sure enough all them kids came up and my dad said stay over there. We back it to the road. That was the last time my dad discipline us with* engii*. Him and my mom got moose. Fresh moose, woman never touch; after three days it's okay.* (Virginia Pete *in* Simeone 2006)

Following one's expected roles in a subsistence society ensures that the entire subsistence process runs smoothly and efficiently. Families work together as a unit to hunt, harvest, process, and distribute subsistence resources. As Bacile Jackson of Copper Center described, children kept the fish camp running while adults attended to other tasks:

> *Usually children were the ones carrying the fish back and forth. Some of the kids would be in the woods gathering skinny pieces of wood we used to spread the fish open so that they dry better, or they gathered firewood to keep the smoke going under the fish.* (Bacile Jackson *in* Simeone and Kari 2002)

Joeneal Hicks expressed a contemporary viewpoint of some of the rules pertaining to social roles in the region:

> *If that's the way you are, don't go because it supposedly makes bad luck and animals and all that can smell you. And the other part of it is that if you are a woman out there in camp you are really expected to be a housewife. They look up to you to be a cook and feed the people. It's still the same way, times have changed but it is really important if you have your period, not to*

> *go. Some people ignore that. I took a woman who was in menstrual cycle and had very, very bad luck, didn't get nothing. Being in camp have to be quiet, not make any unnecessary noise, need some sort of discipline at all times. If you take a woman out to camp it will come back on you, get bad luck.* (Joeneal Hicks *in* Simeone 2006)

There continues to be productive roles for each member of the family-unit in subsistence activities, and while the spiritual component of these traditional rules may be less explicit, they appear to still operate in some manner (Simeone 2006)

E6.4.7 Changes over Time

Changes observed over the lifetime of those contributing to traditional knowledge and subsistence reports include changes to the physical, regulatory, and social environments. Observations of change are not possible without the experience and traditional knowledge-based knowledge to compare present with past conditions. A list of specific noted changes in the Copper River Region was presented in Simeone, et al. (2007: Table 5). Residents of the Copper River Region have observed that a warming climate has resulted in erosional changes to riverbank fish camp locations, loss of permafrost and groundwater, changes in habitat that favor moose and disfavor fish, caribou and other species, changes in stream flow, and bad weather.

Subsistence harvesters use knowledge about the specific needs of subsistence resources in terms of habitat, climate, and feeding, to identify changes and develop positions about their causes. Changes in water levels and conditions are frequently cited as having effects on both aquatic and terrestrial resources. Wilson Justin of Chistochina stated,

> *What is occurring in my area, and I'm talking about Mentasta and Chistochina, is that many stream beds are now too warm to maintain stocks and many shallow lakes like Mentasta, Lost Lake, and those other lakes are rapidly filling with vegetation.* (Wilson Justin 1996 *in* Simeone and Kari 2002)

A resident of Copper Center described the frequently cited view that lakes are drying up or filling in, with habitat for certain animals such as fish, waterfowl, and muskrats, diminishing:

> *That used to be a tree area. I drove down to Kenny Lake. One of the landmarks in that area, in [the] Indian [language], was called the muskrat place. It is all dried up now and [they are] farming over it I think it was because of the fire also.* (Pauly Jerue *in* Simeone et al. 2007)

Habitats for terrestrial mammals are also believed to be declining, with one individual observing,

> *I do know that the caribou food is almost all gone, compared to when I was young. I mean when I was young you could walk for miles stepping on lichen.… Now they go up there and they get that sedge grass, nothing else.* (Wilson Justin *in* Simeone 2005)

Through years of experience processing and consuming subsistence resources and handling their organs and other body parts, subsistence users are acutely aware of any changes in their appearance, texture, or taste. In particular, such observations occur when the changes affect traditional processing methods:

> *When you try to make strips out of them, the bellies are just so thin. Even the king salmon used to be so thick. We used to have a smokehouse, the sockeyes use to fill them up, and they had a good thick meat on them. Now days they just curl up. The salmon do not taste as good as it used to. The further you come up this way, it gets more poorer.* (Mae Marshall *in* Simeone et al. 2007)

Other indicators of change to subsistence users include the decreased access to traditional use areas due to low water levels; flooding or erosion of camp, cabin, or fishing sites; and changes in ice and snow conditions that affect travel methods to hunting or trapping areas. As Pauly Jerue of Copper Center observed,

> *Erosion has a big effect on fishing - on the number of fish camps, whether people can fish or not - especially true for certain locations such as Copper Center -because of erosion. People have lost good fishing sites and there are no more available because the river is inaccessible; no roads or private land.* (Pauly Jerue *in* Simeone et al. 2007)

> *On the other side of the river, there is a huge bank and that thing has eroded from the boating. We didn't have as much gravel and dirt coming down from that bank before that. But, after those boats starting coming by and then you see when they go by, from that wake it actually cuts into the bank, you know, underneath because that's a pretty high bank, but it would cut in and you can actually see the cut in there and it just starts to come down.* (Pauly Jerue *in* Simeone et al. 2007)

E7.0 POTENTIAL IMPACTS OF PROPOSED PROJECT

As described above (Section E4.0, Subsistence-Affected Environment), study communities in the North Slope, Yukon River, Tanana River, and Copper River regions use the available resources for a variety of customary and traditional subsistence activities. Potential project-related impacts from construction, operations, and maintenance activities will be evaluated and presented in the October 2012 final report. At that time, this report will include the concerns raised by subsistence users in APP's 2010 and 2011 community meetings. Additionally, the ADFG Subsistence Division continues to conduct surveys in select communities along the pipeline route which will be provided to FERC for use in developing the project's Environmental Impact Statement.

E7.1 MITIGATION

[Note: Mitigation measures will be included in the final report.]

E8.0 SUBSISTENCE DATA GAPS

Table E-146 lists the most recent all-resources subsistence data available for the 12 subsistence baseline indicators (see Section 3.2, Subsistence Baseline Indicators) for each of the 45 study communities included in the APP study area. Section 3.3 addresses the data adequacy of the subsistence baseline indicators. **Table E-147** shows the criteria used by the study team for identifying the most recent and relevant data for each of the baseline indicators (see Section 4.0, Subsistence-Affected Environment).

This discussion examines the available data and categorizes them into subsistence baseline indicators for which there are no data available, indicators with data from the last 3 years (as requested by FERC), indicators with data from the last 10 years, and indicators with data older than 10 years. As shown in **Table E-146**, none of the 45 study communities have available data that are less than 3 years old.

Table E-146 shows that the references used in this report are the most recent and comprehensive sources available to describe subsistence uses, thus demonstrating APP's best effort to comply with the request from FERC to use current information. Also, there is considerable value in using the data from older research, especially in ascertaining the distribution and extent of the patterns of subsistence use over time. Because subsistence uses depend upon the harvester's access to and distribution and abundance of food resources in expected locations, these uses are subject to interannual variability which is generally accommodated within the extent of a traditional use area. Studies have shown that the knowledge base of local place names and traditional use areas becomes stable across generations, further validating the use of older information. In any given year, people may use only a portion of an overall use area for subsistence because of the distribution of a resource, yet over time, they travel and use the full extent of traditional subsistence use areas and may also use new areas in response to changes in access to and availability of resources.

E8.1 NORTH SLOPE REGION

The North Slope Region study communities for APP have the most current subsistence data compared to the other study regions. For APP, five study communities are within the North Slope Region including Anaktuvuk Pass, Barrow, Kaktovik, Nuiqsut, and Prudhoe Bay. All of these communities, with the exception of Prudhoe Bay, have available subsistence data. Prudhoe Bay is populated mainly by seasonal workers who lend support to the Prudhoe Bay oil fields and has not been subject to general subsistence and traditional knowledge research. The following discussion summarizes the availability and age of each subsistence baseline indicator as shown in **Table E-146** for the North Slope Region study communities.

Anaktuvuk Pass subsistence data are not available for Harvest Sharing. Anaktuvuk Pass has Harvest Participation data that are over 10 years old. All other indicators (Subsistence Use Area, Harvest Amount, Harvest Effort, Harvest Timing, Harvest Success, Harvest

Diversity, Transportation Method, Duration of Trips, Frequency of Trips, and Resource Change) have data that represent uses within the last 10 years.

Barrow subsistence data are not available for Harvest Sharing, Frequency of Trips, and Resource Change. The indicators of Harvest Effort, Harvest Success, and Harvest Participation have data that are over 10 years old. All other indicators (Subsistence Use Area, Harvest Amount, Harvest Timing, Harvest Diversity, Transportation Method, and Duration of Trips) have data that represent uses within the last 10 years.

Kaktovik and Nuiqsut subsistence data are not available for Frequency of Trips and Resource Change. The indicators of Harvest Effort, Harvest Success, Harvest Participation, and Harvest Sharing all have data that are over 10 years old. All other indicators (Subsistence Use Area, Harvest Amount, Harvest Timing, Harvest Diversity, Transportation Method, and Duration of Trips) have data that represent uses within the last 10 years.

E8.2 YUKON RIVER REGION

The Yukon River Region study communities for the APP study area have a variety of subsistence data available. Twelve study communities have been identified within the Yukon River Region related to APP including Alatna, Allakaket, Beaver, Bettles, Coldfoot, Evansville, Fort Yukon, Livengood, Nolan, Rampart, Stevens Village, and Wiseman. The communities of Coldfoot, Livengood, and Nolan do not have available subsistence data for any of the baseline indicators. The following discussion summarizes the availability and age of each subsistence baseline indicator as shown in **Table E-146** for the Yukon River Region study communities.

Alatna, Allakaket, Bettles, and Evansville subsistence data are not available for Harvest Effort, Harvest Success, Harvest Participation, Harvest Sharing, Transportation Method, Duration of Trips, Frequency of Trips, and Resource Change. All other indicators (Subsistence Use Area, Harvest Amount, Harvest Timing, and Harvest Diversity) have data that are over 10 years old.

Beaver subsistence data are not available for Duration of Trips. The indicators of Harvest Amount, Harvest Participation, Harvest Sharing, and Harvest Diversity all have data that are over 10 years old. All other indicators (Subsistence Use Area, Harvest Effort, Harvest Timing, Harvest Success, Transportation Method, Frequency of Trips, and Resource Change) have data that have been collected within the last 10 years.

Fort Yukon subsistence data are not available for Duration of Trips. The indicators of Harvest Amount, Harvest Timing, Harvest Participation, Harvest Sharing, and Harvest Diversity all have data that are over 10 years old. All other indicators (Subsistence Use Area, Harvest Effort, Harvest Success, Transportation Method, Frequency of Trips, and Resource Change) have data that have been collected within the last 10 years.

Rampart subsistence data are not available for Harvest Effort, Harvest Success, Harvest Participation, Harvest Sharing, Transportation Method, Duration of Trips, Frequency of Trips, and Resource Change. All other indicators (Subsistence Use Area, Harvest Amount, Harvest Timing, and Harvest Diversity) have data that are over 10 years old.

Stevens Village subsistence data are not available for Transportation Method, Duration of Trips, Frequency of Trips, and Resource Change. All other indicators (Subsistence Use Area, Harvest Amount, Harvest Effort, Harvest Timing, Harvest Success, Harvest Participation, Harvest Sharing, and Harvest Diversity) have data that are over 10 years old.

Wiseman subsistence data are not available for Harvest Effort, Harvest Success, Harvest Participation, Harvest Sharing, Harvest Diversity, Transportation Method, Duration of Trips, Frequency of Trips, and Resource Change. All other indicators (Subsistence Use Area, Harvest Amount, and Harvest Timing) have data that are over 10 years old.

E8.3 TANANA RIVER REGION

The Tanana River Region study communities for the APP study area have available data that are generally more than 10 years old. Sixteen communities have been identified within the Tanana River Region including Alcan Border, Chisana, Delta Junction, Dot Lake, Dry Creek, Fairbanks, Healy, Healy Lake, Manley Hot Springs, Minto, Nenana, Northway, Tanacross, Tanana, Tetlin, and Tok. The communities of Alcan Border, Delta Junction, Dry Creek, and Fairbanks do not have available subsistence data for any of the baseline indicators. The following discussion summarizes the availability and age of each subsistence baseline indicator as shown in **Table E-146** for the Tanana River Region study communities.

Dot Lake, Northway, Tanacross, Tanana, Tetlin, and Tok subsistence data are not available for indicators Transportation Method, Duration of Trips, Frequency of Trips, and Resource Change. All other indicators (Subsistence Use Area, Harvest Amount, Harvest Effort, Harvest Timing, Harvest Success, Harvest Participation, Harvest Sharing, and Harvest Diversity) have data that are over 10 years old.

Healy subsistence data are not available for Harvest Timing, Transportation Method, Duration of Trips, Frequency of Trips, and Resource Change. All other indicators (Subsistence Use Area, Harvest Amount, Harvest Effort, Harvest Success, Harvest Participation, Harvest Sharing, and Harvest Diversity) have data that are over 10 years old.

Manley Hot Springs subsistence data are not available for Harvest Amount, Harvest Effort, Harvest Success, Harvest Participation, Harvest Sharing, Harvest Diversity, Transportation Method, Duration of Trips, Frequency of Trips, and Resource Change. All other indicators (Subsistence Use Area and Harvest Timing) have data that are over 10 years old.

Minto subsistence data are not available for Harvest Sharing, Transportation Method, Duration of Trips, Frequency of Trips, and Resource Change. All other indicators (Subsistence Use Area, Harvest Amount, Harvest Effort, Harvest Timing, Harvest Success, Harvest Participation, and Harvest Diversity) have data that are over 10 years old.

Nenana subsistence data are not available for Harvest Amount, Harvest Effort, Harvest Timing, Harvest Success, Harvest Participation, Harvest Diversity, Transportation Method, Duration of Trips, Frequency of Trips, and Resource Change. One indicator, Subsistence Use Area, has data that are over 10 years old.

E8.4 COPPER RIVER REGION

The Copper River Region communities for the APP study area have available data that are all older than 10 years old, and most are older than 25 years, concerning their annual subsistence activities. Twelve communities have been identified within the Copper River Region including Chistochina, Chitina, Copper Center, Gakona, Glennallen, Gulkana, Kenny Lake, Mentasta Lake, Nabesna, Paxson, Slana, and Tonsina. The following discussion summarizes the availability and age of each subsistence baseline indicator as shown in **Table E-146** for the Copper River Region study communities.

Copper River Region subsistence data are not available for Harvest Timing, Transportation Method, Duration of Trips, Frequency of Trips, and Resource Change. All other indicators (Subsistence Use Area, Harvest Amount, Harvest Effort, Harvest Success, Harvest Participation, Harvest Sharing, and Harvest Diversity) have data that are over 10 years old. The existing studies provide a foundation of useful and representative information about traditional subsistence use areas and patterns, upon which future studies can contribute additional details.

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INTRODUCTION

TABLE E-1.

Alaska Pipeline Project Subsistence Study Communities

#	Community*	CDP Name	Federal Rural Status	In State-designated Non-subsistence Area	Criteria for Inclusion in APP: Community within 30 miles	Community Use Areas Overlap with Project Corridor	Community Use Areas within 15 miles	Community Use Areas within 30 miles
1	Alatna	Alatna	Rural				X	
2	Allakaket	Allakaket	Rural				X	
3	Alcan Border	Alcan Border	Rural		X			
4	Anaktuvuk Pass	Anaktuvuk Pass	Rural			X		
5	Barrow	Barrow	Rural				X	
6	Beaver	Beaver	Rural				X	
7	Bettles	Bettles	Rural		X		X	
8	Chisana	Chisana	Rural			X		
9	Chistochina	Chistochina	Rural					X
10	Chitina	Chitina	Rural					X
11	Coldfoot	Coldfoot	Rural		X			
12	Copper Center	Copper Center	Rural				X	
13	Delta Junction**	Big Delta	Rural	X	X			
		Delta Junction	Rural	X	X			
		Deltana	Rural	X	X			
		Fort Greely	Rural	X	X			
		Whitestone	Rural	X	X			
14	Dot Lake***	Dot Lake	Rural		X	X		
		Dot Lake Village	Rural		X	X		
15	Dry Creek	Dry Creek	Rural		X			
16	Evansville	Evansville	Rural		X		X	
17	Fairbanks****	College	Fairbanks Nonrural	X	X			
		Eielson AFB	Fairbanks Nonrural	X	X			
		Ester	Fairbanks Nonrural	X	X			
		Fairbanks	Fairbanks Nonrural	X	X			
		Fox	Fairbanks Nonrural	X	X			
		Harding-Birch Lakes	Fairbanks Nonrural	X	X			
		Moose Creek	Fairbanks Nonrural	X	X			
		North Pole	Fairbanks Nonrural	X	X			
		Pleasant Valley	Fairbanks Nonrural	X	X			
		Salcha	Fairbanks Nonrural	X	X			
		Two Rivers	Fairbanks Nonrural	X	X			
18	Fort Yukon	Fort Yukon	Rural					X
19	Gakona	Gakona	Rural					X
20	Glennallen	Glennallen	Rural					X
21	Gulkana	Gulkana	Rural					X

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TABLE E-1.

Alaska Pipeline Project Subsistence Study Communities

					Criteria for Inclusion in APP			
#	**Community***	**CDP Name**	**Federal Rural Status**	**In State-designated Non-subsistence Area**	**Community within 30 miles**	**Community Use Areas Overlap with Project Corridor**	**Community Use Areas within 15 miles**	**Community Use Areas within 30 miles**
22	Healy	Healy	Rural	X				X
23	Healy Lake	Healy Lake	Rural		X	X		
24	Kaktovik	Kaktovik	Rural			X		
25	Kenny Lake	Kenny Lake	Rural					X
26	Livengood	Livengood	Rural		X			
27	Manley Hot Springs	Manley Hot Springs	Rural				X	
28	Mentasta Lake	Mentasta Lake	Rural			X		
29	Minto	Minto	Rural		X	X		
30	Nabesna	Nabesna	Rural				X	
31	Nenana	Nenana	Rural				X	
32	Nolan		Rural		X			
33	Northway***	Northway	Rural		X	X		
		Northway Junction	Rural		X	X		
		Northway Village	Rural		X	X		
34	Nuiqsut	Nuiqsut	Rural			X		
35	Paxson	Paxson	Rural				X	
36	Prudhoe Bay	Prudhoe Bay	Rural*****		X			
37	Rampart	Rampart	Rural		X	X		
38	Slana	Slana	Rural				X	
39	Stevens Village	Stevens Village	Rural		X	X		
40	Tanacross	Tanacross	Rural		X	X		
41	Tanana	Tanana	Rural					X
42	Tetlin	Tetlin	Rural		X	X		
43	Tok	Tok	Rural		X	X		
44	Tonsina	Tonsina	Rural					X
45	Wiseman	Wiseman	Rural		X	X		

*Criteria for inclusion in report: Community or subsistence use area within 30 miles of project route corridor (received from URS on September 1, 2011)

**Given the proximity of these CDPs (Delta Junction, Deltana, Big Delta, Fort Greely, and Whitestone) to each other and their similar demographics, history, economic characteristics, and lack of subsistence documentation, these five CDPs are referred to as Delta Junction.

***Given the proximity of these CDPs (Dot Lake and Dot Lake Village) (Northway, Northway Junction, and Northway Village) to each other and their similar demographics, history, economic characteristics, and subsistence activities, these CDPs are referred to as Dot Lake and Northway.

****Given the proximity of these CDPs (College, Eielson AFB, Ester, Fairbanks, Fox, Harding-Birch Lakes, Moose Creek, North Pole, Pleasant Valley, Salcha, and Two Rivers) to each other and their similar demographics, history, economic characteristics, and lack of subsistence documentation, as well as all being located within the Fairbanks nonrural area, these CDPs are referred to as Fairbanks.

*****The Federal Subsistence Board has added Prudhoe Bay as a nonrural place, effective May 2012.

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TABLE E-2.

Alaska Pipeline Project Subsistence Study Communities by Study Region

Region	**Study Community**
North Slope Region	Anaktuvuk Pass
	Barrow
	Kaktovik
	Nuiqsut
	Prudhoe Bay
Yukon River Region	Alatna
	Allakaket
	Beaver
	Bettles
	Coldfoot
	Evansville
	Fort Yukon
	Livengood
	Nolan
	Rampart
	Stevens Village
	Wiseman
Tanana River Region	Alcan Border
	Chisana
	Delta Junction
	Dot Lake
	Dry Creek
	Fairbanks
	Healy
	Healy Lake
	Manley Hot Springs
	Minto
	Nenana
	Northway
	Tanacross
	Tanana
	Tetlin
	Tok
Copper River Region	Chistochina
	Chitina
	Copper Center
	Gakona
	Glennallen
	Gulkana
	Kenny Lake
	Mentasta Lake
	Nabesna
	Paxson
	Slana
	Tonsina

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TABLE E-3.

Subsistence Baseline Data by Study Community

Community	Harvest Data by Study Year (Source)				Seasonal Round	Use Area
	All Resources	**Mammals**	**Fish**	**Birds**		
North Slope Region						
Anaktuvuk Pass	1992 (Fuller and George 1999); 1994-95 (Brower and Opie 1996); 1996-97, 1998-2003 (Bacon et al. 2009)	1986-1991 (Adams et al. 2008); 1990-91 (Pedersen and Opie 1991); 1991-92 (Pedersen and Opie 1992); 1993-94 (Pedersen and Opie 1994) 2006-07 (Pedersen and Nageak 2009)	1991-1994, 1996-97, 2005, 2007 (ADFG 2009); 2001-02, 2002-03 (Pedersen and Hugo 2005)	-	Bacon et al. 2009; Brower and Opie 1996; Fuller and George 1999; Pedersen and Hugo 2005; Spearman et al. 1979 SRB&A Forthcoming	Lifetime to 1979 (Pedersen 1979; ADFG 1986a); Lifetime to 1985 (Hall et al. 1985); 1994-2003 (SRB&A 2003a)
Barrow	1987-1989 (SRB&A and ISER 1993); 1992 (Fuller and George 1999); 1995-1997, 2000-2003 (Bacon et al. 2009)	2002-2007 (Braem et al. 2011)	1987-2009 (ADFG 2009)	2005, 2007, 2008 (Naves 2010)	Bacon et al. 2009; Braem et al. 2011; EDAW Inc. 2008; Fuller and George 1999; NSB Contract Staff 1979; SRB&A and ISER 1993	Lifetime to 1979 (Pedersen 1979; ADFG 1986a); 1994-2003 (SRB&A 2003a); 1987-1989 (SRB&A Unpublished-a); 1987-1989 (SRB&A and ISER 1993); 1997-2006 (SRB&A 2010a)
Kaktovik	1985, 1986, 1992 (ADFG 2011); 1992 (Fuller and George 1999); 1994-95 (Brower et al. 2000); 2002-03 (Bacon et al. 2009)	1982-1984 (Pedersen 1990); 1987-88, 1990, 1991 (ADFG 2011)	1991, 1994, 1997, 2000, 2002, 2004-2007, 2009 (ADFG 2009); 2001, 2002 (ADFG 2011)	-	EDAW Inc. 2008; Jacobson and Wentworth 1982; Pedersen 1990; Pedersen et al. 1985; Pedersen et al. 1991; Pedersen and Linn 2005	Lifetime to 1979 (Pedersen 1979; ADFG 1986a); 1923-1983 (Coffing and Pedersen 1985) 1994-2003 (SRB&A 2003b); 1996-2006 (SRB&A 2010a)
Nuiqsut	1985, 1993 (ADFG 2011); 1995-96, 2000-01 (Bacon et al. 2009); 1994-95 (Brower and Hepa 1998); 1992 (Fuller and George 1999)	2002-2007 (Braem et al. 2011)	-	-	Bacon et al. 2009; Braem et al. 2011; Brower and Hepa 1998; Brown 1979; EDAW Inc. 2008; Fuller and George 1999; Impact Assessment Inc. 1990a; NSB Contract Staff 1979; Research Foundation of the State University of New York 1984	Lifetime to 1979 (Pedersen 1979); Lifetime to 1986 (ADFG 1986a); 1973-1986 (Pedersen 1986); 1994-2003 (SRB&A 2003a); 1997-2006 (SRB&A 2010a); 2008, 2009 (SRB&A 2010c); 2008, 2009 (SRB&A 2011b)

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TABLE E-3.

Subsistence Baseline Data by Study Community

Community	Harvest Data by Study Year (Source)				Seasonal Round	Use Area
	All Resources	**Mammals**	**Fish**	**Birds**		
Prudhoe Bay	-	1996, 2000, 2005, 2006 (ADFG 2009)	-	-	-	-
Yukon Region						
Alatna	1981-82, 1982-83, 1983-84 (Marcotte and Haynes 1985)*	1997-1999, 2001 (ADFG 2011); 2002-03 (Brown et al. 2004)	1992, 1993, 1995-2000, 2002-2009 (ADFG 2009); 2002 (Andersen et al. 2004a)	-	Andersen et al. 2004a; Andersen et al. 2004b; Brown et al. 2004; Marcotte and Haynes 1985	1981-1983 (Marcotte and Haynes 1985; ADFG 1986b)
Allakaket	1981-82, 1982-83, 1983-84 (Marcotte and Haynes 1985)*	1997-1999, 2001 (ADFG 2011); 2002-03 (Brown et al. 2004)	1992, 1993, 1995-2009 (ADFG 2009); 2002 (Andersen et al. 2004a)	-	Andersen et al. 2004a; Andersen et al. 2004b; Brown et al. 2004; Marcotte and Haynes 1985	1981-1983 (Marcotte and Haynes 1985; ADFG 1986b)
Beaver	1985 (Sumida 1989); 1995, 1996 (ADFG 2011)	1993-96, 2001-02 (CATG 2002); 1993, 1994 (ADFG 2011); 2003 (CATG 2003)	1992-2009 (ADFG 2009); 1993, 2005 (ADFG 2011); 2005 (CATG 2005)	1993, 1994 (ADFG 2011); 2000 (Andersen and Jennings 2001a)	Andersen and Jennings 2001a; Koskey and Mull 2011; SRB&A 2007; Sumida 1989; Sumida and Alexander 1985	1930-1986 (Sumida 1989); 1997-2006 (SRB&A 2007)
Bettles	1981-1984 (Marcotte and Haynes 1985)**	1997-1999 (ADFG 2011); 2002-03 (Brown et al. 2004)	1992-1999, 2002-2005, 2009 (ADFG 2009)** 2002 (Andersen et al. 2004a)	-	Brown et al. 2004; Marcotte and Haynes 1985	1981-1983 (Marcotte and Haynes 1985; ADFG 1986b)
Coldfoot	-	-	1988, 1992, 1994, 2006-2008 (ADFG 2009)	-	-	-
Evansville	1981-1984 (Marcotte and Haynes 1985)**	1998, 1999 (ADFG 2011); 2002-03 (Brown et al. 2004)	2002 (Andersen et al. 2004a)**	-	Marcotte and Haynes 1985	1981-1983 (Marcotte and Haynes 1985; ADFG 1986b)
Fort Yukon	1986-87 (Sumida and Andersen 1990); 1993-1998 (ADFG 2011)	1993-98, 2001-02 (CATG 2002); 1997, 2003 (CATG 2003); 2005 (CATG 2005)	1992-2009 (ADFG 2009); 2005 (ADFG 2011)	2000 (Andersen and Jennings 2001a)	Andersen and Jennings 2001a; Sumida and Andersen 1990	Lifetime to 1982 (Caulfield 1983); 1925-1987 (Sumida and Andersen 1990); 1948-1949 (Shimkin 1955); 1997-2006 (SRB&A 2007)
Livengood	-	-	-	-	-	-
Nolan	-	-	-	-	-	-

TABLE E-3.

Subsistence Baseline Data by Study Community

Community	Harvest Data by Study Year (Source)				Seasonal Round	Use Area
	All Resources	Mammals	Fish	Birds		
Rampart	1993-1995, 1997 (ADFG 2011)	1993-1997, 2001-02 (CATG 2002); 1996, 1998 (ADFG 2011); 2003 (CATG 2003); 2005 (CATG 2005)	1992-2003, 2005-2009 (ADFG 2009); 1996 (ADFG 2011); 1997 (CATG 2002)	2000 (Andersen and Jennings 2001a)	Andersen and Jennings 2001a; Betts 1997	1975-1995 (Betts 1997)
Stevens Village	1984-85 (Sumida 1988) 1993, 1994 (ADFG 2011)	1993-98 (CATG 2002); 1995, 1997 (ADFG 2011); 2003 (CATG 2003); 2005 (CATG 2005)	1992-2009 (ADFG 2009); 1995 (ADFG 2011)	1995, 1997 (ADFG 2011); 2000 (Andersen and Jennings 2001a)	Andersen and Jennings 2001a; Sumida 1988; Sumida and Alexander 1985	1974-1984 (Sumida 1988; ADFG 1986b)
Wiseman		1991 (Scott 1998)	1985, 1992, 2005, 2006, 2008 (ADFG 2009); 1991 (Scott 1998)	1991 (Scott 1998)	Scott 1998	1991 (Scott 1998)
Tanana River Region						
Alcan Border	-	-	-	-	-	-
Delta Junction***	-	-	1988-2009 (ADFG 2009)	-	-	-
Dot Lake	1987-88 (Marcotte 1991)	2004 (ADFG 2011)	1988, 1989, 1991, 1992, 1996-2003, 2005-2009 (ADFG 2009); 2004 (ADFG 2011)	2000 (Andersen and Jennings 2001b)	Andersen and Jennings 2001b; Marcotte 1991; Martin, 1983;	1946-1982 (Martin, 1983, ADFG 1986b)
Dry Creek	-	-	2008 (ADFG 2009)	-	-	-
Fairbanks****	-	-	1983-2009 (ADFG 2009)	-	-	-
Healy	1987 (ADFG 2011)	-	1988-2009 (ADFG 2009)	-	-	Unidentified Time Period (Wolfe et al. Unpublished)
Healy Lake	-	-	-	2000 (Andersen and Jennings 2001b)	Andersen and Jennings 2001b	Lifetime and 1992-2001 (SRB&A 2002)

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TABLE E-3.

Subsistence Baseline Data by Study Community

Community	Harvest Data by Study Year (Source)				Seasonal Round	Use Area
	All Resources	**Mammals**	**Fish**	**Birds**		
Manley Hot Springs	-	2004 (ADFG 2011)	1988-1990, 1992, 1993, 1995, 1996, 1998-2000, 2002-2009 (ADFG 2009); 2004 (ADFG 2011)	-	Andersen and Jennings 2001b; Betts 1997	1975-1995 (Betts 1997)
Minto	1983-84 (Andrews 1988)	2004 (ADFG 2011)	1992-2009 (ADFG 2009); 1994 (Marcotte 1995); 2004 (ADFG 2011)	-	Andrews 1988; Andrews and Napoleon 1985	1960-1984 (Andrews 1988; ADFG 1986b); 1960-1985 (Andrews and Napoleon 1985)
Nenana	-	2004 (ADFG 2011)	1988-2009 (ADFG 2009); 2004 (ADFG 2011)	-	-	1981-1982 (Shinkwin and Case 1984; ADFG 1986b)
Northway	1987-88 (Marcotte 1991)	2004 (ADFG 2011)	1988-2009 (ADFG 2009); 2004 (ADFG 2011)	2000 (Andersen and Jennings 2001b)	Andersen and Jennings 2001b	1974-1984 (Case 1986; ADFG 1986b)
Tanacross	1987-88 (Marcotte 1991)	2004 (ADFG 2011)	1994, 1997, 1999-2001, 2003, 2005, 2009 (ADFG 2009); 2004 (ADFG 2011)	-	Andersen and Jennings 2001b; Haynes et al. 1984; Marcotte 1991;	1968-1988 (Marcotte 1991)
Tanana	1987 (Case and Halpin 1990)	1996-1999 (ADFG 2011); 2002-03 (Brown et al. 2004)	1992-2009 (ADFG 2009); 2006 (Brown et al. 2010)	-	Brown et al. 2004; Brown et al. 2010; Case and Halpin 1990	1968-1988 (Case and Halpin 1990)
Tetlin	1987-88 (Marcotte 1991)	2004 (ADFG 2011)	1992-1993 (ADFG 2009); 2004 (ADFG 2011)	2000 (Andersen and Jennings 2001b)	Andersen and Jennings 2001b; Haynes et al. 1984; Marcotte 1991;	1974-1984 (Halpin 1987)
Tok	1987-88 (Marcotte 1991)	2004 (ADFG 2011)	1988-2009 (ADFG 2009); 2004 (ADFG 2011)	2000 (ADFG 2011)	Andersen and Jennings 2001b; Haynes et al. 1984; Marcotte 1991;	1968-1988 (Marcotte 1991)
Copper River Region						

TABLE E-3.

Subsistence Baseline Data by Study Community

Community	Harvest Data by Study Year (Source)				Seasonal Round	Use Area
	All Resources	**Mammals**	**Fish**	**Birds**		
Chistochina	1982-83 (Stratton and Georgette 1984); 1987 (ADFG 2011)	-	2001 (Simeone and Kari 2005); 2002, 2003 (ADFG 2009)	2000 (ADFG 2011)		1964-1984 (Stratton and Georgette 1985; ADFG 1985)
Chitina	1982-83 (Stratton and Georgette 1984); 1987 (ADFG 2011)	-	1988-2009 (ADFG 2009); 2001 (Simeone and Kari 2005)	2000 (ADFG 2011)		1964-1984 (Stratton and Georgette 1985; ADFG 1985)
Copper Center	1982-83 (Stratton and Georgette 1984); 1987 (ADFG 2011)	-	1988-2009 (ADFG 2009); 2001 (Simeone and Kari 2005)	2000 (ADFG 2011)		1964-1984 (Stratton and Georgette 1985; ADFG 1985); 2001 (Haley and Nemeth 2005)
Gakona	1982-83 (Stratton and Georgette 1984); 1987 (ADFG 2011)	-	1988-2009 (ADFG 2009); 2001 (Simeone and Kari 2005)	-		1964-1984 (Stratton and Georgette 1985; ADFG 1985); 2001 (Haley and Nemeth 2005)
Glennallen	1982-83 (Stratton and Georgette 1984); 1987 (ADFG 2011)	-	1986-2009 (ADFG 2009); 2001 (Simeone and Kari 2005)	-		1964-1984 (Stratton and Georgette 1985; ADFG 1985)
Gulkana	1982-83 (Stratton and Georgette 1984); 1987 (ADFG 2011)	-	1996, 1999, 2002-2004, 2008, 2009 (ADFG 2009); 2001 (Simeone and Kari 2005)	2000 (ADFG 2011)		1964-1984 (Stratton and Georgette 1985; ADFG 1985); 2001 (Haley and Nemeth 2005)
Kenny Lake	1982-83 (Stratton and Georgette 1984); 1987 (ADFG 2011)	-	1996, 1998, 2002-2004, 2008, 2009 (ADFG 2009); 2001 (Simeone and Kari 2005)	-		1964-1984 (Stratton and Georgette 1985; ADFG 1985)
Mentasta Lake*****	1982-83 (Stratton and Georgette 1984); 1987 (ADFG 2011)	-	1989-1993, 1995, 1997-1999, 2001-2006, 2008, 2009 (ADFG 2009); 2001 (Simeone and Kari 2005)	-		1964-1984 (Stratton and Georgette 1985; ADFG 1985)
Nabesna	1982-83 (Stratton and Georgette 1984); 1987 (ADFG 2011)	-	1994, 1997, 2000, 2002-2004 (ADFG 2009)	-		1964-1984 (Stratton and Georgette 1985; ADFG 1985)

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TABLE E-3.

Subsistence Baseline Data by Study Community

Community	**Harvest Data by Study Year (Source)**				**Seasonal Round**	**Use Area**
	All Resources	**Mammals**	**Fish**	**Birds**		
Paxson	1982-83 (Stratton and Georgette 1984); 1987 (ADFG 2011)	-	1985, 1989-2009 (ADFG 2009); 2001 (Simeone and Kari 2005)	-		1964-1984 (Stratton and Georgette 1985; ADFG 1985)
Slana******	1982-83 (Stratton and Georgette 1984); 1987 (ADFG 2011)	-	1988-2009 (ADFG 2009); 2001 (Simeone and Kari 2005)	-		1964-1984 (Stratton and Georgette 1985; ADFG 1985)
Tonsina	1982-83 (Stratton and Georgette 1984); 1987 (ADFG 2011)	-	2002-2004, 2008, 2009 (ADFG 2009); 2001 (Simeone and Kari 2005)	-		1964-1984 (Stratton and Georgette 1985; ADFG 1985)

*Harvest study years for Alatna/Allakaket combined.

**Harvest study years for Bettles/Evansville combined.

***Delta Junction also includes Big Delta, Deltana, Ft. Greely, and Whitestone.

****Fairbanks also includes College, Eielson AFB, Ester, Fox, Harding Birch Lakes, Moose Creek, Pleasant Valley, Salcha, and Two Rivers.

*****Mentasta Lake also includes Mentasta Pass.

******Slana also includes Slana Homestead North and Slana Homestead South.

Blank cells indicate no current (e.g., post-1960) systematically collected subsistence harvest, seasonal round, or use area data discovered for this community. Harvest data cells only include harvest information if the data are estimated for the entire community (or represent over 80 percent of households surveyed) and represent the total harvest for a species during the study time period.

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TABLE E-4.

Anaktuvuk Pass Subsistence Harvest Estimates by Resource Category, All-Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1992***	All Resources	-	-	-	-	-	-	85,040	-	-	100%
1992***	Non-Salmon Fish	-	67	-	-	-	4,892	6,897	-	-	8.1%
1992***	Large Land Mammals	-	-	-	-	-	640	74,390	-	-	87.5%
1992***	Small Land Mammals	-	-	-	-	-	133	22	-	-	0.0%
1992***	Marine Mammals	-	1	-	-	-	0	0	-	-	0.0%
1992***	Migratory Birds	-	22	-	-	-	321	626	-	-	0.7%
1992***	Upland Game Birds	-	-	-	-	-	412	289	-	-	0.3%
1992***	Vegetation	-	68	-	-	-	607	2,818	-	-	3.3%
1994-95	All Resources	-	62	61	-	-	-	52,619	-	-	100.0%
1994-95	Non-Salmon Fish	-	-	-	-	-	1,329	2,242	-	-	4.3%
1994-95	Large Land Mammals	-	-	-	-	-	358	50,000	-	-	95.0%
1994-95	Small Land Mammals	-	-	-	-	-	82	4	-	-	0.0%
1994-95	Migratory Birds	-	-	-	-	-	38	71	-	-	0.1%
1994-95	Upland Game Birds	-	-	-	-	-	165	165	-	-	0.3%
1994-95	Vegetation	-	-	-	-	-	22	137	-	-	0.3%
1996-97	All Resources	-	-	-	-	-	-	31,768	-	-	100.0%
1996-97	Salmon	-	-	-	-	-	68	142	-	-	0.4%
1996-97	Non-Salmon Fish	-	-	-	-	-	1,186	1,830	-	-	5.8%
1996-97	Large Land Mammals	-	-	-	-	-	217	29,284	-	-	92.2%
1996-97	Small Land Mammals	-	-	-	-	-	63	31	-	-	0.1%
1996-97	Migratory Birds	-	-	-	-	-	10	21	-	-	0.1%
1996-97	Upland Game Birds	-	-	-	-	-	118	94	-	-	0.3%
1996-97	Vegetation	-	-	-	-	-	56	366	-	-	1.2%
1998-99	All Resources	-	-	-	-	-	-	75,937	-	-	100.0%
1998-99	Salmon	-	-	-	-	-	3	16	-	-	0.0%
1998-99	Non-Salmon Fish	-	-	-	-	-	1,520	2,650	-	-	3.5%
1998-99	Large Land Mammals	-	-	-	-	-	515	70,374	-	-	92.7%
1998-99	Small Land Mammals	-	-	-	-	-	57	13	-	-	0.0%
1998-99	Migratory Birds	-	-	-	-	-	101	333	-	-	0.4%
1998-99	Upland Game Birds	-	-	-	-	-	118	118	-	-	0.2%
1998-99	Vegetation	-	-	-	-	-	380	2,433	-	-	3.2%
1999-00	All Resources	-	-	-	-	-	-	59,476	-	-	100.0%
1999-00	Non-Salmon Fish	-	-	-	-	-	1,777	12,282	-	-	20.7%
1999-00	Large Land Mammals	-	-	-	-	-	339	45,701	-	-	76.8%
1999-00	Small Land Mammals	-	-	-	-	-	7	0	-	-	0.0%
1999-00	Migratory Birds	-	-	-	-	-	32	108	-	-	0.2%
1999-00	Vegetation	-	-	-	-	-	218	1,385	-	-	2.3%

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TABLE E-4.

Anaktuvuk Pass Subsistence Harvest Estimates by Resource Category, All-Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
2000-01	All Resources	-	-	-	-	-	-	111,782	-	-	100.0%
	Non-Salmon Fish	-	-	-	-	-	3,345	8,928	-	-	8.0%
	Large Land Mammals	-	-	-	-	-	740	101,713	-	-	91.0%
	Migratory Birds	-	-	-	-	-	80	239	-	-	0.2%
	Vegetation	-	-	-	-	-	139	902	-	-	0.8%
2001-02	All Resources	-	-	-	-	-	-	48,809	-	-	100.0%
	Non-Salmon Fish	-	-	-	-	-	2,318	6,116	-	-	12.5%
	Large Land Mammals	-	-	-	-	-	283	41,165	-	-	84.3%
	Small Land Mammals	-	-	-	-	-	58	4	-	-	0.0%
	Upland Game Birds	-	-	-	-	-	100	100	-	-	0.2%
	Vegetation	-	-	-	-	-	219	1,424	-	-	2.9%
2002-03	All Resources	-	-	-	-	-	-	64,851	-	-	100.0%
	Non-Salmon Fish	-	-	-	-	-	1,133	2,019	-	-	3.1%
	Large Land Mammals	-	-	-	-	-	454	62,050	-	-	95.7%
	Small Land Mammals	-	-	-	-	-	43	31	-	-	0.0%
	Migratory Birds	-	-	-	-	-	93	299	-	-	0.5%
	Upland Game Birds	-	-	-	-	-	19	19	-	-	0.0%
	Vegetation	-	-	-	-	-	86	433	-	-	0.7%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
***Household participation for the 1992 study year based on Table A5 in Fuller and George (1999); participation in migratory bird harvests includes waterfowl and eggs; participation in vegetation harvests includes only berries.

The estimated harvest numbers for the 1994-95, 1996-97, 1998-99, 1999-2000, 2000-01, 2001-02, and 2002-03 data were derived by summing individual species in each resource category. Also for those study years, total pounds were derived from conversion rates found at ADFG (2011).

Sources: Bacon et al. 2009 (1996-97, 1998-99, 1999-00, 2000-01, 2001-02, 2002-03); Brower and Opie 1996 (1994-95); Fuller and George 1999 (1992).

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TABLE E-5.

Anaktuvuk Pass Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1991	Salmon	-	-	-	-	-	12	-	-	-
1992	Salmon	-	-	-	-	-	28	-	-	-
1993	Salmon	-	-	-	-	-	30	-	-	-
1994	Salmon	-	-	-	-	-	2	-	-	-
1996	Salmon	-	-	-	-	-	42	-	-	-
1997	Salmon	-	-	-	-	-	30	-	-	-
2005	Salmon	-	-	-	-	-	45	-	-	-
2007	Salmon	-	-	-	-	-	15	-	-	-
Non-Salmon Fish										
2001-02	Non-Salmon Fish	-	-	53	-	-	3,622	5,357	58	16
2002-03	Non-Salmon Fish	-	-	37	-	-	2,324	4,284	44	13

Sources: ADFG 2009 (1991-1994, 1996, 1997, 2005, 2007); Pedersen and Hugo 2005 (2001-02, 2002-03).

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TABLE E-6.

Anaktuvuk Pass Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1986	Wolf	-	-	-	-	-	44	-	-	-	-
1987	Wolf	-	-	-	-	-	38	-	-	-	-
1988	Wolf	-	-	-	-	-	57	-	-	-	-
1989	Wolf	-	-	-	-	-	55	-	-	-	-
1990	Wolf	-	-	-	-	-	110	-	-	-	-
1990-91	Caribou	-	-	55	-	-	592	69,964	985	223	-
1991a	Coho	-	-	-	-	-	12	-	-	-	-
1991b	Wolf	-	-	-	-	-	52	-	-	-	-
1991-92	Caribou	-	-	51	-	-	545	66,712	940	245	-
1992a	Coho	-	-	-	-	-	20	-	-	-	-
	Sockeye	-	-	-	-	-	8	-	-	-	-
1992b****	Caribou	-	74	-	-	-	600	70,222	889	260	82.6%
	Dall Sheep	-	-	-	-	-	32	3,168	40	12	3.7%
	Arctic Grayling	-	-	-	-	-	3,709	2,967	38	11	3.5%
	Lake Trout	-	-	-	-	-	531	2,124	27	8	2.5%

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TABLE E-6.

Anaktuvuk Pass Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
	Arctic Char	-	-	-	-	-	640	1,791	23	7	2.1%
	Moose	-	-	-	-	-	2	1,000	-	-	1.2%
1993	Sockeye	-	-	-	-	-	15	-	-	-	-
	Coho	-	-	-	-	-	15	-	-	-	-
1993-94	Caribou	-	-	43	-	-	574	67,713	846	219	-
1994	Sockeye	-	-	-	-	-	2	-	-	-	-
1994-95	Caribou	-	-	-	-	-	322	43,792	-	-	83.2%
	Moose	-	-	-	-	-	6	3,228	-	-	6.1%
	Dall Sheep	-	-	-	-	-	27	2,808	-	-	5.3%
	Arctic Grayling	-	-	-	-	-	931	838	-	-	1.6%
	Arctic Char	-	-	-	-	-	215	706	-	-	1.3%
1996	Sockeye	-	-	-	-	-	35	-	-	-	-
	Chinook	-	-	-	-	-	4	-	-	-	-
	Coho	-	-	-	-	-	3	-	-	-	-
1996-97	Caribou	-	-	-	-	-	210	28,587	-	-	90.0%
	Arctic Grayling	-	-	-	-	-	885	797	-	-	2.5%
	Dall Sheep	-	-	-	-	-	7	697	-	-	2.2%
	Arctic Char	-	-	-	-	-	188	621	-	-	2.0%
1997	Sockeye	-	-	-	-	-	30	-	-	-	-
1998-99	Caribou	-	-	-	-	-	500	68,000	-	-	89.5%
	Moose	-	-	-	-	-	2	1,076	-	-	1.4%
	Arctic Grayling	-	-	-	-	-	1,173	1,056	-	-	1.4%
	Lake Trout	-	-	-	-	-	175	1,050	-	-	1.4%
	Dall Sheep	-	-	-	-	-	10	1,040	-	-	1.4%
	Salmonberries	-	-	-	-	-	130	845	-	-	1.1%
1999-00	Caribou	-	-	-	-	-	329	44,744	-	-	75.2%
	Arctic Char	-	-	-	-	-	278	9,167	-	-	15.4%
	Lake Trout	-	-	-	-	-	346	2,075	-	-	3.5%
	Arctic Grayling	-	-	-	-	-	1,152	1,037	-	-	1.7%
	Dall Sheep	-	-	-	-	-	9	957	-	-	1.6%
2000-01	Caribou	-	-	-	-	-	732	99,579	-	-	89.1%
	Lake Trout	-	-	-	-	-	862	5,174	-	-	4.6%
	Arctic Char	-	-	-	-	-	583	1,924	-	-	1.7%
	Arctic Grayling	-	-	-	-	-	1,800	1,620	-	-	1.4%
	Moose	-	-	-	-	-	3	1,614	-	-	1.4%
2001-02a	Caribou	-	-	-	-	-	271	36,910	-	-	75.6%
	Moose	-	-	-	-	-	7	3,766	-	-	7.7%
	Lake Trout	-	-	-	-	-	496	2,976	-	-	6.1%
	Arctic Char	-	-	-	-	-	559	1,845	-	-	3.8%
	Arctic Grayling	-	-	-	-	-	1,132	1,019	-	-	2.1%

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TABLE E-6.

Anaktuvuk Pass Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
	Blackberries	-	-	-	-	-	113	735	-	-	1.5%
	Blueberries	-	-	-	-	-	92	597	-	-	1.2%
	Dall Sheep	-	-	-	-	-	5	489	-	-	1.0%
2001-02b	Arctic Grayling	-	-	47	-	-	2,666	2,400	26	7	-
	Arctic Char	-	-	29	-	-	533	1,493	16	5	-
	Lake Trout	-	-	29	-	-	342	1,369	15	4	-
	Arctic Cisco	-	-	4	-	-	68	48	1	0	-
	Burbot	-	-	4	-	-	12	47	1	0	-
2002-03a	Caribou	-	-	-	-	-	436	59,310	-	-	91.5%
	Dall Sheep	-	-	-	-	-	16	1,664	-	-	2.6%
	Moose	-	-	-	-	-	2	1,076	-	-	1.7%
	Arctic Grayling	-	-	-	-	-	839	755	-	-	1.2%
	Lake Trout	-	-	-	-	-	117	701	-	-	1.1%
2002-03b	Arctic Char	-	-	30	-	-	674	1,886	19	6	-
	Arctic Grayling	-	-	24	-	-	1,288	1,159	12	3	-
	Lake Trout	-	-	25	-	-	286	1,145	12	3	-
	Unknown Whitefish	-	-	2	-	-	50	38	0	0	-
	Dolly Varden	-	-	2	-	-	9	26	0	0	-
2005	Sockeye	-	-	-	-	-	45	-	-	-	-
2006-07	Caribou	92	61	53	47	63	696	81,490	1,000	299	-
2007	Sockeye	-	-	-	-	-	15	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
****Household participation for the 1992b study year based on Table A5 in Fuller and George (1999).

For All Resources study years (1992b,1994-95, 1996-97, 1998-99, 1999-2000, 2000-01, 2001-02, 2002-03), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

The estimated harvest numbers for the 1994-95, 1996-97, 1998-99, 1999-00, 2000-01, 2001-02a, and 2002-03a. All Resources study years were derived by summing individual species in each resource category. Also for those study years, total pounds were derived from conversion rates found at ADFG (2011) and provided by ADFG.

Sources: Adams, et al. 2008 (1986-90, 1991b); ADFG 2009 (1991a, 1992a, 1993, 1994, 1996, 1997, 2005, 2007); Bacon et al. 2009 (1996-97, 1998-2001, 2001-02a, 2002-03a); Brower and Opie 1996 (1994-95); Fuller and George 1999 (1992b); Pedersen and Hugo 2005 (2001-02b, 2002-03b); Pedersen and Nageak, 2009 (2006-07); Pedersen and Opie 1991 (1990-91); Pedersen and Opie 1992 (1991-92); Pedersen and Opie 1994 (1993-94).

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TABLE E-7.

Anaktuvuk Pass Annual Cycle of Subsistence Activities

	Winter					**Spring**		**Summer**			**Fall**	
	Nov	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**
Caribou												
Dall Sheep												
Moose												
Ptarmigan												
Furbearers												
Fish												
Berries												
		No to Very Low Levels of Subsistence Activity										
		Low to Medium Levels of Subsistence Activity										
		High Levels of Subsistence Activity										
Source: Brower and Opie, 1996.												

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TABLE E-8.

Barrow Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1987	All Resources	-	-	58	-	-	-	621,067	663	206	100.0%
	Salmon	-	-	3	-	-	196	1,190	1	0	0.2%
	Non-Salmon Fish	-	-	-	-	-	45,367	67,262	72	22	10.8%
	Large Land Mammals	-	-	-	-	-	1,660	213,777	228	71	34.4%
	Small Land Mammals	-	-	-	-	-	233	58	0	0	0.0%
	Marine Mammals	-	-	41	-	-	-	316,229	337	105	50.9%
	Migratory Birds	-	-	-	-	-	8,125	20,618	22	7	3.3%
	Upland Game Birds	-	-	16	-	-	2,454	1,717	2	1	0.3%
	Vegetation	-	-	3	-	-	-	216	0	0	0.0%
1988	All Resources	-	-	50	-	-	-	614,669	656	204	100.0%
	Salmon	-	-	1	-	-	80	490	1	0	0.1%
	Non-Salmon Fish	-	-	14	-	-	38,005	50,571	54	17	8.2%
	Large Land Mammals	-	-	27	-	-	1,599	207,005	221	69	33.7%
	Small Land Mammals	-	-	-	-	-	152	0	0	0	0.0%
	Marine Mammals	-	-	39	-	-	654	334,069	357	111	54.3%
	Migratory Birds	-	-	34	-	-	7,832	21,419	23	7	3.5%
	Upland Game Birds	-	-	9	-	-	1,350	945	1	0	0.2%
	Vegetation	-	-	2	-	-	-	169	0	0	0.0%
1989	All Resources	-	-	61	-	-	-	872,092	931	289	100.0%
	Salmon	-	-	10	-	-	2,088	12,244	13	4	1.4%
	Non-Salmon Fish	-	-	13	-	-	66,199	106,226	113	35	12.2%
	Large Land Mammals	-	-	39	-	-	1,705	214,676	229	71	24.6%
	Small Land Mammals	-	-	2	-	-	68	7	0	0	0.0%
	Marine Mammals	-	-	45	-	-	591	508,181	542	169	58.3%
	Migratory Birds	-	-	37	-	-	12,539	29,215	31	10	3.3%
	Upland Game Birds	-	-	5	-	-	329	231	0	0	0.0%
	Vegetation	-	-	-	-	-	-	1,312	1	0	0.2%
1992***	All Resources	-	-	-	-	-	-	1,363,738	-	-	100.0%
	Salmon	-	-	-	-	-	1,161	8,236	-	-	0.6%
	Non-Salmon Fish	-	-	-	-	-	50,596	87,769	-	-	6.4%
	Large Land Mammals	-	-	-	-	-	2,033	250,447	-	-	18.4%
	Small Land Mammals	-	-	-	-	-	260	35	-	-	0.0%
	Marine Mammals	-	-	-	-	-	1,080	991,528	-	-	72.7%
	Migratory Birds	-	37	-	-	-	10,223	22,922	-	-	1.7%
	Upland Game Birds	-	-	-	-	-	1,332	933	-	-	0.1%
	Eggs	-	-	-	-	-	89	13	-	-	0.0%
	Marine Invertebrates	-	-	-	-	-	1,774	694	-	-	0.1%

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TABLE E-8.

Barrow Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
	Vegetation	-	16	-	-	-	291	1,164	-	-	0.1%
1995-96	All Resources	-	-	-	-	-	-	1,194,484	-	-	100.0%
	Salmon	-	-	-	-	-	301	1,628	-	-	0.1%
	Non-Salmon Fish	-	-	-	-	-	29,334	42,778	-	-	3.6%
	Large Land Mammals	-	-	-	-	-	2,164	294,236	-	-	24.6%
	Small Land Mammals	-	-	-	-	-	220	54	-	-	0.0%
	Marine Mammals	-	-	-	-	-	883	789,821	-	-	66.1%
	Migratory Birds	-	-	-	-	-	14,746	61,217	-	-	5.1%
	Upland Game Birds	-	-	-	-	-	152	152	-	-	0.0%
	Eggs	-	-	-	-	-	21	3	-	-	0.0%
	Marine Invertebrates	-	-	-	-	-	2,208	4,416	-	-	0.4%
	Vegetation	-	-	-	-	-	27	178	-	-	0.0%
1996-97	All Resources	-	-	-	-	-	-	1,181,132	-	-	100.0%
	Salmon	-	-	-	-	-	345	2,063	-	-	0.2%
	Non-Salmon Fish	-	-	-	-	-	27,469	44,964	-	-	3.8%
	Large Land Mammals	-	-	-	-	-	1,158	157,420	-	-	13.3%
	Small Land Mammals	-	-	-	-	-	157	213	-	-	0.0%
	Marine Mammals	-	-	-	-	-	486	957,692	-	-	81.1%
	Migratory Birds	-	-	-	-	-	4,472	18,533	-	-	1.6%
	Upland Game Birds	-	-	-	-	-	224	224	-	-	0.0%
	Vegetation	-	-	-	-	-	4	23	-	-	0.0%
2000	All Resources	-	-	-	-	-	-	1,285,565	-	-	100.0%
	Salmon	-	-	-	-	-	2,100	10,247	-	-	0.7%
	Non-Salmon Fish	-	-	-	-	-	78,065	114,455	-	-	7.3%
	Large Land Mammals	-	-	-	-	-	3,390	460,642	-	-	29.5%
	Small Land Mammals	-	-	-	-	-	421	423	-	-	0.0%
	Marine Mammals	-	-	-	-	-	1,491	909,927	-	-	58.3%
	Migratory Birds	-	-	-	-	-	15,647	63,826	-	-	4.1%
	Upland Game Birds	-	-	-	-	-	1,071	1,071	-	-	0.1%
	Eggs	-	-	-	-	-	11	3	-	-	0.0%
	Marine Invertebrates	-	-	-	-	-	36	109	-	-	0.0%
	Vegetation	-	-	-	-	-	71	382	-	-	0.0%
2001	All Resources	-	-	-	-	-	-	1,082,241	-	-	100.0%
	Salmon	-	-	-	-	-	332	1,720	-	-	0.2%
	Non-Salmon Fish	-	-	-	-	-	4,453	10,003	-	-	0.9%
	Large Land Mammals	-	-	-	-	-	1,840	249,943	-	-	23.1%
	Small Land Mammals	-	-	-	-	-	118	0	-	-	0.0%
	Marine Mammals	-	-	-	-	-	777	793,162	-	-	73.3%

TABLE E-8.

Barrow Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
	Migratory Birds	-	-	-	-	-	6,390	26,326	-	-	2.4%
	Upland Game Birds	-	-	-	-	-	1,029	1,029	-	-	0.1%
	Marine Invertebrates	-	-	-	-	-	13	36	-	-	0.0%
	Vegetation	-	-	-	-	-	3	22	-	-	0.0%
2003	All Resources	-	-	-	-	-	-	1,245,943	-	-	100.0%
	Salmon	-	-	-	-	-	4,793	22,617	-	-	1.8%
	Non-Salmon Fish	-	-	-	-	-	20,109	36,922	-	-	3.0%
	Large Land Mammals	-	-	-	-	-	2,098	285,297	-	-	22.9%
	Small Land Mammals	-	-	-	-	-	84	7	-	-	0.0%
	Marine Mammals	-	-	-	-	-	1,551	871,568	-	-	70.0%
	Migratory Birds	-	-	-	-	-	8,119	23,349	-	-	1.9%
	Upland Game Birds	-	-	-	-	-	443	438	-	-	0.0%
	Eggs	-	-	-	-	-	44	185	-	-	0.0%
	Marine Invertebrates	-	-	-	-	-	1,733	5,198	-	-	0.4%
	Vegetation	-	-	-	-	-	61	362	-	-	0.0%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
***Household participation for the 1992 study year based on Table A5 in Fuller and George (1999); participation in migratory bird harvests includes waterfowl and eggs. Participation in vegetation harvests includes only berries.

The estimated harvest numbers for the 1995-96, 1996-97, 2000, 2001, and 2003 data were derived by summing individual species in each resource category. Also for those study years, total pounds were derived from conversion rates found at ADFG (2011) and total (usable) pounds for bowhead whales were calculated based on the method presented in SRB&A and ISER (1993). These estimates do not account for whale girth and should be considered approximate; more exact methods for estimating total whale weights are available in George et al. (n.d.).

Sources: Bacon et al. 2009 (1995-96, 1996-97, 2000, 2001, 2003); Fuller and George 1999 (1992); SRB&A and ISER 1993 (1987-89).

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TABLE E-9.

Barrow Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1987	Salmon	-	-	-	-	-	50	-	-	-
1988	Salmon	-	-	-	-	-	73	-	-	-
1989	Salmon	-	-	-	-	-	97	-	-	-
1990	Salmon	-	-	-	-	-	108	-	-	-
1991	Salmon	-	-	-	-	-	338	-	-	-
1992	Salmon	-	-	-	-	-	227	-	-	-
1993	Salmon	-	-	-	-	-	133	-	-	-
1994	Salmon	-	-	-	-	-	146	-	-	-
1995	Salmon	-	-	-	-	-	315	-	-	-
1996	Salmon	-	-	-	-	-	247	-	-	-
1997	Salmon	-	-	-	-	-	524	-	-	-
1998	Salmon	-	-	-	-	-	523	-	-	-
1999	Salmon	-	-	-	-	-	494	-	-	-
2000	Salmon	-	-	-	-	-	232	-	-	-
2001	Salmon	-	-	-	-	-	399	-	-	-
2002	Salmon	-	-	-	-	-	321	-	-	-
2003	Salmon	-	-	-	-	-	296	-	-	-
2004	Salmon	-	-	-	-	-	329	-	-	-
2005a	Salmon	-	-	-	-	-	398	-	-	-
2006	Salmon	-	-	-	-	-	131	-	-	-
2007a	Salmon	-	-	-	-	-	296	-	-	-
2008a	Salmon	-	-	-	-	-	616	-	-	-
2009	Salmon	-	-	-	-	-	330	-	-	-
Birds										
2005b	Birds*	-	-	-	-	-	10,943	-	-	-
2007b	Birds*	-	-	-	-	-	38,152	-	-	-
2008b	Birds*	-	-	-	-	-	35,250	-	-	-
Eggs										
2005b	Eggs	-	-	-	-	-	32	-	-	-
2007b	Eggs	-	-	-	-	-	1,783	-	-	-
2008b	Eggs	-	-	-	-	-	204	-	-	-

Notes: *Estimated harvest number for birds include upland game birds and migratory birds combined.

Sources: ADFG 2009 (1987-2004, 2005a, 2006, 2007a, 2008a, 2009); Naves 2010 (2005b, 2007b, 2008b).

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TABLE E-10.

Barrow Subsistence Harvest Estimates by Selected Species

Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number	Total Pounds	Average HH Pounds	Per Capita Pounds	% of Total Harvest
1987a	Sockeye	-	-	-	-	-	50	-	-	-	-
1987b	Caribou	-	-	26	-	-	1,595	186,669	199	62	30.1%
	Bowhead Whale	-	-	31	-	-	7	184,629	197	61	29.7%
	Walrus	-	-	11	-	-	84	64,663	69	21	10.4%
	Bearded Seal	-	-	25	-	-	236	41,518	44	14	6.7%
	Broad Whitefish	-	-	11	-	-	10,579	27,519	29	9	4.4%
	Moose	-	-	6	-	-	52	25,786	28	9	4.2%
	Ringed Seal	-	-	14	-	-	466	19,574	21	6	3.2%
	Geese	-	-	20	-	-	2,873	12,740	14	4	2.1%
	Unknown Whitefish	-	-	3	-	-	5,108	10,215	11	3	1.6%
	Arctic Grayling	-	-	14	-	-	12,664	10,131	11	3	1.6%
	Ducks	-	-	22	-	-	5,252	7,878	8	3	1.3%
	Least Cisco	-	-	-	-	-	7,024	7,024	8	2	1.1%
1988a	Sockeye	-	-	-	-	-	65	-	-	-	-
	Chinook	-	-	-	-	-	6	-	-	-	-
	Coho	-	-	-	-	-	1	-	-	-	-
1988b	Bowhead Whale	-	-	35	-	-	11	233,313	249	77	38.0%
	Caribou	-	-	27	-	-	1,533	179,314	191	59	29.2%
	Walrus	-	-	6	-	-	61	47,215	50	16	7.7%
	Bearded Seal	-	-	11	-	-	179	31,436	34	10	5.1%
	Broad Whitefish	-	-	11	-	-	11,432	29,423	31	10	4.8%
	Moose	-	-	4	-	-	53	26,367	28	9	4.3%
	Ringed Seal	-	-	10	-	-	388	16,304	17	5	2.7%
	Geese	-	-	19	-	-	3,334	14,672	16	5	2.4%
	Least Cisco	-	-	2	-	-	7,505	7,505	8	2	1.2%
	Arctic Grayling	-	-	11	-	-	8,684	6,947	7	2	1.1%
	Ducks	-	-	20	-	-	4,498	6,747	7	2	1.1%
1989a	Sockeye	-	-	-	-	-	87	-	-	-	-
	Chinook	-	-	-	-	-	10	-	-	-	-
1989b	Bowhead Whale	-	-	45	-	-	10	377,647	403	125	43.3%
	Caribou	-	-	39	-	-	1,656	193,744	207	64	22.2%
	Broad Whitefish	-	-	-	-	-	30,047	78,921	84	26	9.0%
	Walrus	-	-	13	-	-	101	77,987	83	26	8.9%
	Seal	-	-	11	-	-	440	33,077	35	11	3.8%
	Moose	-	-	6	-	-	40	20,014	21	7	2.3%
	Polar Bear	-	-	4	-	-	39	19,471	21	6	2.2%

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TABLE E-10.

Barrow Subsistence Harvest Estimates by Selected Species

Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number	Total Pounds	Average HH Pounds	Per Capita Pounds	% of Total Harvest
	Bearded Seal	-	-	11	-	-	109	19,152	20	6	2.2%
	Geese	-	-	13	-	-	3,944	16,289	17	5	1.9%
	Ringed Seal	-	-	11	-	-	328	13,774	15	5	1.6%
	Ducks	-	-	37	-	-	8,589	12,883	14	4	1.5%
	Humpback Whitefish	-	-	10	-	-	3,648	9,119	10	3	1.0%
1990	Sockeye	-	-	-	-	-	103	-	-	-	-
	Chinook	-	-	-	-	-	5	-	-	-	-
1991	Sockeye	-	-	-	-	-	333	-	-	-	-
	Chinook	-	-	-	-	-	5	-	-	-	-
1992a	Sockeye	-	-	-	-	-	172	-	-	-	-
	Chinook	-	-	-	-	-	26	-	-	-	-
	Coho	-	-	-	-	-	15	-	-	-	-
	Chum	-	-	-	-	-	12	-	-	-	-
	Pink	-	-	-	-	-	2	-	-	-	-
1992b****	Bowhead Whale	-	-	-	-	-	22	729,952	-	-	53.5%
	Caribou	-	46	-	-	-	1,993	233,206	-	-	17.1%
	Walrus	-	26	-	-	-	206	159,236	-	-	11.7%
	Bearded Seal	-	-	-	-	-	463	81,471	-	-	6.0%
	Broad Whitefish	-	-	-	-	-	23,997	59,993	-	-	4.4%
	Moose	-	-	-	-	-	34	17,115	-	-	1.3%
1993	Sockeye	-	-	-	-	-	131	-	-	-	-
	Chinook	-	-	-	-	-	2	-	-	-	-
1994	Sockeye	-	-	-	-	-	141	-	-	-	-
	Chinook	-	-	-	-	-	5	-	-	-	-
1995	Sockeye	-	-	-	-	-	282	-	-	-	-
	Chinook	-	-	-	-	-	28	-	-	-	-
	Coho	-	-	-	-	-	5	-	-	-	-
1995-96	Bowhead Whale	-	-	-	-	-	16	525,413	-	-	44.0%
	Caribou	-	-	-	-	-	2,155	293,094	-	-	24.5%
	Bearded Seal	-	-	-	-	-	431	181,146	-	-	15.2%
	Walrus	-	-	-	-	-	74	51,520	-	-	4.3%
	Ducks	-	-	-	-	-	12,118	50,200	-	-	4.2%
	Ringed Seal	-	-	-	-	-	345	25,530	-	-	2.1%
	Broad Whitefish	-	-	-	-	-	5,130	13,337	-	-	1.1%
	Whitefish	-	-	-	-	-	6,005	12,610	-	-	1.1%
1996	Sockeye	-	-	-	-	-	229	-	-	-	-
	Coho	-	-	-	-	-	14	-	-	-	-
	Chinook	-	-	-	-	-	4	-	-	-	-
1996-97	Bowhead Whale	-	-	-	-	-	28	803,891	-	-	68.1%

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TABLE E-10.

Barrow Subsistence Harvest Estimates by Selected Species

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds	
	Caribou	-	-	-	-	-	1,158	157,420	-	-	13.3%
	Bearded Seal	-	-	-	-	-	192	80,766	-	-	6.8%
	Walrus	-	-	-	-	-	78	54,320	-	-	4.6%
	Broad Whitefish	-	-	-	-	-	6,684	22,726	-	-	1.9%
	Least Cisco	-	-	-	-	-	16,519	16,519	-	-	1.4%
	Ringed Seal	-	-	-	-	-	180	13,298	-	-	1.1%
1997	Sockeye	-	-	-	-	-	487	-	-	-	-
	Chinook	-	-	-	-	-	23	-	-	-	-
	Coho	-	-	-	-	-	11	-	-	-	-
	Chum	-	-	-	-	-	3	-	-	-	-
1998	Sockeye	-	-	-	-	-	487	-	-	-	-
	Chinook	-	-	-	-	-	35	-	-	-	-
1999	Sockeye	-	-	-	-	-	464	-	-	-	-
	Chinook	-	-	-	-	-	31	-	-	-	-
2000a	Sockeye	-	-	-	-	-	221	-	-	-	-
	Chinook	-	-	-	-	-	10	-	-	-	-
2000b	Bowhead Whale	-	-	-	-	-	18	472,651	-	-	30.3%
	Caribou	-	-	-	-	-	3,359	456,851	-	-	29.3%
	Bearded Seal	-	-	-	-	-	729	306,012	-	-	19.6%
	Walrus	-	-	-	-	-	115	80,710	-	-	5.2%
	Broad Whitefish	-	-	-	-	-	21,318	72,480	-	-	4.6%
	Ringed Seal	-	-	-	-	-	586	43,334	-	-	2.8%
	Geese	-	-	-	-	-	7,818	32,564	-	-	2.1%
	Ducks	-	-	-	-	-	7,827	31,257	-	-	2.0%
2001a	Sockeye	-	-	-	-	-	382	-	-	-	-
	Chinook	-	-	-	-	-	17	-	-	-	-
2001b	Bowhead Whale	-	-	-	-	-	27	545,558	-	-	50.4%
	Caribou	-	-	-	-	-	1,820	247,520	-	-	22.9%
	Bearded Seal	-	-	-	-	-	327	137,340	-	-	12.7%
	Walrus	-	-	-	-	-	123	86,380	-	-	8.0%
	Ringed Seal	-	-	-	-	-	287	21,216	-	-	2.0%
	Geese	-	-	-	-	-	4,146	17,214	-	-	1.6%
2002	Sockeye	-	-	-	-	-	316	-	-	-	-
	Chinook	-	-	-	-	-	5	-	-	-	-
2002-03	Caribou	92	61	55	80	78	5,641	-	-	123	-
2003a	Sockeye	-	-	-	-	-	282	-	-	-	-
	Chinook	-	-	-	-	-	14	-	-	-	-
2003b	Bowhead Whale	-	-	-	-	-	16	476,693	-	-	38.3%
	Bearded Seal	-	-	-	-	-	776	325,962	-	-	26.2%

TABLE E-10.

Barrow Subsistence Harvest Estimates by Selected Species

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds	
	Caribou	-	-	-	-	-	2,092	284,444	-	-	22.8%
	Ringed Seal	-	-	-	-	-	413	30,525	-	-	2.4%
	Walrus	-	-	-	-	-	313	29,380	-	-	2.4%
	Broad Whitefish	-	-	-	-	-	8,207	27,905	-	-	2.2%
	Geese	-	-	-	-	-	3,629	14,369	-	-	1.2%
2003-04	Caribou	87	52	45	73	69	3,548	-	-	82	-
2004	Sockeye	-	-	-	-	-	305	-	-	-	-
	Chinook	-	-	-	-	-	24	-	-	-	-
2004-05	Caribou	85	51	48	62	64	4,338	-	-	94	-
2005	Sockeye	-	-	-	-	-	393	-	-	-	-
	Chinook	-	-	-	-	-	4	-	-	-	-
2005-06	Caribou	90	50	47	81	78	4,535	-	-	103	-
2006	Sockeye	-	-	-	-	-	123	-	-	-	-
	Coho	-	-	-	-	-	5	-	-	-	-
	Chinook	-	-	-	-	-	3	-	-	-	-
2006-07	Caribou	92	65	59	65	70	5,380	-	-	111	-
2007	Sockeye	-	-	-	-	-	251	-	-	-	-
	Chinook	-	-	-	-	-	41	-	-	-	-
	Coho	-	-	-	-	-	5	-	-	-	-
2008	Sockeye	-	-	-	-	-	514	-	-	-	-
	Chinook	-	-	-	-	-	102	-	-	-	-
2009	Sockeye	-	-	-	-	-	328	-	-	-	-
	Chinook	-	-	-	-	-	2	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
****Household participation for the 1992b study year based on Table A5 in Fuller and George (1999).

For All Resources study years (1987b, 1988b, 1989b, 1992b, 1995-96, 1996-97, 2000b, 2001b, 2003b) species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

The estimated harvest numbers for the 1995-96, 1996-97, 2000, 2001, and 2003 data were derived by summing individual species in each resource category. Also for those study years, total pounds were derived from conversion rates found at ADFG (2011) and total (usable) pounds for bowhead whales were calculated based on the method presented in SRB&A and ISER (1993). These estimates do not account for whale girth and should be considered approximate; more exact methods for estimating total whale weights are available in George et al. (n.d.).

Sources: ADFG 2009 (1987a, 1988a, 1989a, 1990-91, 1992a, 1993-95, 1996, 1997-99, 2000a, 2001a, 2002, 2003a, 2004, 2005, 2006, 2007-09); Bacon et al. 2009 (1995-96, 1996-97, 2000b, 2001b, 2003b); Braem et al. 2011 (2002-03, 2003-04, 2004-05, 2005-06, 2006-07); Fuller and George 1999 (1992b); SRB&A and ISER1993 (1987b, 1988b, and 1989b).

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TABLE E-11.

Barrow Annual Cycle of Subsistence Activities

	Winter					**Spring**		**Summer**			**Fall**	
	Nov	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**
Fish												
Birds												
Berries												
Furbearers												
Caribou												
Polar Bear												
Seals												
Walrus												
Bowhead												

(white)	No to Very Low Levels of Subsistence Activity
(light grey)	Low to Medium Levels of Subsistence Activity
(dark grey)	High Levels of Subsistence Activity

Source: SRB&A and ISER 1993.

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KAKTOVIK

TABLE E-12.

Kaktovik Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1985	All Resources	100	93	91	83	100	-	61,663	1,163	328	100.0%
	Salmon	2	0	0	0	2	0	0	0	0	0.0%
	Non-Salmon Fish	100	86	81	45	93	6,866	11,403	215	61	18.5%
	Large Land Mammals	100	79	71	71	100	288	35,331	667	188	57.3%
	Small Land Mammals	60	52	52	31	24	427	160	3	1	0.3%
	Marine Mammals	88	69	57	41	86	174	10,762	203	57	17.5%
	Migratory Birds	83	76	71	48	57	964	3,388	64	18	5.5%
	Upland Game Birds	86	74	69	45	43	867	607	11	3	1.0%
	Vegetation	24	17	2	5	21	-	13	0	0	0.0%
1986	All Resources	100	89	87	83	100	-	84,060	1,501	433	100.0%
	Non-Salmon Fish	96	75	72	66	87	4,416	6,951	124	36	8.3%
	Large Land Mammals	98	68	62	57	98	198	24,908	445	128	29.6%
	Small Land Mammals	47	45	40	19	30	183	39	1	0	0.0%
	Marine Mammals	96	64	60	64	96	-	49,723	888	256	59.2%
	Migratory Birds	-	-	-	-	-	273	1,673	30	9	2.0%
	Upland Game Birds	87	62	62	47	55	1,012	708	13	4	0.8%
	Eggs	2	2	2	0	2	4	1	0	0	0.0%
	Vegetation	49	21	21	11	40	-	58	1	0	0.1%
1992a	All Resources	96	89	89	83	92	-	170,939	2,713	886	100.0%
	Salmon	26	9	9	11	19	50	105	2	1	0.1%
	Non-Salmon Fish	94	83	81	70	68	18,415	22,847	363	118	13.4%
	Large Land Mammals	96	70	57	62	83	212	28,705	456	149	16.8%
	Small Land Mammals	47	43	38	21	19	213	162	3	1	0.1%
	Marine Mammals	89	64	40	70	87	-	115,645	1,836	599	67.7%
	Migratory Birds	83	62	51	47	70	970	2,702	43	14	1.6%
	Upland Game Birds	85	60	57	47	49	769	539	9	3	0.3%
	Eggs	23	15	13	15	15	56	8	0	0	0.0%
	Vegetation	77	72	70	23	40	-	227	4	1	0.1%
1992b***	All Resources	-	-	-	-	-	-	180,970	-	-	100.0%
	Salmon	-	-	-	-	-	20	123	-	-	0.1%
	Non-Salmon Fish	-	66	-	-	-	19,641	32,941	-	-	18.2%
	Large Land Mammals	-	-	-	-	-	195	24,763	-	-	13.7%
	Small Land Mammals	-	-	-	-	-	51	13	-	-	0.0%
	Marine Mammals	-	-	-	-	-	77	120,287	-	-	66.5%
	Migratory Birds	-	64	-	-	-	773	2,362	-	-	1.3%
	Upland Game Birds	-	-	-	-	-	400	257	-	-	0.1%
	Eggs	-	-	-	-	-	32	5	-	-	0.0%
	Vegetation	-	50	-	-	-	56	219	-	-	0.1%
1994-95	All Resources	-	-	-	-	-	-	126,893	-	-	100.0%

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TABLE E-12.

Kaktovik Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
	Salmon	-	-	-	-	-	1	6	-	-	0.0%
	Non-Salmon Fish	-	-	-	-	-	4,425	7,934	-	-	6.3%
	Large Land Mammals	-	-	-	-	-	119	17,007	-	-	13.4%
	Small Land Mammals	-	-	-	-	-	59	18	-	-	0.0%
	Marine Mammals	-	-	-	-	-	46	100,725	-	-	79.4%
	Migratory Birds	-	-	-	-	-	411	1,102	-	-	0.9%
	Upland Game Birds	-	-	-	-	-	119	119	-	-	0.1%
2002-03	All Resources	-	-	-	-	-	-	104,777	-	-	100.0%
	Non-Salmon Fish	-	-	-	-	-	2,363	4,784	-	-	4.6%
	Large Land Mammals	-	-	-	-	-	130	17,104	-	-	16.3%
	Small Land Mammals	-	-	-	-	-	56	20	-	-	0.0%
	Marine Mammals	-	-	-	-	-	30	80,877	-	-	77.2%
	Migratory Birds	-	-	-	-	-	536	1,585	-	-	1.5%
	Upland Game Birds	-	-	-	-	-	370	370	-	-	0.4%
	Eggs	-	-	-	-	-	30	5	-	-	0.0%
	Marine Invertebrates	-	-	-	-	-	3	6	-	-	0.0%
	Vegetation	-	-	-	-	-	9	27	-	-	0.0%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
***Due to a low response rate during the 1992b survey, these data should be viewed with caution. Household participation for the 1992b study year based on Table A5 in Fuller and George (1999); participation in migratory bird harvests includes waterfowl and eggs; participation in vegetation harvests includes only berries; participation in non-salmon fish harvests is for "fish" in general.

The estimated harvest numbers for the 1994-95 and 2002-03 data were derived by summing individual species in each resource category. Also for those study years, total pounds were derived from conversion rates found at ADFG (2011) and total (usable) pounds for bowhead whales were calculated based on the method presented in SRB&A and ISER (1993b). These estimates do not account for whale girth and should be considered approximate; more exact methods for estimating total whale weights are available in George et al. (n.d.).

Sources: ADFG 2011 (1985, 1986, 1992a); Bacon et al. 2009 (2002-03); Brower et al. 2000 (1994-95); Fuller and George 1999 (1992b).

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TABLE E-13.

Kaktovik Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1991	Salmon	-	-	-	-	-	32	-	-	-
1994	Salmon	-	-	-	-	-	87	-	-	-
1997	Salmon	-	-	-	-	-	7	-	-	-
2000	Salmon	-	-	-	-	-	7	-	-	-
2002a	Salmon	-	-	-	-	-	25	-	-	-
2004	Salmon	-	-	-	-	-	28	-	-	-
2005	Salmon	-	-	-	-	-	40	-	-	-
2006	Salmon	-	-	-	-	-	40	-	-	-
2007	Salmon	-	-	-	-	-	39	-	-	-
2009	Salmon	-	-	-	-	-	143	-	-	-
Non-Salmon Fish										
2001	Non-Salmon Fish	61	43	38	36	52	3,137	5,970	35	11
2002b	Non-Salmon Fish	76	55	47	33	47	5,036	9,748	55	19

Sources: ADFG 2009 (1991, 1994, 1997, 2000, 2002a, 2004-2007, 2009); ADFG 2011 (2001, 2002b).

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Table E-14. Kaktovik Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
1981-82	Caribou	-	-	-	-	-	43	-	-	-	-
1982-83	Caribou	-	-	-	-	-	160	-	-	-	-
1983-84	Caribou	-	-	-	-	-	107	-	-	-	-
1985	Caribou	95	76	69	67	86	235	27,941	527	149	45.3%
	Arctic Char	100	86	81	41	69	3,075	8,611	162	46	14.0%
	Ringed Seal	69	50	45	26	45	151	6,360	120	34	10.3%
	Dall Sheep	79	29	21	21	74	47	4,622	87	25	7.5%
	Bearded Seal	62	43	33	29	57	21	3,776	71	20	6.1%
	Geese	71	62	57	38	43	647	2,913	55	15	4.7%
	Cisco	79	60	55	29	62	3,546	2,482	47	13	4.0%
	Moose	45	7	7	5	38	4	1,893	36	10	3.1%
	Muskox	43	5	2	2	43	1	748	14	4	1.2%
	Polar Bear	24	5	2	2	21	1	626	12	3	1.0%
	Ptarmigan	86	74	69	45	43	867	607	11	3	1.0%

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Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
1986	Bowhead Whale	96	62	43	51	94	-	43,704	780	225	52.0%
	Caribou	98	66	60	53	94	178	21,188	378	109	25.2%
	Arctic Char	94	70	70	62	77	1,768	4,951	88	25	5.9%
	Bearded Seal	75	34	26	23	64	17	2,936	52	15	3.5%
	Ringed Seal	72	40	38	28	60	44	1,851	33	10	2.2%
	Dall Sheep	75	15	9	9	68	17	1,710	31	9	2.0%
	Cisco	85	53	53	45	79	2,402	1,682	30	9	2.0%
	Muskox	68	4	4	4	66	2	1,413	25	7	1.7%
	Geese	83	55	51	36	70	371	1,410	25	7	1.7%
	Polar Bear	15	6	4	4	13	2	1,182	21	6	1.4%
1987-88	Caribou	-	-	55	-	-	185	22,229	383	104	-
1990****	Caribou	-	-	48	-	-	113	13,453	224	67	-
1991a	Sockeye	-	-	-	-	-	26	-	-	-	-
	Coho	-	-	-	-	-	6	-	-	-	-
1991b	Caribou	-	-	50	-	-	181	22,113	369	94	-
1992a	Bowhead Whale	87	53	6	62	85	-	108,160	1,717	560	63.3%
	Caribou	96	70	55	53	75	158	19,136	304	99	11.2%
	Arctic Char	92	81	79	66	45	5,523	15,463	245	80	9.0%
	Bering Cisco	77	62	62	57	45	8,103	5,672	90	29	3.3%
	Dall Sheep	70	36	28	32	64	44	4,379	70	23	2.6%
	Bearded Seal	75	47	28	32	60	24	4,246	67	22	2.5%
	Muskox	53	21	9	17	51	5	3,179	50	16	1.9%
	Geese	79	60	47	40	62	601	2,135	34	11	1.2%
	Moose	36	11	6	9	32	4	2,011	32	10	1.2%
	Ringed Seal	47	30	26	28	36	42	1,689	27	9	1.0%
1992b*****	Bowhead Whale	-	59	-	-	-	3	108,463	-	-	59.9%
	Arctic Char	-	-	-	-	-	7,937	22,224	-	-	12.3%
	Caribou	-	66	-	-	-	136	15,926	-	-	8.8%
	Arctic Cisco	-	-	-	-	-	-	7,143	-	-	3.9%
	Dall Sheep	-	-	-	-	-	53	5,249	-	-	2.9%
	Walrus	-	23	-	-	-	5	3,737	-	-	2.1%
	Musk Ox	-	-	-	-	-	6	3,588	-	-	2.0%
	Bearded Seal	-	62	-	-	-	17	2,998	-	-	1.7%
	Beluga	-	-	-	-	-	2	2,761	-	-	1.5%
	Arctic Grayling	-	-	-	-	-	3,299	2,639	-	-	1.5%
	Geese	-	-	-	-	-	563	2,034	-	-	1.1%
1994	Sockeye	-	-	-	-	-	84	-	-	-	-
	Chinook	-	-	-	-	-	3	-	-	-	-
1994-95	Bowhead Whale	-	-	-	-	-	3	88,688	-	-	69.9%
	Caribou	-	-	-	-	-	78	10,608	-	-	8.4%
	Bearded Seal	-	-	-	-	-	21	8,820	-	-	7.0%
	Dolly Varden	-	-	-	-	-	1,875	6,188	-	-	4.9%

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Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
	Dall Sheep	-	-	-	-	-	30	3,120	-	-	2.5%
	Muskox	-	-	-	-	-	9	2,655	-	-	2.1%
	Arctic Cisco	-	-	-	-	-	2,358	1,651	-	-	1.3%
1997	Sockeye	-	-	-	-	-	7	-	-	-	-
2000	Sockeye	-	-	-	-	-	6	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
2001	Dolly Varden	-	-	35	-	-	1,739	4,869	27	9	-
	Arctic Cisco	-	-	91	-	-	1,361	953	32	9	-
	Lake Trout	-	-	4	-	-	37	148	2	1	-
2002a	Sockeye	-	-	-	-	-	24	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
2002b	Dolly Varden	-	-	44	-	-	2,649	7,418	41	14	-
	Arctic Cisco	-	-	38	-	-	2,187	1,531	19	7	-
	Lake Trout	-	-	6	-	-	200	800	10	3	-
2002-03	Bowhead Whale	-	-	-	-	-	3	75,515	-	-	72.1%
	Caribou	-	-	-	-	-	112	15,232	-	-	14.5%
	Arctic Char	-	-	-	-	-	1,162	3,834	-	-	3.7%
	Bearded Seal	-	-	-	-	-	8	3,360	-	-	3.2%
	Dall Sheep	-	-	-	-	-	18	1,872	-	-	1.8%
	Ringed Seal	-	-	-	-	-	17	1,258	-	-	1.2%
2004	Sockeye	-	-	-	-	-	28	-	-	-	-
2005	Sockeye	-	-	-	-	-	40	-	-	-	-
2006	Sockeye	-	-	-	-	-	39	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
2007	Sockeye	-	-	-	-	-	37	-	-	-	-
	Chinook	-	-	-	-	-	2	-	-	-	-
2009	Sockeye	-	-	-	-	-	143	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
****Per capita pounds may be underestimated.
*****Data should be viewed with caution due to a low response rate. Household participation for the 1992b study year based on Table A5 in Fuller and George (1999). Bearded seal participation rates include all species of seal.

For All Resources study years (1985, 1986, 1992a, 1992b, 1994-95, 2002-03), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years).

The estimated harvest numbers for the 1994-95 and 2002-03 data were derived by summing individual species in each resource category. Also for those study years, total pounds were derived from conversion rates found at ADFG (2011) and total (usable) pounds for bowhead whales were calculated based on the method presented in SRB&A and ISER (1993b). These estimates do not account for whale girth and should be considered approximate; more exact methods for estimating total whale weights are available in George et al. (n.d.).

Sources: ADFG 2009 (1991a, 1994, 1997, 2000, 2002a, 2004-2007, 2009); ADFG 2011 (1985, 1986, 1987-88, 1990, 1991, 1992a, 2001, 2002b); Bacon et al. 2009 (2002-03); Brower et al. 2000 (1994-95); Fuller and George 1999 (1992b); Pedersen, 1990 (1981-

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Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
82, 1982-83, 1983-84).											

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Table E-15. Kaktovik Annual Cycle of Subsistence Activities

	Winter					Spring		Summer			Fall	
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Fish												
Birds/Eggs												
Moose												
Caribou												
Grizzly Bear												
Small Mammals												
Furbearers												
Dall Sheep												
Polar Bear												
Seals												
Bowhead Whale												
		No to Very Low Levels of Subsistence Activity										
		Low to Medium Levels of Subsistence Activity										
		High Levels of Subsistence Activity										
Source: Jacobson and Wentworth, 1982.												

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NUIQSUT

Table E-16. Nuiqsut Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1985	All Resources	100	98	98	95	100	-	160,035	2,106	399	100.0%
	Salmon	60	43	40	23	23	441	1,366	18	3	0.9%
	Non-Salmon Fish	100	93	93	83	75	67,712	69,243	911	173	43.3%
	Large Land Mammals	98	90	90	80	70	536	67,621	890	169	42.3%
	Small Land Mammals	65	63	58	23	13	688	245	3	1	0.2%
	Marine Mammals	100	48	23	30	100	59	13,355	176	33	8.3%
	Migratory Birds	90	90	85	60	55	1,733	6,626	87	17	4.1%
	Upland Game Birds	88	88	88	58	13	1,957	1,370	18	3	0.9%
	Bird Eggs	25	25	23	8	10	262	40	1	0	0.0%
	Vegetation	38	50	18	10	20	-	169	2	0	0.1%
1992***	All Resources	-	-	-	-	-	-	150,195	-	-	100.0%
	Salmon	-	-	-	-	-	6	65	-	-	0.0%
	Non-Salmon Fish	-	74	-	-	-	36,701	51,890	-	-	34.5%
	Large Land Mammals	-	-	-	-	-	299	41,386	-	-	27.6%
	Small Land Mammals	-	-	-	-	-	46	1	-	-	0.0%
	Marine Mammals	-	-	-	-	-	49	52,865	-	-	35.2%
	Migratory Birds	-	-	-	-	-	1,105	3,655	-	-	2.4%
	Upland Game Birds	-	-	-	-	-	378	265	-	-	0.2%
	Eggs	-	-	-	-	-	25	4	-	-	0.0%
	Vegetation	-	32	-	-	-	-	66	-	-	0.0%
1993	All Resources	100	94	90	92	98	-	267,818	2,943	742	100.0%
	Salmon	71	45	36	39	47	272	1,009	11	3	0.4%
	Non-Salmon Fish	97	79	79	87	90	71,626	89,481	983	248	33.4%
	Large Land Mammals	98	76	74	82	92	691	87,306	959	242	32.6%
	Small Land Mammals	53	45	42	27	18	599	84	1	0	0.0%
	Marine Mammals	97	58	37	79	97	113	85,216	936	236	31.8%
	Migratory Birds	87	74	73	63	65	2,238	3,540	39	10	1.3%
	Upland Game Birds	60	45	45	42	26	973	681	7	2	0.3%
	Eggs	40	21	19	15	23	346	104	1	0	0.0%
	Vegetation	79	71	71	27	40	-	396	4	1	0.1%
1994-95****	All Resources	-	-	-	-	-	-	83,228	-	-	100.0%
	Salmon	-	-	-	-	-	10	31	-	-	0.0%
	Non-Salmon Fish	-	-	-	-	-	15,190	46,569	-	-	56.0%
	Large Land Mammals	-	-	-	-	-	263	32,686	-	-	39.3%
	Small Land Mammals	-	-	-	-	-	42	0	-	-	0.0%
	Marine Mammals	-	-	-	-	-	25	1,504	-	-	1.8%
	Migratory Birds	-	-	-	-	-	569	2,289	-	-	2.8%
	Upland Game Birds	-	-	-	-	-	58	58	-	-	0.1%
	Vegetation	-	-	-	-	-	14	91	-	-	0.1%
1995-96	All Resources	-	-	-	-	-	-	183,576	-	-	100.0%
	Salmon	-	-	-	-	-	42	131	-	-	0.1%

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Study Year	Resource	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	% of Total Harvest
	Non-Salmon Fish	-	-	-	-	-	10,612	16,822	-	-	9.2%
	Large Land Mammals	-	-	-	-	-	364	43,554	-	-	23.7%
	Small Land Mammals	-	-	-	-	-	27	0	-	-	0.0%
	Marine Mammals	-	-	-	-	-	178	120,811	-	-	65.8%
	Migratory Birds	-	-	-	-	-	683	2,166	-	-	1.2%
	Upland Birds	-	-	-	-	-	19	13	-	-	0.0%
	Vegetation	-	-	-	-	-	12	78	-	-	0.0%
2000-01	All Resources	-	-	-	-	-	-	183,246	-	-	100.0%
	Salmon	-	-	-	-	-	10	75	-	-	0.0%
	Non-Salmon Fish	-	-	-	-	-	26,545	27,933	-	-	15.2%
	Large Land Mammals	-	-	-	-	-	504	62,171	-	-	33.9%
	Small Land Mammals	-	-	-	-	-	108	2	-	-	0.0%
	Marine Mammals	-	-	-	-	-	31	87,929	-	-	48.0%
	Migratory Birds	-	-	-	-	-	1,192	5,108	-	-	2.8%
	Upland Birds	-	-	-	-	-	23	16	-	-	0.0%
	Vegetation	-	-	-	-	-	2	13	-	-	0.0%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
***The estimated pounds of moose harvested in 1992 is likely too high (Fuller and George 1999).
****The 1994-95 study year underrepresents the harvest of Arctic cisco and humpback whitefish (Brower and Hepa 1998); Nuiqsut did not successfully harvest a bowhead whale in 1994-95.

The estimated harvest numbers for the 1994-95, 1995-96 and 2000-01 data were derived by summing individual species in each resource category. Also for those study years, total pounds were derived from conversion rates found at ADFG (2011) and total (usable) pounds for bowhead whales were calculated based on the method presented in SRB&A and ISER (1993b). These estimates do not account for whale girth and should be considered approximate; more exact methods for estimating total whale weights are available in George et al. (n.d.).

Sources: ADFG 2011 (1985, 1993); Bacon et al. 2009 (1995-96, 2000-01); Brower and Hepa, 1998 (1994-95); Fuller and George 1999 (1992).

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Table E-17. Nuiqsut Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1985	Caribou	98	90	90	80	60	513	60,021	790	150	37.5%
	Cisco	98	75	73	65	60	46,478	29,354	386	73	18.3%
	Broad Whitefish	95	80	78	70	40	7,900	26,861	353	67	16.8%
	Bowhead Whale	100	23	5	8	100	0	7,458	98	19	4.7%
	Moose	40	40	18	20	25	13	6,650	88	17	4.2%
	Geese	90	90	85	55	48	1,345	6,045	80	15	3.8%
	Arctic Grayling	78	65	63	48	35	4,055	3,650	48	9	2.3%
	Humpback Whitefish	48	45	38	33	13	4,345	3,476	46	9	2.2%
	Arctic Char	75	63	60	33	35	1,060	2,969	39	7	1.9%
	Burbot	75	60	60	43	33	669	2,675	35	7	1.7%
	Bearded Seal	48	25	15	15	35	15	2,675	35	7	1.7%
	Ringed Seal	53	25	18	23	40	40	1,676	22	4	1.0%
1992	Bowhead Whale	-	-	-	-	-	2	48,715	-	-	32.4%
	Caribou	-	81	-	-	-	278	32,551	-	-	21.7%
	Arctic Cisco	-	-	-	-	-	22,391	22,391	-	-	14.9%
	Broad Whitefish	-	-	-	-	-	6,248	15,621	-	-	10.4%
	Moose****	-	-	-	-	-	18	8,835	-	-	5.9%
	Humpback Whitefish	-	-	-	-	-	1,802	4,504	-	-	3.0%
	Arctic Char	-	-	-	-	-	1,544	4,324	-	-	2.9%
	Bearded Seal	-	50	-	-	-	16	2,760	-	-	1.8%
	Arctic Grayling	-	-	-	-	-	3,114	2,491	-	-	1.7%
	Canada Geese	-	-	-	-	-	319	1,437	-	-	1.0%
1993	Caribou	98	74	74	79	79	672	82,169	903	228	30.7%
	Bowhead Whale	97	37	5	76	97	3	76,906	845	213	28.7%
	Broad Whitefish	90	66	66	65	66	12,193	41,455	456	115	15.5%
	Arctic Cisco	89	69	68	81	60	45,237	31,666	348	88	11.8%
	Ringed Seal	65	42	31	40	55	98	7,277	80	20	2.7%
	Burbot	79	63	57	53	55	1,416	5,949	65	16	2.2%
	Moose	69	47	10	29	63	9	4,403	48	12	1.6%
	Arctic Grayling	79	69	65	44	27	4,515	4,063	45	11	1.5%
	Least Cisco	63	52	47	36	27	6,553	3,277	36	9	1.2%
1994-95*****	Broad Whitefish	-	-	-	-	-	3,237	37,417	-	-	45.0%
	Caribou	-	-	-	-	-	258	30,186	-	-	36.3%
	Arctic Cisco	-	-	-	-	-	9,842	6,889	-	-	8.3%
	Moose	-	-	-	-	-	5	2,500	-	-	3.0%
	Geese	-	-	-	-	-	474	2,133	-	-	2.6%
	Ringed Seal	-	-	-	-	-	24	1,008	-	-	1.2%
1995-96	Bowhead Whale	-	-	-	-	-	4	110,715	-	-	60.3%
	Caribou	-	-	-	-	-	362	42,354	-	-	23.1%
	Broad Whitefish	-	-	-	-	-	2,863	9,735	-	-	5.3%
	Ringed Seal	-	-	-	-	-	155	6,527	-	-	3.6%

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Study Year	Resource*	Percentage of Households: Use	Percentage of Households: Try to Harvest	Percentage of Households: Harvest	Percentage of Households: Give	Percentage of Households: Receive	Estimated Harvest: Number**	Estimated Harvest: Total Pounds***	Estimated Harvest: Average HH Pounds	Estimated Harvest: Per Capita Pounds	% of Total Harvest
	Arctic Cisco	-	-	-	-	-	5,030	3,521	-	-	1.9%
	Bearded Seal	-	-	-	-	-	17	2,974	-	-	1.6%
	Least Cisco	-	-	-	-	-	1,804	1,804	-	-	1.0%
2000-01	Bowhead Whale	-	-	-	-	-	4	86220	-	-	47.1%
	Caribou	-	-	-	-	-	496	57,985	-	-	31.6%
	Arctic Cisco	-	-	-	-	-	18,222	12,755	-	-	7.0%
	Broad Whitefish	-	-	-	-	-	2,968	10,092	-	-	5.5%
	Geese	-	-	-	-	-	1,107	4,980	-	-	2.7%
	Moose	-	-	-	-	-	6	3,000	-	-	1.6%
2002-03	Caribou	95	47	45	49	80	397	-	-	118	-
2003-04	Caribou	97	74	70	81	81	564	-	-	157	-
2004-05	Caribou	99	62	61	81	96	546	-	-	147	-
2005-06	Caribou	100	60	59	97	96	363	-	-	102	-
2006-07	Caribou	97	77	74	66	69	475	-	-	143	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
****The estimated pounds of moose harvested in 1992 is likely too high (Fuller and George 1999).
*****The 1994-95 study year underrepresents the harvest of Arctic cisco and humpback whitefish (Brower and Hepa 1998); Nuiqsut did not successfully harvest a bowhead whale in 1994-95.

For All Resources study years (1985, 1992, 1993, 1994-95, 1995-96, 2000-01), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

The estimated harvest numbers for the 1992, 1994-95, 1995-96 and 2000-01 data were derived by summing individual species in each resource category. Also for those study years, total pounds were derived from conversion rates found at ADFG (2011) and total (usable) pounds for bowhead whales were calculated based on the method presented in SRB&A and ISER (1993b). These estimates do not account for whale girth and should be considered approximate; more exact methods for estimating total whale weights are available in George et al. (n.d.).

Sources: ADFG 2011 (1985, 1993); Bacon et al. 2009 (1995-96, 2000-01); Braem et al. 2011 (2002-2007); Brower and Hepa, 1998 (1994-95); Fuller and George 1999 (1992).

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Table E-18. Nuiqsut Annual Cycle of Subsistence Activities

	Winter					Spring		Summer			Fall	
	Nov	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**
Bowhead Whale												
Seals												
Polar Bear												
Birds/Eggs												
Caribou												
Moose												
Grizzly Bear												
Furbearers												
Small Mammals												
Freshwater Fish												
Berries/Roots/Plants												
		No to Very Low Levels of Subsistence Activity										
		Low to Medium Levels of Subsistence Activity										
		High Levels of Subsistence Activity										
Source: Impact Assessment Inc., 1990a; Research Foundation of the State University of New York, 1984.												

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PRUDHOE BAY

Table E-19. Prudhoe Bay Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1996*	Salmon	-	-	-	-	-	9	-	-	-
2000*	Salmon	-	-	-	-	-	15	-	-	-
2005	Salmon	-	-	-	-	-	30	-	-	-
2006	Salmon	-	-	-	-	-	15	-	-	-

Notes: *Harvest data listed for Deadhorse.

Source: ADFG 2009.

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Table E-20. Prudhoe Bay Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds	Average HH Pounds	Per Capita Pounds	
1996**	Sockeye	-	-	-	-	-	9	-	-	-	-
2000**	Sockeye	-	-	-	-	-	14	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
2005	Sockeye	-	-	-	-	-	28	-	-	-	-
	Chinook	-	-	-	-	-	2	-	-	-	-
2006	Sockeye	-	-	-	-	-	14	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-

Notes: *Estimated numbers represent individuals.
**Harvest data listed for Deadhorse.

Species are listed in descending order by total number harvested.

Source: ADFG 2009.

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ALATNA

Table E-21. Alatna Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1981-82***	All Resources	-	-	-	-	-	-	138,242	3,545	906	100.0%
	Salmon	-	-	-	-	-	13,170	84,641	2,170	554	61.2%
	Non-Salmon Fish	-	-	-	-	-	11,017	27,048	694	177	19.6%
	Large Land Mammals	-	-	-	-	-	66	18,044	463	118	13.1%
	Small Land Mammals	-	-	-	-	-	2,763	3,623	93	24	2.6%
	Migratory Birds	-	-	-	-	-	1,396	3,635	93	24	2.6%
	Upland Game Birds	-	-	-	-	-	262	131	3	1	0.1%
	Vegetation	-	-	-	-	-	-	1,121	29	7	0.8%
1982-83***	All Resources	-	-	-	-	-	-	129,426	2,538	696	100.0%
	Salmon	-	-	-	-	-	12,649	82,545	1,619	444	63.8%
	Non-Salmon Fish	-	-	-	-	-	16,784	25,966	509	140	20.1%
	Large Land Mammals	-	-	-	-	-	35	13,559	266	73	10.5%
	Small Land Mammals	-	-	73	-	-	1,932	2,432	48	13	1.9%
	Migratory Birds	-	-	-	-	-	1,615	3,627	71	20	2.8%
	Upland Game Birds	-	-	-	-	-	165	463	9	2	0.4%
	Vegetation	-	-	-	-	-	-	833	16	4	0.6%
1983-84***	All Resources	-	-	-	-	-	-	113,942	1,965	629	100.0%
	Salmon	-	-	-	-	-	10,593	68,144	1,175	376	59.8%
	Non-Salmon Fish	-	-	-	-	-	8,143	21,231	366	117	18.6%
	Large Land Mammals	-	-	-	-	-	66	21,223	366	117	18.6%
	Small Land Mammals	-	-	63	-	-	1,344	1,645	28	9	1.4%
	Migratory Birds	-	-	-	-	-	2,071	5,059	87	28	4.4%
	Upland Game Birds	-	-	-	-	-	0	0	0	0	0.0%
	Vegetation	-	-	-	-	-	-	1,585	27	9	1.4%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
***The 1981-82, 1982-83, and 1983-84 study years show combined harvest data for the two study communities of Alatna and Allakaket.

Source: Marcotte and Haynes, 1985.

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Table E-22. Alatna Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1992	Salmon	-	-	-	-	-	659	-	-	-
1993	Salmon	-	-	-	-	-	58	-	-	-
1995	Salmon	-	-	-	-	-	150	-	-	-
1996	Salmon	-	-	-	-	-	210	-	-	-
1997a	Salmon	-	-	-	-	-	183	-	-	-
1998a	Salmon	-	-	-	-	-	15	-	-	-
1999a	Salmon	-	-	-	-	-	109	-	-	-
2000	Salmon	-	-	-	-	-	23	-	-	-
2002a	Salmon	-	-	-	-	-	28	-	-	-
2003	Salmon	-	-	-	-	-	69	-	-	-
2004	Salmon	-	-	-	-	-	16	-	-	-
2005	Salmon	-	-	-	-	-	5	-	-	-
2006	Salmon	-	-	-	-	-	124	-	-	-
2007	Salmon	-	-	-	-	-	18	-	-	-
2008	Salmon	-	-	-	-	-	82	-	-	-
2009	Salmon	-	-	-	-	-	173	-	-	-
Non-Salmon Fish										
2002b	Non-Salmon Fish	75	58	58	17	50	443	1,076	90	34
Large Land Mammals										
1997b	Large Land Mammals	-	-	-	-	-	34	7,990	726	320
1998b	Large Land Mammals	100	90	70	60	100	16	4,130	413	153
1999b	Large Land Mammals	100	86	43	43	100	6	3,471	386	96
2001	Large Land Mammals	91	55	45	27	82	13	3,940	358	152
2002-03	Large Land Mammals	100	67	67	67	83	54	10,900	908	303
Sources: ADFG 2009 (1992-93, 1995-97a, 1998a, 1999a, 2000, 2002a, 2003-2009); ADFG 2011 (1997b, 1998b, 1999b, 2001); Andersen et al. 2004a (2002b); Brown et al. 2004 (2002-03).										

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Table E-23. Alatna Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1981-82****	Chum	-	-	-	-	-	12,811	78,147	2,004	512	56.5%
	Moose	-	-	77	-	26	31	15,600	400	102	11.3%
	Chinook	-	-	60	-	23	359	6,494	167	43	4.7%
	Whitefish	-	-	71	-	14	5,413	4,871	125	32	3.5%
	Beaver	-	-	66	-	0	256	2,255	58	15	1.6%
	Geese	-	-	77	-	3	440	2,201	56	14	1.6%
	Ducks	-	-	80	-	6	956	1,434	37	9	1.0%
	Snowshoe Hare	-	-	80	-	-	911	1,367	35	9	1.0%
	Black Bear	-	-	37	-	6	23	1,357	35	9	1.0%
1982-83****	Chum	-	-	51	-	-	12,200	74,422	1,459	400	57.5%
	Moose	-	-	47	-	-	26	13,033	256	70	10.1%
	Sheefish	-	-	42	-	-	1,745	12,217	240	66	9.4%
	Whitefish	-	-	44	-	-	13,158	11,842	232	64	9.1%
	Chinook	-	-	40	-	-	449	8,123	159	44	6.3%
	Ducks	-	-	62	-	-	1,273	1,909	37	10	1.5%
	Geese	-	-	60	-	-	337	1,684	33	9	1.3%
1983-84****	Chum	-	-	-	-	-	10,300	62,829	1,083	347	55.1%
	Moose	-	-	58	-	-	39	19,333	333	107	17.0%
	Chinook	-	-	-	-	-	294	5,315	92	29	4.7%
	Whitefish	-	-	52	-	-	3,966	3,569	62	20	3.1%
	Geese	-	-	63	-	-	527	2,635	45	15	2.3%
	Ducks	-	-	67	-	-	1,518	2,277	39	13	2.0%
	Northern Pike	-	-	27	-	-	503	1,407	24	8	1.2%
	Beaver	-	-	29	-	-	157	1,382	24	8	1.2%
	Black Bear	-	-	31	-	-	21	1,191	21	7	1.0%
1992	Chum	-	-	-	-	-	617	-	-	-	-
	Chinook	-	-	-	-	-	42	-	-	-	-
1993	Chum	-	-	-	-	-	54	-	-	-	-
	Chinook	-	-	-	-	-	4	-	-	-	-
1995	Chum	-	-	-	-	-	140	-	-	-	-
	Chinook	-	-	-	-	-	10	-	-	-	-
1996	Chum	-	-	-	-	-	209	-	-	-	-
	Chinook	-	-	-	-	-	2	-	-	-	-
1997a	Chum	-	-	-	-	-	145	-	-	-	-
	Chinook	-	-	-	-	-	38	-	-	-	-
1997b	Moose	100	82	46	46	64	9	4,860	442	194	-
	Caribou	73	46	36	36	46	21	2,730	248	109	-
	Black Bear	73	36	36	27	36	4	400	36	16	-
1998a	Chum	-	-	-	-	-	11	-	-	-	-
	Chinook	-	-	-	-	-	4	-	-	-	-

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Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
1998b	Moose	100	80	30	30	80	5	2,700	270	100	-
	Caribou	100	90	60	50	60	11	1,430	143	53	-
	Black Bear	100	60	0	0	100	0	0	0	0	-
1999a	Chum	-	-	-	-	-	99	-	-	-	-
	Chinook	-	-	-	-	-	10	-	-	-	-
1999b	Moose	100	86	43	43	100	6	3,471	386	96	-
	Black Bear	100	43	0	0	100	0	0	0	0	-
	Caribou	100	57	0	0	100	0	0	0	0	-
2000	Chum	-	-	-	-	-	15	-	-	-	-
	Chinook	-	-	-	-	-	8	-	-	-	-
2001	Moose	91	55	45	27	64	6	3,240	295	125	-
	Black Bear	45	27	27	18	36	7	700	64	27	-
	Caribou	27	0	0	0	27	0	0	0	0	-
2002a	Chum	-	-	-	-	-	25	-	-	-	-
	Chinook	-	-	-	-	-	3	-	-	-	-
2002b	Broad Whitefish	42	8	8	8	33	150	600	50	19	-
	Arctic Grayling	50	33	25	17	25	-	148	12	5	-
	Northern Pike	33	25	25	17	8	35	105	9	3	-
	Sheefish	50	50	25	8	25	13	78	7	2	-
	Least Cisco	42	17	17	8	25	-	68	6	2	-
2002-3	Moose	100	67	67	50	83	12	6,480	540	180	-
	Caribou	100	67	67	50	83	34	4,420	368	123	-
	Black Bear	50	17	17	17	33	8	0	0	0	-
2003	Chum	-	-	-	-	-	50	-	-	-	-
	Chinook	-	-	-	-	-	12	-	-	-	-
	Coho	-	-	-	-	-	7	-	-	-	-
2004	Chum	-	-	-	-	-	16	-	-	-	-
2005	Chum	-	-	-	-	-	5	-	-	-	-
2006	Chum	-	-	-	-	-	110	-	-	-	-
	Chinook	-	-	-	-	-	14	-	-	-	-
2007	Chum	-	-	-	-	-	18	-	-	-	-
2008	Chum	-	-	-	-	-	66	-	-	-	-
	Chinook	-	-	-	-	-	16	-	-	-	-
2009	Chum	-	-	-	-	-	163	-	-	-	-
	Chinook	-	-	-	-	-	10	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
****The 1981-82, 1982-83, and 1983-84 study years show combined harvest data for the two study communities of Alatna and Allakaket.

For All Resources study years (1981-82, 1982-83, 1983-84), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in

Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest

descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (1992-93; 1995-96, 1997a,1998a, 1999a, 2000, 2002a, 2003-2009); ADFG 2011 (1997b, 1998b, 1999b, 2001); Andersen et al. 2004a (2002b); Brown et al. 2004 (2002-03); Marcotte and Haynes, 1985 (1981-82, 1982-83, 1983-84).

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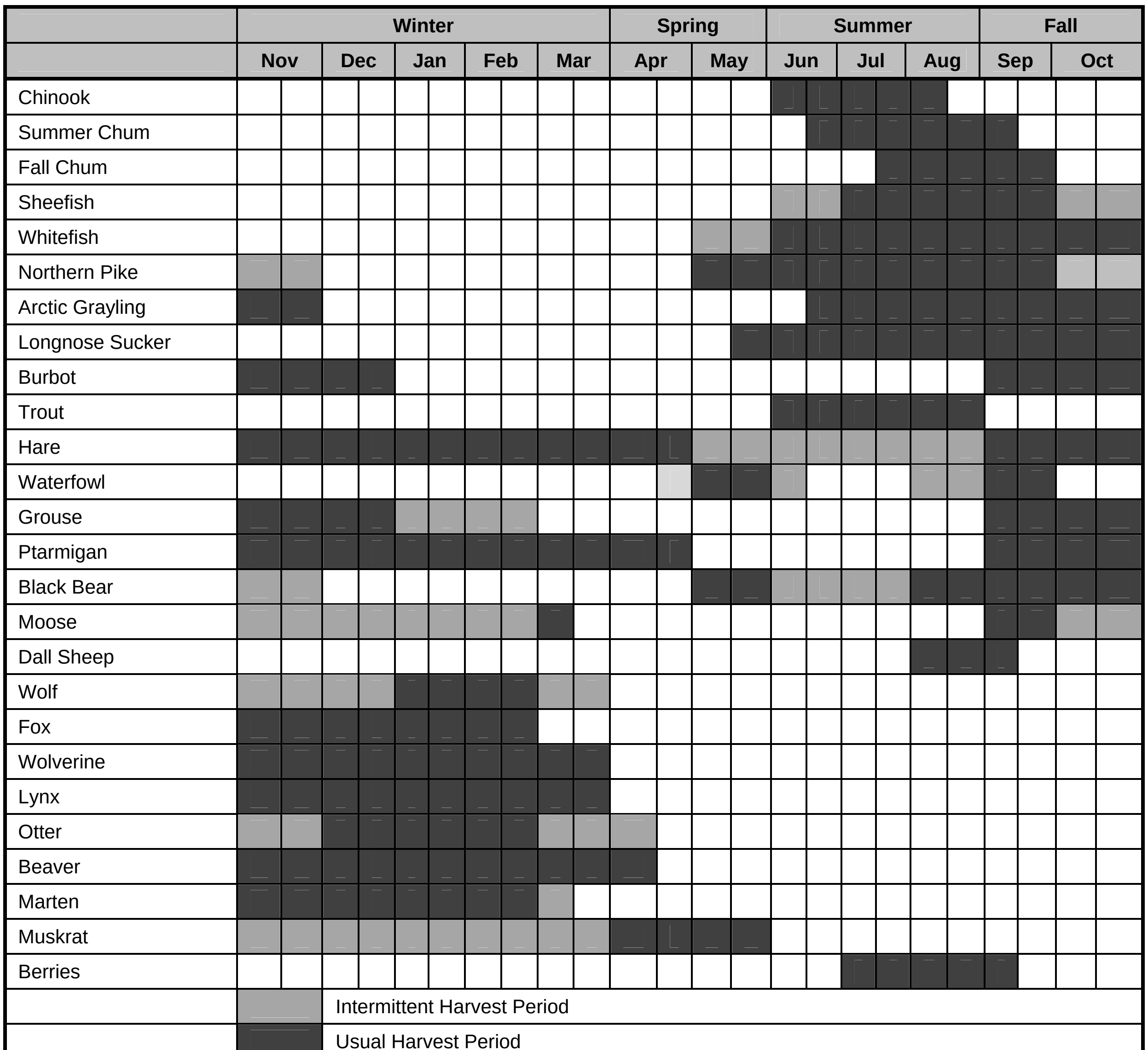
Table E-24. Alatna, Allakaket, Bettles, and Evansville Annual Cycle of Subsistence Activities



Source: Marcotte and Haynes, 1985.

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ALLAKAKET

Table E-25. Allakaket Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1981-82***	All Resources	-	-	-	-	-	-	138,242	3,545	906	100.0%
	Salmon	-	-	-	-	-	13,170	84,641	2,170	554	61.2%
	Non-Salmon Fish	-	-	-	-	-	11,017	27,048	694	177	19.6%
	Large Land Mammals	-	-	-	-	-	66	18,044	463	118	13.1%
	Small Land Mammals	-	-	-	-	-	2,763	3,623	93	24	2.6%
	Migratory Birds	-	-	-	-	-	1,396	3,635	93	24	2.6%
	Upland Game Birds	-	-	-	-	-	262	131	3	1	0.1%
	Vegetation	-	-	-	-	-	-	1,121	29	7	0.8%
1982-83***	All Resources	-	-	-	-	-	-	129,426	2,538	696	100.0%
	Salmon	-	-	-	-	-	12,649	82,545	1,619	444	63.8%
	Non-Salmon Fish	-	-	-	-	-	16,784	25,966	509	140	20.1%
	Large Land Mammals	-	-	-	-	-	35	13,559	266	73	10.5%
	Small Land Mammals	-	-	73	-	-	1,932	2,432	48	13	1.9%
	Migratory Birds	-	-	-	-	-	1,615	3,627	71	20	2.8%
	Upland Game Birds	-	-	-	-	-	165	463	9	2	0.4%
	Vegetation	-	-	-	-	-	-	833	16	4	0.6%
1983-84***	All Resources	-	-	-	-	-	-	113,942	1,965	629	100.0%
	Salmon	-	-	-	-	-	10,593	68,144	1,175	376	59.8%
	Non-Salmon Fish	-	-	-	-	-	8,143	21,231	366	117	18.6%
	Large Land Mammals	-	-	-	-	-	66	21,223	366	117	18.6%
	Small Land Mammals	-	-	63	-	-	1,344	1,645	28	9	1.4%
	Migratory Birds	-	-	-	-	-	2,071	5,059	87	28	4.4%
	Upland Game Birds	-	-	-	-	-	0	0	0	0	0.0%
	Vegetation	-	-	-	-	-	-	1,585	27	9	1.4%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
***The 1981-82, 1982-83, and 1983-84 study years show combined harvest data for the two study communities of Alatna and Allakaket.

Sources: Marcotte and Haynes, 1985.

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Table E-26. Allakaket Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study	Resource	Percentage of Households	Estimated Harvest

Year		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1992	Salmon	-	-	-	-	-	8,216	-	-	-
1993	Salmon	-	-	-	-	-	3,022	-	-	-
1995	Salmon	-	-	-	-	-	6,976	-	-	-
1996	Salmon	-	-	-	-	-	5,750	-	-	-
1997a	Salmon	-	-	-	-	-	4,658	-	-	-
1998a	Salmon	-	-	-	-	-	997	-	-	-
1999a	Salmon	-	-	-	-	-	2,373	-	-	-
2000	Salmon	-	-	-	-	-	1,598	-	-	-
2001a	Salmon	-	-	-	-	-	1,755	-	-	-
2002a	Salmon	-	-	-	-	-	6,598	-	-	-
2003	Salmon	-	-	-	-	-	4,893	-	-	-
2004	Salmon	-	-	-	-	-	3,423	-	-	-
2005	Salmon	-	-	-	-	-	3,365	-	-	-
2006	Salmon	-	-	-	-	-	5,611	-	-	-
2007	Salmon	-	-	-	-	-	4,509	-	-	-
2008	Salmon	-	-	-	-	-	4,784	-	-	-
2009	Salmon	-	-	-	-	-	5,629	-	-	-
Non-Salmon Fish										
2002b	Non-Salmon Fish	78	66	66	44	46	8,559	25,556	465	155
Large Land Mammals										
1997b	Large Land Mammals	-	-	-	-	-	64	25,744	-	-
1998b	Large Land Mammals	100	78	58	55	100	91	26,496	434	139
1999b	Large Land Mammals	100	71	51	61	100	63	22,894	382	136
2001b	Large Land Mammals	100	69	61	41	79	63	22,011	361	128
2002-03	Large Land Mammals	100	84	68	36	80	151	32,912	748	126
Sources: ADFG 2009 (1992-93, 1995-1997a, 1998a, 1999a, 2000, 2001a, 2002a, 2003-2009); ADFG 2011 (1997b, 1998b, 1999b, 2001b); Andersen et al. 2004a (2002b); Brown et al. 2004 (2002-03).										

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Table E-27. Allakaket Subsistence Harvest Estimates by Selected Species, All Study Years

		Percentage of Households					Estimated Harvest				
Study Year	Resource*	Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
1981-82****	Chum	-	-	-	-	-	12,811	78,147	2,004	512	56.5%
	Moose	-	-	77	-	26	31	15,600	400	102	11.3%
	Chinook	-	-	60	-	23	359	6,494	167	43	4.7%
	Whitefish	-	-	71	-	14	5,413	4,871	125	32	3.5%
	Beaver	-	-	66	-	0	256	2,255	58	15	1.6%
	Geese	-	-	77	-	3	440	2,201	56	14	1.6%
	Ducks	-	-	80	-	6	956	1,434	37	9	1.0%
	Snowshoe Hare	-	-	80	-	-	911	1,367	35	9	1.0%
	Black Bear	-	-	37	-	6	23	1,357	35	9	1.0%
1982-83****	Chum	-	-	51	-	-	12,200	74,422	1,459	400	57.5%
	Moose	-	-	47	-	-	26	13,033	256	70	10.1%
	Sheefish	-	-	42	-	-	1,745	12,217	240	66	9.4%
	Whitefish	-	-	44	-	-	13,158	11,842	232	64	9.1%
	Chinook	-	-	40	-	-	449	8,123	159	44	6.3%
	Ducks	-	-	62	-	-	1,273	1,909	37	10	1.5%
	Geese	-	-	60	-	-	337	1,684	33	9	1.3%
1983-84****	Chum	-	-	-	-	-	10,300	62,829	1,083	347	55.1%
	Moose	-	-	58	-	-	39	19,333	333	107	17.0%
	Chinook	-	-	-	-	-	294	5,315	92	29	4.7%
	Whitefish	-	-	52	-	-	3,966	3,569	62	20	3.1%
	Geese	-	-	63	-	-	527	2,635	45	15	2.3%
	Ducks	-	-	67	-	-	1,518	2,277	39	13	2.0%
	Northern Pike	-	-	27	-	-	503	1,407	24	8	1.2%
	Beaver	-	-	29	-	-	157	1,382	24	8	1.2%
	Black Bear	-	-	31	-	-	21	1,191	21	7	1.0%
1992	Chum	-	-	-	-	-	7,820	-	-	-	-
	Chinook	-	-	-	-	-	395	-	-	-	-
1993	Chum	-	-	-	-	-	2,884	-	-	-	-
	Chinook	-	-	-	-	-	135	-	-	-	-
	Coho	-	-	-	-	-	3	-	-	-	-
1995	Chum	-	-	-	-	-	6,656	-	-	-	-
	Chinook	-	-	-	-	-	321	-	-	-	-
1996	Chum	-	-	-	-	-	5,629	-	-	-	-
	Chinook	-	-	-	-	-	82	-	-	-	-
	Coho	-	-	-	-	-	39	-	-	-	-
1997a	Chum	-	-	-	-	-	4,186	-	-	-	-
	Chinook	-	-	-	-	-	423	-	-	-	-
	Coho	-	-	-	-	-	50	-	-	-	-
1997b	Moose	98	77	54	60	60	43	23,417	426	133	-

Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
	Caribou	42	15	6	10	39	11	1,375	25	8	-
	Black Bear	73	35	14	15	65	10	952	17	5	-
1998a	Chum	-	-	-	-	-	912	-	-	-	-
	Chinook	-	-	-	-	-	85	-	-	-	-
1998b	Moose	100	76	50.9	45.5	74.5	37	19,764	324	104	-
	Caribou	100	55	25.5	20	85.5	43	5,623	92	29	-
	Black Bear	98.2	35	12.7	10.9	92.7	11	1,109	18	6	-
1999a	Chum	-	-	-	-	-	2,265	-	-	-	-
	Chinook	-	-	-	-	-	108	-	-	-	-
1999b	Moose	100	70	44	59	88	37	19,769	329	118	-
	Caribou	93	34	12	15	86	13	1,719	29	10	-
	Black Bear	93	44	17	19	90	11	1,119	19	7	-
	Brown Bear	5	5	3	3	2	2	287	5	2	-
2000	Chum	-	-	-	-	-	1,557	-	-	-	-
	Chinook	-	-	-	-	-	41	-	-	-	-
2001a	Chum	-	-	-	-	-	1,654	-	-	-	-
	Chinook	-	-	-	-	-	76	-	-	-	-
	Coho	-	-	-	-	-	25	-	-	-	-
2001b	Moose	100	66	57	36	77	35	18,900	310	110	-
	Black Bear	44	30	28	18	23	18	1,800	30	10	-
	Caribou	21	7	7	3	15	9	1,170	19	7	-
	Brown Bear	2	2	2	0	0	1	141	2	1	-
2002a	Chum	-	-	-	-	-	6,342	-	-	-	-
	Chinook	-	-	-	-	-	200	-	-	-	-
	Coho	-	-	-	-	-	56	-	-	-	-
2002b	Sheefish	73	49	46	26	35	1,463	8,778	160	53	-
	Broad Whitefish	56	29	29	11	35	1,785	7,140	130	43	-
	Humpback Whitefish	40	24	24	7	20	1,295	3,885	71	24	-
	Cisco	44	27	27	20	18	2,029	2,109	38	13	-
2002-03	Moose	96	80	60	24	60	35	19,008	432	73	-
	Caribou	96	68	44	32	68	106	13,728	312	53	-
	Black Bear	60	40	12	4	48	11	176	4	1	-
2003	Chum	-	-	-	-	-	4,488	-	-	-	-
	Chinook	-	-	-	-	-	306	-	-	-	-
	Coho	-	-	-	-	-	99	-	-	-	-
2004	Chum	-	-	-	-	-	3,335	-	-	-	-
	Chinook	-	-	-	-	-	66	-	-	-	-
	Coho	-	-	-	-	-	17	-	-	-	-
	Sockeye	-	-	-	-	-	5	-	-	-	-
2005	Chum	-	-	-	-	-	3,092	-	-	-	-
	Coho	-	-	-	-	-	205	-	-	-	-
	Chinook	-	-	-	-	-	68	-	-	-	-

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Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
2006	Chum	-	-	-	-	-	5,563	-	-	-	-
	Coho	-	-	-	-	-	25	-	-	-	-
	Chinook	-	-	-	-	-	23	-	-	-	-
2007	Chum	-	-	-	-	-	4,390	-	-	-	-
	Coho	-	-	-	-	-	66	-	-	-	-
	Chinook	-	-	-	-	-	53	-	-	-	-
2008	Chum	-	-	-	-	-	4,574	-	-	-	-
	Coho	-	-	-	-	-	152	-	-	-	-
	Chinook	-	-	-	-	-	58	-	-	-	-
2009	Chum	-	-	-	-	-	5,496	-	-	-	-
	Chinook	-	-	-	-	-	90	-	-	-	-
	Coho	-	-	-	-	-	43	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
****The 1981-1982, 1982-1983, and 1983-1984 study years show combined harvest data for the two study communities of Alatna and Allakaket.

For All Resources study years (1981-82, 1982-83, 1983-84), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (1992-93, 1995-96, 1997a, 1998a, 1999a, 2000-01a, 2002a, 2003-2009); ADFG 2011 (1997b, 1998b, 1999b, 2001b); Andersen et al. 2004a (2002b); Brown et al. 2004 (2002-03); Marcotte and Haynes, 1985 (1981-82, 1982-83, 1983-84).

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Table E-28. Beaver Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1985	All Resources	-	100	100	84	94	-	60,767	1,841	732	100.0%
	Salmon	-	39	39	32	68	-	34,406	1,043	414	56.6%
	Non-Salmon Fish	-	65	65	39	45	-	6,580	199	79	10.8%
	Large Land Mammals	-	71	36	39	71	-	10,752	326	129	17.7%
	Small Land Mammals	-	87	84	48	45	-	4,752	144	57	7.8%
	Migratory Birds	-	84	84	55	45	-	3,704	112	45	6.1%
	Upland Game Birds	-	74	71	29	26	-	280	8	3	0.5%
	Vegetation	-	-	97	-	-	-	219	7	3	0.4%
1995***	All Resources	-	-	-	-	-	-	10,801	-	-	100.0%
	Salmon	-	-	-	-	-	402	5,863	-	-	54.3%
	Non-Salmon Fish	-	-	-	-	-	74	292	-	-	2.7%
	Large Land Mammals	-	-	-	-	-	4	1,720	-	-	15.9%
	Small Land Mammals	-	-	-	-	-	300	313	-	-	2.9%
	Migratory Birds	-	-	-	-	-	961	2,585	-	-	23.9%
	Upland Game Birds	-	-	-	-	-	40	28	-	-	0.3%
1996***	All Resources	-	-	-	-	-	-	6,261	-	-	100.0%
	Salmon	-	-	-	-	-	163	1,796	-	-	28.7%
	Non-Salmon Fish	-	-	-	-	-	123	289	-	-	4.6%
	Large Land Mammals	-	-	-	-	-	8	3,880	-	-	62.0%
	Small Land Mammals	-	-	-	-	-	90	177	-	-	2.8%
	Migratory Birds	-	-	-	-	-	48	120	-	-	1.9%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
***Study year includes all resource categories except Vegetation.

Sources: ADFG 2011 (1995,1996); Sumida, 1989 (1985).

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Table E-29. Beaver Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1992	Salmon	-	-	-	-	-	2,336	-	-	-
1993a	Salmon	-	-	-	-	-	1,313	-	-	-
1994a	Salmon	-	-	-	-	-	3,583	-	-	-
1995	Salmon	-	-	-	-	-	2,308	-	-	-
1996	Salmon	-	-	-	-	-	1,474	-	-	-
1997	Salmon	-	-	-	-	-	2,103	-	-	-
1998	Salmon	-	-	-	-	-	894	-	-	-
1999	Salmon	-	-	-	-	-	580	-	-	-
2000a	Salmon	-	-	-	-	-	203	-	-	-
2001	Salmon	-	-	-	-	-	1,717	-	-	-
2002	Salmon	-	-	-	-	-	796	-	-	-
2003a	Salmon	-	-	-	-	-	1,370	-	-	-
2004	Salmon	-	-	-	-	-	1,062	-	-	-
2005a	Salmon	-	-	-	-	-	1,204	-	-	-
2006	Salmon	-	-	-	-	-	947	-	-	-
2007	Salmon	-	-	-	-	-	1,993	-	-	-
2008	Salmon	-	-	-	-	-	592	-	-	-
2009	Salmon	-	-	-	-	-	658	-	-	-
Non-Salmon Fish										
1993b	Non-Salmon Fish	-	-	-	-	-	86	253	-	-
2005b	Non-Salmon Fish	82	73	68	27	46	600	2,605	79	79
Large Land Mammals										
1993-96	Large Land Mammals	-	-	-	-	-	39	-	-	-
1993b	Large Land Mammals	-	-	-	-	-	13	7,020	-	-
1994b	Large Land Mammals	-	-	-	-	-	6	1,190	-	-
2001-02	Large Land Mammals	89	46	43	25	50	50	-	-	-
2003b	Large Land Mammals	-	-	-	32	88	41	-	-	-
Small Land Mammals										
1993b	Small Land Mammals	-	-	-	-	-	446	179	-	-
1994b	Small Land Mammals	-	-	-	-	-	151	28	-	-
Migratory Birds										
1993b	Migratory Birds	-	-	-	-	-	235	894	-	-
1994b	Migratory Birds	-	-	-	-	-	232	585	-	-
2000b	Migratory Birds	-	-	56	-	-	661	2,464	67	28
Upland Game Birds										
1993b	Upland Game Birds	-	-	-	-	-	19	13	-	-

Sources: ADFG 2009 (1992, 1993a, 1994a, 1995-1999, 2000a, 2001, 2002, 2003a, 2004, 2005a, 2006-2009); ADFG 2011 (1993b, 1994b, 2005b); Andersen and Jennings 2001a (2000b); CATG, 2002 (1993-96, 2001-02); CATG, 2003 (2003b).

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Table E-30. Beaver Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
1985	Chum	-	19	19	10	39	4,311	21,088	639	254	34.7%
	Chinook	-	32	32	29	65	942	13,001	394	157	21.4%
	Moose	-	68	29	29	65	15	10,432	316	126	17.2%
	Northern Pike	-	58	58	26	23	612	2,755	83	33	4.5%
	Geese	-	71	71	48	42	515	2,576	78	31	4.2%
	Snowshoe Hare	-	81	77	26	13	498	1,345	41	16	2.2%
	Muskrat	-	48	48	26	19	856	1,284	39	15	2.1%
	Beaver	-	29	29	7	32	46	1,099	33	13	1.8%
	Ducks	-	74	74	42	42	712	1,068	32	13	1.8%
	Lynx	-	55	45	3	3	72	869	26	10	1.4%
1992	Chinook	-	-	-	-	-	1,564	-	-	-	-
	Coho	-	-	-	-	-	398	-	-	-	-
	Chum	-	-	-	-	-	373	-	-	-	-
1993-96	Moose	-	-	-	-	-	37	-	-	-	-
	Wolf	-	-	-	-	-	3	-	-	-	-
	Black bear	-	-	-	-	-	2	-	-	-	-
1993a	Chinook	-	-	-	-	-	1,294	-	-	-	-
	Chum	-	-	-	-	-	19	-	-	-	-
1993b	Moose	-	-	-	-	-	13	7,020	-	-	-
	Geese	-	-	-	-	-	140	700	-	-	-
	Northern Pike	-	-	-	-	-	70	210	-	-	-
	Ducks	-	-	-	-	-	95	194	-	-	-
	Lynx	-	-	-	-	-	29	116	-	-	-
1994a	Chum	-	-	-	-	-	2,723	-	-	-	-
	Chinook	-	-	-	-	-	850	-	-	-	-
	Coho	-	-	-	-	-	10	-	-	-	-
1994b	Caribou	-	-	-	-	-	5	650	-	-	-
	Moose	-	-	-	-	-	1	540	-	-	-
	Geese	-	-	-	-	-	137	370	-	-	-
	Ducks	-	-	-	-	-	95	215	-	-	-
	Lynx	-	-	-	-	-	7	28	-	-	-
1995a	Chum	-	-	-	-	-	1,267	-	-	-	-
	Chinook	-	-	-	-	-	1,021	-	-	-	-
	Coho	-	-	-	-	-	20	-	-	-	-
1995b	Chinook	-	-	-	-	-	392	5,813	-	-	53.8%
	Moose	-	-	-	-	-	3	1,620	-	-	15.0%
	Ducks	-	-	-	-	-	649	1,398	-	-	12.9%
	Geese	-	-	-	-	-	311	1,177	-	-	10.9%
	Sheefish	-	-	-	-	-	28	154	-	-	1.4%
	Northern Pike	-	-	-	-	-	46	138	-	-	1.3%

Study Year	Resource*	Percentage of Households: Use	Percentage of Households: Try to Harvest	Percentage of Households: Harvest	Percentage of Households: Give	Percentage of Households: Receive	Estimated Harvest: Number**	Estimated Harvest: Total Pounds***	Estimated Harvest: Average HH Pounds	Estimated Harvest: Per Capita Pounds	% of Total Harvest
	Snowshoe Hare	-	-	-	-	-	62	124	-	-	1.1%
	Beaver	-	-	-	-	-	12	105	-	-	1.0%
1996a	Chinook	-	-	-	-	-	886	-	-	-	-
	Chum	-	-	-	-	-	581	-	-	-	-
	Coho	-	-	-	-	-	7	-	-	-	-
1996b	Moose	-	-	-	-	-	7	3,780	-	-	60.4%
	Chinook	-	-	-	-	-	100	1,472	-	-	23.5%
	Chum	-	-	-	-	-	63	324	-	-	5.2%
	Snowshoe Hare	-	-	-	-	-	84	168	-	-	2.7%
	Northern Pike	-	-	-	-	-	46	138	-	-	2.2%
	Black Bear	-	-	-	-	-	1	100	-	-	1.6%
	Geese	-	-	-	-	-	18	90	-	-	1.4%
	Sheefish	-	-	-	-	-	13	72	-	-	1.1%
1997	Chinook	-	-	-	-	-	1,859	-	-	-	-
	Chum	-	-	-	-	-	245	-	-	-	-
1998	Chinook	-	-	-	-	-	470	-	-	-	-
	Chum	-	-	-	-	-	424	-	-	-	-
1999	Chinook	-	-	-	-	-	473	-	-	-	-
	Chum	-	-	-	-	-	107	-	-	-	-
2000a	Chinook	-	-	-	-	-	196	-	-	-	-
	Chum	-	-	-	-	-	7	-	-	-	-
2000b	Geese	-	-	56	-	-	528	2,182	59	25	-
	Ducks	-	-	28	-	-	133	282	8	3	-
2001-02	Moose	-	-	-	-	-	25	-	-	-	-
	Black Bear	-	-	-	-	-	22	-	-	-	-
	Grizzly Bear	-	-	-	-	-	3	-	-	-	-
	Wolf	-	-	-	-	-	1	-	-	-	-
2001	Chinook	-	-	-	-	-	1,368	-	-	-	-
	Chum	-	-	-	-	-	349	-	-	-	-
2002	Chinook	-	-	-	-	-	702	-	-	-	-
	Chum	-	-	-	-	-	78	-	-	-	-
	Coho	-	-	-	-	-	17	-	-	-	-
2003a	Chinook	-	-	-	-	-	1,156	-	-	-	-
	Chum	-	-	-	-	-	199	-	-	-	-
	Sockeye	-	-	-	-	-	15	-	-	-	-
2003b	Moose	-	42	-	-	-	18	-	-	-	-
	Black Bear	-	-	-	-	-	3	-	-	-	-
	Wolf	-	4	-	-	-	3	-	-	-	-
2004	Chinook	-	-	-	-	-	990	-	-	-	-
	Chum	-	-	-	-	-	58	-	-	-	-
	Sockeye	-	-	-	-	-	14	-	-	-	-

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Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
2005a	Chinook	-	-	-	-	-	957	-	-	-	-
	Chum	-	-	-	-	-	247	-	-	-	-
2005b	Northern Pike	73	64	59	14	32	336	1,512	46	46	-
	Sheefish	23	14	14	5	14	72	432	13	13	-
	Broad Whitefish	18	14	9	0	14	89	354	11	11	-
	Humpback Whitefish	27	23	9	9	23	102	306	9	9	-
	Longnose Sucker	18	14	5	5	18	1	1	0	0	-
2006	Chinook	-	-	-	-	-	830	-	-	-	-
	Chum	-	-	-	-	-	117	-	-	-	-
2007	Chinook	-	-	-	-	-	1,244	-	-	-	-
	Coho	-	-	-	-	-	354	-	-	-	-
	Chum	-	-	-	-	-	395	-	-	-	-
2008	Chinook	-	-	-	-	-	546	-	-	-	-
	Coho	-	-	-	-	-	6	-	-	-	-
	Chum	-	-	-	-	-	40	-	-	-	-
2009	Chinook	-	-	-	-	-	516	-	-	-	-
	Chum	-	-	-	-	-	142	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

For All Resources study years (1985, 1995b, 1996b), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (1992, 1993a, 1994a, 1995a, 1996a, 1997-2000a, 2001-03a, 2004, 2005a, 2006-09); ADFG 2011 (1993b, 1994b, 1995b, 1996b); Andersen and Jennings 2001a (2000b); CATG, 2002 (1993-96, 2001-02); CATG, 2003 (2003b); CATG, 2005 (2005b); Sumida 1989 (1985).

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Table E-31. Beaver Annual Cycle of Subsistence Activities

	Winter										Spring				Summer						Fall			
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
Chinook																░	█	█	░					
Summer Chum																		░	█	░				
Fall Chum																				░	█	█	░	
Coho																				░	█	█	░	
Whitefish	█	█								░	░	░	░	█	█	█	█	█	█	█	█	█	█	█
Sheefish	░													░	█	█	█	█	█	█	█	░	░	░
Northern Pike	█	█								░	░	░	░	█	█	█	█	█	█	█	█	█	█	█
Burbot	█	█								░	░	░	░	█	█	░	░	░	░	░	█	█	█	█
Longnose Sucker	█	█												░	░	░	░	░	░	░	█	█	█	█
Arctic Grayling	█	█													░	░	░	░	░	░	█	█	█	█
Moose			░	░	░	░	░	░												░	█	█	░	
Black Bear												░	░	░	░	░	░	░	█	█	█	█	█	█
Caribou	█	█	█	█	░	░	░	░	█	█	█													
Hare	█	█	█	█	█	█	█	█															█	█
Muskrat								░	█	█	█	█	░	░	░	░								
Porcupine	░												░	░	░	░	░	░	░	░	█	█	█	█
Ground Squirrel															█	█	█	█	█	█	█	█	░	░
Tree Squirrel	█	█	█	█	█	█	█	█	█	█														░
Beaver						░	░	█	█	█	░	░												
Other Furbearers	█	█	█	█	█	█	█	█	█	█														
Waterfowl											░	█	█	█	█	░	░	░	░	█	█	█	░	
Grouse	░	░	░	░																░	█	█	█	█
Ptarmigan	█	█	█	█	█	█	█	█	█	█	░	░	░										░	░
Berries																	░	█	█	█	█	░		
	░	Occasional Periods of Harvest																						
	█	Primary Periods of Harvest																						
Source: Sumida, 1989.																								

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BETTLES

Table E-32. Bettles Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1981-82***	All Resources	-	-	-	-	-	-	16,903	676	260	100.0%
	Salmon	-	-	-	-	-	676	4,260	170	66	25.2%
	Non-Salmon Fish	-	-	-	-	-	1,234	2,719	109	42	16.1%
	Large Land Mammals	-	-	-	-	-	36	8,739	350	134	51.7%
	Small Land Mammals	-	-	-	-	-	584	555	22	9	3.3%
	Migratory Birds	-	-	-	-	-	60	142	6	2	0.8%
	Upland Game Birds	-	-	-	-	-	34	17	1	0	0.1%
	Vegetation	-	-	-	-	-	-	471	19	7	2.8%
1983***	All Resources	-	-	-	-	-	-	14,683	565	185	100.0%
	Salmon	-	-	-	-	-	527	3,217	124	41	21.9%
	Non-Salmon Fish	-	-	-	-	-	1,664	2,088	80	26	14.2%
	Large Land Mammals	-	-	-	-	-	22	8,216	316	104	56.0%
	Small Land Mammals	-	-	29	-	-	250	11	0	0	0.1%
	Migratory Birds	-	-	-	-	-	36	67	3	1	0.5%
	Upland Game Birds	-	-	-	-	-	62	173	7	2	1.2%
	Vegetation	-	-	-	-	-	-	910	35	11	6.2%
1984***	All Resources	-	-	-	-	-	-	10,348	280	123	100.0%
	Salmon	-	-	-	-	-	163	1,175	32	14	11.4%
	Non-Salmon Fish	-	-	-	-	-	502	566	15	7	5.5%
	Large Land Mammals	-	-	-	-	-	20	7,531	204	89	72.8%
	Small Land Mammals	-	-	34	-	-	407	170	5	2	1.6%
	Migratory Birds	-	-	-	-	-	90	188	5	2	1.8%
	Upland Game Birds	-	-	-	-	-	67	188	5	2	1.8%
	Vegetation	-	-	-	-	-	-	532	14	6	5.1%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
***Study year reports the combined totals for two communities; Bettles and Evansville.

Source: Marcotte and Haynes, 1985.

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Table E-33. Bettles Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1992	Salmon	-	-	-	-	-	103	-	-	-
1993	Salmon	-	-	-	-	-	35	-	-	-
1994	Salmon	-	-	-	-	-	45	-	-	-
1995	Salmon	-	-	-	-	-	1,328	-	-	-
1996	Salmon	-	-	-	-	-	60	-	-	-
1997	Salmon	-	-	-	-	-	249	-	-	-
1998a	Salmon	-	-	-	-	-	102	-	-	-
1999a	Salmon	-	-	-	-	-	131	-	-	-
2002a	Salmon	-	-	-	-	-	50	-	-	-
2003	Salmon	-	-	-	-	-	15	-	-	-
2004	Salmon	-	-	-	-	-	1	-	-	-
2005	Salmon	-	-	-	-	-	57	-	-	-
2009	Salmon	-	-	-	-	-	6	-	-	-
Non-Salmon Fish										
2002b*	Non-Salmon Fish	75	38	33	46	67	320	320	11	7
Large Land Mammals										
1998b	Large Land Mammals	100	60	60	80	80	34	7,418	824	242
1999b	Large Land Mammals	100	67	44	44	89	28	4,267	267	80
2002-03*	Large Land Mammals	92	15	0	31	92	0	0	0	0

Notes: *Study year reports the combined totals for two communities; Bettles and Evansville.

Sources: ADFG 2009 (1992-1997, 1998a, 1999a, 2002a, 2003-2005, 2009); ADFG 2011 (1998b, 1999b); Andersen et al. 2004a (2002b); Brown et al. 2004 (2002-03).

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Table E-34. Bettles Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1981-82****	Moose	-	-	35	-	35	13	6,250	250	96	37.0%
	Chum	-	-	25	-	5	665	4,056	162	62	24.0%
	Sheefish	-	-	20	-	10	265	1,855	74	29	11.0%
	Caribou	-	-	15	-	5	14	1,788	72	28	10.6%
	Berries	-	-	80	-	-	118	471	19	7	2.8%
	Snowshoe Hare	-	-	35	-	5	289	434	17	7	2.6%
	Arctic Grayling	-	-	70	-	5	614	430	17	7	2.5%
	Black Bear	-	-	25	-	5	6	363	15	6	2.1%

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
	Whitefish	-	-	10	-	0	263	236	9	4	1.4%
	Chinook	-	-	10	-	10	11	204	8	3	1.2%
	Brown Bear	-	-	5	-	0	1	176	7	3	1.0%
	Dall Sheep	-	-	5	-	5	3	163	7	3	1.0%
1983****	Moose	-	-	38	-	-	15	7,429	286	94	50.6%
	Chum	-	-	24	-	-	527	3,217	124	41	21.9%
	Berries	-	-	76	-	-	228	910	35	11	6.2%
	Arctic Grayling	-	-	62	-	-	999	699	27	9	4.8%
	Caribou	-	-	10	-	-	5	644	25	8	4.4%
	Lake Trout	-	-	24	-	-	314	629	24	8	4.3%
	Northern Pike	-	-	24	-	-	142	399	15	5	2.7%
	Sheefish	-	-	14	-	-	28	199	8	3	1.4%
	Arctic Char	-	-	14	-	-	180	162	6	2	1.1%
	Black Bear	-	-	5	-	-	2	144	6	2	1.0%
1984****	Moose	-	-	31	-	-	14	6,938	188	82	67.0%
	Chum	-	-	16	-	-	148	903	24	11	8.7%
	Berries	-	-	53	-	-	133	532	14	6	5.1%
	Caribou	-	-	6	-	-	3	451	12	5	4.4%
	Arctic Grayling	-	-	50	-	-	410	287	8	3	2.8%
	Chinook	-	-	6	-	-	15	272	7	3	2.6%
	Hare	-	-	16	-	-	113	170	5	2	1.6%
	Sheefish	-	-	9	-	-	16	113	3	1	1.1%
	Ducks	-	-	9	-	-	75	113	3	1	1.1%
	Grouse	-	-	28	-	-	37	104	3	1	1.0%
1992	Chinook	-	-	-	-	-	53	-	-	-	-
	Chum	-	-	-	-	-	51	-	-	-	-
1993	Chum	-	-	-	-	-	34	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
1994	Chum	-	-	-	-	-	45	-	-	-	-
1995	Chum	-	-	-	-	-	1,323	-	-	-	-
	Chinook	-	-	-	-	-	4	-	-	-	-
	Coho	-	-	-	-	-	1	-	-	-	-
1996	Chum	-	-	-	-	-	50	-	-	-	-
	Sockeye	-	-	-	-	-	10	-	-	-	-
1997a	Chum	-	-	-	-	-	210	-	-	-	-
	Chinook	-	-	-	-	-	39	-	-	-	-
1997b	Caribou	14	29	0	14	14	0	0	0	0	-
	Moose	29	14	0	14	29	0	0	0	0	-
1998a	Chum	-	-	-	-	-	82	-	-	-	-
	Chinook	-	-	-	-	-	20	-	-	-	-
1998b	Moose	100	60	60	80	80	7	3,888	432	127	-

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Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
	Caribou	60	40	40	60	20	25	3,276	364	107	-
	Brown Bear	20	20	20	0	0	2	254	28	8	-
1999a	Chum	-	-	-	-	-	100		-	-	-
	Sockeye	-	-	-	-	-	30		-	-	-
	Chinook	-	-	-	-	-	1		-	-	-
1999b	Caribou	67	44	44	33	33	21	2,773	173	52	-
	Moose	89	33	11	22	78	2	960	60	18	-
	Black Bear	22	33	11	11	11	5	533	33	10	-
2002a	Sockeye	-	-	-	-	-	50	-	-	-	-
2002b****	Arctic Grayling	54	38	33	21	33	114	114	4	2	-
	Northern Pike	29	17	13	13	21	23	69	2	1	-
	Lake Trout	33	8	8	8	33	33	65	2	1	-
	Sheefish	46	8	8	17	38	11	65	2	1	-
	Burbot	4	4	4	0	0	4	7	0	0	-
2002-03****	Black Bear	8	4	0	8	8	0	0	0	0	-
	Brown Bear	0	0	0	0	0	0	0	0	0	-
	Caribou	58	8	0	12	58	0	0	0	0	-
	Moose	89	8	0	31	89	0	0	0	0	-
2003	Sockeye	-	-	-	-	-	15	-	-	-	-
2004	Chinook	-	-	-	-	-	1	-	-	-	-
2005	Chum	-	-	-	-	-	54	-	-	-	-
	Chinook	-	-	-	-	-	3	-	-	-	-
2009	Chum	-	-	-	-	-	6	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
****Study year reports the combined totals for two communities; Bettles and Evansville.

For All Resources study years (1981-82, 1983, 1984), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (1992-1996, 1997a, 1998a, 1999a, 2002a, 2003-2005, 2009); ADFG 2011 (1997b, 1998b, 1999b); Andersen et al. 2004a (2002b); Brown et al. 2004 (2002-03); Marcotte and Haynes, 1985 (1981-82, 1983, 1984).

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COLDFOOT

Table E-35. Coldfoot Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households: Use	Percentage of Households: Try to Harvest	Percentage of Households: Harvest	Percentage of Households: Give	Percentage of Households: Receive	Estimated Harvest: Number	Estimated Harvest: Total Pounds**	Estimated Harvest: Average HH Pounds	Estimated Harvest: Per Capita Pounds
Salmon										
1988	Salmon	-	-	-	-	-	16	-	-	-
1992	Salmon	-	-	-	-	-	54	-	-	-
1994	Salmon	-	-	-	-	-	30	-	-	-
2006	Salmon	-	-	-	-	-	60	-	-	-
2007	Salmon	-	-	-	-	-	13	-	-	-
2008	Salmon	-	-	-	-	-	5	-	-	-

Source: ADFG 2009.

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Table E-36. Coldfoot Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource	Percentage of Households: Use	Percentage of Households: Try to Harvest	Percentage of Households: Harvest	Percentage of Households: Give	Percentage of Households: Receive	Estimated Harvest: Number*	Estimated Harvest: Total Pounds	Estimated Harvest: Average HH Pounds	Estimated Harvest: Per Capita Pounds	% of Total Harvest
1988	Sockeye	-	-	-	-	-	15	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
1992	Chum	-	-	-	-	-	46	-	-	-	-
	Sockeye	-	-	-	-	-	7	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
1994	Sockeye	-	-	-	-	-	25	-	-	-	-
	Chinook	-	-	-	-	-	5	-	-	-	-
2006	Sockeye	-	-	-	-	-	60	-	-	-	-
2007	Sockeye	-	-	-	-	-	12	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
2008	Sockeye	-	-	-	-	-	5	-	-	-	-

Notes: *Estimated numbers represent individuals.

Species are listed in descending order by total number harvested.

Source: ADFG 2009.

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Table E-37. Evansville Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	% of Total Harvest
1981-82***	All Resources	-	-	-	-	-	-	16,903	676	260	100.0%
	Salmon	-	-	-	-	-	676	4,260	170	66	25.2%
	Non-Salmon Fish	-	-	-	-	-	1,234	2,719	109	42	16.1%
	Large Land Mammals	-	-	-	-	-	36	8,739	350	134	51.7%
	Small Land Mammals	-	-	-	-	-	584	555	22	9	3.3%
	Migratory Birds	-	-	-	-	-	60	142	6	2	0.8%
	Upland Game Birds	-	-	-	-	-	34	17	1	0	0.1%
	Vegetation	-	-	-	-	-	-	471	19	7	2.8%
1983***	All Resources	-	-	-	-	-	-	14,683	565	185	100.0%
	Salmon	-	-	-	-	-	527	3,217	124	41	21.9%
	Non-Salmon Fish	-	-	-	-	-	1,664	2,088	80	26	14.2%
	Large Land Mammals	-	-	-	-	-	22	8,216	316	104	56.0%
	Small Land Mammals	-	-	29	-	-	250	11	0	0	0.1%
	Migratory Birds	-	-	-	-	-	36	67	3	1	0.5%
	Upland Game Birds	-	-	-	-	-	62	173	7	2	1.2%
	Vegetation	-	-	-	-	-	-	910	35	11	6.2%
1984***	All Resources	-	-	-	-	-	-	10,348	280	123	100.0%
	Salmon	-	-	-	-	-	163	1,175	32	14	11.4%
	Non-Salmon Fish	-	-	-	-	-	502	566	15	7	5.5%
	Large Land Mammals	-	-	-	-	-	20	7,531	204	89	72.8%
	Small Land Mammals	-	-	34	-	-	407	170	5	2	1.6%
	Migratory Birds	-	-	-	-	-	90	188	5	2	1.8%
	Upland Game Birds	-	-	-	-	-	67	188	5	2	1.8%
	Vegetation	-	-	-	-	-		532	14	6	5.1%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
***Study year reports the combined totals for two communities; Bettles and Evansville.

Source: Marcotte and Haynes, 1985.

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Table E-38. Evansville Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Non-Salmon Fish										
2002*	Non-Salmon Fish	75	38	33	46	67	320	320	11	7
Large Land Mammals										
1998	Large Land Mammals	92	75	33	50	92	7	2345	168	84
1999	Large Land Mammals	75	33	17	33	67	4	1452	112	52
2002-03*	Large Land Mammals	92	15	0	31	92	0	0	0	0

Notes: *Study year reports the combined totals for two communities; Bettles and Evansville.

Sources: ADFG 2011 (1998, 1999); Andersen et al. 2004a (2002b); Brown et al. 2004 (2002-03).

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Table E-39. Evansville Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1981-82****	Moose	-	-	35	-	35	13	6,250	250	96	37.0%
	Chum	-	-	25	-	5	665	4,056	162	62	24.0%
	Sheefish	-	-	20	-	10	265	1,855	74	29	11.0%
	Caribou	-	-	15	-	5	14	1,788	72	28	10.6%
	Berries	-	-	80	-	-	118	471	19	7	2.8%
	Snowshoe Hare	-	-	35	-	5	289	434	17	7	2.6%
	Arctic Grayling	-	-	70	-	5	614	430	17	7	2.5%
	Black Bear	-	-	25	-	5	6	363	15	6	2.1%
	Whitefish	-	-	10	-	0	263	236	9	4	1.4%
	Chinook	-	-	10	-	10	11	204	8	3	1.2%
	Brown Bear	-	-	5	-	0	1	176	7	3	1.0%
	Dall Sheep	-	-	5	-	5	3	163	7	3	1.0%
1983****	Moose	-	-	38	-	-	15	7,429	286	94	50.6%
	Chum	-	-	24	-	-	527	3,217	124	41	21.9%
	Berries	-	-	76	-	-	228	910	35	11	6.2%
	Arctic Grayling	-	-	62	-	-	999	699	27	9	4.8%
	Caribou	-	-	10	-	-	5	644	25	8	4.4%
	Lake Trout	-	-	24	-	-	314	629	24	8	4.3%
	Northern Pike	-	-	24	-	-	142	399	15	5	2.7%
	Sheefish	-	-	14	-	-	28	199	8	3	1.4%

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Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
	Arctic Char	-	-	14	-	-	180	162	6	2	1.1%
	Black Bear	-	-	5	-	-	2	144	6	2	1.0%
1984****	Moose	-	-	31	-	-	14	6,938	188	82	67.0%
	Chum	-	-	16	-	-	148	903	24	11	8.7%
	Berries	-	-	53	-	-	133	532	14	6	5.1%
	Caribou	-	-	6	-	-	3	451	12	5	4.4%
	Arctic Grayling	-	-	50	-	-	410	287	8	3	2.8%
	Chinook	-	-	6	-	-	15	272	7	3	2.6%
	Hare	-	-	16	-	-	113	170	5	2	1.6%
	Sheefish	-	-	9	-	-	16	113	3	1	1.1%
	Ducks	-	-	9	-	-	75	113	3	1	1.1%
	Grouse	-	-	28	-	-	37	104	3	1	1.0%
1997	Moose	50	36	7	43	50	3	1,389	77	32	-
	Caribou	50	14	7	21	50	3	334	19	8	-
	Black Bear	7	14	7	0	0	1	0	0	0	-
	Brown Bear	0	7	0	0	0	0	0	0	0	-
1998	Moose	92	75	25	50	83	4	1,890	135	68	-
	Caribou	67	25	17	8	58	4	455	33	16	-
	Black Bear	8	8	0	0	8	0	0	0	0	-
1999	Moose	75	33	17	25	67	2	1,170	90	42	-
	Caribou	67	25	17	17	50	2	282	22	10	-
	Black Bear	8	8	0	0	8	0	0	0	0	-
2002****	Arctic Grayling	54	38	33	21	33	114	114	4	2	-
	Northern Pike	29	17	13	13	21	23	69	2	1	-
	Lake Trout	33	8	8	8	33	33	65	2	1	-
	Sheefish	46	8	8	17	38	11	65	2	1	-
	Burbot	4	4	4	0	0	4	7	0	0	-
2002-03****	Black Bear	8	4	0	8	8	0	0	0	0	-
	Brown Bear	0	0	0	0	0	0	0	0	0	-
	Caribou	58	8	0	12	58	0	0	0	0	-
	Moose	89	8	0	31	89	0	0	0	0	-

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
****Study year reports the combined totals for two communities; Bettles and Evansville.

For All Resources study years (1981-82, 1983, 1984), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2011 (1997,1998, 1999); Andersen et al. 2004a (2002b); Brown et al. 2004 (2002-03); Marcotte and Haynes, 1985 (for 1981-82, 1983, and 1984).

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Table E-40. Fort Yukon Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1986-87	All Resources	100	92	88	78	97	-	625,725	2,952	999	100.0%
	Salmon	97	46	45	48	64	57,427	380,744	1,796	608	60.8%
	Non-Salmon Fish	89	63	62	35	60	29,083	75,965	358	121	12.1%
	Large Land Mammals	100	73	60	58	87	489	125,129	590	200	20.0%
	Small Land Mammals	88	71	68	53	62	14,637	20,826	98	33	3.3%
	Migratory Birds	86	67	67	59	59	10,095	18,702	88	30	3.0%
	Upland Game Birds	85	75	72	43	29	4,363	2,203	10	4	0.4%
	Vegetation	74	53	53	24	37	539	2,156	10	3	0.3%
1993***	All Resources	-	-	-	-	-	-	39,889	-	-	100.0%
	Salmon	-	-	-	-	-	1,860	21,159	-	-	53.0%
	Non-Salmon Fish	-	-	-	-	-	620	1,185	-	-	3.0%
	Large Land Mammals	-	-	-	-	-	32	12,500	-	-	31.3%
	Small Land Mammals	-	-	-	-	-	1,531	788	-	-	2.0%
	Migratory Birds	-	-	-	-	-	1,093	4,030	-	-	10.1%
	Upland Game Birds	-	-	-	-	-	324	227	-	-	0.6%
1994***	All Resources	-	-	-	-	-	-	65,089	-	-	100.0%
	Salmon	-	-	-	-	-	5,955	28,319	-	-	43.5%
	Non-Salmon Fish	-	-	-	-	-	540	1,570	-	-	2.4%
	Large Land Mammals	-	-	-	-	-	121	33,270	-	-	51.1%
	Small Land Mammals	-	-	-	-	-	672	510	-	-	0.8%
	Migratory Birds	-	-	-	-	-	743	1,361	-	-	2.1%
	Upland Game Birds	-	-	-	-	-	85	60	-	-	0.1%
1995***	All Resources	-	-	-	-	-	-	96,060	-	-	100.0%
	Salmon	-	-	-	-	-	7,505	37,525	-	-	39.1%
	Non-Salmon Fish	-	-	-	-	-	275	560	-	-	0.6%
	Large Land Mammals	-	-	-	-	-	137	53,040	-	-	55.2%
	Small Land Mammals	-	-	-	-	-	997	1,248	-	-	1.3%
	Migratory Birds	-	-	-	-	-	1,283	3,554	-	-	3.7%
	Upland Game Birds	-	-	-	-	-	189	132	-	-	0.1%
1996***	All Resources	-	-	-	-	-	-	54,450	-	-	100.0%
	Salmon	-	-	-	-	-	3,505	35,442	-	-	65.1%
	Non-Salmon Fish	-	-	-	-	-	1,090	2,356	-	-	4.3%
	Large Land Mammals	-	-	-	-	-	39	9,040	-	-	16.6%
	Small Land Mammals	-	-	-	-	-	1,313	2,170	-	-	4.0%
	Migratory Birds	-	-	-	-	-	1,838	5,240	-	-	9.6%
	Upland Game Birds	-	-	-	-	-	289	202	-	-	0.4%
1997***	All Resources	-	-	-	-	-	-	86,119	-	-	100.0%
	Salmon	-	-	-	-	-	9,338	55,622	-	-	64.6%
	Non-Salmon Fish	-	-	-	-	-	283	675	-	-	0.8%
	Large Land Mammals	-	-	-	-	-	78	25,120	-	-	29.2%

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Study Year	Resource	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	% of Total Harvest
	Small Land Mammals	-	-	-	-	-	993	1,699	-	-	2.0%
	Migratory Birds	-	-	-	-	-	1,096	2,878	-	-	3.3%
	Upland Game Birds	-	-	-	-	-	179	125	-	-	0.1%
1998***	All Resources	-	-	-	-	-	-	3,133	-	-	100.0%
	Salmon	-	-	-	-	-	425	1,989	-	-	63.5%
	Non-Salmon Fish	-	-	-	-	-	31	56	-	-	1.8%
	Large Land Mammals	-	-	-	-	-	6	1,040	-	-	33.2%
	Small Land Mammals	-	-	-	-	-	5	18	-	-	0.6%
	Migratory Birds	-	-	-	-	-	13	30	-	-	1.0%
	Upland Game Birds	-	-	-	-	-	-	1	-	-	0.0%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
***Study year includes all resource categories except Vegetation.

Sources: ADFG 2011 (1993-98); Sumida and Andersen, 1990 (1986-87).

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Table E-41. Fort Yukon Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1992	Salmon	-	-	-	-	-	8,483	-	-	-
1993	Salmon	-	-	-	-	-	12,792	-	-	-
1994	Salmon	-	-	-	-	-	14,723	-	-	-
1995	Salmon	-	-	-	-	-	13,329	-	-	-
1996	Salmon	-	-	-	-	-	13,297	-	-	-
1997	Salmon	-	-	-	-	-	9,645	-	-	-
1998	Salmon	-	-	-	-	-	4,874	-	-	-
1999	Salmon	-	-	-	-	-	12,366	-	-	-
2000a	Salmon	-	-	-	-	-	1,431	-	-	-
2001	Salmon	-	-	-	-	-	5,900	-	-	-
2002	Salmon	-	-	-	-	-	7,717	-	-	-
2003	Salmon	-	-	-	-	-	14,385	-	-	-
2004	Salmon	-	-	-	-	-	12,938	-	-	-
2005a	Salmon	-	-	-	-	-	12,140	-	-	-
2006	Salmon	-	-	-	-	-	10,522	-	-	-
2007	Salmon	-	-	-	-	-	15,272	-	-	-
2008	Salmon	-	-	-	-	-	18,287	-	-	-
2009	Salmon	-	-	-	-	-	3,952	-	-	-
Non-Salmon Fish										
2005b	Non-Salmon Fish	63	31	31	17	38	4,588	15,953	79	78
Migratory Birds										
2000b	Migratory Birds	-	-	51	-	-	3,266	9,469	47	18
Sources: ADFG 2009 (1992-1999, 2000a, 2001-2004, 2005a, 2006-2009); ADFG 2011 (2005b); Andersen and Jennings 2001a (2000b).										

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Table E-42. Fort Yukon Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1986-87	Chum	76	31	29	28	47	47,155	238,081	1,123	380	38.0%
	Chinook	94	44	44	44	62	10,154	142,155	671	227	22.7%
	Moose	99	72	55	54	79	150	105,093	496	168	16.8%
	Sheefish	45	28	28	15	24	2,966	17,793	84	28	2.8%
	Northern Pike	59	47	46	25	21	3,859	17,367	82	28	2.8%
	Snowshoe Hare	87	64	62	44	51	6,701	16,752	79	27	2.7%
	Caribou	73	13	9	10	64	156	15,587	74	25	2.5%
	Humpback Whitefish	58	33	33	22	40	5,033	15,098	71	24	2.4%
	Unknown Whitefish	15	3	3	1	13	4,289	12,868	61	21	2.1%
	Geese	78	64	57	47	50	2,945	11,193	53	18	1.8%
	Ducks	86	65	65	52	44	-	7,112	34	11	1.1%
1992	Chinook	-	-	-	-	-	4,122	-	-	-	-
	Chum	-	-	-	-	-	4,012	-	-	-	-
	Coho	-	-	-	-	-	341	-	-	-	-
	Sockeye	-	-	-	-	-	8	-	-	-	-
1993a	Chinook	-	-	-	-	-	6,433	-	-	-	-
	Chum	-	-	-	-	-	6,354	-	-	-	-
	Coho	-	-	-	-	-	5	-	-	-	-
1993b	Chinook	-	-	-	-	-	1,383	19,251	-	-	48.3%
	Moose	-	-	-	-	-	21	11,340	-	-	28.4%
	Geese	-	-	-	-	-	675	3,375	-	-	8.5%
	Chum	-	-	-	-	-	477	1,908	-	-	4.8%
	Black Bear	-	-	-	-	-	9	900	-	-	2.3%
	Whitefish	-	-	-	-	-	389	681	-	-	1.7%
	Ducks	-	-	-	-	-	418	655	-	-	1.6%
1993-98	Moose	-	-	-	-	-	202	-	-	-	-
	Black Bear	-	-	-	-	-	55	-	-	-	-
	Wolf	-	-	-	-	-	9	-	-	-	-
1994a	Chum	-	-	-	-	-	8,870	-	-	-	-
	Chinook	-	-	-	-	-	4,889	-	-	-	-
	Coho	-	-	-	-	-	963	-	-	-	-
1994b****	Moose	-	-	-	-	-	43	23,220	-	-	35.7%
	Chum	-	-	-	-	-	4,720	18,880	-	-	29.0%
	Caribou	-	-	-	-	-	75	9,750	-	-	15.0%
	Chinook	-	-	-	-	-	385	5,359	-	-	8.2%
	Coho	-	-	-	-	-	850	4,080	-	-	6.3%
	Ducks	-	-	-	-	-	565	1,099	-	-	1.7%
	Sheefish	-	-	-	-	-	140	770	-	-	1.2%
1995a	Chum	-	-	-	-	-	10,193	-	-	-	-
	Chinook	-	-	-	-	-	3,132	-	-	-	-
	Coho	-	-	-	-	-	4	-	-	-	-

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Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1995b****	Moose	-	-	-	-	-	86	46,440	-	-	48.3%
	Chum	-	-	-	-	-	7,505	37,525	-	-	39.1%
	Caribou	-	-	-	-	-	50	6,500	-	-	6.8%
	Geese	-	-	-	-	-	479	2,365	-	-	2.5%
	Ducks	-	-	-	-	-	804	1,189	-	-	1.2%
	Snowshoe Hare	-	-	-	-	-	553	1,106	-	-	1.2%
1996a	Chum	-	-	-	-	-	8,170	-	-	-	-
	Chinook	-	-	-	-	-	4,957	-	-	-	-
	Coho	-	-	-	-	-	157	-	-	-	-
	Sockeye	-	-	-	-	-	13	-	-	-	-
1996b****	Chinook	-	-	-	-	-	1,819	26,776	-	-	49.2%
	Chum	-	-	-	-	-	1,686	8,666	-	-	15.9%
	Moose	-	-	-	-	-	11	5,940	-	-	10.9%
	Geese	-	-	-	-	-	752	3,534	-	-	6.5%
	Non-Salmon Fish	-	-	-	-	-	1,090	2,356	-	-	4.3%
	Black Bear	-	-	-	-	-	18	1,800	-	-	3.3%
	Ducks	-	-	-	-	-	1,086	1,706	-	-	3.1%
	Snowshoe Hare	-	-	-	-	-	850	1,700	-	-	3.1%
	Caribou	-	-	-	-	-	10	1,300	-	-	2.4%
	Whitefish	-	-	-	-	-	731	1,279	-	-	2.3%
	Northern Pike	-	-	-	-	-	359	1,077	-	-	2.0%
1997a	Chum	-	-	-	-	-	6,253	-	-	-	-
	Chinook	-	-	-	-	-	3,145	-	-	-	-
	Coho	-	-	-	-	-	248	-	-	-	-
1997b****	Chum	-	-	-	-	-	8,574	44,070	-	-	51.2%
	Moose	-	-	-	-	-	38	20,520	-	-	23.8%
	Chinook	-	-	-	-	-	764	11,552	-	-	13.4%
	Caribou	-	-	-	-	-	20	2,600	-	-	3.0%
	Black Bear	-	-	-	-	-	20	2,000	-	-	2.3%
	Geese	-	-	-	-	-	387	1,821	-	-	2.1%
	Snowshoe Hare	-	-	-	-	-	705	1,410	-	-	1.6%
	Ducks	-	-	-	-	-	709	1,056	-	-	1.2%
1997c	Moose	-	-	-	-	-	41	-	-	-	-
	Grizzly Bear	-	-	-	-	-	10	-	-	-	-
1998a	Chum	-	-	-	-	-	3,065	-	-	-	-
	Chinook	-	-	-	-	-	1,771	-	-	-	-
	Coho	-	-	-	-	-	37	-	-	-	-
1998b****	Chum	-	-	-	-	-	425	1,989	-	-	63.5%
	Moose	-	-	-	-	-	1	540	-	-	17.2%
	Black Bear	-	-	-	-	-	5	500	-	-	16.0%
	Whitefish	-	-	-	-	-	30	52	-	-	1.7%
1999	Chum	-	-	-	-	-	9,702	-	-	-	-

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Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
	Chinook	-	-	-	-	-	2,539	-	-	-	-
	Coho	-	-	-	-	-	124	-	-	-	-
2000a	Chinook	-	-	-	-	-	976	-	-	-	-
	Chum	-	-	-	-	-	331	-	-	-	-
	Coho	-	-	-	-	-	120	-	-	-	-
	Sockeye	-	-	-	-	-	4	-	-	-	-
2000b	Geese	-	-	51	-	-	1,481	6,105	30	11	-
	Ducks	-	-	50	-	-	1,783	3,350	17	6	-
	White-fronted Geese Eggs	-	-	1	-	-	20	5	0	0	-
2001	Chum	-	-	-	-	-	2,498	-	-	-	-
	Chinook	-	-	-	-	-	2,361	-	-	-	-
	Coho	-	-	-	-	-	972	-	-	-	-
	Sockeye	-	-	-	-	-	69	-	-	-	-
2001-02	Moose	-	-	-	-	-	160	-	-	-	-
	Black Bear	-	-	-	-	-	60	-	-	-	-
	Grizzly Bear	-	-	-	-	-	10	-	-	-	-
	Wolf	-	-	-	-	-	10	-	-	-	-
2002	Chum	-	-	-	-	-	5,355	-	-	-	-
	Chinook	-	-	-	-	-	2,348	-	-	-	-
	Coho	-	-	-	-	-	14	-	-	-	-
2003a	Chum	-	-	-	-	-	10,137	-	-	-	-
	Chinook	-	-	-	-	-	4,004	-	-	-	-
	Coho	-	-	-	-	-	244	-	-	-	-
2003b*****	Moose	-	31	-	-	-	50	-	-	-	-
	Bear	-	1	-	-	-	29	-	-	-	-
	Black Bear	-	-	-	-	-	25	-	-	-	-
	Wolf	-	2	-	-	-	15	-	-	-	-
	Grizzly Bear	-	-	-	-	-	4	-	-	-	-
2004	Chum	-	-	-	-	-	8,489	-	-	-	-
	Chinook	-	-	-	-	-	4,430	-	-	-	-
	Coho	-	-	-	-	-	19	-	-	-	-
2005a	Chum	-	-	-	-	-	8,155	-	-	-	-
	Chinook	-	-	-	-	-	3,591	-	-	-	-
	Coho	-	-	-	-	-	394	-	-	-	-
2005b	Broad Whitefish	41	20	20	11	24	1,783	7,131	35	35	-
	Northern Pike	30	24	24	8	8	675	3,039	15	15	-
	Humpback Whitefish	30	9	9	5	23	734	2,201	11	11	-
	Sheefish	17	15	15	4	3	357	2,147	11	11	-
	Burbot	16	14	13	4	2	344	825	4	4	-
2006	Chum	-	-	-	-	-	7,343	-	-	-	-
	Chinook	-	-	-	-	-	3,144	-	-	-	-
	Coho	-	-	-	-	-	35	-	-	-	-

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
2007	Chum	-	-	-	-	-	8,375	-	-	-	-
	Chinook	-	-	-	-	-	4,076	-	-	-	-
	Coho	-	-	-	-	-	2,821	-	-	-	-
2008	Chum	-	-	-	-	-	14,482	-	-	-	-
	Chinook	-	-	-	-	-	1,991	-	-	-	-
	Coho	-	-	-	-	-	1,618	-	-	-	-
	Pink	-	-	-	-	-	196	-	-	-	-
2009	Chum	-	-	-	-	-	3,104	-	-	-	-
	Chinook	-	-	-	-	-	846	-	-	-	-
	Coho	-	-	-	-	-	2	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers). Actual number harvested is reported for the 1993-98, 1997b, 2001-02, and 2005b study years.
****Study year includes all resource categories except Vegetation.
*****The 2003b study year sampled 80% of the Fort Yukon community.

For All Resources study years (1986-87, 1993b, 1994b, 1995b, 1996b, 1997b, 1998b), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (1992, 1993a, 1994a, 1995a, 1996a, 1997a, 1998a, 1999, 2000a, 2001, 2002, 2003a, 2004, 2005a, 2006-09); ADFG 2011 (1993b, 1994b, 1995b, 1996b, 1997b, 1998b, 2005b); Andersen and Jennings 2001a (2000b); CATG, 2002 (1993-98, 2001-02); CATG, 2003 (1997c, 2003b); Sumida and Andersen, 1990 (1986-87).

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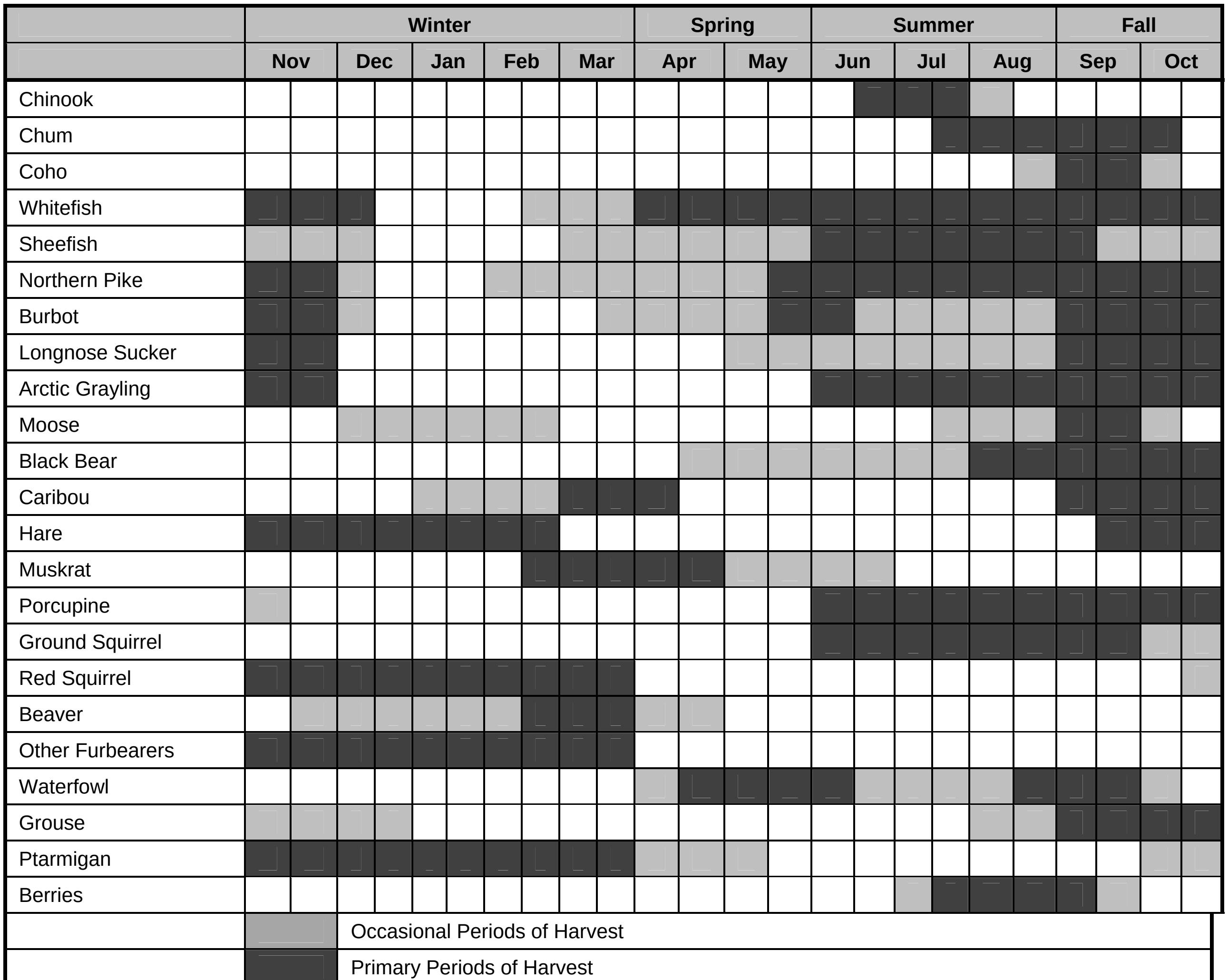
Table E-43. Fort Yukon Annual Cycle of Subsistence Activities



Source: Sumida and Andersen, 1990.

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LIVENGOOD

(No Available Subsistence Data)

NOLAN

(No Available Subsistence Data)

RAMPART

Table E-44. Rampart Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1993	All Resources	-	-	-	-	-	-	28,666	-	-	100.0%
	Salmon	-	-	-	-	-	2,766	22,512	-	-	78.5%
	Non-Salmon Fish	-	-	-	-	-	2,278	3,984	-	-	13.9%
	Large Land Mammals	-	-	-	-	-	7	2,110	-	-	7.4%
	Small Land Mammals	-	-	-	-	-	30	19	-	-	0.1%
	Upland Game Birds	-	-	-	-	-	60	42	-	-	0.1%
1994	All Resources	-	-	-	-	-	-	36,713	-	-	100.0%
	Salmon	-	-	-	-	-	2,774	31,691	-	-	86.3%
	Non-Salmon Fish	-	-	-	-	-	418	482	-	-	1.3%
	Large Land Mammals	-	-	-	-	-	8	4,320	-	-	11.8%
	Small Land Mammals	-	-	-	-	-	41	87	-	-	0.2%
	Migratory Birds	-	-	-	-	-	64	104	-	-	0.3%
	Upland Game Birds	-	-	-	-	-	42	29	-	-	0.1%
1995	All Resources	-	-	-	-	-	-	19,645	-	-	100.0%
	Salmon	-	-	-	-	-	3,090	15,450	-	-	78.6%
	Non-Salmon Fish	-	-	-	-	-	119	257	-	-	1.3%
	Large Land Mammals	-	-	-	-	-	8	3,470	-	-	17.7%
	Small Land Mammals	-	-	-	-	-	33	28	-	-	0.1%
	Upland Game Birds	-	-	-	-	-	200	140	-	-	0.7%
	Marine Invertebrates	-	-	-	-	-	100	300	-	-	1.5%
1997	All Resources	-	-	-	-	-	-	35,252	-	-	100.0%
	Salmon	-	-	-	-	-	3,073	29,907	-	-	84.8%
	Non-Salmon Fish	-	-	-	-	-	224	209	-	-	0.6%
	Large Land Mammals	-	-	-	-	-	11	5,060	-	-	14.4%
	Small Land Mammals	-	-	-	-	-	30	68	-	-	0.2%
	Upland Game Birds	-	-	-	-	-	12	8	-	-	0.0%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

Source: ADFG 2011.

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Table E-45. Rampart Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households	Estimated Harvest

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		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1992	Salmon	-	-	-	-	-	13,088	-	-	-
1993	Salmon	-	-	-	-	-	6,798	-	-	-
1994	Salmon	-	-	-	-	-	3,040	-	-	-
1995	Salmon	-	-	-	-	-	4,159	-	-	-
1996a	Salmon	-	-	-	-	-	3,840	-	-	-
1996b	Salmon	-	-	-	-	-	2,575	35,030	-	-
1997	Salmon	-	-	-	-	-	3,656	-	-	-
1998a	Salmon	-	-	-	-	-	1,024	-	-	-
1999	Salmon	-	-	-	-	-	7,028	-	-	-
2000a	Salmon	-	-	-	-	-	894	-	-	-
2001	Salmon	-	-	-	-	-	2,040	-	-	-
2002	Salmon	-	-	-	-	-	866	-	-	-
2003a	Salmon	-	-	-	-	-	1,785	-	-	-
2005a	Salmon	-	-	-	-	-	1,094	-	-	-
2006	Salmon	-	-	-	-	-	814	-	-	-
2007	Salmon	-	-	-	-	-	575	-	-	-
2008	Salmon	-	-	-	-	-	1,163	-	-	-
2009	Salmon	-	-	-	-	-	1,640	-	-	-
Large Land Mammals										
1993-96	Large Land Mammals	-	-	-	-	-	32	-	-	-
2001-02	Large Land Mammals	53	42	42	11	21	21	-	-	-
2003b	Large Land Mammals	-	-	-	33	67	4	-	-	-
2005b	Large Land Mammals	-	-	-	8	100	1	-	-	-
Small Land Mammals										
1996b	Small Land Mammals	-	-	-	-	-	3	26	-	-
Migratory Birds										
2000b	Migratory Birds	-	-	42	-	-	57	108	5	2

Sources: ADFG 2009 (1992-1995, 1996a, 1997, 1998a, 1999, 2000a, 2001-2002, 2003a, 2005a, 2006-2009); ADFG 2011 (1996b); Andersen and Jennings 2001a (2000b); CATG, 2002 (1993-96, 2001-02); CATG, 2003 (2003b); CATG, 2005 (2005b).

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Table E-46. Rampart Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1992	Chum	-	-	-	-	-	10,195	-	-	-	-
	Chinook	-	-	-	-	-	2,818	-	-	-	-
	Coho	-	-	-	-	-	75	-	-	-	-
1993a	Chum	-	-	-	-	-	4,764	-	-	-	-
	Chinook	-	-	-	-	-	1,997	-	-	-	-
	Coho	-	-	-	-	-	38	-	-	-	-
1993b	Chinook	-	-	-	-	-	1,154	16,064	-	-	56.0%
	Chum	-	-	-	-	-	1,612	6,448	-	-	22.5%
	Whitefish	-	-	-	-	-	2,084	3,616	-	-	12.6%
	Moose	-	-	-	-	-	3	1,620	-	-	5.7%
	Caribou	-	-	-	-	-	3	390	-	-	1.4%
1993-96	Moose	-	-	-	-	-	26	-	-	-	-
	Black Bear	-	-	-	-	-	6	-	-	-	-
1994a	Chum	-	-	-	-	-	1,566	-	-	-	-
	Chinook	-	-	-	-	-	1,375	-	-	-	-
	Coho	-	-	-	-	-	99	-	-	-	-
1994b	Chinook	-	-	-	-	-	2,064	28,731	-	-	78.3%
	Moose	-	-	-	-	-	8	4,320	-	-	11.8%
	Chum	-	-	-	-	-	560	2,240	-	-	6.1%
	Coho	-	-	-	-	-	150	720	-	-	2.0%
1995a	Chum	-	-	-	-	-	2,690	-	-	-	-
	Chinook	-	-	-	-	-	1,469	-	-	-	-
1995b	Chum	-	-	-	-	-	3,090	15,450	-	-	78.6%
	Moose	-	-	-	-	-	6	3,240	-	-	16.5%
	Clams	-	-	-	-	-	100	300	-	-	1.5%
	Whitefish	-	-	-	-	-	115	235	-	-	1.2%
1996a	Chum	-	-	-	-	-	2,084	-	-	-	-
	Chinook	-	-	-	-	-	1,751	-	-	-	-
	Coho	-	-	-	-	-	5	-	-	-	-
1996b	Chinook	-	-	-	-	-	2,275	33,488	-	-	-
	Chum	-	-	-	-	-	300	1,542	-	-	-
	Beaver	-	-	-	-	-	3	26	-	-	-
1997a	Chinook	-	-	-	-	-	2,237	-	-	-	-
	Chum	-	-	-	-	-	1,384	-	-	-	-
	Coho	-	-	-	-	-	34	-	-	-	-
1997b	Chinook	-	-	-	-	-	1,423	21,516	-	-	61.0%
	Chum	-	-	-	-	-	1,310	6,733	-	-	19.1%
	Moose	-	-	-	-	-	9	4,860	-	-	13.8%
	Coho	-	-	-	-	-	340	1,658	-	-	4.7%
1998a	Chinook	-	-	-	-	-	885	-	-	-	-
	Chum	-	-	-	-	-	119	-	-	-	-

Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
	Coho	-	-	-	-	-	20	-	-	-	-
1998b	Black Bear	-	-	-	-	-	2	200	-	-	-
1999	Chum	-	-	-	-	-	4,884	-	-	-	-
	Chinook	-	-	-	-	-	2,018	-	-	-	-
	Coho	-	-	-	-	-	126	-	-	-	-
2000a	Chinook	-	-	-	-	-	847	-	-	-	-
	Chum	-	-	-	-	-	47	-	-	-	-
2000b	Ducks	-	-	37	-	-	52	78	4	2	-
	Geese	-	-	11	-	-	4	18	1	0	-
	Swan	-	-	5	-	-	1	12	1	0	-
2001	Chinook	-	-	-	-	-	1,857	-	-	-	-
	Chum	-	-	-	-	-	183	-	-	-	-
2001-02	Wolf	-	-	-	-	-	15	-	-	-	-
	Moose	-	-	-	-	-	13	-	-	-	-
	Black Bear	-	-	-	-	-	6	-	-	-	-
	Grizzly Bear	-	-	-	-	-	2	-	-	-	-
2002	Chinook	-	-	-	-	-	852	-	-	-	-
	Chum	-	-	-	-	-	14	-	-	-	-
2003a	Chinook	-	-	-	-	-	1,411	-	-	-	-
	Chum	-	-	-	-	-	374	-	-	-	-
2003b	Moose	-	57	-	-	-	4	-	-	-	-
	Wolf	-	14	-	-	-	1	-	-	-	-
2005a	Chum	-	-	-	-	-	673	-	-	-	-
	Chinook	-	-	-	-	-	411	-	-	-	-
	Coho	-	-	-	-	-	10	-	-	-	-
2005b	Moose	-	53	-	-	-	1	-	-	-	-
	Wolf	-	20	-	-	-	3	-	-	-	-
2006	Chinook	-	-	-	-	-	429	-	-	-	-
	Chum	-	-	-	-	-	385	-	-	-	-
2007	Chum	-	-	-	-	-	275	-	-	-	-
	Chinook	-	-	-	-	-	250	-	-	-	-
	Coho	-	-	-	-	-	50	-	-	-	-
2008	Chum	-	-	-	-	-	1,027	-	-	-	-
	Chinook	-	-	-	-	-	136	-	-	-	-
2009	Chum	-	-	-	-	-	1,112	-	-	-	-
	Chinook	-	-	-	-	-	528	-	-	-	-

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

For All Resources study years (1993b, 1994b, 1995b, 1997b), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (1992, 1993a, 1994a, 1995a, 1996a, 1997a, 1998a, 1999, 2000a, 2001, 2002, 2003a, 2005a, 2006-2009); ADFG 2011 (1993b, 1994b, 1995b, 1996b, 1997b, 1998b); Andersen and Jennings 2001a (2000b); CATG, 2002 (1993-96, 1997b, 2001-02); CATG, 2003 (2003b); CATG, 2005 (2005b).

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Table E-47. Rampart Annual Cycle of Subsistence Activities

	Winter			Spring		Summer			Fall		Winter	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Moose												
Caribou												
Black Bear												
Porcupine												
Hare												
Grouse												
Ptarmigan												
Waterfowl												
Marten												
Mink												
Fox												
Lynx												
Wolf												
Wolverine												
Beaver												
Muskrat												
Otter												
Weasel												
Coyote												
Chinook												
Summer Chum												
Fall Chum												
Coho												
Whitefish												
Sheefish												
Longnose Sucker												
Burbot												
Dolly Varden												
Northern Pike												
Arctic Grayling												
Berries												
Plants												
Firewood												
		Occasional Harvest Period										
		Usual Harvest Period										
Source: Betts 1997.												

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STEVENS VILLAGE

Table E-48. Stevens Village Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1984-85	All Resources	-	-	100	-	-	-	102,485	3,416	1,139	100.0%
	Salmon	-	-	73	37	30	-	82,949	2,765	922	80.9%
	Non-Salmon Fish	-	-	80	20	10	-	9,155	305	102	8.9%
	Large Land Mammals	-	-	47	40	50	-	6,600	220	73	6.4%
	Small Land Mammals	-	-	73	-	-	-	1,856	62	21	1.8%
	Migratory Birds	-	-	77	30	20	609	1,543	51	17	1.5%
	Upland Game Birds	-	-	77	20	10	311	218	7	2	0.2%
	Vegetation	-	-	97	-	-	-	164	5	2	0.2%
1993	All Resources	-	-	-	-	-	1,824	21,239	-	-	100.0%
	Salmon	-	-	-	-	-	1,050	14,517	-	-	68.4%
	Non-Salmon Fish	-	-	-	-	-	279	745	-	-	3.5%
	Large Land Mammals	-	-	-	-	-	12	5,160	-	-	24.3%
	Small Land Mammals	-	-	-	-	-	99	114	-	-	0.5%
	Migratory Birds	-	-	-	-	-	290	637	-	-	3.0%
	Upland Game Birds	-	-	-	-	-	94	66	-	-	0.3%
1994	All Resources	-	-	-	-	-	880	8,451	-	-	100.0%
	Salmon	-	-	-	-	-	372	4,444	-	-	52.6%
	Non-Salmon Fish	-	-	-	-	-	99	191	-	-	2.3%
	Large Land Mammals	-	-	-	-	-	6	3,240	-	-	38.3%
	Small Land Mammals	-	-	-	-	-	273	472	-	-	5.6%
	Migratory Birds	-	-	-	-	-	3	15	-	-	0.2%
	Upland Game Birds	-	-	-	-	-	127	89	-	-	1.1%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

Sources: ADFG 2011 (1993, 1994); Sumida, 1988 (1984-85).

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Table E-49. Stevens Village Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds
Salmon										
1992	Salmon	-	-	-	-	-	2,517	-	-	-
1993	Salmon	-	-	-	-	-	3,270	-	-	-
1994	Salmon	-	-	-	-	-	3,136	-	-	-
1995a	Salmon	-	-	-	-	-	6,026	-	-	-
1995b	Salmon	-	-	-	-	-	1,302	6,510	-	-
1996	Salmon	-	-	-	-	-	2,204	-	-	-
1997a	Salmon	-	-	-	-	-	3,847	-	-	-
1998	Salmon	-	-	-	-	-	2,503	-	-	-
1999	Salmon	-	-	-	-	-	1,261	-	-	-
2000a	Salmon	-	-	-	-	-	516	-	-	-
2001	Salmon	-	-	-	-	-	747	-	-	-
2002	Salmon	-	-	-	-	-	1,040	-	-	-
2003a	Salmon	-	-	-	-	-	1,978	-	-	-
2004	Salmon	-	-	-	-	-	3,808	-	-	-
2005a	Salmon	-	-	-	-	-	2,258	-	-	-
2006	Salmon	-	-	-	-	-	2,267	-	-	-
2007	Salmon	-	-	-	-	-	1,063	-	-	-
2008	Salmon	-	-	-	-	-	1,559	-	-	-
2009	Salmon	-	-	-	-	-	1,271	-	-	-
Non-Salmon Fish										
1995b	Non-Salmon Fish	-	-	-	-	-	105	247	-	-
1997b	Non-Salmon Fish	-	-	-	-	-	20	35	-	-
Large Land Mammals										
1993-98	Large Land Mammals	-	-	-	-	-	16	-	-	-
1997b	Large Land Mammals	-	-	-	-	-	4	1,720	-	-
2003b	Large Land Mammals	-	-	-	18	48	17	-	-	-
2005b	Large Land Mammals	-	-	-	21	29	31	-	-	-
Small Land Mammals										
1997b	Small Land Mammals	-	-	-	-	-	110	36	-	-
Migratory Birds										
1995b	Migratory Birds	-	-	-	-	-	25	33	-	-
1997b	Migratory Birds	-	-	-	-	-	99	140	-	-
2000b	Migratory Birds	-	-	54	-	-	210	521	16	6
Upland Game Birds										
1997b	Upland Game Birds	-	-	-	-	-	19	13	-	-

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

Sources: ADFG 2009 (1992-1994, 1995a, 1995b, 1996, 1997a, 1998-99, 2000a, 2001-02, 2003a, 2004, 2005a, 2006-09); ADFG

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds
2011 (1995b, 1997b); Andersen and Jennings 2001a (2000b); CATG, 2002 (1993-98); CATG, 2003 (2003b); CATG, 2005 (2005b); Sumida, 1988 (1984-85).										

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Table E-50. Stevens Village Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1984-85	Chum	-	-	43	-	-	10,885	52,197	1,740	580	50.9%
	Chinook	-	-	70	-	-	2,202	30,167	1,006	335	29.4%
	Moose	-	-	20	20	30	7	4,900	163	54	4.8%
	Whitefish	-	-	73	13	7	2,511	4,771	159	53	4.7%
	Northern Pike	-	-	67	7	0	730	2,555	85	28	2.5%
	Black Bear	-	-	40	37	23	17	1,700	57	19	1.7%
	Sheefish	-	-	47	3	3	239	1,434	48	16	1.4%
1992	Chinook	-	-	-	-	-	1,887	-	-	-	-
	Chum	-	-	-	-	-	610	-	-	-	-
	Coho	-	-	-	-	-	20	-	-	-	-
1993a	Chinook	-	-	-	-	-	1,754	-	-	-	-
	Chum	-	-	-	-	-	1,515	-	-	-	-
1993b	Chinook	-	-	-	-	-	1,040	14,477	-	-	68.2%
	Moose	-	-	-	-	-	9	4,860	-	-	22.9%
	Northern Pike	-	-	-	-	-	170	510	-	-	2.4%
	Geese	-	-	-	-	-	108	343	-	-	1.6%
	Black Bear	-	-	-	-	-	3	300	-	-	1.4%
	Ducks	-	-	-	-	-	182	294	-	-	1.4%
1993-98	Moose	-	-	-	-	-	12	-	-	-	-
	Black Bear	-	-	-	-	-	4	-	-	-	-
1994a	Chinook	-	-	-	-	-	2,814	-	-	-	-
	Chum	-	-	-	-	-	322	-	-	-	-
1994b	Chinook	-	-	-	-	-	298	4,148	-	-	49.1%
	Moose	-	-	-	-	-	6	3,240	-	-	38.3%
	Snowshoe Hare	-	-	-	-	-	236	472	-	-	5.6%
	Chum	-	-	-	-	-	74	296	-	-	3.5%
	Whitefish	-	-	-	-	-	85	149	-	-	1.8%
	Grouse	-	-	-	-	-	127	89	-	-	1.1%
1995a	Chum	-	-	-	-	-	3,351	-	-	-	-
	Chinook	-	-	-	-	-	2,674	-	-	-	-

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Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
	Coho	-	-	-	-	-	1	-	-	-	-
1995b	Chum	-	-	-	-	-	1,302	6,510	-	-	-
	Northern Pike	-	-	-	-	-	40	120	-	-	-
	Whitefish	-	-	-	-	-	45	79	-	-	-
	Burbot	-	-	-	-	-	20	48	-	-	-
	Geese	-	-	-	-	-	15	18	-	-	-
1996	Chum	-	-	-	-	-	1,521	-	-	-	-
	Chinook	-	-	-	-	-	681	-	-	-	-
	Coho	-	-	-	-	-	2	-	-	-	-
1997a	Chinook	-	-	-	-	-	2,070	-	-	-	-
	Chum	-	-	-	-	-	1,776	-	-	-	-
	Coho	-	-	-	-	-	1	-	-	-	-
1997b	Moose	-	-	-	-	-	3	1,620	-	-	-
	Geese	-	-	-	-	-	68	105	-	-	-
	Black Bear	-	-	-	-	-	1	100	-	-	-
	Whitefish	-	-	-	-	-	20	35	-	-	-
	Ducks	-	-	-	-	-	31	35	-	-	-
1998	Chinook	-	-	-	-	-	1,232	-	-	-	-
	Chum	-	-	-	-	-	1,211	-	-	-	-
	Coho	-	-	-	-	-	60	-	-	-	-
1999	Chinook	-	-	-	-	-	1,214	-	-	-	-
	Chum	-	-	-	-	-	46	-	-	-	-
2000a	Chinook	-	-	-	-	-	466	-	-	-	-
	Chum	-	-	-	-	-	50	-	-	-	-
2000b	Ducks	-	-	46	-	-	155	281	9	3	-
	Geese	-	-	42	-	-	48	194	6	2	-
	Sand hill Crane	-	-	13	-	-	7	46	1	1	-
2001	Chinook	-	-	-	-	-	747	-	-	-	-
2002	Chinook	-	-	-	-	-	1,036	-	-	-	-
	Chum	-	-	-	-	-	4	-	-	-	-
2003a	Chinook	-	-	-	-	-	1,121	-	-	-	-
	Chum	-	-	-	-	-	857	-	-	-	-
2003b	Moose	-	23	-	-	-	10	-	-	-	-
	Bear	-	6	-	-	-	7	-	-	-	-
2004	Chinook	-	-	-	-	-	2,476	-	-	-	-
	Chum	-	-	-	-	-	1,229	-	-	-	-
	Coho	-	-	-	-	-	103	-	-	-	-
2005a	Chinook	-	-	-	-	-	1,570	-	-	-	-
	Chum	-	-	-	-	-	688	-	-	-	-
2005b	Moose	-	20	-	-	-	17	-	-	-	-
	Grizzly Bear	-	-	-	-	-	6	-	-	-	-
	Black Bear	-	-	-	-	-	4	-	-	-	-

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Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
	Wolf	-	8	-	-	-	4	-	-	-	-
2006	Chinook	-	-	-	-	-	1,245	-	-	-	-
	Chum	-	-	-	-	-	1,022	-	-	-	-
2007	Chinook	-	-	-	-	-	610	-	-	-	-
	Chum	-	-	-	-	-	453	-	-	-	-
2008	Chum	-	-	-	-	-	806	-	-	-	-
	Chinook	-	-	-	-	-	753	-	-	-	-
2009	Chum	-	-	-	-	-	776	-	-	-	-
	Chinook	-	-	-	-	-	405	-	-	-	-
	Coho	-	-	-	-	-	90	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

For All Resources study years (1984-85, 1993b, 1994b), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (1992, 1993a, 1994a, 1995a, 1996, 1997a, 1998-99, 2000a, 2001-02, 2003a, 2004, 2005a, 2006-09); ADFG 2011 (1993b, 1994b, 1995b, 1997b); Andersen and Jennings 2001a (2000b); CATG, 2002 (1993-98); CATG, 2003 (2003b); CATG, 2005 (2005b); Sumida, 1988 (1984-85).

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Table E-51. Stevens Village Annual Cycle of Subsistence Activities

	Winter					Spring		Summer			Fall	
	Nov	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**
Chinook												
Summer Chum												
Fall Chum												
Coho												
Whitefish												
Sheefish												
Northern Pike												
Burbot												
Longnose Sucker												
Arctic Grayling												
Moose												
Black Bear												
Porcupine												
Hare												
Grouse												
Ptarmigan												
Waterfowl												
Marten												
Fox												
Lynx												
Mink												
Wolf												
Wolverine												
Otter												
Beaver												
Muskrat												
Berries												
Firewood												
		Occasional Harvest Period										
		Usual Harvest Period										
Source: Sumida, 1988.												

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WISEMAN

Table E-52. Wiseman Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number*	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1985	Salmon	-	-	-	-	-	72	-	-	-
1991	Salmon	-	-	-	-	-	31	-	-	-
1992	Salmon	-	-	-	-	-	27	-	-	-
2005	Salmon	-	-	-	-	-	40	-	-	-
2006	Salmon	-	-	-	-	-	31	-	-	-
2008	Salmon	-	-	-	-	-	22	-	-	-
Non-Salmon Fish										
1991	Non-Salmon Fish	-	-	-	-	-	169	-	-	-
Large Land Mammals										
1991	Large Land Mammals	-	-	-	-	-	20	-	-	-
Small Land Mammals										
1991	Small Land Mammals	-	-	-	-	-	227	-	-	-
Migratory Birds										
1991	Migratory Birds	-	-	-	-	-	31	-	-	-
Upland Game Birds										
1991	Upland Game Birds	-	-	-	-	-	169	-	-	-
Vegetation										
1991	Vegetation	-	-	-	-	-	41	-	-	-

Notes: *Estimated numbers represent individuals in all cases except berries, where they represent gallons.

Sources: ADFG 2009 (1985, 1992, 2005, 2006, 2008); Scott, 1998 (1991).

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Table E-53. Wiseman Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds	Average HH Pounds	Per Capita Pounds	
1985	Sockeye	-	-	-	-	-	70	-	-	-	-
	Chinook	-	-	-	-	-	2	-	-	-	-
1991	Sockeye	-	-	-	-	-	31	-	-	-	-
	Arctic Grayling	-	-	-	-	-	131	-	-	-	-
	Lake Trout	-	-	-	-	-	19	-	-	-	-
	Northern Pike	-	-	-	-	-	8	-	-	-	-
	Sheefish	-	-	-	-	-	6	-	-	-	-
	Burbot	-	-	-	-	-	5	-	-	-	-
	Caribou	-	-	-	-	-	10	-	-	-	-
	Dall Sheep	-	-	-	-	-	7	-	-	-	-
	Moose	-	-	-	-	-	3	-	-	-	-
	Black Bear	-	-	-	-	-	0	-	-	-	-
	Grizzly Bear	-	-	-	-	-	0	-	-	-	-
	Marten	-	-	-	-	-	84	-	-	-	-
	Snowshoe Hare	-	-	-	-	-	53	-	-	-	-
	Lynx	-	-	-	-	-	24	-	-	-	-
	Fox	-	-	-	-	-	21	-	-	-	-
	Squirrel	-	-	-	-	-	17	-	-	-	-
	Wolverine	-	-	-	-	-	14	-	-	-	-
	Wolf	-	-	-	-	-	5	-	-	-	-
	Beaver	-	-	-	-	-	4	-	-	-	-
	Weasel	-	-	-	-	-	4	-	-	-	-
	Mink	-	-	-	-	-	1	-	-	-	-
	Ducks	-	-	-	-	-	17	-	-	-	-
	Geese	-	-	-	-	-	14	-	-	-	-
	Grouse	-	-	-	-	-	96	-	-	-	-
	Ptarmigan	-	-	-	-	-	73	-	-	-	-
	Berries	-	-	-	-	-	41	-	-	-	-
1992	Sockeye	-	-	-	-	-	23	-	-	-	-
	Pink	-	-	-	-	-	4	-	-	-	-
2005	Sockeye	-	-	-	-	-	39	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
2006	Sockeye	-	-	-	-	-	31	-	-	-	-
2008	Sockeye	-	-	-	-	-	22	-	-	-	-

Notes: *Estimated numbers represent individuals in all cases except berries, where they represent gallons.

Species are listed in descending order total number harvested.

Source: ADFG 2009 (1985, 1992, 2005-06, 2008); Scott, 1998 (1991).

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Table E-54. Wiseman Annual Cycle of Subsistence Activities

	Winter	Spring	Summer	Fall

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	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
Caribou							■	■	■	■	■									■	■	■	■	
Moose									■													■		
Dall Sheep									■	■										■	■	■	■	
Bear												■	■									■	■	
Furbearers	■	■	■	■	■	■	■	■	■	■	■												■	■
Berries																		■	■	■	■	■		
Firewood	■	■	■	■	■	■	■	■	■	■						■	■	■		■	■			■
	■		Common Periods of Activities																					
Source: Scott, 1998.																								

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ALCAN BORDER

(No Available Subsistence Data)

CHISANA

Table E-55. Chisana Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1982-83***	All Resources	100	-	100	-	-		2,894	482	219	100.0%
	Salmon	80	-	0	-	-	0	0	0	0	0.0%
	Non-Salmon Fish	100	-	100	-	-	994	994	166	75	34.3%
	Large Land Mammals	100	-	40	-	-	5	1,434	239	109	49.6%
	Small Land Mammals	100	-	100	-	-	361	377	63	29	13.0%
	Migratory Birds	20	-	20	-	-	7	11	2	1	0.4%
	Upland Game Birds	60	-	60	-	-	82	41	7	3	1.4%
	Vegetation	80	-	80	-	-	37	37	6	3	1.3%
1987	All Resources	100	100	100	67	83		1,664	277	128	100.0%
	Salmon	83	33	33	0	83	7	46	8	4	2.8%
	Non-Salmon Fish	100	100	83	50	50	713	713	119	55	42.8%
	Large Land Mammals	100	83	83	17	67	9	777	130	60	46.7%
	Small Land Mammals	50	50	50	17	0	97	42	7	3	2.5%
	Migratory Birds	17	17	17	0	0	3	3	1	0	0.2%
	Upland Game Birds	33	67	33	0	0	88	44	7	3	2.6%
	Marine Invertebrates	0	0	0	0	0	0	0	0	0	0.0%
	Vegetation	100	100	100	0	0	39	39	7	3	2.3%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
***The 1982-83 study year was for the North Wrangell Mountains, which included Chisana and surrounding isolated settlements.

Sources: ADFG 2011 (1987); Stratton and Georgette 1984 (1982-83).

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Table E-56. Chisana Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
2002	Salmon	-	-	-	-	-	77	-	-	-

Sources: Fall et al. 2003a.

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Table E-57. Chisana Subsistence Harvest Estimates by Selected Species, All Study Years

Study	Resource*	Percentage of Households	Estimated Harvest	% of Total Harvest

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Year		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1982-83****	Moose	100	-	40	-	-	2	1,200	200	91	41.5%
	Lake Trout	80	-	80	-	-	301	602	100	46	20.8%
	Lynx	60	-	60	-	-	56	226	38	17	7.8%
	Northern Pike	60	-	60	-	-	62	175	29	13	6.0%
	Caribou	100	-	20	-	-	1	156	26	12	5.4%
	Arctic Grayling	100	-	100	-	-	203	142	24	11	4.9%
	Hare	80	-	80	-	-	55	83	14	6	2.9%
	Dall Sheep	100	-	20	-	-	1	78	13	6	2.7%
	Burbot	60	-	60	-	-	31	75	12	6	2.6%
	Muskrat	40	-	40	-	-	94	47	8	4	1.6%
	Ptarmigan	60	-	60	-	-	67	34	6	3	1.2%
1987	Caribou	100	67	67	17	50	5	650	108	50	39.1%
	Lake Trout	83	83	83	33	17	244	488	81	38	29.3%
	Deer	17	17	17	0	0	3	128	21	10	7.7%
	Burbot	83	83	83	50	33	49	118	20	9	7.1%
	Arctic Grayling	100	100	83	50	17	114	80	13	6	4.8%
	Hare	50	50	50	17	0	28	42	7	3	2.5%
	Ptarmigan	33	67	33	0	0	66	33	6	3	2.0%
	Berries	83	83	83	0	0	8	30	5	2	1.8%
	Whitefish	33	33	33	0	0	31	28	5	2	1.7%
	Chinook	67	17	17	0	67	1	17	3	1	1.0%
	Coho	17	17	17	0	0	3	16	3	1	1.0%
2002	Sockeye	-	-	-	-	-	73	-	-	-	-
	Chinook	-	-	-	-	-	4	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
****The 1982-83 study year was for the North Wrangell Mountains, which included Chisana and surrounding isolated settlements.

For All Resources study years (1982-83, 1987), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years (2002), species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2011 (1987); Stratton and Georgette 1984 (1982-83).

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DELTA JUNCTION

Table E-58. Delta Junction Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

		Percentage of Households					Estimated Harvest			
Study Year	Resource	Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds*	Average HH Pounds	Per Capita Pounds
Delta Junction										
1988	Salmon	-	-	-	-	-	3,632	-	-	-
1989	Salmon	-	-	-	-	-	3,102	-	-	-
1990	Salmon	-	-	-	-	-	3,595	-	-	-
1991	Salmon	-	-	-	-	-	4,345	-	-	-
1992	Salmon	-	-	-	-	-	6,656	-	-	-
1993	Salmon	-	-	-	-	-	5,020	-	-	-
1994	Salmon	-	-	-	-	-	6,861	-	-	-
1995	Salmon	-	-	-	-	-	6,523	-	-	-
1996	Salmon	-	-	-	-	-	5,816	-	-	-
1997	Salmon	-	-	-	-	-	7,389	-	-	-
1998	Salmon	-	-	-	-	-	6,718	-	-	-
1999	Salmon	-	-	-	-	-	7,351	-	-	-
2000	Salmon	-	-	-	-	-	6,058	-	-	-
2001	Salmon	-	-	-	-	-	7,217	-	-	-
2002	Salmon	-	-	-	-	-	4,701	-	-	-
2003	Salmon	-	-	-	-	-	5,262	-	-	-
2004	Salmon	-	-	-	-	-	6,373	-	-	-
2005	Salmon	-	-	-	-	-	8,976	-	-	-
2006	Salmon	-	-	-	-	-	8,556	-	-	-
2007	Salmon	-	-	-	-	-	7,029	-	-	-
2008	Salmon	-	-	-	-	-	6,354	-	-	-
2009	Salmon	-	-	-	-	-	6,326	-	-	-
Fort Greely										
1988	Salmon	-	-	-	-	-	302	-	-	-
1989	Salmon	-	-	-	-	-	118	-	-	-
1990	Salmon	-	-	-	-	-	189	-	-	-
1991	Salmon	-	-	-	-	-	166	-	-	-
1992	Salmon	-	-	-	-	-	251	-	-	-
1993	Salmon	-	-	-	-	-	294	-	-	-
1994	Salmon	-	-	-	-	-	298	-	-	-
1995	Salmon	-	-	-	-	-	112	-	-	-
1996	Salmon	-	-	-	-	-	59	-	-	-
1997	Salmon	-	-	-	-	-	57	-	-	-
1998	Salmon	-	-	-	-	-	72	-	-	-
1999	Salmon	-	-	-	-	-	64	-	-	-
2000	Salmon	-	-	-	-	-	46	-	-	-
2004	Salmon	-	-	-	-	-	78	-	-	-
2005	Salmon	-	-	-	-	-	78	-	-	-
2006	Salmon	-	-	-	-	-	348	-	-	-
2007	Salmon	-	-	-	-	-	317	-	-	-

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Study Year	Resource	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number	Total Pounds*	Average HH Pounds	Per Capita Pounds
2008	Salmon	-	-	-	-	-	304	-	-	-
2009	Salmon	-	-	-	-	-	375	-	-	-
Source: ADFG 2009.										

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Table E-59. Delta Junction Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number*	Total Pounds	Average HH Pounds	Per Capita Pounds	% of Total Harvest
1988	Sockeye	-	-	-	-	-	3,193	-	-	-	-
	Chinook	-	-	-	-	-	267	-	-	-	-
	Coho	-	-	-	-	-	172	-	-	-	-
1989	Sockeye	-	-	-	-	-	2,984	-	-	-	-
	Chinook	-	-	-	-	-	75	-	-	-	-
	Coho	-	-	-	-	-	43	-	-	-	-
1990	Sockeye	-	-	-	-	-	3,421	-	-	-	-
	Chinook	-	-	-	-	-	141	-	-	-	-
	Coho	-	-	-	-	-	33	-	-	-	-
1991	Sockeye	-	-	-	-	-	4,046	-	-	-	-
	Chinook	-	-	-	-	-	154	-	-	-	-
	Coho	-	-	-	-	-	145	-	-	-	-
1992	Sockeye	-	-	-	-	-	4,770	-	-	-	-
	Chum	-	-	-	-	-	1,583	-	-	-	-
	Chinook	-	-	-	-	-	243	-	-	-	-
	Coho	-	-	-	-	-	53	-	-	-	-
	Pink	-	-	-	-	-	7	-	-	-	-
1993	Sockeye	-	-	-	-	-	4,887	-	-	-	-
	Chinook	-	-	-	-	-	108	-	-	-	-
	Coho	-	-	-	-	-	24	-	-	-	-
	Chum	-	-	-	-	-	1	-	-	-	-
1994	Sockeye	-	-	-	-	-	6,038	-	-	-	-
	Chum	-	-	-	-	-	407	-	-	-	-
	Chinook	-	-	-	-	-	282	-	-	-	-
	Coho	-	-	-	-	-	134	-	-	-	-
1995	Sockeye	-	-	-	-	-	6,083	-	-	-	-
	Coho	-	-	-	-	-	180	-	-	-	-
	Chinook	-	-	-	-	-	175	-	-	-	-
	Chum	-	-	-	-	-	85	-	-	-	-

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds	Average HH Pounds	Per Capita Pounds	
1996	Sockeye	-	-	-	-	-	5,399	-	-	-	-
	Coho	-	-	-	-	-	201	-	-	-	-
	Chinook	-	-	-	-	-	122	-	-	-	-
	Chum	-	-	-	-	-	93	-	-	-	-
1997	Sockeye	-	-	-	-	-	7,136	-	-	-	-
	Chinook	-	-	-	-	-	252	-	-	-	-
	Coho	-	-	-	-	-	1	-	-	-	-
1998	Sockeye	-	-	-	-	-	6,243	-	-	-	-
	Chinook	-	-	-	-	-	298	-	-	-	-
	Coho	-	-	-	-	-	177	-	-	-	-
1999	Sockeye	-	-	-	-	-	6,989	-	-	-	-
	Chinook	-	-	-	-	-	223	-	-	-	-
	Coho	-	-	-	-	-	139	-	-	-	-
2000	Sockeye	-	-	-	-	-	5,723	-	-	-	-
	Coho	-	-	-	-	-	193	-	-	-	-
	Chinook	-	-	-	-	-	139	-	-	-	-
	Chum	-	-	-	-	-	2	-	-	-	-
2001	Sockeye	-	-	-	-	-	6,824	-	-	-	-
	Coho	-	-	-	-	-	242	-	-	-	-
	Chinook	-	-	-	-	-	150	-	-	-	-
2002	Sockeye	-	-	-	-	-	4,539	-	-	-	-
	Chinook	-	-	-	-	-	127	-	-	-	-
	Coho	-	-	-	-	-	36	-	-	-	-
2003	Sockeye	-	-	-	-	-	4,990	-	-	-	-
	Coho	-	-	-	-	-	144	-	-	-	-
	Chinook	-	-	-	-	-	127	-	-	-	-
2004	Sockeye	-	-	-	-	-	6,055	-	-	-	-
	Coho	-	-	-	-	-	173	-	-	-	-
	Chinook	-	-	-	-	-	145	-	-	-	-
2005	Sockeye	-	-	-	-	-	8,702	-	-	-	-
	Chinook	-	-	-	-	-	168	-	-	-	-
	Coho	-	-	-	-	-	106	-	-	-	-
2006	Sockeye	-	-	-	-	-	8,165	-	-	-	-
	Chinook	-	-	-	-	-	208	-	-	-	-
	Coho	-	-	-	-	-	183	-	-	-	-
2007	Sockeye	-	-	-	-	-	6,601	-	-	-	-
	Coho	-	-	-	-	-	240	-	-	-	-
	Chinook	-	-	-	-	-	188	-	-	-	-
2008	Sockeye	-	-	-	-	-	6,048	-	-	-	-
	Coho	-	-	-	-	-	175	-	-	-	-
	Chinook	-	-	-	-	-	131	-	-	-	-

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds	Average HH Pounds	Per Capita Pounds	
2009	Sockeye	-	-	-	-	-	6,140	-	-	-	-
	Coho	-	-	-	-	-	110	-	-	-	-
	Chinook	-	-	-	-	-	76	-	-	-	-

Notes: *Estimated numbers represent individuals.

Species are listed in descending order by total number harvested.

Source: ADFG 2009.

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Table E-60. Fort Greely Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds	Average HH Pounds	Per Capita Pounds	
1988	Sockeye	-	-	-	-	-	298	-	-	-	-
	Chinook	-	-	-	-	-	5	-	-	-	-
1989	Sockeye	-	-	-	-	-	98	-	-	-	-
	Coho	-	-	-	-	-	20	-	-	-	-
1990	Sockeye	-	-	-	-	-	163	-	-	-	-
	Coho	-	-	-	-	-	14	-	-	-	-
	Chinook	-	-	-	-	-	12	-	-	-	-
1991	Sockeye	-	-	-	-	-	157	-	-	-	-
	Chinook	-	-	-	-	-	9	-	-	-	-
1992	Sockeye	-	-	-	-	-	237	-	-	-	-
	Chinook	-	-	-	-	-	14	-	-	-	-
1993	Sockeye	-	-	-	-	-	287	-	-	-	-
	Chinook	-	-	-	-	-	6	-	-	-	-
	Coho	-	-	-	-	-	1	-	-	-	-
1994	Sockeye	-	-	-	-	-	283	-	-	-	-
	Coho	-	-	-	-	-	11	-	-	-	-
	Chinook	-	-	-	-	-	5	-	-	-	-
1995	Sockeye	-	-	-	-	-	100	-	-	-	-
	Chinook	-	-	-	-	-	12	-	-	-	-
1996	Sockeye	-	-	-	-	-	42	-	-	-	-
	Coho	-	-	-	-	-	17	-	-	-	-
1997	Sockeye	-	-	-	-	-	55	-	-	-	-
	Chinook	-	-	-	-	-	2	-	-	-	-
1998	Sockeye	-	-	-	-	-	67	-	-	-	-

Study Year	Resource	Percentage of Households: Use	Percentage of Households: Try to Harvest	Percentage of Households: Harvest	Percentage of Households: Give	Percentage of Households: Receive	Estimated Harvest: Number*	Estimated Harvest: Total Pounds	Estimated Harvest: Average HH Pounds	Estimated Harvest: Per Capita Pounds	% of Total Harvest
	Chinook	-	-	-	-	-	5	-	-	-	-
1999	Sockeye	-	-	-	-	-	60	-	-	-	-
	Chinook	-	-	-	-	-	4	-	-	-	-
2000	Sockeye	-	-	-	-	-	45	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
2004	Sockeye	-	-	-	-	-	74	-	-	-	-
	Coho	-	-	-	-	-	5	-	-	-	-
2005	Sockeye	-	-	-	-	-	78	-	-	-	-
2006	Sockeye	-	-	-	-	-	337	-	-	-	-
	Coho	-	-	-	-	-	7	-	-	-	-
	Chinook	-	-	-	-	-	4	-	-	-	-
2007	Sockeye	-	-	-	-	-	311	-	-	-	-
	Chinook	-	-	-	-	-	7	-	-	-	-
2008	Sockeye	-	-	-	-	-	298	-	-	-	-
	Chinook	-	-	-	-	-	7	-	-	-	-
2009	Sockeye	-	-	-	-	-	370	-	-	-	-
	Coho	-	-	-	-	-	3	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-

Notes: *Estimated numbers represent individuals.

Species are listed in descending order by total number harvested.

Source: ADFG 2009.

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DOT LAKE

Table E-61. Dot Lake Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1987-88	All Resources	100	100	100	60	87	-	7,555	378	116	100.0%
	Salmon	80	20	20	13	73	271	1,329	66	20	17.6%
	Non-Salmon Fish	93	73	73	47	33	-	2,094	105	32	27.7%
	Large Land Mammals	93	60	33	20	73	9	3,177	159	49	42.1%
	Small Land Mammals	73	53	53	13	20	305	308	15	5	4.1%
	Migratory Birds	47	27	27	27	33	51	36	2	1	0.5%
	Upland Game Birds	67	53	53	40	20	223	111	6	2	1.5%
	Vegetation	93	93	93	47	13	-	499	25	8	6.6%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

Source: Marcotte 1991.

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Table E-62. Dot Lake Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1988	Salmon	-	-	-	-	-	31	-	-	-
1989	Salmon	-	-	-	-	-	20	-	-	-
1991	Salmon	-	-	-	-	-	34	-	-	-
1992	Salmon	-	-	-	-	-	1	-	-	-
1996	Salmon	-	-	-	-	-	77	-	-	-
1997	Salmon	-	-	-	-	-	278	-	-	-
1998	Salmon	-	-	-	-	-	185	-	-	-
1999	Salmon	-	-	-	-	-	100	-	-	-
2000a	Salmon	-	-	-	-	-	162	-	-	-
2001	Salmon	-	-	-	-	-	143	-	-	-
2002	Salmon	-	-	-	-	-	40	-	-	-
2003	Salmon	-	-	-	-	-	186	-	-	-
2005	Salmon	-	-	-	-	-	88	-	-	-
2006	Salmon	-	-	-	-	-	6	-	-	-
2007	Salmon	-	-	-	-	-	74	-	-	-
2008	Salmon	-	-	-	-	-	30	-	-	-
2009	Salmon	-	-	-	-	-	30	-	-	-
Non-Salmon Fish										
2004	Non-Salmon Fish	75	63	63	38	44	730	1,580	83	28
Large Land Mammals										
2004	Large Land Mammals	81	75	44	25	56	13	6,650	350	119
Small Land Mammals										
2004	Small Land Mammals	31	31	31	6	0	45	333	18	6
Migratory Birds										
2000b	Migratory Birds	-	-	13	-	-	36	56	3	1

Sources: ADFG 2009 (1988-89, 1991-92, 1996-1999, 2000a, 2001-2003, 2005-2009); ADFG 2011 (2004); Andersen and Jennings 2001b (2000b).

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Table E-63. Dot Lake Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1987-88	Moose	73	47	20	20	67	4	2,580	129	39	34.1%
	Whitefish	73	47	47	40	33	385	809	40	12	10.7%
	Coho	7	7	7	0	7	133	714	36	11	9.5%
	Caribou	67	40	20	13	53	4	520	26	8	6.9%
	Rainbow Trout	60	40	40	20	27	327	457	23	7	6.0%
	Berries	93	93	93	40	13	113	453	23	7	6.0%
	Arctic Grayling	67	53	53	47	20	452	316	16	5	4.2%
	Hare	67	47	47	13	20	201	302	15	5	4.0%
	Sockeye	33	13	13	7	27	67	273	14	4	3.6%
	Unknown Salmon	47	7	7	7	47	67	273	14	4	3.6%
	Lake Trout	60	40	40	27	27	121	243	12	4	3.2%
	Halibut	7	7	7	0	0	200	200	10	3	2.6%
	Black Bear	27	7	7	0	20	1	77	4	1	1.0%
	Grouse	53	47	47	33	13	148	74	4	1	1.0%
1988	Sockeye	-	-	-	-	-	31	-	-	-	-
1989	Sockeye	-	-	-	-	-	20	-	-	-	-
1991	Sockeye	-	-	-	-	-	34	-	-	-	-
1992	Sockeye	-	-	-	-	-	1	-	-	-	-
1996	Sockeye	-	-	-	-	-	44	-	-	-	-
	Coho	-	-	-	-	-	15	-	-	-	-
	Chum	-	-	-	-	-	11	-	-	-	-
	Chinook	-	-	-	-	-	7	-	-	-	-
1997	Chum	-	-	-	-	-	212	-	-	-	-
	Sockeye	-	-	-	-	-	67	-	-	-	-
1998	Sockeye	-	-	-	-	-	96	-	-	-	-
	Chum	-	-	-	-	-	71	-	-	-	-
	Coho	-	-	-	-	-	15	-	-	-	-
	Chinook	-	-	-	-	-	3	-	-	-	-
1999	Sockeye	-	-	-	-	-	100	-	-	-	-
2000a	Chum	-	-	-	-	-	100	-	-	-	-
	Sockeye	-	-	-	-	-	60	-	-	-	-
	Chinook	-	-	-	-	-	2	-	-	-	-
2000b	Ducks	-	-	13	-	-	36	56	3	1	-
2001	Sockeye	-	-	-	-	-	141	-	-	-	-
	Chinook	-	-	-	-	-	2	-	-	-	-
2002	Sockeye	-	-	-	-	-	35	-	-	-	-
	Chinook	-	-	-	-	-	5	-	-	-	-
2003	Sockeye	-	-	-	-	-	175	-	-	-	-
	Chinook	-	-	-	-	-	11	-	-	-	-
2004	Moose	75	63	31	19	50	8	5,818	306	104	-

Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
	Black Bear	13	19	13	6	0	4	831	44	15	-
	Humpback Whitefish	13	13	13	6	0	249	748	39	13	-
	Unknown Whitefish	31	31	31	13	19	99	199	11	4	-
	Porcupine	25	25	25	6	0	9	186	10	3	-
2005	Sockeye	-	-	-	-	-	88	-	-	-	-
2006	Sockeye	-	-	-	-	-	5	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
2007	Sockeye	-	-	-	-	-	73	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
2008	Sockeye	-	-	-	-	-	30	-	-	-	-
2009	Sockeye	-	-	-	-	-	30	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

For All Resources study years (1987-88), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (1988-89, 1991-92, 1996-1999, 2000a, 2001-2003, 2005-2009); ADFG 2011 (2004); Andersen and Jennings 2001b (2000b); Marcotte 1991 (1987-88).

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Table E-64. Dot Lake Annual Cycle of Subsistence Activities

	Winter										Spring				Summer						Fall			
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
Salmon															█	█	█	█	░	░				
Whitefish	░	░	░	░									░	░	░	█	█	█	█	░	░	░	░	░
Northern Pike	░	░	░	░											█	█	█	█	░	░	█	█	█	█
Arctic Grayling											█	█	░	░	░	░	░	░	░	░				
Burbot															░	░	░	█	█	█	█	░	░	░
Longnose Sucker	░	░	░	░											░	░	░	█	█	█	█	░	░	░
Moose																					█	█		
Caribou			█	█	█	█	█	█											█	█	█	█		
Dall Sheep																			█	█	█	█		
Black Bear																			█	█	█	█		
Brown Bear																			█	█	█	█		
Hares	█		░	░	░	░	░															█	█	█
Muskrat	█	█	█	█	█	█	█	░	░	░														
Beaver	█	█	█	█	█	█	█	░	░	░														
Porcupine	░	░	░	░	░	░	░	░	█	█	█	█	█									█	█	█
Marten	█	█	█	█	█	█	█	░	░	░														
Mink	█	█	█	█	█	█	█	░	░	░														
Wolverine	█	█	█	█	█	█	█	░	░	░														
Lynx	█	█	█	█	█	█	█	░	░	░														
Red Fox	█	█	█	█	█	█																		
Wolf	█	█	█	█	█	█	█	░	░	░														
Squirrel	█	█	░	░	░	░	░															█	█	█
Land Otter	█	█	█	█	█	█	█	░	░	░														
Waterfowl	░	░	░	░																		█	█	█
Ptarmigan	█	░	░	░	░	░	░	░	░												█	█	█	█
Berries														█	█	█	█	█	█	█	█			
Firewood	█	█	█	█	░	░	░	░	░	░	░	░	░	░	░	░	░	░	█	█	█	█	█	█
Other Plants			█	█										█	█	█	█	█	█	█	█			
	░	Occasional Periods of Harvest																						
	█	Primary Periods of Harvest																						
Source: Marcotte 1991.																								

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DRY CREEK

Table E-65. Dry Creek Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
2008	Salmon	-	-	-	-	-	80	-	-	-
Source: ADFG 2009.										

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Table E-66. Dry Creek Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number*	Total Pounds	Average HH Pounds	Per Capita Pounds	% of Total Harvest
2008	Sockeye	-	-	-	-	-	79	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-

Notes: *Estimated numbers represent individuals.

Species are listed in descending order total number harvested.

Source: ADFG 2009.

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FAIRBANKS

Table E-67. Fairbanks Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Eielson AFB										
1983	Salmon	-	-	-	-	-	474	-	-	-
1984	Salmon	-	-	-	-	-	1,142	-	-	-
1985	Salmon	-	-	-	-	-	726	-	-	-
1986	Salmon	-	-	-	-	-	1,187	-	-	-
1987	Salmon	-	-	-	-	-	1,651	-	-	-
1988	Salmon	-	-	-	-	-	1,663	-	-	-
1989	Salmon	-	-	-	-	-	1,692	-	-	-
1990	Salmon	-	-	-	-	-	1,728	-	-	-
1991	Salmon	-	-	-	-	-	4,012	-	-	-
1992	Salmon	-	-	-	-	-	3,394	-	-	-
1993	Salmon	-	-	-	-	-	4,557	-	-	-
1994	Salmon	-	-	-	-	-	4,191	-	-	-
1995	Salmon	-	-	-	-	-	3,063	-	-	-
1996	Salmon	-	-	-	-	-	2,636	-	-	-
1997	Salmon	-	-	-	-	-	3,348	-	-	-
1998	Salmon	-	-	-	-	-	3,501	-	-	-
1999	Salmon	-	-	-	-	-	2,777	-	-	-
2000	Salmon	-	-	-	-	-	572	-	-	-
Ester										
1988	Salmon	-	-	-	-	-	83	-	-	-
1989	Salmon	-	-	-	-	-	182	-	-	-
1990	Salmon	-	-	-	-	-	140	-	-	-
1991	Salmon	-	-	-	-	-	153	-	-	-
1992	Salmon	-	-	-	-	-	559	-	-	-
1993	Salmon	-	-	-	-	-	428	-	-	-
1994	Salmon	-	-	-	-	-	768	-	-	-
1995	Salmon	-	-	-	-	-	830	-	-	-
1996	Salmon	-	-	-	-	-	756	-	-	-
1997	Salmon	-	-	-	-	-	1,198	-	-	-
1998	Salmon	-	-	-	-	-	873	-	-	-
1999	Salmon	-	-	-	-	-	1,170	-	-	-
2000	Salmon	-	-	-	-	-	733	-	-	-
2001	Salmon	-	-	-	-	-	1,136	-	-	-
2002	Salmon	-	-	-	-	-	910	-	-	-
2003	Salmon	-	-	-	-	-	1,082	-	-	-
2004	Salmon	-	-	-	-	-	1,596	-	-	-
2005	Salmon	-	-	-	-	-	1,577	-	-	-
2006	Salmon	-	-	-	-	-	1,635	-	-	-
2007	Salmon	-	-	-	-	-	1,575	-	-	-
2008	Salmon	-	-	-	-	-	1,311	-	-	-

Study Year	Resource	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number	Total Pounds	Average HH Pounds	Per Capita Pounds
2009	Salmon	-	-	-	-	-	1,437	-	-	-
Fairbanks										
1983	Salmon	-	-	-	-	-	25	-	-	-
1984	Salmon	-	-	-	-	-	377	-	-	-
1985	Salmon	-	-	-	-	-	170	-	-	-
1986	Salmon	-	-	-	-	-	379	-	-	-
1987	Salmon	-	-	-	-	-	301	-	-	-
1988	Salmon	-	-	-	-	-	18,624	-	-	-
1989	Salmon	-	-	-	-	-	18,579	-	-	-
1990	Salmon	-	-	-	-	-	21,199	-	-	-
1991	Salmon	-	-	-	-	-	24,755	-	-	-
1992	Salmon	-	-	-	-	-	34,664	-	-	-
1993	Salmon	-	-	-	-	-	33,445	-	-	-
1994	Salmon	-	-	-	-	-	50,765	-	-	-
1995	Salmon	-	-	-	-	-	49,143	-	-	-
1996	Salmon	-	-	-	-	-	48,401	-	-	-
1997	Salmon	-	-	-	-	-	50,595	-	-	-
1998	Salmon	-	-	-	-	-	43,838	-	-	-
1999	Salmon	-	-	-	-	-	47,785	-	-	-
2000	Salmon	-	-	-	-	-	39,261	-	-	-
2001	Salmon	-	-	-	-	-	43,946	-	-	-
2002	Salmon	-	-	-	-	-	37,542	-	-	-
2003	Salmon	-	-	-	-	-	37,996	-	-	-
2004	Salmon	-	-	-	-	-	53,973	-	-	-
2005	Salmon	-	-	-	-	-	67,968	-	-	-
2006	Salmon	-	-	-	-	-	65,527	-	-	-
2007	Salmon	-	-	-	-	-	66,121	-	-	-
2008	Salmon	-	-	-	-	-	41,203	-	-	-
2009	Salmon	-	-	-	-	-	47,653	-	-	-
Fox										
1988	Salmon	-	-	-	-	-	3	-	-	-
1992	Salmon	-	-	-	-	-	10	-	-	-
1993	Salmon	-	-	-	-	-	8	-	-	-
1996	Salmon	-	-	-	-	-	8	-	-	-
1999	Salmon	-	-	-	-	-	173	-	-	-
2000	Salmon	-	-	-	-	-	3	-	-	-
2003	Salmon	-	-	-	-	-	74	-	-	-
North Pole										
1987	Salmon	-	-	-	-	-	50	-	-	-
1988	Salmon	-	-	-	-	-	7,388	-	-	-
1989	Salmon	-	-	-	-	-	7,091	-	-	-
1990	Salmon	-	-	-	-	-	7,995	-	-	-

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Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
1991	Salmon	-	-	-	-	-	9,717	-	-	-
1992	Salmon	-	-	-	-	-	10,364	-	-	-
1993	Salmon	-	-	-	-	-	10,668	-	-	-
1994	Salmon	-	-	-	-	-	12,991	-	-	-
1995	Salmon	-	-	-	-	-	11,140	-	-	-
1996	Salmon	-	-	-	-	-	11,251	-	-	-
1997	Salmon	-	-	-	-	-	15,003	-	-	-
1998	Salmon	-	-	-	-	-	13,044	-	-	-
1999	Salmon	-	-	-	-	-	13,867	-	-	-
2000	Salmon	-	-	-	-	-	10,388	-	-	-
2001	Salmon	-	-	-	-	-	13,499	-	-	-
2002	Salmon	-	-	-	-	-	9,896	-	-	-
2003	Salmon	-	-	-	-	-	10,449	-	-	-
2004	Salmon	-	-	-	-	-	16,054	-	-	-
2005	Salmon	-	-	-	-	-	16,479	-	-	-
2006	Salmon	-	-	-	-	-	15,274	-	-	-
2007	Salmon	-	-	-	-	-	16,690	-	-	-
2008	Salmon	-	-	-	-	-	10,170	-	-	-
2009	Salmon	-	-	-	-	-	20,550	-	-	-
Salcha										
1989	Salmon	-	-	-	-	-	1,293	-	-	-
1990	Salmon	-	-	-	-	-	584	-	-	-
1991	Salmon	-	-	-	-	-	800	-	-	-
1992	Salmon	-	-	-	-	-	2,218	-	-	-
1993	Salmon	-	-	-	-	-	966	-	-	-
1994	Salmon	-	-	-	-	-	1,412	-	-	-
1995	Salmon	-	-	-	-	-	343	-	-	-
1996	Salmon	-	-	-	-	-	1,775	-	-	-
1997	Salmon	-	-	-	-	-	1,990	-	-	-
1998	Salmon	-	-	-	-	-	1,491	-	-	-
1999	Salmon	-	-	-	-	-	1,536	-	-	-
2000	Salmon	-	-	-	-	-	962	-	-	-
2001	Salmon	-	-	-	-	-	1,222	-	-	-
2002	Salmon	-	-	-	-	-	1,138	-	-	-
2003	Salmon	-	-	-	-	-	1,467	-	-	-
2004	Salmon	-	-	-	-	-	2,164	-	-	-
2005	Salmon	-	-	-	-	-	1,684	-	-	-
2006	Salmon	-	-	-	-	-	1,289	-	-	-
2007	Salmon	-	-	-	-	-	1,045	-	-	-
2008	Salmon	-	-	-	-	-	627	-	-	-
2009	Salmon	-	-	-	-	-	593	-	-	-
Two Rivers										

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
1989	Salmon	-	-	-	-	-	154	-	-	-
1990	Salmon	-	-	-	-	-	177	-	-	-
1991	Salmon	-	-	-	-	-	202	-	-	-
1992	Salmon	-	-	-	-	-	516	-	-	-
1993	Salmon	-	-	-	-	-	330	-	-	-
1994	Salmon	-	-	-	-	-	427	-	-	-
1995	Salmon	-	-	-	-	-	296	-	-	-
1996	Salmon	-	-	-	-	-	222	-	-	-
1997	Salmon	-	-	-	-	-	250	-	-	-
1998	Salmon	-	-	-	-	-	396	-	-	-
1999	Salmon	-	-	-	-	-	377	-	-	-
2000	Salmon	-	-	-	-	-	249	-	-	-
2001	Salmon	-	-	-	-	-	524	-	-	-
2002	Salmon	-	-	-	-	-	327	-	-	-
2003	Salmon	-	-	-	-	-	340	-	-	-
2004	Salmon	-	-	-	-	-	339	-	-	-
2005	Salmon	-	-	-	-	-	428	-	-	-
2006	Salmon	-	-	-	-	-	464	-	-	-
2007	Salmon	-	-	-	-	-	400	-	-	-
2008	Salmon	-	-	-	-	-	264	-	-	-
2009	Salmon	-	-	-	-	-	250	-	-	-

Source: ADFG 2009.

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Table E-68. Eielson AFB Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number*	Total Pounds	Average HH Pounds	Per Capita Pounds	% of Total Harvest
1983	Sockeye	-	-	-	-	-	463	-	-	-	-
	Coho	-	-	-	-	-	10	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
1984	Sockeye	-	-	-	-	-	501	-	-	-	-
	Coho	-	-	-	-	-	481	-	-	-	-
	Pink	-	-	-	-	-	75	-	-	-	-
	Chinook	-	-	-	-	-	52	-	-	-	-
	Chum	-	-	-	-	-	33	-	-	-	-
1985	Sockeye	-	-	-	-	-	552	-	-	-	-
	Coho	-	-	-	-	-	146	-	-	-	-
	Chinook	-	-	-	-	-	12	-	-	-	-
	Pink	-	-	-	-	-	9	-	-	-	-
	Chum	-	-	-	-	-	7	-	-	-	-
1986	Sockeye	-	-	-	-	-	796	-	-	-	-
	Coho	-	-	-	-	-	277	-	-	-	-
	Chinook	-	-	-	-	-	68	-	-	-	-
	Chum	-	-	-	-	-	38	-	-	-	-
	Pink	-	-	-	-	-	8	-	-	-	-
1987	Sockeye	-	-	-	-	-	1,145	-	-	-	-
	Coho	-	-	-	-	-	282	-	-	-	-
	Chum	-	-	-	-	-	127	-	-	-	-
	Chinook	-	-	-	-	-	94	-	-	-	-
	Pink	-	-	-	-	-	2	-	-	-	-
1988	Sockeye	-	-	-	-	-	1,167	-	-	-	-
	Coho	-	-	-	-	-	325	-	-	-	-
	Chinook	-	-	-	-	-	73	-	-	-	-
	Chum	-	-	-	-	-	55	-	-	-	-
	Pink	-	-	-	-	-	44	-	-	-	-
1989	Sockeye	-	-	-	-	-	1,167	-	-	-	-
	Coho	-	-	-	-	-	434	-	-	-	-
	Chinook	-	-	-	-	-	56	-	-	-	-
	Chum	-	-	-	-	-	35	-	-	-	-
1990	Sockeye	-	-	-	-	-	1,124	-	-	-	-
	Coho	-	-	-	-	-	342	-	-	-	-
	Chum	-	-	-	-	-	123	-	-	-	-
	Chinook	-	-	-	-	-	93	-	-	-	-
	Pink	-	-	-	-	-	46	-	-	-	-
1991	Sockeye	-	-	-	-	-	3,364	-	-	-	-
	Coho	-	-	-	-	-	422	-	-	-	-
	Chum	-	-	-	-	-	126	-	-	-	-
	Chinook	-	-	-	-	-	70	-	-	-	-

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Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds	Average HH Pounds	Per Capita Pounds	
	Pink	-	-	-	-	-	31	-	-	-	-
1992	Sockeye	-	-	-	-	-	2,349	-	-	-	-
	Coho	-	-	-	-	-	607	-	-	-	-
	Chum	-	-	-	-	-	284	-	-	-	-
	Chinook	-	-	-	-	-	103	-	-	-	-
	Pink	-	-	-	-	-	51	-	-	-	-
1993	Sockeye	-	-	-	-	-	3,284	-	-	-	-
	Coho	-	-	-	-	-	980	-	-	-	-
	Chum	-	-	-	-	-	148	-	-	-	-
	Chinook	-	-	-	-	-	127	-	-	-	-
	Pink	-	-	-	-	-	19	-	-	-	-
1994	Sockeye	-	-	-	-	-	2,984	-	-	-	-
	Coho	-	-	-	-	-	822	-	-	-	-
	Chinook	-	-	-	-	-	195	-	-	-	-
	Pink	-	-	-	-	-	135	-	-	-	-
	Chum	-	-	-	-	-	55	-	-	-	-
1995	Sockeye	-	-	-	-	-	2,030	-	-	-	-
	Coho	-	-	-	-	-	659	-	-	-	-
	Chum	-	-	-	-	-	188	-	-	-	-
	Pink	-	-	-	-	-	105	-	-	-	-
	Chinook	-	-	-	-	-	80	-	-	-	-
1996	Sockeye	-	-	-	-	-	1,867	-	-	-	-
	Coho	-	-	-	-	-	487	-	-	-	-
	Chinook	-	-	-	-	-	111	-	-	-	-
	Chum	-	-	-	-	-	90	-	-	-	-
	Pink	-	-	-	-	-	82	-	-	-	-
1997	Sockeye	-	-	-	-	-	2,047	-	-	-	-
	Coho	-	-	-	-	-	962	-	-	-	-
	Chinook	-	-	-	-	-	252	-	-	-	-
	Chum	-	-	-	-	-	55	-	-	-	-
	Pink	-	-	-	-	-	32	-	-	-	-
1998	Sockeye	-	-	-	-	-	2,310	-	-	-	-
	Coho	-	-	-	-	-	652	-	-	-	-
	Pink	-	-	-	-	-	273	-	-	-	-
	Chum	-	-	-	-	-	191	-	-	-	-
	Chinook	-	-	-	-	-	76	-	-	-	-
1999	Sockeye	-	-	-	-	-	1,726	-	-	-	-
	Coho	-	-	-	-	-	864	-	-	-	-
	Chinook	-	-	-	-	-	142	-	-	-	-
	Chum	-	-	-	-	-	44	-	-	-	-
	Pink	-	-	-	-	-	2	-	-	-	-
2000	Sockeye	-	-	-	-	-	319	-	-	-	-

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Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds	Average HH Pounds	Per Capita Pounds	
	Coho	-	-	-	-	-	233	-	-	-	-
	Chinook	-	-	-	-	-	11	-	-	-	-
	Chum	-	-	-	-	-	9	-	-	-	-

Notes: *Estimated numbers represent individuals.

Species are listed in descending order by total number harvested.

Source: ADFG 2009.

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Table E-69. Ester Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds	Average HH Pounds	Per Capita Pounds	
1988	Sockeye	-	-	-	-	-	65	-	-	-	-
	Chinook	-	-	-	-	-	18	-	-	-	-
1989	Sockeye	-	-	-	-	-	156	-	-	-	-
	Coho	-	-	-	-	-	14	-	-	-	-
	Chinook	-	-	-	-	-	12	-	-	-	-
1990	Sockeye	-	-	-	-	-	122	-	-	-	-
	Coho	-	-	-	-	-	10	-	-	-	-
	Chinook	-	-	-	-	-	8	-	-	-	-
1991	Sockeye	-	-	-	-	-	135	-	-	-	-
	Coho	-	-	-	-	-	14	-	-	-	-
	Chinook	-	-	-	-	-	4	-	-	-	-
1992	Sockeye	-	-	-	-	-	353	-	-	-	-
	Chum	-	-	-	-	-	138	-	-	-	-
	Coho	-	-	-	-	-	41	-	-	-	-
	Chinook	-	-	-	-	-	27	-	-	-	-
1993	Sockeye	-	-	-	-	-	389	-	-	-	-
	Chinook	-	-	-	-	-	15	-	-	-	-
	Coho	-	-	-	-	-	12	-	-	-	-
	Chum	-	-	-	-	-	12	-	-	-	-
1994	Sockeye	-	-	-	-	-	681	-	-	-	-
	Coho	-	-	-	-	-	40	-	-	-	-
	Chinook	-	-	-	-	-	34	-	-	-	-
	Chum	-	-	-	-	-	12	-	-	-	-
1995	Sockeye	-	-	-	-	-	615	-	-	-	-
	Coho	-	-	-	-	-	104	-	-	-	-
	Chum	-	-	-	-	-	68	-	-	-	-
	Chinook	-	-	-	-	-	43	-	-	-	-
1996	Sockeye	-	-	-	-	-	623	-	-	-	-
	Coho	-	-	-	-	-	82	-	-	-	-
	Chinook	-	-	-	-	-	30	-	-	-	-
	Chum	-	-	-	-	-	21	-	-	-	-
1997	Sockeye	-	-	-	-	-	917	-	-	-	-
	Chum	-	-	-	-	-	156	-	-	-	-
	Chinook	-	-	-	-	-	88	-	-	-	-
	Coho	-	-	-	-	-	37	-	-	-	-
1998	Sockeye	-	-	-	-	-	734	-	-	-	-
	Chinook	-	-	-	-	-	66	-	-	-	-
	Coho	-	-	-	-	-	58	-	-	-	-
	Chum	-	-	-	-	-	15	-	-	-	-
1999	Sockeye	-	-	-	-	-	969	-	-	-	-

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Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds	Average HH Pounds	Per Capita Pounds	
	Coho	-	-	-	-	-	74	-	-	-	-
	Chinook	-	-	-	-	-	66	-	-	-	-
	Chum	-	-	-	-	-	60	-	-	-	-
2000	Sockeye	-	-	-	-	-	668	-	-	-	-
	Coho	-	-	-	-	-	44	-	-	-	-
	Chinook	-	-	-	-	-	21	-	-	-	-
2001	Sockeye	-	-	-	-	-	1,011	-	-	-	-
	Coho	-	-	-	-	-	65	-	-	-	-
	Chinook	-	-	-	-	-	41	-	-	-	-
	Chum	-	-	-	-	-	19	-	-	-	-
2002	Sockeye	-	-	-	-	-	852	-	-	-	-
	Coho	-	-	-	-	-	31	-	-	-	-
	Chinook	-	-	-	-	-	27	-	-	-	-
2003	Sockeye	-	-	-	-	-	984	-	-	-	-
	Chinook	-	-	-	-	-	56	-	-	-	-
	Coho	-	-	-	-	-	37	-	-	-	-
	Chum	-	-	-	-	-	6	-	-	-	-
2004	Sockeye	-	-	-	-	-	1,498	-	-	-	-
	Chinook	-	-	-	-	-	46	-	-	-	-
	Coho	-	-	-	-	-	43	-	-	-	-
	Chum	-	-	-	-	-	9	-	-	-	-
2005	Sockeye	-	-	-	-	-	1,526	-	-	-	-
	Chinook	-	-	-	-	-	29	-	-	-	-
	Coho	-	-	-	-	-	22	-	-	-	-
2006	Sockeye	-	-	-	-	-	1,485	-	-	-	-
	Chinook	-	-	-	-	-	87	-	-	-	-
	Coho	-	-	-	-	-	64	-	-	-	-
2007	Sockeye	-	-	-	-	-	1,482	-	-	-	-
	Chinook	-	-	-	-	-	89	-	-	-	-
	Coho	-	-	-	-	-	5	-	-	-	-
2008	Sockeye	-	-	-	-	-	1,179	-	-	-	-
	Coho	-	-	-	-	-	93	-	-	-	-
	Chinook	-	-	-	-	-	35	-	-	-	-
2009	Sockeye	-	-	-	-	-	1,366	-	-	-	-
	Coho	-	-	-	-	-	52	-	-	-	-
	Chinook	-	-	-	-	-	20	-	-	-	-

Notes: *Estimated numbers represent individuals.

Species are listed in descending order total number harvested.

Source: ADFG 2009.

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Table E-70. Fairbanks Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number*	Total Pounds	Average HH Pounds	Per Capita Pounds	% of Total Harvest
1983	Chinook	-	-	-	-	-	25	-	-	-	-
1984	Pink	-	-	-	-	-	156	-	-	-	-
	Coho	-	-	-	-	-	100	-	-	-	-
	Sockeye	-	-	-	-	-	67	-	-	-	-
	Chinook	-	-	-	-	-	49	-	-	-	-
	Chum	-	-	-	-	-	5	-	-	-	-
1985	Sockeye	-	-	-	-	-	115	-	-	-	-
	Chinook	-	-	-	-	-	45	-	-	-	-
	Chum	-	-	-	-	-	10	-	-	-	-
1986	Sockeye	-	-	-	-	-	227	-	-	-	-
	Chinook	-	-	-	-	-	94	-	-	-	-
	Chum	-	-	-	-	-	31	-	-	-	-
	Pink	-	-	-	-	-	20	-	-	-	-
	Coho	-	-	-	-	-	7	-	-	-	-
1987	Sockeye	-	-	-	-	-	238	-	-	-	-
	Chinook	-	-	-	-	-	48	-	-	-	-
	Coho	-	-	-	-	-	11	-	-	-	-
	Chum	-	-	-	-	-	4	-	-	-	-
1988	Sockeye	-	-	-	-	-	17,024	-	-	-	-
	Chinook	-	-	-	-	-	1,379	-	-	-	-
	Coho	-	-	-	-	-	220	-	-	-	-
1989	Sockeye	-	-	-	-	-	17,472	-	-	-	-
	Chinook	-	-	-	-	-	850	-	-	-	-
	Coho	-	-	-	-	-	251	-	-	-	-
	Chum	-	-	-	-	-	4	-	-	-	-
	Pink	-	-	-	-	-	3	-	-	-	-
1990	Sockeye	-	-	-	-	-	19,605	-	-	-	-
	Chinook	-	-	-	-	-	995	-	-	-	-
	Coho	-	-	-	-	-	578	-	-	-	-
	Pink	-	-	-	-	-	20	-	-	-	-
	Chum	-	-	-	-	-	1	-	-	-	-
1991	Sockeye	-	-	-	-	-	22,285	-	-	-	-
	Chinook	-	-	-	-	-	1,470	-	-	-	-
	Coho	-	-	-	-	-	1,000	-	-	-	-
1992	Sockeye	-	-	-	-	-	24,947	-	-	-	-
	Chum	-	-	-	-	-	4,052	-	-	-	-
	Chinook	-	-	-	-	-	2,932	-	-	-	-
	Coho	-	-	-	-	-	2,716	-	-	-	-
	Pink	-	-	-	-	-	16	-	-	-	-
1993	Sockeye	-	-	-	-	-	27,778	-	-	-	-

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds	Average HH Pounds	Per Capita Pounds	
	Chinook	-	-	-	-	-	2,988	-	-	-	-
	Chum	-	-	-	-	-	2,147	-	-	-	-
	Coho	-	-	-	-	-	531	-	-	-	-
	Pink	-	-	-	-	-	1	-	-	-	-
1994	Sockeye	-	-	-	-	-	32,264	-	-	-	-
	Chum	-	-	-	-	-	11,457	-	-	-	-
	Chinook	-	-	-	-	-	4,041	-	-	-	-
	Coho	-	-	-	-	-	2,942	-	-	-	-
	Pink	-	-	-	-	-	61	-	-	-	-
1995	Sockeye	-	-	-	-	-	27,507	-	-	-	-
	Chum	-	-	-	-	-	13,242	-	-	-	-
	Coho	-	-	-	-	-	4,504	-	-	-	-
	Chinook	-	-	-	-	-	3,890	-	-	-	-
1996	Sockeye	-	-	-	-	-	29,573	-	-	-	-
	Chum	-	-	-	-	-	12,527	-	-	-	-
	Coho	-	-	-	-	-	3,526	-	-	-	-
	Chinook	-	-	-	-	-	2,776	-	-	-	-
1997	Sockeye	-	-	-	-	-	41,109	-	-	-	-
	Chum	-	-	-	-	-	5,022	-	-	-	-
	Chinook	-	-	-	-	-	2,970	-	-	-	-
	Coho	-	-	-	-	-	1,488	-	-	-	-
	Pink	-	-	-	-	-	5	-	-	-	-
1998	Sockeye	-	-	-	-	-	37,119	-	-	-	-
	Chinook	-	-	-	-	-	3,695	-	-	-	-
	Coho	-	-	-	-	-	1,529	-	-	-	-
	Chum	-	-	-	-	-	1,495	-	-	-	-
1999	Sockeye	-	-	-	-	-	40,036	-	-	-	-
	Chum	-	-	-	-	-	3,147	-	-	-	-
	Chinook	-	-	-	-	-	3,088	-	-	-	-
	Coho	-	-	-	-	-	1,514	-	-	-	-
2000	Sockeye	-	-	-	-	-	34,929	-	-	-	-
	Chinook	-	-	-	-	-	2,854	-	-	-	-
	Coho	-	-	-	-	-	1,099	-	-	-	-
	Chum	-	-	-	-	-	379	-	-	-	-
2001	Sockeye	-	-	-	-	-	40,400	-	-	-	-
	Chinook	-	-	-	-	-	2,345	-	-	-	-
	Coho	-	-	-	-	-	793	-	-	-	-
	Chum	-	-	-	-	-	407	-	-	-	-
	Pink	-	-	-	-	-	1	-	-	-	-
2002	Sockeye	-	-	-	-	-	32,498	-	-	-	-
	Chinook	-	-	-	-	-	2,758	-	-	-	-

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Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds	Average HH Pounds	Per Capita Pounds	
	Coho	-	-	-	-	-	1,741	-	-	-	-
	Chum	-	-	-	-	-	545	-	-	-	-
2003	Sockeye	-	-	-	-	-	30,454	-	-	-	-
	Chinook	-	-	-	-	-	2,822	-	-	-	-
	Chum	-	-	-	-	-	2,492	-	-	-	-
	Coho	-	-	-	-	-	2,229	-	-	-	-
2004	Sockeye	-	-	-	-	-	41,950	-	-	-	-
	Chinook	-	-	-	-	-	4,597	-	-	-	-
	Coho	-	-	-	-	-	3,953	-	-	-	-
	Chum	-	-	-	-	-	3,384	-	-	-	-
	Pink	-	-	-	-	-	89	-	-	-	-
2005	Sockeye	-	-	-	-	-	49,912	-	-	-	-
	Chum	-	-	-	-	-	9,483	-	-	-	-
	Chinook	-	-	-	-	-	4,627	-	-	-	-
	Coho	-	-	-	-	-	3,940	-	-	-	-
	Pink	-	-	-	-	-	7	-	-	-	-
2006	Sockeye	-	-	-	-	-	51,284	-	-	-	-
	Chum	-	-	-	-	-	8,590	-	-	-	-
	Chinook	-	-	-	-	-	3,493	-	-	-	-
	Coho	-	-	-	-	-	2,152	-	-	-	-
	Pink	-	-	-	-	-	8	-	-	-	-
2007	Sockeye	-	-	-	-	-	53,711	-	-	-	-
	Chum	-	-	-	-	-	6,564	-	-	-	-
	Chinook	-	-	-	-	-	4,299	-	-	-	-
	Coho	-	-	-	-	-	1,548	-	-	-	-
2008	Sockeye	-	-	-	-	-	35,034	-	-	-	-
	Chinook	-	-	-	-	-	3,069	-	-	-	-
	Coho	-	-	-	-	-	1,547	-	-	-	-
	Chum	-	-	-	-	-	1,524	-	-	-	-
	Pink	-	-	-	-	-	29	-	-	-	-
2009	Sockeye	-	-	-	-	-	39,435	-	-	-	-
	Chum	-	-	-	-	-	4,516	-	-	-	-
	Chinook	-	-	-	-	-	2,425	-	-	-	-
	Coho	-	-	-	-	-	1,264	-	-	-	-
	Pink	-	-	-	-	-	13	-	-	-	-

Notes: *Estimated numbers represent individuals.

Species are listed in descending order by total number harvested.

Source: ADFG 2009.

Stephen R. Braund & Associates 2011.

Table E-71. Fox Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number*	Total Pounds	Average HH Pounds	Per Capita Pounds	% of Total Harvest
1988	Sockeye	-	-	-	-	-	3	-	-	-	-
1992	Sockeye	-	-	-	-	-	10	-	-	-	-
1993	Sockeye	-	-	-	-	-	8	-	-	-	-
1996	Sockeye	-	-	-	-	-	7	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
1999	Sockeye	-	-	-	-	-	173	-	-	-	-
2000	Sockeye	-	-	-	-	-	3	-	-	-	-
2003	Sockeye	-	-	-	-	-	60	-	-	-	-
	Chinook	-	-	-	-	-	14	-	-	-	-

Notes: *Estimated numbers represent individuals.

Species are listed in descending order by total number harvested.

Source: ADFG 2009.

Stephen R. Braund & Associates 2011.

Table E-72. North Pole Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number*	Total Pounds	Average HH Pounds	Per Capita Pounds	% of Total Harvest
1987	Sockeye	-	-	-	-	-	50	-	-	-	-
1988	Sockeye	-	-	-	-	-	6,739	-	-	-	-
	Chinook	-	-	-	-	-	604	-	-	-	-
	Coho	-	-	-	-	-	44	-	-	-	-
1989	Sockeye	-	-	-	-	-	6,681	-	-	-	-
	Chinook	-	-	-	-	-	325	-	-	-	-
	Coho	-	-	-	-	-	85	-	-	-	-
1990	Sockeye	-	-	-	-	-	7,539	-	-	-	-
	Chinook	-	-	-	-	-	320	-	-	-	-
	Coho	-	-	-	-	-	135	-	-	-	-
1991	Sockeye	-	-	-	-	-	8,735	-	-	-	-
	Chinook	-	-	-	-	-	515	-	-	-	-
	Coho	-	-	-	-	-	466	-	-	-	-
1992	Sockeye	-	-	-	-	-	9,128	-	-	-	-
	Chinook	-	-	-	-	-	508	-	-	-	-
	Chum	-	-	-	-	-	365	-	-	-	-
	Coho	-	-	-	-	-	363	-	-	-	-
1993	Sockeye	-	-	-	-	-	9,700	-	-	-	-
	Chinook	-	-	-	-	-	634	-	-	-	-
	Coho	-	-	-	-	-	213	-	-	-	-
	Chum	-	-	-	-	-	121	-	-	-	-
1994	Sockeye	-	-	-	-	-	11,483	-	-	-	-
	Chinook	-	-	-	-	-	715	-	-	-	-
	Coho	-	-	-	-	-	455	-	-	-	-
	Chum	-	-	-	-	-	337	-	-	-	-
	Pink	-	-	-	-	-	1	-	-	-	-
1995	Sockeye	-	-	-	-	-	9,018	-	-	-	-
	Coho	-	-	-	-	-	1,019	-	-	-	-
	Chinook	-	-	-	-	-	670	-	-	-	-
	Chum	-	-	-	-	-	433	-	-	-	-
1996	Sockeye	-	-	-	-	-	9,821	-	-	-	-
	Coho	-	-	-	-	-	524	-	-	-	-
	Chinook	-	-	-	-	-	484	-	-	-	-
	Chum	-	-	-	-	-	422	-	-	-	-
1997	Sockeye	-	-	-	-	-	14,023	-	-	-	-
	Chinook	-	-	-	-	-	647	-	-	-	-
	Chum	-	-	-	-	-	211	-	-	-	-
	Coho	-	-	-	-	-	122	-	-	-	-
1998	Sockeye	-	-	-	-	-	11,740	-	-	-	-
	Chinook	-	-	-	-	-	777	-	-	-	-
	Coho	-	-	-	-	-	313	-	-	-	-

Study Year	Resource	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number*	Total Pounds	Average HH Pounds	Per Capita Pounds	% of Total Harvest
	Chum	-	-	-	-	-	214	-	-	-	-
1999	Sockeye	-	-	-	-	-	12,336	-	-	-	-
	Chinook	-	-	-	-	-	628	-	-	-	-
	Coho	-	-	-	-	-	537	-	-	-	-
	Chum	-	-	-	-	-	367	-	-	-	-
2000	Sockeye	-	-	-	-	-	9,683	-	-	-	-
	Chinook	-	-	-	-	-	496	-	-	-	-
	Coho	-	-	-	-	-	204	-	-	-	-
	Pink	-	-	-	-	-	5	-	-	-	-
2001	Sockeye	-	-	-	-	-	12,835	-	-	-	-
	Chinook	-	-	-	-	-	455	-	-	-	-
	Coho	-	-	-	-	-	183	-	-	-	-
	Chum	-	-	-	-	-	26	-	-	-	-
2002	Sockeye	-	-	-	-	-	9,201	-	-	-	-
	Chinook	-	-	-	-	-	453	-	-	-	-
	Coho	-	-	-	-	-	202	-	-	-	-
	Chum	-	-	-	-	-	40	-	-	-	-
2003	Sockeye	-	-	-	-	-	9,379	-	-	-	-
	Coho	-	-	-	-	-	567	-	-	-	-
	Chinook	-	-	-	-	-	485	-	-	-	-
	Chum	-	-	-	-	-	18	-	-	-	-
2004	Sockeye	-	-	-	-	-	12,753	-	-	-	-
	Coho	-	-	-	-	-	1,655	-	-	-	-
	Chum	-	-	-	-	-	932	-	-	-	-
	Chinook	-	-	-	-	-	715	-	-	-	-
2005	Sockeye	-	-	-	-	-	16,007	-	-	-	-
	Chinook	-	-	-	-	-	323	-	-	-	-
	Coho	-	-	-	-	-	143	-	-	-	-
	Pink	-	-	-	-	-	5	-	-	-	-
	Chum	-	-	-	-	-	1	-	-	-	-
2006	Sockeye	-	-	-	-	-	14,726	-	-	-	-
	Chinook	-	-	-	-	-	352	-	-	-	-
	Coho	-	-	-	-	-	193	-	-	-	-
	Chum	-	-	-	-	-	2	-	-	-	-
	Pink	-	-	-	-	-	1	-	-	-	-
2007	Sockeye	-	-	-	-	-	16,159	-	-	-	-
	Chinook	-	-	-	-	-	422	-	-	-	-
	Coho	-	-	-	-	-	109	-	-	-	-
2008	Sockeye	-	-	-	-	-	9,614	-	-	-	-
	Chinook	-	-	-	-	-	320	-	-	-	-
	Coho	-	-	-	-	-	236	-	-	-	-
2009	Sockeye	-	-	-	-	-	19,727	-	-	-	-

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Study Year	Resource	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number*	Total Pounds	Average HH Pounds	Per Capita Pounds	% of Total Harvest
	Chinook	-	-	-	-	-	437	-	-	-	-
	Coho	-	-	-	-	-	386	-	-	-	-

Notes: *Estimated numbers represent individuals.

Species are listed in descending order by total number harvested.

Source: ADFG 2009.

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Table E-73. Salcha Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number*	Total Pounds	Average HH Pounds	Per Capita Pounds	% of Total Harvest
1989	Sockeye	-	-	-	-	-	1,218	-	-	-	-
	Chinook	-	-	-	-	-	56	-	-	-	-
	Coho	-	-	-	-	-	19	-	-	-	-
1990	Sockeye	-	-	-	-	-	565	-	-	-	-
	Coho	-	-	-	-	-	11	-	-	-	-
	Chinook	-	-	-	-	-	8	-	-	-	-
1991	Sockeye	-	-	-	-	-	683	-	-	-	-
	Coho	-	-	-	-	-	68	-	-	-	-
	Chinook	-	-	-	-	-	46	-	-	-	-
	Pink	-	-	-	-	-	2	-	-	-	-
	Chum	-	-	-	-	-	1	-	-	-	-
1992	Chum	-	-	-	-	-	1,423	-	-	-	-
	Sockeye	-	-	-	-	-	682	-	-	-	-
	Chinook	-	-	-	-	-	94	-	-	-	-
	Coho	-	-	-	-	-	19	-	-	-	-
1993	Sockeye	-	-	-	-	-	801	-	-	-	-
	Chum	-	-	-	-	-	131	-	-	-	-
	Chinook	-	-	-	-	-	34	-	-	-	-
1994	Sockeye	-	-	-	-	-	1,147	-	-	-	-
	Chum	-	-	-	-	-	199	-	-	-	-
	Chinook	-	-	-	-	-	59	-	-	-	-
	Coho	-	-	-	-	-	7	-	-	-	-
1995	Chum	-	-	-	-	-	314	-	-	-	-
	Chinook	-	-	-	-	-	29	-	-	-	-
1996	Chum	-	-	-	-	-	945	-	-	-	-
	Sockeye	-	-	-	-	-	751	-	-	-	-
	Chinook	-	-	-	-	-	64	-	-	-	-
	Coho	-	-	-	-	-	14	-	-	-	-
1997	Sockeye	-	-	-	-	-	1,362	-	-	-	-
	Chum	-	-	-	-	-	513	-	-	-	-
	Chinook	-	-	-	-	-	91	-	-	-	-
	Coho	-	-	-	-	-	24	-	-	-	-
1998	Sockeye	-	-	-	-	-	1,138	-	-	-	-
	Chinook	-	-	-	-	-	185	-	-	-	-
	Chum	-	-	-	-	-	120	-	-	-	-
	Coho	-	-	-	-	-	48	-	-	-	-
1999	Sockeye	-	-	-	-	-	1,308	-	-	-	-
	Chum	-	-	-	-	-	117	-	-	-	-
	Chinook	-	-	-	-	-	110	-	-	-	-
2000	Sockeye	-	-	-	-	-	735	-	-	-	-
	Chinook	-	-	-	-	-	153	-	-	-	-

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds	Average HH Pounds	Per Capita Pounds	
	Chum	-	-	-	-	-	69	-	-	-	-
	Coho	-	-	-	-	-	6	-	-	-	-
2001	Sockeye	-	-	-	-	-	941	-	-	-	-
	Chum	-	-	-	-	-	125	-	-	-	-
	Chinook	-	-	-	-	-	113	-	-	-	-
	Coho	-	-	-	-	-	42	-	-	-	-
2002	Sockeye	-	-	-	-	-	676	-	-	-	-
	Chum	-	-	-	-	-	204	-	-	-	-
	Chinook	-	-	-	-	-	175	-	-	-	-
	Coho	-	-	-	-	-	83	-	-	-	-
2003	Sockeye	-	-	-	-	-	976	-	-	-	-
	Chum	-	-	-	-	-	208	-	-	-	-
	Coho	-	-	-	-	-	160	-	-	-	-
	Chinook	-	-	-	-	-	123	-	-	-	-
2004	Sockeye	-	-	-	-	-	1,717	-	-	-	-
	Chinook	-	-	-	-	-	249	-	-	-	-
	Chum	-	-	-	-	-	160	-	-	-	-
	Coho	-	-	-	-	-	38	-	-	-	-
2005	Sockeye	-	-	-	-	-	1,653	-	-	-	-
	Chinook	-	-	-	-	-	17	-	-	-	-
	Coho	-	-	-	-	-	14	-	-	-	-
2006	Sockeye	-	-	-	-	-	1,231	-	-	-	-
	Coho	-	-	-	-	-	32	-	-	-	-
	Chinook	-	-	-	-	-	27	-	-	-	-
2007	Sockeye	-	-	-	-	-	1,010	-	-	-	-
	Coho	-	-	-	-	-	20	-	-	-	-
	Chinook	-	-	-	-	-	15	-	-	-	-
2008	Sockeye	-	-	-	-	-	595	-	-	-	-
	Coho	-	-	-	-	-	19	-	-	-	-
	Chinook	-	-	-	-	-	13	-	-	-	-
2009	Sockeye	-	-	-	-	-	572	-	-	-	-
	Coho	-	-	-	-	-	11	-	-	-	-
	Chinook	-	-	-	-	-	9	-	-	-	-

Notes: *Estimated numbers represent individuals.

Species are listed in descending order by total number harvested.

Source: ADFG 2009.

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Table E-74. Two Rivers Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds	Average HH Pounds	Per Capita Pounds	
1989	Sockeye	-	-	-	-	-	153	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
1990	Sockeye	-	-	-	-	-	176	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
1991	Sockeye	-	-	-	-	-	194	-	-	-	-
	Chinook	-	-	-	-	-	8	-	-	-	-
1992	Sockeye	-	-	-	-	-	288	-	-	-	-
	Chum	-	-	-	-	-	150	-	-	-	-
	Coho	-	-	-	-	-	70	-	-	-	-
	Chinook	-	-	-	-	-	8	-	-	-	-
1993	Sockeye	-	-	-	-	-	323	-	-	-	-
	Chinook	-	-	-	-	-	7	-	-	-	-
1994	Sockeye	-	-	-	-	-	384	-	-	-	-
	Coho	-	-	-	-	-	38	-	-	-	-
1995	Sockeye	-	-	-	-	-	244	-	-	-	-
	Coho	-	-	-	-	-	42	-	-	-	-
	Chinook	-	-	-	-	-	10	-	-	-	-
1996	Sockeye	-	-	-	-	-	187	-	-	-	-
	Coho	-	-	-	-	-	28	-	-	-	-
	Chinook	-	-	-	-	-	7	-	-	-	-
1997	Sockeye	-	-	-	-	-	248	-	-	-	-
	Chinook	-	-	-	-	-	2	-	-	-	-
1998	Sockeye	-	-	-	-	-	385	-	-	-	-
	Chinook	-	-	-	-	-	11	-	-	-	-
1999	Sockeye	-	-	-	-	-	353	-	-	-	-
	Coho	-	-	-	-	-	15	-	-	-	-
	Chinook	-	-	-	-	-	9	-	-	-	-
2000	Sockeye	-	-	-	-	-	224	-	-	-	-
	Coho	-	-	-	-	-	22	-	-	-	-
	Chinook	-	-	-	-	-	3	-	-	-	-
2001	Sockeye	-	-	-	-	-	507	-	-	-	-
	Coho	-	-	-	-	-	9	-	-	-	-
	Chinook	-	-	-	-	-	8	-	-	-	-
2002	Sockeye	-	-	-	-	-	309	-	-	-	-
	Coho	-	-	-	-	-	11	-	-	-	-
	Chinook	-	-	-	-	-	7	-	-	-	-
2003	Sockeye	-	-	-	-	-	334	-	-	-	-
	Chinook	-	-	-	-	-	5	-	-	-	-
2004	Sockeye	-	-	-	-	-	326	-	-	-	-
	Chinook	-	-	-	-	-	9	-	-	-	-
	Coho	-	-	-	-	-	4	-	-	-	-

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds	Average HH Pounds	Per Capita Pounds	
2005	Sockeye	-	-	-	-	-	421	-	-	-	-
	Chinook	-	-	-	-	-	7	-	-	-	-
2006	Sockeye	-	-	-	-	-	457	-	-	-	-
	Chinook	-	-	-	-	-	7	-	-	-	-
2007	Sockeye	-	-	-	-	-	387	-	-	-	-
	Chinook	-	-	-	-	-	8	-	-	-	-
	Coho	-	-	-	-	-	5	-	-	-	-
2008	Sockeye	-	-	-	-	-	258	-	-	-	-
	Chinook	-	-	-	-	-	5	-	-	-	-
	Coho	-	-	-	-	-	1	-	-	-	-
2009	Sockeye	-	-	-	-	-	242	-	-	-	-
	Coho	-	-	-	-	-	4	-	-	-	-
	Chinook	-	-	-	-	-	4	-	-	-	-

Notes: *Estimated numbers represent individuals.

Species are listed in descending order by total number harvested.

Source: ADFG 2009.

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Table E-75. Healy Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1987	All Resources	97	93	93	46	77	-	113,575	419	132	100.0%
	Salmon	64	42	37	11	39	8,497	50,690	187	59	44.6%
	Non-Salmon Fish	87	80	76	21	31	-	23,648	87	28	20.8%
	Large Land Mammals	66	59	28	22	50	98	30,832	114	36	27.1%
	Small Land Mammals	34	34	33	7	6	1,713	2,176	8	3	1.9%
	Migratory Birds	12	11	9	0	4	274	487	2	1	0.4%
	Upland Game Birds	45	45	42	5	6	3,192	1,596	6	2	1.4%
	Marine Invertebrates	13	5	5	0	11	-	297	1	0	0.3%
	Vegetation	90	86	86	23	27	-	3,850	14	4	3.4%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

Source: ADFG 2011.

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Table E-76. Healy Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1988	Salmon	-	-	-	-	-	323	-	-	-
1989	Salmon	-	-	-	-	-	210	-	-	-
1990	Salmon	-	-	-	-	-	308	-	-	-
1991	Salmon	-	-	-	-	-	190	-	-	-
1992	Salmon	-	-	-	-	-	2,462	-	-	-
1993	Salmon	-	-	-	-	-	1,701	-	-	-
1994	Salmon	-	-	-	-	-	4,445	-	-	-
1995	Salmon	-	-	-	-	-	3,494	-	-	-
1996	Salmon	-	-	-	-	-	3,003	-	-	-
1997	Salmon	-	-	-	-	-	5,859	-	-	-
1998	Salmon	-	-	-	-	-	3,414	-	-	-
1999	Salmon	-	-	-	-	-	4,156	-	-	-
2000	Salmon	-	-	-	-	-	1,969	-	-	-
2001	Salmon	-	-	-	-	-	3,538	-	-	-
2002	Salmon	-	-	-	-	-	4,197	-	-	-
2003	Salmon	-	-	-	-	-	4,017	-	-	-
2004	Salmon	-	-	-	-	-	4,119	-	-	-
2005	Salmon	-	-	-	-	-	4,467	-	-	-
2006	Salmon	-	-	-	-	-	2,981	-	-	-
2007	Salmon	-	-	-	-	-	3,111	-	-	-
2008	Salmon	-	-	-	-	-	2,576	-	-	-
2009	Salmon	-	-	-	-	-	1,928	-	-	-

Source: ADFG 2009.

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Table E-77. Healy Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1987	Chum	12	9	6	4	6	5,236	31,418	116	37	27.7%
	Moose	61	56	18	17	43	52	25,830	95	30	22.7%
	Coho	44	25	25	8	22	2,229	13,371	49	16	11.8%
	Halibut	42	24	21	12	25	222	7,347	27	9	6.5%
	Northern Pike	18	19	14	1	3	980	4,411	16	5	3.9%
	Caribou	36	25	10	5	26	30	3,912	14	5	3.4%
	Chinook	32	19	15	4	18	216	3,879	14	5	3.4%
	Lake Trout	40	43	37	8	3	1,279	3,838	14	4	3.4%
	Arctic Grayling	65	65	62	13	7	4,474	3,579	13	4	3.2%
	Berries	85	83	81	21	25	3,357	3,357	12	4	3.0%
	Hare	20	22	20	1	0	1,243	1,865	7	2	1.6%
	Dolly Varden	27	36	24	5	3	1,862	1,862	7	2	1.6%
	Pink	7	6	6	3	1	638	1,276	5	1	1.1%
1988	Sockeye	-	-	-	-	-	311	-	-	-	-
	Chinook	-	-	-	-	-	12	-	-	-	-
1989	Sockeye	-	-	-	-	-	194	-	-	-	-
	Chinook	-	-	-	-	-	16	-	-	-	-
1990	Sockeye	-	-	-	-	-	298	-	-	-	-
	Chinook	-	-	-	-	-	10	-	-	-	-
1991	Sockeye	-	-	-	-	-	173	-	-	-	-
	Coho	-	-	-	-	-	15	-	-	-	-
	Chinook	-	-	-	-	-	2	-	-	-	-
1992	Coho	-	-	-	-	-	1,038	-	-	-	-
	Chum	-	-	-	-	-	1,003	-	-	-	-
	Sockeye	-	-	-	-	-	410	-	-	-	-
	Chinook	-	-	-	-	-	11	-	-	-	-
1993	Coho	-	-	-	-	-	1,158	-	-	-	-
	Chum	-	-	-	-	-	351	-	-	-	-
	Sockeye	-	-	-	-	-	186	-	-	-	-
	Chinook	-	-	-	-	-	6	-	-	-	-
1994	Chum	-	-	-	-	-	2,002	-	-	-	-
	Coho	-	-	-	-	-	1,959	-	-	-	-
	Sockeye	-	-	-	-	-	455	-	-	-	-
	Chinook	-	-	-	-	-	29	-	-	-	-
1995	Chum	-	-	-	-	-	2,160	-	-	-	-
	Coho	-	-	-	-	-	851	-	-	-	-

Study Year	Resource*	Percentage of Households: Use	Percentage of Households: Try to Harvest	Percentage of Households: Harvest	Percentage of Households: Give	Percentage of Households: Receive	Estimated Harvest: Number**	Estimated Harvest: Total Pounds***	Estimated Harvest: Average HH Pounds	Estimated Harvest: Per Capita Pounds	% of Total Harvest
	Sockeye	-	-	-	-	-	467	-	-	-	-
	Chinook	-	-	-	-	-	16	-	-	-	-
1996	Chum	-	-	-	-	-	1,417	-	-	-	-
	Coho	-	-	-	-	-	1,011	-	-	-	-
	Sockeye	-	-	-	-	-	556	-	-	-	-
	Chinook	-	-	-	-	-	19	-	-	-	-
1997	Chum	-	-	-	-	-	3,294	-	-	-	-
	Coho	-	-	-	-	-	1,618	-	-	-	-
	Sockeye	-	-	-	-	-	915	-	-	-	-
	Chinook	-	-	-	-	-	32	-	-	-	-
1998	Chum	-	-	-	-	-	1,806	-	-	-	-
	Coho	-	-	-	-	-	842	-	-	-	-
	Sockeye	-	-	-	-	-	727	-	-	-	-
	Chinook	-	-	-	-	-	39	-	-	-	-
1999	Chum	-	-	-	-	-	2,267	-	-	-	-
	Coho	-	-	-	-	-	1,265	-	-	-	-
	Sockeye	-	-	-	-	-	606	-	-	-	-
	Chinook	-	-	-	-	-	18	-	-	-	-
2000	Coho	-	-	-	-	-	1,203	-	-	-	-
	Sockeye	-	-	-	-	-	548	-	-	-	-
	Chum	-	-	-	-	-	200	-	-	-	-
	Chinook	-	-	-	-	-	18	-	-	-	-
2001	Coho	-	-	-	-	-	1,817	-	-	-	-
	Chum	-	-	-	-	-	853	-	-	-	-
	Sockeye	-	-	-	-	-	848	-	-	-	-
	Chinook	-	-	-	-	-	19	-	-	-	-
2002	Coho	-	-	-	-	-	3,047	-	-	-	-
	Chum	-	-	-	-	-	831	-	-	-	-
	Sockeye	-	-	-	-	-	312	-	-	-	-
	Chinook	-	-	-	-	-	7	-	-	-	-
2003	Coho	-	-	-	-	-	2,570	-	-	-	-
	Chum	-	-	-	-	-	1,234	-	-	-	-
	Sockeye	-	-	-	-	-	209	-	-	-	-
	Chinook	-	-	-	-	-	4	-	-	-	-
2004	Coho	-	-	-	-	-	2,463	-	-	-	-
	Chum	-	-	-	-	-	1,086	-	-	-	-
	Sockeye	-	-	-	-	-	558	-	-	-	-

Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
	Chinook	-	-	-	-	-	12	-	-	-	-
2005	Chum	-	-	-	-	-	2,075	-	-	-	-
	Coho	-	-	-	-	-	1,601	-	-	-	-
	Sockeye	-	-	-	-	-	773	-	-	-	-
	Chinook	-	-	-	-	-	18	-	-	-	-
2006	Chum	-	-	-	-	-	1,408	-	-	-	-
	Coho	-	-	-	-	-	1,113	-	-	-	-
	Sockeye	-	-	-	-	-	451	-	-	-	-
	Chinook	-	-	-	-	-	9	-	-	-	-
2007	Coho	-	-	-	-	-	1,463	-	-	-	-
	Chum	-	-	-	-	-	1,090	-	-	-	-
	Sockeye	-	-	-	-	-	539	-	-	-	-
	Chinook	-	-	-	-	-	19	-	-	-	-
2008	Coho	-	-	-	-	-	1,170	-	-	-	-
	Chum	-	-	-	-	-	1,030	-	-	-	-
	Sockeye	-	-	-	-	-	355	-	-	-	-
	Chinook	-	-	-	-	-	21	-	-	-	-
2009	Chum	-	-	-	-	-	775	-	-	-	-
	Coho	-	-	-	-	-	702	-	-	-	-
	Sockeye	-	-	-	-	-	437	-	-	-	-
	Chinook	-	-	-	-	-	15	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

For All Resources study years (1987), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (1988-2009); ADFG 2011 (1987).

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HEALY LAKE

Table E-78. Healy Lake Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

		Percentage of Households					Estimated Harvest			
Study Year	Resource	Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Migratory Birds										
2000	Migratory Birds	-	-	29	-	-	44	69	10	4

Source: Andersen and Jennings 2001b.

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Table E-79. Healy Lake Subsistence Harvest Estimates by Selected Species, All Study Years

		Percentage of Households					Estimated Harvest				
Study Year	Resource	Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds	Average HH Pounds	Per Capita Pounds	% of Total Harvest
2000	Ducks	-	-	29	-	-	44	69	10	4	-

Notes: *Estimated numbers represent individuals.

Source: Andersen and Jennings 2001b.

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MANLEY HOT SPRINGS

Table E-80. Manley Hot Springs Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1988	Salmon	-	-	-	-	-	84	-	-	-
1989	Salmon	-	-	-	-	-	30	-	-	-
1990	Salmon	-	-	-	-	-	57	-	-	-
1992	Salmon	-	-	-	-	-	59	-	-	-
1993	Salmon	-	-	-	-	-	26	-	-	-
1995	Salmon	-	-	-	-	-	72	-	-	-
1996	Salmon	-	-	-	-	-	30	-	-	-
1998	Salmon	-	-	-	-	-	26	-	-	-
1999	Salmon	-	-	-	-	-	32	-	-	-
2000	Salmon	-	-	-	-	-	34	-	-	-
2002	Salmon	-	-	-	-	-	30	-	-	-
2003	Salmon	-	-	-	-	-	8	-	-	-
2004a	Salmon	-	-	-	-	-	1,856	-	-	-
2005	Salmon	-	-	-	-	-	5,947	-	-	-
2006	Salmon	-	-	-	-	-	5,495	-	-	-
2007	Salmon	-	-	-	-	-	5,056	-	-	-
2008	Salmon	-	-	-	-	-	4,641	-	-	-
2009	Salmon	-	-	-	-	-	7,146	-	-	-
Non-Salmon Fish										
2004b	Non-Salmon Fish	50	50	44	13	31	492	1,388	43	19
Large Land Mammals										
2004b	Large Land Mammals	50	44	13	25	38	10	6,450	202	90
Small Land Mammals										
2004b	Small Land Mammals	31	31	25	13	13	114	828	26	12

Sources: ADFG 2009 (1988-90, 1992-93, 1995-96, 1998-2000, 2002-03, 2004a, 2005-09); ADFG 2011 (2004b).

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Table E-81. Manley Hot Springs Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
1988	Sockeye	-	-	-	-	-	80	-	-	-	-
	Chinook	-	-	-	-	-	5	-	-	-	-
1989	Sockeye	-	-	-	-	-	24	-	-	-	-
	Chinook	-	-	-	-	-	6	-	-	-	-
1990	Sockeye	-	-	-	-	-	54	-	-	-	-
	Chinook	-	-	-	-	-	3	-	-	-	-
1992	Sockeye	-	-	-	-	-	52	-	-	-	-
	Chinook	-	-	-	-	-	7	-	-	-	-
1993	Sockeye	-	-	-	-	-	22	-	-	-	-
	Chinook	-	-	-	-	-	4	-	-	-	-
1995	Sockeye	-	-	-	-	-	60	-	-	-	-
	Chinook	-	-	-	-	-	12	-	-	-	-
1996	Sockeye	-	-	-	-	-	29	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
1998	Sockeye	-	-	-	-	-	24	-	-	-	-
	Chinook	-	-	-	-	-	2	-	-	-	-
1999	Sockeye	-	-	-	-	-	28	-	-	-	-
	Chinook	-	-	-	-	-	4	-	-	-	-
2000	Sockeye	-	-	-	-	-	34	-	-	-	-
2002	Sockeye	-	-	-	-	-	30	-	-	-	-
2003	Sockeye	-	-	-	-	-	7	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
2004a	Chum	-	-	-	-	-	937	-	-	-	-
	Chinook	-	-	-	-	-	471	-	-	-	-
	Coho	-	-	-	-	-	448	-	-	-	-
2004b	Moose	50	44	13	25	38	10	6,450	202	90	-
	Beaver	25	19	19	13	13	34	816	26	11	-
	Northern Pike	38	44	38	13	13	148	666	21	9	-
	Burbot	31	31	31	6	6	96	230	7	3	-
	Sheefish	19	31	19	0	0	54	199	6	3	-
	Humpback Whitefish	6	6	6	0	6	60	180	6	3	-
	Arctic Grayling	19	19	13	0	13	120	84	3	1	-
	Broad Whitefish	6	6	6	0	6	14	28	1	0	-
	Tree Squirrel	13	13	13	0	0	36	12	0	0	-
2005	Chum	-	-	-	-	-	3,148	-	-	-	-
	Coho	-	-	-	-	-	2,510	-	-	-	-
	Chinook	-	-	-	-	-	289	-	-	-	-
2006	Chum	-	-	-	-	-	3,463	-	-	-	-
	Coho	-	-	-	-	-	1,671	-	-	-	-
	Chinook	-	-	-	-	-	361	-	-	-	-
2007	Chum	-	-	-	-	-	3,559	-	-	-	-

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Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
	Coho	-	-	-	-	-	1,126	-	-	-	-
	Chinook	-	-	-	-	-	335	-	-	-	-
	Sockeye	-	-	-	-	-	36	-	-	-	-
2008	Chum	-	-	-	-	-	2,634	-	-	-	-
	Coho	-	-	-	-	-	1,901	-	-	-	-
	Chinook	-	-	-	-	-	106	-	-	-	-
2009	Chum	-	-	-	-	-	4,493	-	-	-	-
	Coho	-	-	-	-	-	2,308	-	-	-	-
	Chinook	-	-	-	-	-	345	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

Species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (1988-90, 1992-93, 1995-96, 1998-2000, 2002-03, 2004a, 2005-09); ADFG 2011 (2004b).

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Table E-82. Manley Hot Springs Annual Cycle of Subsistence Activities

	Winter			Spring		Summer			Fall		Winter	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Moose												
Black Bear												
Porcupine												
Hare												
Grouse												
Ptarmigan												
Waterfowl												
Marten												
Fox												
Mink												
Lynx												
Otter												
Weasel												
Wolf												
Wolverine												
Beaver												
Muskrat												
Chinook												
Summer Chum												
Fall Chum												
Coho												
Whitefish												
Sheefish												
Longnose Sucker												
Burbot												
Dolly Varden												
Northern Pike												
Arctic Grayling												
Berries												
Plants												
Firewood												
		Occasional Harvest Period										
		Usual Harvest Period										
Source: Betts 1997.												

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Table E-83. Minto Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1983-84	All Resources	-	98	96	-	-	-	190,619	3,971	1,015	100.0%
	Salmon	-	78	78	-	-	24,372	128,891	2,685	687	67.6%
	Non-Salmon Fish	-	73	73	-	-	11,846	32,619	680	174	17.1%
	Large Land Mammals	-	84	53	-	-	36	16,987	354	90	8.9%
	Small Land Mammals	-	84	84	-	-	1,502	5,861	122	31	3.1%
	Migratory Birds	-	82	82	-	-	1,845	4,541	95	24	2.4%
	Upland Game Birds	-	73	73	-	-	582	291	6	2	0.2%
	Vegetation	-	82	82	-	-	-	2,859	60	15	1.5%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

Source: Andrews 1988.

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Table E-84. Minto Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

		Percentage of Households					Estimated Harvest			
Study Year	Resource	Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1992	Salmon	-	-	-	-	-	5,299	-	-	-
1993	Salmon	-	-	-	-	-	3,503	-	-	-
1994a	Salmon	-	-	-	-	-	5,282	-	-	-
1995	Salmon	-	-	-	-	-	7,105	-	-	-
1996	Salmon	-	-	-	-	-	9,345	-	-	-
1997	Salmon	-	-	-	-	-	5,745	-	-	-
1998	Salmon	-	-	-	-	-	1,170	-	-	-
1999	Salmon	-	-	-	-	-	1,442	-	-	-
2000	Salmon	-	-	-	-	-	13	-	-	-
2001	Salmon	-	-	-	-	-	605	-	-	-
2002	Salmon	-	-	-	-	-	554	-	-	-
2003	Salmon	-	-	-	-	-	2,547	-	-	-
2004a	Salmon	-	-	-	-	-	157	-	-	-
2005	Salmon	-	-	-	-	-	656	-	-	-
2006	Salmon	-	-	-	-	-	747	-	-	-
2007	Salmon	-	-	-	-	-	474	-	-	-
2008	Salmon	-	-	-	-	-	49	-	-	-
2009	Salmon	-	-	-	-	-	1	-	-	-
Non-Salmon Fish										
1994b	Non-Salmon Fish	-	-	-	-	-	4,006	-	-	-
2004b	Non-Salmon Fish	57	40	39	29	34	747	2,106	30	10
Large Land Mammals										
2004b	Large Land Mammals	85	62	45	34	75	48	27,464	392	131
Small Land Mammals										
2004b	Small Land Mammals	57	32	31	15	43	176	1,035	15	5

Sources: ADFG 2009 (1992-93, 1994a, 1995-2003, 2004a, 2005-09); ADFG 2011 (2004b); Marcotte 1995 (1994b).

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Table E-85. Minto Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1983-84	Chum	-	69	69	-	-	23,669	118,347	2,466	630	62.1%
	Northern Pike	-	60	60	-	-	3,203	14,414	300	77	7.6%
	Moose	-	84	40	-	-	20	14,187	296	76	7.4%
	Whitefish	69	69	69	-	-	6,477	12,954	270	69	6.8%
	Chinook	-	53	53	-	-	703	10,544	220	56	5.5%
	Beaver	-	36	36	-	-	147	4,122	86	22	2.2%
	Vegetation	-	82	82	-	-	-	2,859	60	15	1.5%
	Black Bear	-	20	20	-	-	16	2,800	58	15	1.5%
	Geese	-	64	64	-	-	507	2,533	53	13	1.3%
	Longnose Sucker	40	40	40	-	-	1,634	2,451	51	13	1.3%
	Sheefish	-	27	27	-	-	381	2,285	48	12	1.2%
	Ducks	-	82	82	-	-	1,339	2,008	42	11	1.1%
1992	Chum	-	-	-	-	-	4,370	-	-	-	-
	Coho	-	-	-	-	-	737	-	-	-	-
	Chinook	-	-	-	-	-	172	-	-	-	-
	Sockeye	-	-	-	-	-	19	-	-	-	-
1993	Chum	-	-	-	-	-	2,555	-	-	-	-
	Chinook	-	-	-	-	-	578	-	-	-	-
	Coho	-	-	-	-	-	371	-	-	-	-
1994a	Coho	-	-	-	-	-	2,715	-	-	-	-
	Chum	-	-	-	-	-	2,001	-	-	-	-
	Chinook	-	-	-	-	-	536	-	-	-	-
	Sockeye	-	-	-	-	-	30	-	-	-	-
1994b	Northern Pike	86	-	57	31	40	2,997	-	91	-	-
	Broad Whitefish	43	-	21	12	22	479	-	39	-	-
	Humpback Whitefish	43	-	24	12	21	415	-	30	-	-
	Least Cisco	31	-	9	9	24	115	-	23	-	-
	Round Whitefish	2	-	0	0	1	0	-	0	-	-
1995	Chum	-	-	-	-	-	6,196	-	-	-	-
	Chinook	-	-	-	-	-	543	-	-	-	-
	Coho	-	-	-	-	-	343	-	-	-	-
	Sockeye	-	-	-	-	-	23	-	-	-	-
1996	Chum	-	-	-	-	-	7,183	-	-	-	-
	Coho	-	-	-	-	-	1,514	-	-	-	-
	Chinook	-	-	-	-	-	648	-	-	-	-
1997	Chum	-	-	-	-	-	3,831	-	-	-	-
	Chinook	-	-	-	-	-	1,471	-	-	-	-
	Coho	-	-	-	-	-	443	-	-	-	-
1998	Chum	-	-	-	-	-	757	-	-	-	-
	Chinook	-	-	-	-	-	377	-	-	-	-
	Coho	-	-	-	-	-	36	-	-	-	-

Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
1999	Chum	-	-	-	-	-	1,065	-	-	-	-
	Chinook	-	-	-	-	-	376	-	-	-	-
2000	Chinook	-	-	-	-	-	5	-	-	-	-
	Chum	-	-	-	-	-	5	-	-	-	-
	Coho	-	-	-	-	-	3	-	-	-	-
2001	Chum	-	-	-	-	-	295	-	-	-	-
	Chinook	-	-	-	-	-	278	-	-	-	-
	Sockeye	-	-	-	-	-	32	-	-	-	-
2002	Coho	-	-	-	-	-	281	-	-	-	-
	Chum	-	-	-	-	-	236	-	-	-	-
	Chinook	-	-	-	-	-	21	-	-	-	-
	Sockeye	-	-	-	-	-	15	-	-	-	-
2003	Chum	-	-	-	-	-	1,601	-	-	-	-
	Coho	-	-	-	-	-	521	-	-	-	-
	Chinook	-	-	-	-	-	409	-	-	-	-
	Sockeye	-	-	-	-	-	15	-	-	-	-
2004a	Chinook	-	-	-	-	-	64	-	-	-	-
	Sockeye	-	-	-	-	-	48	-	-	-	-
	Coho	-	-	-	-	-	23	-	-	-	-
	Chum	-	-	-	-	-	23	-	-	-	-
2004b	Moose	85	59	40	34	75	42	27,090	387	129	-
	Northern Pike	45	29	29	20	23	216	974	15	5	-
	Beaver	48	14	14	9	39	57	878	13	4	-
	Humpback Whitefish	26	17	17	14	14	147	442	7	2	-
	Black Bear	22	15	9	3	20	6	374	5	2	-
2005	Chum	-	-	-	-	-	621	-	-	-	-
	Chinook	-	-	-	-	-	35	-	-	-	-
2006	Chum	-	-	-	-	-	702	-	-	-	-
	Chinook	-	-	-	-	-	31	-	-	-	-
	Coho	-	-	-	-	-	14	-	-	-	-
2007	Chum	-	-	-	-	-	237	-	-	-	-
	Coho	-	-	-	-	-	155	-	-	-	-
	Chinook	-	-	-	-	-	82	-	-	-	-
2008	Chum	-	-	-	-	-	37	-	-	-	-
	Chinook	-	-	-	-	-	12	-	-	-	-
2009	Chum	-	-	-	-	-	1	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

For All Resources study years (1983-84), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
total harvest" data were not comprehensive (i.e., all resources) study years.											
Sources: ADFG 2009 (1992-93, 1994a, 1995-2003, 2004a, 2005-2009); ADFG 2011 (2004b); Andrews 1988 (1983-84); Marcotte 1995 (1994b).											

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Table E-86. Minto Annual Cycle of Subsistence Activities

	Winter					Spring		Summer			Fall	
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Chinook												
Summer Chum												
Fall Chum												
Coho												
Whitefish												
Blackfish												
Sheefish												
Northern Pike												
Burbot												
Longnose Sucker												
Moose												
Black/Brown Bear												
Waterfowl												
Ptarmigan												
Grouse												
Hare												
Beaver												
Muskrat												
Marten												
Otter												
Fox												
Wolf												
Mink												
Lynx												
Porcupine												
Berries/Plants												
Firewood												
		Occasionally Harvested										
		Regularly Harvested										
Source: Andrews 1988.												

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Table E-87. Nenana Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1988	Salmon	-	-	-	-	-	155	-	-	-
1989	Salmon	-	-	-	-	-	221	-	-	-
1990	Salmon	-	-	-	-	-	334	-	-	-
1991	Salmon	-	-	-	-	-	220	-	-	-
1992	Salmon	-	-	-	-	-	32,752	-	-	-
1993	Salmon	-	-	-	-	-	14,484	-	-	-
1994	Salmon	-	-	-	-	-	27,413	-	-	-
1995	Salmon	-	-	-	-	-	29,078	-	-	-
1996	Salmon	-	-	-	-	-	29,225	-	-	-
1997	Salmon	-	-	-	-	-	14,119	-	-	-
1998	Salmon	-	-	-	-	-	18,238	-	-	-
1999	Salmon	-	-	-	-	-	13,478	-	-	-
2000	Salmon	-	-	-	-	-	3,458	-	-	-
2001	Salmon	-	-	-	-	-	8,527	-	-	-
2002	Salmon	-	-	-	-	-	8,046	-	-	-
2003	Salmon	-	-	-	-	-	17,989	-	-	-
2004a	Salmon	-	-	-	-	-	18,442	-	-	-
2005	Salmon	-	-	-	-	-	26,306	-	-	-
2006	Salmon	-	-	-	-	-	19,689	-	-	-
2007	Salmon	-	-	-	-	-	29,725	-	-	-
2008	Salmon	-	-	-	-	-	11,235	-	-	-
2009	Salmon	-	-	-	-	-	12,428	-	-	-
Non-Salmon Fish										
2004b	Non-Salmon Fish	50	41	40	20	26	3,106	4,738	26	10
Large Land Mammals										
2004b	Large Land Mammals	51	44	24	17	33	73	41,134	229	85
Small Land Mammals										
2004b	Small Land Mammals	16	15	13	9	5	438	1,818	10	4

Sources: ADFG 2009 (1988-2003, 2004a, 2005-2009); ADFG 2011 (2004b).

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Table E-88. Nenana Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
1988	Sockeye	-	-	-	-	-	141	-	-	-	-
	Chinook	-	-	-	-	-	14	-	-	-	-
1989	Sockeye	-	-	-	-	-	209	-	-	-	-
	Chinook	-	-	-	-	-	12	-	-	-	-
1990	Sockeye	-	-	-	-	-	310	-	-	-	-
	Chinook	-	-	-	-	-	24	-	-	-	-
1991	Sockeye	-	-	-	-	-	202	-	-	-	-
	Chinook	-	-	-	-	-	11	-	-	-	-
	Coho	-	-	-	-	-	7	-	-	-	-
1992	Chum	-	-	-	-	-	21,243	-	-	-	-
	Coho	-	-	-	-	-	9,607	-	-	-	-
	Chinook	-	-	-	-	-	1,641	-	-	-	-
	Sockeye	-	-	-	-	-	261	-	-	-	-
1993	Chum	-	-	-	-	-	11,881	-	-	-	-
	Coho	-	-	-	-	-	1,427	-	-	-	-
	Chinook	-	-	-	-	-	926	-	-	-	-
	Sockeye	-	-	-	-	-	250	-	-	-	-
1994	Chum	-	-	-	-	-	14,780	-	-	-	-
	Coho	-	-	-	-	-	11,030	-	-	-	-
	Chinook	-	-	-	-	-	1,217	-	-	-	-
	Sockeye	-	-	-	-	-	386	-	-	-	-
1995	Chum	-	-	-	-	-	20,773	-	-	-	-
	Coho	-	-	-	-	-	7,160	-	-	-	-
	Chinook	-	-	-	-	-	885	-	-	-	-
	Sockeye	-	-	-	-	-	260	-	-	-	-
1996	Chum	-	-	-	-	-	19,818	-	-	-	-
	Coho	-	-	-	-	-	8,418	-	-	-	-
	Chinook	-	-	-	-	-	661	-	-	-	-
	Sockeye	-	-	-	-	-	328	-	-	-	-
1997	Chum	-	-	-	-	-	6,574	-	-	-	-
	Coho	-	-	-	-	-	5,649	-	-	-	-
	Chinook	-	-	-	-	-	1,398	-	-	-	-
	Sockeye	-	-	-	-	-	498	-	-	-	-
1998	Chum	-	-	-	-	-	12,727	-	-	-	-
	Coho	-	-	-	-	-	3,787	-	-	-	-
	Chinook	-	-	-	-	-	1,447	-	-	-	-
	Sockeye	-	-	-	-	-	278	-	-	-	-
1999	Chum	-	-	-	-	-	7,760	-	-	-	-
	Coho	-	-	-	-	-	4,155	-	-	-	-
	Chinook	-	-	-	-	-	1,213	-	-	-	-
	Sockeye	-	-	-	-	-	350	-	-	-	-

Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
2000	Coho	-	-	-	-	-	1,828	-	-	-	-
	Chum	-	-	-	-	-	823	-	-	-	-
	Chinook	-	-	-	-	-	597	-	-	-	-
	Sockeye	-	-	-	-	-	210	-	-	-	-
2001	Coho	-	-	-	-	-	5,143	-	-	-	-
	Chinook	-	-	-	-	-	1,609	-	-	-	-
	Chum	-	-	-	-	-	1,173	-	-	-	-
	Sockeye	-	-	-	-	-	602	-	-	-	-
2002	Coho	-	-	-	-	-	4,500	-	-	-	-
	Chum	-	-	-	-	-	2,169	-	-	-	-
	Chinook	-	-	-	-	-	707	-	-	-	-
	Sockeye	-	-	-	-	-	671	-	-	-	-
2003	Chum	-	-	-	-	-	10,370	-	-	-	-
	Coho	-	-	-	-	-	5,619	-	-	-	-
	Chinook	-	-	-	-	-	1,315	-	-	-	-
	Sockeye	-	-	-	-	-	685	-	-	-	-
2004a	Coho	-	-	-	-	-	8,906	-	-	-	-
	Chum	-	-	-	-	-	8,280	-	-	-	-
	Sockeye	-	-	-	-	-	648	-	-	-	-
	Chinook	-	-	-	-	-	608	-	-	-	-
2004b	Moose	49	43	22	16	32	62	40,213	223	83	-
	Humpback Whitefish	5	5	5	2	2	342	1,028	6	2	-
	Beaver	8	7	7	3	3	75	1,013	6	2	-
	Northern Pike	14	12	12	6	3	202	909	5	2	-
	Snowshoe Hare	11	8	8	5	4	247	692	4	1	-
2005	Coho	-	-	-	-	-	12,395	-	-	-	-
	Chum	-	-	-	-	-	12,365	-	-	-	-
	Sockeye	-	-	-	-	-	1,005	-	-	-	-
	Chinook	-	-	-	-	-	541	-	-	-	-
2006	Chum	-	-	-	-	-	10,918	-	-	-	-
	Coho	-	-	-	-	-	7,065	-	-	-	-
	Sockeye	-	-	-	-	-	986	-	-	-	-
	Chinook	-	-	-	-	-	720	-	-	-	-
2007	Chum	-	-	-	-	-	23,292	-	-	-	-
	Coho	-	-	-	-	-	4,495	-	-	-	-
	Sockeye	-	-	-	-	-	1,028	-	-	-	-
	Chinook	-	-	-	-	-	911	-	-	-	-
2008	Chum	-	-	-	-	-	7,646	-	-	-	-
	Coho	-	-	-	-	-	2,775	-	-	-	-
	Sockeye	-	-	-	-	-	482	-	-	-	-
	Chinook	-	-	-	-	-	331	-	-	-	-
2009	Chum	-	-	-	-	-	8,132	-	-	-	-

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Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
	Coho	-	-	-	-	-	3,481	-	-	-	-
	Chinook	-	-	-	-	-	474	-	-	-	-
	Sockeye	-	-	-	-	-	341	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

Species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (1988-2003, 2004a, 2005-2009); ADFG 2011 (2004b).

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NORTHWAY

Table E-89. Northway Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1987-88	All Resources	100	96	96	60	93	-	90,090	1,001	278	100.0%
	Salmon	60	24	20	7	53	906	4,684	52	14	5.2%
	Non-Salmon Fish	93	84	84	44	51	-	41,873	465	129	46.5%
	Large Land Mammals	96	84	44	29	84	82	29,146	324	90	32.4%
	Small Land Mammals	91	87	84	31	22	8,602	9,164	102	28	10.2%
	Migratory Birds	71	64	62	22	20	2,828	2,178	24	7	2.4%
	Upland Game Birds	82	76	76	20	16	1,914	957	11	3	1.1%
	Vegetation	82	80	80	16	4	-	2,088	23	6	2.3%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

Source: Marcotte 1991.

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Table E-90. Northway Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households: Use	Percentage of Households: Try to Harvest	Percentage of Households: Harvest	Percentage of Households: Give	Percentage of Households: Receive	Estimated Harvest: Number	Estimated Harvest: Total Pounds	Estimated Harvest: Average HH Pounds	Estimated Harvest: Per Capita Pounds
Salmon										
1988	Salmon	-	-	-	-	-	297	-	-	-
1989	Salmon	-	-	-	-	-	222	-	-	-
1990	Salmon	-	-	-	-	-	368	-	-	-
1991	Salmon	-	-	-	-	-	221	-	-	-
1992	Salmon	-	-	-	-	-	596	-	-	-
1993	Salmon	-	-	-	-	-	421	-	-	-
1994	Salmon	-	-	-	-	-	839	-	-	-
1995	Salmon	-	-	-	-	-	752	-	-	-
1996	Salmon	-	-	-	-	-	318	-	-	-
1997	Salmon	-	-	-	-	-	623	-	-	-
1998	Salmon	-	-	-	-	-	151	-	-	-
1999	Salmon	-	-	-	-	-	921	-	-	-
2000a	Salmon	-	-	-	-	-	287	-	-	-
2001	Salmon	-	-	-	-	-	304	-	-	-
2002	Salmon	-	-	-	-	-	35	-	-	-
2003	Salmon	-	-	-	-	-	309	-	-	-
2004a	Salmon	-	-	-	-	-	957	-	-	-
2005	Salmon	-	-	-	-	-	1,263	-	-	-
2006	Salmon	-	-	-	-	-	183	-	-	-
2007	Salmon	-	-	-	-	-	122	-	-	-
2008	Salmon	-	-	-	-	-	112	-	-	-
2009	Salmon	-	-	-	-	-	604	-	-	-
Non-Salmon Fish										
2004b	Non-Salmon Fish	68	68	68	5	18	7,580	19,484	244	74
Large Land Mammals										
2004b	Large Land Mammals	67	63	58	2	12	104	40,793	510	155
Small Land Mammals										
2004b	Small Land Mammals	65	65	65	3	15	1,821	3,630	45	14
Migratory Birds										
2000b	Migratory Birds	-	-	5	-	-	79	144	3	1

Sources: ADFG 2009 (1988-99, 2000a, 2001-03, 2004a, 2005-09); ADFG 2011 (2004b); Andersen and Jennings 2001b (2000b).

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Table E-91. Northway Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1987-88	Whitefish	84	67	64	36	40	15,460	32,466	361	100	36.0%
	Moose	93	82	33	20	76	38	24,188	269	75	26.8%
	Hare	89	87	82	22	18	4,116	6,174	69	19	6.9%
	Caribou	64	49	20	16	49	32	4,160	46	13	4.6%
	Muskrat	38	38	38	11	0	3,484	2,880	32	9	3.2%
	Sockeye	40	16	13	4	36	606	2,481	28	8	2.8%
	Burbot	69	60	58	27	22	1,008	2,419	27	7	2.7%
	Northern Pike (large)	47	42	42	13	11	776	2,173	24	7	2.4%
	Berries	64	64	62	16	4	485	1,940	22	6	2.2%
	Ducks	69	60	60	22	18	2,652	1,910	21	6	2.1%
	Northern Pike (small, pickle)	22	18	18	4	7	-	1,770	20	5	2.0%
	Arctic Grayling	71	67	62	20	13	2,526	1,768	20	5	2.0%
	Coho	11	7	7	0	9	240	1,285	14	4	1.4%
1988	Sockeye	-	-	-	-	-	297	-	-	-	-
1989	Sockeye	-	-	-	-	-	216	-	-	-	-
	Chinook	-	-	-	-	-	6	-	-	-	-
1990	Sockeye	-	-	-	-	-	365	-	-	-	-
	Chinook	-	-	-	-	-	3	-	-	-	-
1991	Sockeye	-	-	-	-	-	220	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
1992	Sockeye	-	-	-	-	-	340	-	-	-	-
	Chum	-	-	-	-	-	250	-	-	-	-
	Chinook	-	-	-	-	-	6	-	-	-	-
1993	Sockeye	-	-	-	-	-	417	-	-	-	-
	Chinook	-	-	-	-	-	5	-	-	-	-
1994	Sockeye	-	-	-	-	-	743	-	-	-	-
	Chum	-	-	-	-	-	75	-	-	-	-
	Chinook	-	-	-	-	-	21	-	-	-	-
1995	Sockeye	-	-	-	-	-	697	-	-	-	-
	Chinook	-	-	-	-	-	54	-	-	-	-
1996	Sockeye	-	-	-	-	-	259	-	-	-	-
	Chinook	-	-	-	-	-	58	-	-	-	-
	Chum	-	-	-	-	-	1	-	-	-	-
1997	Sockeye	-	-	-	-	-	556	-	-	-	-
	Chinook	-	-	-	-	-	67	-	-	-	-
1998	Sockeye	-	-	-	-	-	87	-	-	-	-
	Chinook	-	-	-	-	-	64	-	-	-	-
1999	Sockeye	-	-	-	-	-	786	-	-	-	-
	Chinook	-	-	-	-	-	105	-	-	-	-
	Chum	-	-	-	-	-	30	-	-	-	-
2000a	Sockeye	-	-	-	-	-	283	-	-	-	-

Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
	Chinook	-	-	-	-	-	4	-	-	-	-
2000b	Ducks	-	-	5	-	-	79	144	3	1	-
2001	Sockeye	-	-	-	-	-	297	-	-	-	-
	Chinook	-	-	-	-	-	3	-	-	-	-
	Chum	-	-	-	-	-	3	-	-	-	-
	Coho	-	-	-	-	-	1	-	-	-	-
2002	Sockeye	-	-	-	-	-	35	-	-	-	-
2003	Sockeye	-	-	-	-	-	267	-	-	-	-
	Chinook	-	-	-	-	-	41	-	-	-	-
	Chum	-	-	-	-	-	1	-	-	-	-
2004a	Sockeye	-	-	-	-	-	549	-	-	-	-
	Chinook	-	-	-	-	-	408	-	-	-	-
2004b	Moose	58	60	50	0	8	50	35,466	443	135	-
	Humpback Whitefish	55	55	55	2	10	5,385	16,156	202	62	-
	Caribou	32	32	32	2	3	41	4,133	52	16	-
	Beaver	30	30	30	2	5	82	1,269	16	5	-
	Snowshoe Hare	45	45	45	2	0	382	1,071	13	4	-
2005	Sockeye	-	-	-	-	-	1,257	-	-	-	-
	Chinook	-	-	-	-	-	6	-	-	-	-
2006	Sockeye	-	-	-	-	-	174	-	-	-	-
	Chinook	-	-	-	-	-	9	-	-	-	-
2007	Sockeye	-	-	-	-	-	120	-	-	-	-
	Chinook	-	-	-	-	-	2	-	-	-	-
2008	Sockeye	-	-	-	-	-	110	-	-	-	-
	Chinook	-	-	-	-	-	2	-	-	-	-
2009	Sockeye	-	-	-	-	-	584	-	-	-	-
	Chinook	-	-	-	-	-	20	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

For All Resources study years (1987-88), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.
Sources: ADFG 2009 (1988-99, 2000a, 2001-03, 2004a, 2005-09); ADFG 2011 (2004b); Andersen and Jennings 2001b (2000b); Marcotte 1991 (1987-88).

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Table E-92. Northway Annual Cycle of Subsistence Activities

	Winter			Spring		Summer			Fall		Winter	
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Salmon						P	P	O				
Whitefish						P	P	P	P			
Northern Pike					P	P	P	P	P	P	P	
Arctic Grayling					P	P	P	P	P	P	P	
Burbot	P	P	P	P	P			O	O	P	P	P
Longnose Sucker					O	P	P	P	P			
Moose									P			
Caribou	P	P										P
Black Bear	O	O	O	O	O	P	O	P	O	O	O	O
Brown Bear	O	O	O	O	O	P	O	P	O	O	O	O
Hare	P	P	P	O	O	O	O	O	P	P	P	P
Muskrat	P	P	P	P	P	P			P	P	P	P
Beaver	P	P	P	P							P	O
Porcupine	O	O	O	P	O	O	O	O	O	O	O	O
Marten	P	P									P	P
Mink	P	P									P	P
Wolverine	P	P	P								P	P
Lynx	P	P	P								P	P
Red Fox	P	P									P	P
Wolf	P	P	P								P	P
Coyote	P											P
Otter	P	P	P	P							P	P
Geese									P	P		
Ducks									P	P		
Crane									P			
Ptarmigan	P	P	P					O	P	P	P	P
Berries						O	P	P	P			
Firewood	P	P	P	P	O	O	O	O	P	P	P	P
Other Plants				O	P	P	P	P	P			
O	Occasional Periods of Harvest											
P	Primary Periods of Harvest											
Source: Marcotte 1991.												

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TANACROSS

Table E-93. Tanacross Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1987-88	All Resources	96	96	96	63	96	-	23,287	685	250	100.0%
	Salmon	85	22	22	11	82	762	3,598	106	39	15.5%
	Non-Salmon Fish	85	74	74	33	41	-	8,231	242	88	35.3%
	Large Land Mammals	85	74	37	30	67	23	9,250	272	99	39.7%
	Small Land Mammals	78	74	74	30	19	973	1,001	29	11	4.3%
	Migratory Birds	56	44	44	30	15	230	195	6	2	0.8%
	Upland Game Birds	74	63	63	22	11	602	301	9	3	1.3%
	Vegetation	96	89	89	15	19	-	709	21	8	3.0%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

Source: Marcotte 1991.

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Table E-94. Tanacross Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1994	Salmon	-	-	-	-	-	50	-	-	-
1997	Salmon	-	-	-	-	-	106	-	-	-
1999	Salmon	-	-	-	-	-	6	-	-	-
2000	Salmon	-	-	-	-	-	14	-	-	-
2001	Salmon	-	-	-	-	-	50	-	-	-
2003	Salmon	-	-	-	-	-	26	-	-	-
2005	Salmon	-	-	-	-	-	556	-	-	-
2009	Salmon	-	-	-	-	-	80	-	-	-
Non-Salmon Fish										
2004	Non-Salmon Fish	54	43	43	19	16	2,135	5,110	136	34
Large Land Mammals										
2004	Large Land Mammals	62	68	57	5	19	44	18,900	505	125
Small Land Mammals										
2004	Small Land Mammals	24	27	22	5	11	208	1,101	29	7

Sources: ADFG 2009 (1994, 1997, 1999-2001, 2003, 2005, 2009); ADFG 2011 (2004).

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Table E-95. Tanacross Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1987-88	Moose	82	67	30	22	63	13	8,122	239	87	34.9%
	Whitefish	85	70	70	30	19	3,003	6,307	186	68	27.1%
	Coho	33	19	19	7	19	371	1,989	59	21	8.5%
	Northern Pike (large)	52	52	52	15	4	419	1,174	35	13	5.0%
	Caribou	63	52	19	15	44	8	982	29	11	4.2%
	Hare	78	74	74	30	4	611	916	27	10	3.9%
	Berries	70	67	67	4	4	160	640	19	7	2.7%
	Sockeye	48	7	7	0	48	151	619	18	7	2.7%
	Pink	4	4	4	4	4	201	592	17	6	2.5%
	Burbot	19	11	11	7	7	126	302	9	3	1.3%
	Arctic Grayling	56	52	52	22	7	324	226	7	2	1.0%
1994	Sockeye	-	-	-	-	-	49	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
1997	Sockeye	-	-	-	-	-	93	-	-	-	-
	Chinook	-	-	-	-	-	13	-	-	-	-
1999	Sockeye	-	-	-	-	-	6	-	-	-	-
2000	Sockeye	-	-	-	-	-	14	-	-	-	-
2001	Sockeye	-	-	-	-	-	50	-	-	-	-
2003	Sockeye	-	-	-	-	-	24	-	-	-	-
	Chum	-	-	-	-	-	2	-	-	-	-
2004	Moose	57	65	51	5	16	23	16,686	446	111	-
	Humpback Whitefish	32	27	27	11	11	833	2,499	67	17	-
	Caribou	41	43	35	3	11	18	1,816	49	12	-
	Northern Pike	38	30	30	5	11	182	822	22	5	-
	Broad Whitefish	11	11	8	3	3	283	567	15	4	-
2005	Sockeye	-	-	-	-	-	545	-	-	-	-
	Chinook	-	-	-	-	-	11	-	-	-	-
2009	Sockeye	-	-	-	-	-	80	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
For All Resources study years (1987-88), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (1994, 1997, 1999-2001, 2003, 2005, 2009); ADFG 2011 (2004); Marcotte 1991 (1987-88).

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Table E-96. Tanacross Annual Cycle of Subsistence Activities

	Winter										Spring				Summer						Fall			
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
Salmon															P	P	P	P						
Whitefish	O	O	O	O											P	P	P	P	O	O	O	O	O	O
Northern Pike	O	O	O	O											P	P	P	P	O	O	P	P	P	P
Arctic Grayling											P	P	O	O	O	O	O	O	O	O				
Burbot	P	P	P	P																				
Longnose Sucker															P	P	P	P	O	O				
Moose					O	O									O	O	O	O			P	P		
Caribou																			P	P	P	P		
Dall Sheep																			P	P				
Black Bear															O	O	P	P	O	O	O	O		
Brown Bear															O	O	P	P	O	O	O	O		
Hare	P	P	P	P	P	P	P	P					O	O	O	O	O	O	O	O	O	O	O	O
Muskrat							P	P	P	P														
Beaver	P	P	P	P	P	P	P	O	O	O														
Porcupine	O	O													O	O	P	P	P	P	P	P	O	O
Marten	P	P	P	P	P	P	P	P	O	O														
Mink	P	P	P	P	P	P																		
Wolverine	P	P	P	P	P	P	P	P	O	O														
Lynx	P	P	P	P	P	P	P	P	O	O														
Red Fox	P	P	P	P	P	P	P	P	O	O														
Wolf	P	P	P	P	P	P	P	P	O	O														
Coyote			P	P	P	P	P	P																
Otter			P	P	P	P	P	P																
Geese																					P	P		
Ducks													O	O			O	O	O	O	P	P		
Ptarmigan	O	O	O	O	O	O					O	O	O	O	O	O			O	O	P	P	O	O
Berries															O	O	P	P	P	P	P	P		
Firewood	P	P	P	P	O	O	O	O	O	O	O	O	O	O	O	O	O	O	P	P	P	P	P	P
Other Plants			P	P							O	O	P	P	P	P	P	P	P	P	P	P		
	O		Occasional Periods of Harvest																					
	P		Primary Periods of Harvest																					
Source: Marcotte 1991.																								

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Table E-97. Tanana Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1987	All Resources	100	93	92	84	98	-	745,940	5,828	2,157	100.0%
	Salmon	93	71	67	40	64	86,554	553,266	4,322	1,600	74.2%
	Non-Salmon Fish	76	71	64	43	34	32,840	123,943	968	358	16.6%
	Large Land Mammals	100	76	54	46	85	137	48,604	380	141	6.5%
	Small Land Mammals	80	44	41	32	52	2,658	13,350	104	39	1.8%
	Migratory Birds	65	45	45	19	31	1,424	3,710	29	11	0.5%
	Upland Game Birds	81	77	77	28	22	2,094	1,978	15	6	0.3%
	Vegetation	54	46	46	30	26	283	1,089	9	3	0.1%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

Source: Case and Halpin 1990.

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Table E-98. Tanana Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1992	Salmon	-	-	-	-	-	38,155	-	-	-
1993	Salmon	-	-	-	-	-	36,882	-	-	-
1994	Salmon	-	-	-	-	-	48,642	-	-	-
1995	Salmon	-	-	-	-	-	43,251	-	-	-
1996a	Salmon	-	-	-	-	-	57,513	-	-	-
1997a	Salmon	-	-	-	-	-	39,462	-	-	-
1998a	Salmon	-	-	-	-	-	40,004	-	-	-
1999a	Salmon	-	-	-	-	-	38,027	-	-	-
2000	Salmon	-	-	-	-	-	21,477	-	-	-
2001	Salmon	-	-	-	-	-	21,973	-	-	-
2002	Salmon	-	-	-	-	-	13,987	-	-	-
2003	Salmon	-	-	-	-	-	26,195	-	-	-
2004	Salmon	-	-	-	-	-	28,346	-	-	-
2005	Salmon	-	-	-	-	-	30,722	-	-	-
2006a	Salmon	-	-	-	-	-	36,054	-	-	-
2007	Salmon	-	-	-	-	-	34,692	-	-	-
2008	Salmon	-	-	-	-	-	25,927	-	-	-
2009	Salmon	-	-	-	-	-	29,583	-	-	-
Non-Salmon Fish										
2006b	Non-Salmon Fish	32	18	18	11	14	9,834	28,855	251	112
Large Land Mammals										
1996b	Large Land Mammals	-	-	-	-	-	63	21,239	198	72
1997b	Large Land Mammals	-	-	-	-	-	45	23,119	214	78
1998b	Large Land Mammals	96	72	46	52	74	61	29,715	327	114
1999b	Large Land Mammals	92	68	37	34	64	60	23,726	235	87
2002-03	Large Land Mammals	99	72	42	40	88	75	33,458	338	162

Sources: ADFG 2009 (1992-95, 1996a, 1997a, 1998a,1999a, 2000-05, 2006a, 2007-09); ADFG 2011 (1996b, 1997b, 1998b, 1999b); Brown et al. 2004 (2002-03); Brown et al. 2010 (2006b).

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Table E-99. Tanana Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1987	Chum	70	66	62	28	27	67,411	400,317	3,127	1,158	53.7%
	Whitefish	51	32	32	32	23	24,918	87,212	681	252	11.7%
	Chinook	91	57	54	30	48	4,769	81,079	633	234	10.9%
	Coho	44	40	34	8	10	14,374	71,870	561	208	9.6%
	Moose	100	68	35	43	76	57	40,050	313	116	5.4%
	Sheefish	32	30	30	12	9	5,250	34,127	267	99	4.6%
	Beaver	57	13	13	18	47	379	11,357	89	33	1.5%
1992	Chum	-	-	-	-	-	24,116	-	-	-	-
	Coho	-	-	-	-	-	11,406	-	-	-	-
	Chinook	-	-	-	-	-	2,630	-	-	-	-
	Sockeye	-	-	-	-	-	3	-	-	-	-
1993	Chum	-	-	-	-	-	27,359	-	-	-	-
	Coho	-	-	-	-	-	5,576	-	-	-	-
	Chinook	-	-	-	-	-	3,945	-	-	-	-
	Sockeye	-	-	-	-	-	2	-	-	-	-
1994	Chum	-	-	-	-	-	42,379	-	-	-	-
	Chinook	-	-	-	-	-	3,325	-	-	-	-
	Coho	-	-	-	-	-	2,937	-	-	-	-
1995	Chum	-	-	-	-	-	38,245	-	-	-	-
	Chinook	-	-	-	-	-	2,716	-	-	-	-
	Coho	-	-	-	-	-	2,290	-	-	-	-
1996a	Chum	-	-	-	-	-	47,627	-	-	-	-
	Coho	-	-	-	-	-	7,062	-	-	-	-
	Chinook	-	-	-	-	-	2,824	-	-	-	-
1996b	Moose	94	67	29	27	80	34	18,385	172	62	-
	Black Bear	30	27	18	12	14	24	2,432	23	8	-
	Caribou	12	8	3	3	11	3	422	4	1	-
	Brown Bear	2	2	2	0	0	2	0	0	0	-
1997a	Chum	-	-	-	-	-	31,990	-	-	-	-
	Coho	-	-	-	-	-	3,842	-	-	-	-
	Chinook	-	-	-	-	-	3,630	-	-	-	-
1997b	Moose	89	66	33	33	66	42	22,781	211	77	-
	Black Bear	9	6	2	2	8	3	338	3	1	-
	Brown Bear	0	2	0	0	0	0	0	0	0	-
	Caribou	8	3	0	0	8	0	0	0	0	-
1998a	Chum	-	-	-	-	-	31,725	-	-	-	-
	Chinook	-	-	-	-	-	5,227	-	-	-	-
	Coho	-	-	-	-	-	3,052	-	-	-	-
1998b	Moose	91	70	44	50	67	53	28,843	317	110	-
	Black Bear	9	7	7	7	2	6	593	7	2	-
	Brown Bear	2	4	2	0	0	2	279	3	1	-

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
	Caribou	24	4	0	0	24	0	0	0	0	-
1999a	Chum	-	-	-	-	-	29,062	-	-	-	-
	Coho	-	-	-	-	-	5,488	-	-	-	-
	Chinook	-	-	-	-	-	3,451	-	-	-	-
	Sockeye	-	-	-	-	-	26	-	-	-	-
1999b	Moose	90	68	32	31	64	39	21,261	211	78	-
	Caribou	10	5	5	3	5	14	1,780	18	7	-
	Black Bear	10	7	5	5	5	7	685	7	3	-
2000	Chum	-	-	-	-	-	12,266	-	-	-	-
	Coho	-	-	-	-	-	6,285	-	-	-	-
	Chinook	-	-	-	-	-	2,896	-	-	-	-
	Sockeye	-	-	-	-	-	29	-	-	-	-
2001	Chum	-	-	-	-	-	11,186	-	-	-	-
	Coho	-	-	-	-	-	6,675	-	-	-	-
	Chinook	-	-	-	-	-	4,112	-	-	-	-
2002	Chum	-	-	-	-	-	9,576	-	-	-	-
	Chinook	-	-	-	-	-	2,379	-	-	-	-
	Coho	-	-	-	-	-	2,032	-	-	-	-
2002-03	Moose	99	72	39	36	86	60	32,198	325	156	-
	Black Bear	18	19	9	9	13	11	675	7	3	-
	Caribou	7	11	3	3	5	4	585	6	3	-
	Brown Bear	0	1	0	0	0	0	0	0	0	-
2003	Chum	-	-	-	-	-	17,383	-	-	-	-
	Chinook	-	-	-	-	-	5,332	-	-	-	-
	Coho	-	-	-	-	-	3,480	-	-	-	-
2004	Chum	-	-	-	-	-	24608	-	-	-	-
	Chinook	-	-	-	-	-	2689	-	-	-	-
	Coho	-	-	-	-	-	1049	-	-	-	-
2005	Chum	-	-	-	-	-	25377	-	-	-	-
	Chinook	-	-	-	-	-	3729	-	-	-	-
	Coho	-	-	-	-	-	1616	-	-	-	-
2006a	Chum	-	-	-	-	-	28641	-	-	-	-
	Chinook	-	-	-	-	-	3794	-	-	-	-
	Coho	-	-	-	-	-	3619	-	-	-	-
2006b	Broad Whitefish	30	17	17	8	13	2,705	10,822	94	42	-
	Humpback Whitefish	16	13	13	7	3	2,070	6,210	54	24	-
	Sheefish	23	16	16	4	7	834	5,005	44	19	-
	Bering Cisco	6	6	6	0	0	3,016	4,222	37	16	-
	Northern Pike	12	11	11	3	2	358	1,611	14	6	-
2007	Chum	-	-	-	-	-	26825	-	-	-	-
	Chinook	-	-	-	-	-	5498	-	-	-	-
	Coho	-	-	-	-	-	2369	-	-	-	-

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Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	% of Total Harvest
2008	Chum	-	-	-	-	-	20355	-	-	-	-
	Chinook	-	-	-	-	-	3981	-	-	-	-
	Coho	-	-	-	-	-	1511	-	-	-	-
	Pink	-	-	-	-	-	80	-	-	-	-
2009	Chum	-	-	-	-	-	24260	-	-	-	-
	Chinook	-	-	-	-	-	2950	-	-	-	-
	Coho	-	-	-	-	-	2373	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

For All Resources study years (1987), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (1992-95, 1996a, 1997a, 1998a, 1999a, 2000-02, 2003-05, 2006a, 2007-09); ADFG 2011 (1996b, 1997b, 1998b, 1999b); Brown et al. 2004 (2002-03); ; Brown et al. 2010 (2006b); Case and Halpin 1990 (1987).

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Table E-100. Tanana Annual Cycle of Subsistence Activities

	Winter					Spring		Summer			Fall	
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Chinook												
Summer Chum												
Fall Chum												
Coho												
Whitefish												
Sheefish												
Northern Pike												
Burbot												
Longnose Sucker												
Arctic Grayling												
Moose												
Black Bear												
Brown Bear												
Caribou												
Hare												
Porcupine												
Muskrat												
Beaver												
Other Furbearers												
Waterfowl												
Grouse												
Ptarmigan												
Berries and Plants												
Wood and Bark												
		Occasional Periods of Harvest										
		Primary Periods of Harvest										
Source: Case and Halpin 1990.												

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Table E-101. Tetlin Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1987-88	All Resources	100	90	90	79	90	-	24,769	854	214	100.0%
	Salmon	25	5	5	5	20	70	287	10	2	1.2%
	Non-Salmon Fish	100	90	90	49	66	-	14,354	495	124	58.0%
	Large Land Mammals	90	59	35	35	85	13	7,535	260	65	30.4%
	Small Land Mammals	90	79	79	44	26	1,072	1,465	51	13	5.9%
	Migratory Birds	79	50	50	25	40	811	591	20	5	2.4%
	Upland Game Birds	50	35	35	10	15	148	74	3	1	0.3%
	Eggs	5	15	5	0	0	1	3	0	0	0.0%
	Vegetation	100	69	64	25	70	-	462	16	4	1.9%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

Sources: Marcotte 1991.

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Table E-102. Tetlin Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1992	Salmon	-	-	-	-	-	5	-	-	-
1993	Salmon	-	-	-	-	-	2	-	-	-
Non-Salmon Fish										
2004	Non-Salmon Fish	100	97	97	48	61	3,593	10,756	269	77
Large Land Mammals										
2004	Large Land Mammals	97	81	61	39	74	50	22,019	551	158
Small Land Mammals										
2004	Small Land Mammals	55	48	45	26	36	637	998	25	7
Migratory Birds										
2000	Migratory Birds	-	-	7	-	-	80	114	4	1

Sources: ADFG 2009 (1992-93); ADFG 2011 (2004); Andersen and Jennings 2001b (2000).

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Table E-103. Tetlin Subsistence Harvest Estimates by Selected Species, All Study Years

Study	Resource*	Percentage of Households	Estimated Harvest	of Tot al Ha rve

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Year		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1987-88	Whitefish	100	69	69	35	51	5,822	12,226	422	106	49.4%
	Moose	90	59	35	35	85	11	7,353	254	64	29.7%
	Northern Pike (large)	90	70	70	10	21	451	1,263	44	11	5.1%
	Hare	90	79	79	35	15	500	750	26	6	3.0%
	Ducks	79	50	50	25	40	810	589	20	5	2.4%
	Muskrat	60	50	50	5	10	-	507	17	4	2.0%
	Northern Pike (small)	45	40	40	5	5	-	382	13	3	1.5%
	Berries	100	64	55	10	55	74	295	10	3	1.2%
	Unknown Salmon	15	5	5	5	10	70	287	10	2	1.2%
	Longnose Sucker	39	39	39	5	0	340	238	8	2	1.0%
1992	Sockeye	-	-	-	-	-	5	-	-	-	-
1993	Sockeye	-	-	-	-	-	2	-	-	-	-
2000	Ducks	-	-	7	-	-	80	114	4	1	-
2004	Moose	94	81	55	36	74	28	19,871	497	143	-
	Humpback Whitefish	97	94	94	42	52	2,856	8,570	214	62	-
	Caribou	55	45	32	23	39	20	2,064	52	15	-
	Northern Pike	48	45	45	19	19	311	1,399	35	10	-
	Burbot	58	58	55	19	23	171	583	15	4	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

For All Resources study years (1987-88), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (1992-93); ADFG 2011 (2004); Andersen and Jennings 2001b (2000); Marcotte 1991 (1987-88).

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Table E-104. Tetlin Annual Cycle of Subsistence Activities

	Winter			Spring		Summer			Fall		Winter	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Moose	O	O	O				O	O	P	O	O	O
Caribou												
Hare	P	P	O	O	O	O	O	O	P	P	P	P
Porcupine							P	P	P	P		
Muskrat		O	P	P	P	O						
Red Fox	O	O	O								P	P
Lynx	P	P	P								P	P
Marten	O	O	O								P	P
Mink	P	P	O								P	P
Beaver			P									
Wolverine	P	P	P								P	P
Wolf	O	O	O								O	O
Coyote	P	P	P								P	P
Geese				O	O			O	P	O		
Ducks			O	O	O		O	O	P	O		
Ptarmigan	O	O	P	O	O	O	O	O	P	P	P	P
Whitefish						P	P	P	P			
Burbot										P	P	
Arctic Grayling							P	P	O			
Northern Pike	O		O		O	P	P	P	P	O	P	O
Longnose Sucker									P			
Salmon						P	P					
Berries							P	P	P			
Other Plants		O	O	O	O	P	P	P	P	O		
Wood	P	P	P	P	P	O	O	O	P	P	P	P

O = Occasional Periods of Harvest

P = Primary Periods of Harvest

Source: Marcotte 1991.

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Table E-105. Tok Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1987-88	All Resources	94	88	84	29	80	-	161,321	440	149	100.0%
	Salmon	79	45	43	9	58	8,083	38,147	104	35	23.6%
	Non-Salmon Fish	81	68	68	10	28	-	37,352	102	35	23.2%
	Large Land Mammals	74	61	43	19	49	287	72,154	197	67	44.7%
	Small Land Mammals	43	42	42	4	8	5,945	4,673	13	4	2.9%
	Migratory Birds	23	23	22	4	5	2,181	1,792	5	2	1.1%
	Upland Game Birds	55	55	55	5	1	7,131	3,565	10	3	2.2%
	Eggs	1	1	1	1	0	3	6	0	0	0.0%
	Marine Invertebrates	1	1	1	0	0	-	50	0	0	0.0%
	Vegetation	54	54	54	1	7	-	3,582	10	3	2.2%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

Source: Marcotte 1991.

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Table E-106. Tok Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds*	Average HH Pounds	Per Capita Pounds
Salmon										
1988	Salmon	-	-	-	-	-	3,834	-	-	-
1989	Salmon	-	-	-	-	-	3,624	-	-	-
1990	Salmon	-	-	-	-	-	2,731	-	-	-
1991	Salmon	-	-	-	-	-	2,961	-	-	-
1992	Salmon	-	-	-	-	-	3,238	-	-	-
1993	Salmon	-	-	-	-	-	3,589	-	-	-
1994	Salmon	-	-	-	-	-	5,270	-	-	-
1995	Salmon	-	-	-	-	-	3,721	-	-	-
1996	Salmon	-	-	-	-	-	4,124	-	-	-
1997	Salmon	-	-	-	-	-	7,401	-	-	-
1998	Salmon	-	-	-	-	-	4,600	-	-	-
1999	Salmon	-	-	-	-	-	4,248	-	-	-
2000a	Salmon	-	-	-	-	-	3,362	-	-	-
2001	Salmon	-	-	-	-	-	3,686	-	-	-
2002	Salmon	-	-	-	-	-	1,717	-	-	-
2003	Salmon	-	-	-	-	-	2,352	-	-	-
2004a	Salmon	-	-	-	-	-	5,247	-	-	-
2005	Salmon	-	-	-	-	-	5,498	-	-	-
2006	Salmon	-	-	-	-	-	3,527	-	-	-
2007	Salmon	-	-	-	-	-	2,509	-	-	-
2008	Salmon	-	-	-	-	-	1,237	-	-	-
2009	Salmon	-	-	-	-	-	2,925	-	-	-
Non-Salmon Fish										
2004b	Non-Salmon Fish	53	52	52	12	5	6,957	17,936	51	19
Large Land Mammals										
2004b	Large Land Mammals	46	73	37	9	9	240	84,741	241	89
Small Land Mammals										
2004b	Small Land Mammals	22	24	22	3	0	1,842	4,208	12	4
Migratory Birds										
2000b	Migratory Birds	-	-	-	-	-	1,209	2,219	28	10

Notes: *Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

Sources: ADFG 2009 (1988-1999, 2000a, 2001-03, 2004a, 2005-09); ADFG 2011 (2000b, 2004b).

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Table E-107. Tok Subsistence Harvest Estimates by Selected Species, All Study Years

Study	Resource*	Percentage of Households	Estimated Harvest	o Tot al Ha rve

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Year		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1987-88	Moose	63	49	24	15	39	82	52,870	144	49	32.8%
	Sockeye	43	17	16	6	32	4,315	17,671	48	16	11.0%
	Caribou	60	42	25	9	37	113	14,633	40	14	9.1%
	Whitefish	26	18	18	3	10	6,386	13,410	37	12	8.3%
	Coho	25	12	11	2	17	1,575	8,433	23	8	5.2%
	Chinook	41	16	16	1	31	327	5,661	15	5	3.5%
	Burbot	40	33	33	3	8	2,119	5,085	14	5	3.2%
	Rainbow Trout	35	35	35	2	2	3,228	4,519	12	4	2.8%
	Halibut	28	9	9	1	21	-	4,256	12	4	2.6%
	Northern Pike	27	23	23	5	5	1,376	3,852	11	4	2.4%
	Hare	36	36	36	2	5	2,562	3,843	10	4	2.4%
	Arctic Grayling	56	49	49	5	7	4,665	3,265	9	3	2.0%
	Berries	44	44	44	1	1	758	3,033	8	3	1.9%
	Chum	8	7	7	1	4	425	3,018	8	3	1.9%
	Grouse	55	55	55	5	1	5,304	2,652	7	2	1.6%
	Black Bear	24	16	8	2	16	40	2,434	7	2	1.5%
	Lake Trout	23	23	23	2	0	918	1,837	5	2	1.1%
	Unknown Salmon	7	1	1	0	6	447	1,832	5	2	1.1%
	Ducks	20	20	19	4	2	2,129	1,618	4	2	1.0%
1988	Sockeye	-	-	-	-	-	3,723	-	-	-	-
	Chinook	-	-	-	-	-	83	-	-	-	-
	Coho	-	-	-	-	-	28	-	-	-	-
1989	Sockeye	-	-	-	-	-	3,525	-	-	-	-
	Chinook	-	-	-	-	-	98	-	-	-	-
	Coho	-	-	-	-	-	1	-	-	-	-
1990	Sockeye	-	-	-	-	-	2,679	-	-	-	-
	Coho	-	-	-	-	-	36	-	-	-	-
	Chinook	-	-	-	-	-	16	-	-	-	-
1991	Sockeye	-	-	-	-	-	2,800	-	-	-	-
	Chinook	-	-	-	-	-	86	-	-	-	-
	Coho	-	-	-	-	-	75	-	-	-	-
1992	Sockeye	-	-	-	-	-	3,046	-	-	-	-
	Chinook	-	-	-	-	-	144	-	-	-	-
	Chum	-	-	-	-	-	32	-	-	-	-
	Coho	-	-	-	-	-	16	-	-	-	-
1993	Sockeye	-	-	-	-	-	3,503	-	-	-	-
	Chinook	-	-	-	-	-	74	-	-	-	-
	Coho	-	-	-	-	-	11	-	-	-	-
	Chum	-	-	-	-	-	1	-	-	-	-
1994	Sockeye	-	-	-	-	-	5,146	-	-	-	-
	Chinook	-	-	-	-	-	101	-	-	-	-
	Pink	-	-	-	-	-	22	-	-	-	-
	Chum	-	-	-	-	-	1	-	-	-	-

Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
1995	Sockeye	-	-	-	-	-	2,519	-	-	-	-
	Chum	-	-	-	-	-	871	-	-	-	-
	Chinook	-	-	-	-	-	318	-	-	-	-
	Coho	-	-	-	-	-	13	-	-	-	-
1996	Sockeye	-	-	-	-	-	3,197	-	-	-	-
	Chum	-	-	-	-	-	575	-	-	-	-
	Chinook	-	-	-	-	-	298	-	-	-	-
	Coho	-	-	-	-	-	54	-	-	-	-
1997	Sockeye	-	-	-	-	-	6,510	-	-	-	-
	Chum	-	-	-	-	-	564	-	-	-	-
	Chinook	-	-	-	-	-	327	-	-	-	-
1998	Sockeye	-	-	-	-	-	4,399	-	-	-	-
	Chinook	-	-	-	-	-	149	-	-	-	-
	Chum	-	-	-	-	-	50	-	-	-	-
	Coho	-	-	-	-	-	3	-	-	-	-
1999	Sockeye	-	-	-	-	-	4,004	-	-	-	-
	Chinook	-	-	-	-	-	146	-	-	-	-
	Chum	-	-	-	-	-	69	-	-	-	-
	Coho	-	-	-	-	-	29	-	-	-	-
2000a	Sockeye	-	-	-	-	-	3,264	-	-	-	-
	Chinook	-	-	-	-	-	67	-	-	-	-
	Coho	-	-	-	-	-	24	-	-	-	-
	Chum	-	-	-	-	-	6	-	-	-	-
2000b	Ducks	-	-	-	-	-	1,130	1,814	23	8	-
	Geese	-	-	-	-	-	50	209	3	1	-
	Crane	-	-	-	-	-	29	196	2	1	-
2001	Sockeye	-	-	-	-	-	3,635	-	-	-	-
	Chinook	-	-	-	-	-	50	-	-	-	-
	Coho	-	-	-	-	-	1	-	-	-	-
2002	Sockeye	-	-	-	-	-	1,642	-	-	-	-
	Chinook	-	-	-	-	-	49	-	-	-	-
	Chum	-	-	-	-	-	25	-	-	-	-
	Pink	-	-	-	-	-	1	-	-	-	-
2003	Sockeye	-	-	-	-	-	2,228	-	-	-	-
	Chinook	-	-	-	-	-	122	-	-	-	-
	Chum	-	-	-	-	-	1	-	-	-	-
2004a	Sockeye	-	-	-	-	-	5,124	-	-	-	-
	Chinook	-	-	-	-	-	104	-	-	-	-
	Chum	-	-	-	-	-	16	-	-	-	-
	Coho	-	-	-	-	-	2	-	-	-	-
2004b	Moose	33	66	26	6	8	90	63,180	180	67	-
	Caribou	20	43	17	4	3	82	8,273	24	9	-

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Study Year	Resource*	Percentage of Households: Use	Percentage of Households: Try to Harvest	Percentage of Households: Harvest	Percentage of Households: Give	Percentage of Households: Receive	Estimated Harvest: Number**	Estimated Harvest: Total Pounds***	Estimated Harvest: Average HH Pounds	Estimated Harvest: Per Capita Pounds	% of Total Harvest
	Humpback Whitefish	13	13	13	6	0	2,645	7,935	23	8	-
	Black Bear	9	22	8	2	1	42	7,458	21	8	-
	Brown Bear	4	14	4	1	0	12	5,014	14	5	-
2005	Sockeye	-	-	-	-	-	5,459	-	-	-	-
	Chinook	-	-	-	-	-	39	-	-	-	-
2006	Sockeye	-	-	-	-	-	3,469	-	-	-	-
	Chinook	-	-	-	-	-	57	-	-	-	-
2007	Sockeye	-	-	-	-	-	2,428	-	-	-	-
	Chinook	-	-	-	-	-	49	-	-	-	-
	Coho	-	-	-	-	-	32	-	-	-	-
2008	Sockeye	-	-	-	-	-	1,173	-	-	-	-
	Chinook	-	-	-	-	-	64	-	-	-	-
2009	Sockeye	-	-	-	-	-	2,898	-	-	-	-
	Chinook	-	-	-	-	-	28	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

For All Resources study years, species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (1988-99, 2000a, 2001-09); ADFG 2011 (2000b, 2004b); Marcotte 1991 (1987-88).

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Table E-108. Tok Annual Cycle of Subsistence Activities

	Winter										Spring				Summer						Fall			
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
Salmon	░	░	░	░									░	░	█	█	█	█	░	░			░	░
Whitefish															░	░	█	█	░	░	░	░	█	█
Northern Pike							░	░	░	░			█	█	█	█	█	█	█	█	█	█	░	░
Arctic Grayling											░	░	█	█	█	█	█	█	█	█	█	█	░	░
Burbot															░	░	░	█	█	█	█	░	░	░
Longnose Sucker															░	░			█	█	█	█	█	█
Moose																			░	░	█	█		
Caribou	█	█	█	█			░	░											█	█	█	█		
Dall Sheep																			█	█	░	░		
Black Bear											░	░	█	█	░	░	░	░	█	█	░	░		
Brown Bear											░	░	█	█	░	░	░	░	█	█	░	░		
Hare	█	█	█	█	█	█	█	█	█	█	░	░			░	░	░	░	█	█	█	█	█	█
Muskrat	░	░							░	░			░	░					░	░	░	░	░	░
Beaver	█	█	█	█	█	█	█	░	░	░														
Porcupine																					░	░		
Marten	█	█	█	█	█	█	█	█																
Mink	█	█	█	█	█	█	█	█																
Wolverine	█	█	█	█	█	█	█	█	░	░														
Lynx	█	█	█	█	█	█	█	█	░	░														
Red Fox	█	█	█	█	█	█	█	█																
Wolf	█	█	█	█	█	█	█	█	░	░														
Coyote	█	█	█	█	█	█	█	█	░	░														
Otter	█	█	█	█	█	█	█	█	░	░														
Geese																					█	█	█	█
Ducks																					█	█	█	█
Ptarmigan	█	█	░	░	░	░	░	░													█	█	█	█
Berries																	█	█	█	█	█	█	░	░
Firewood	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Other Plants															█	█	█	█	█	█	█	█	░	░
	░		Occasional Periods of Harvest																					
	█		Primary Periods of Harvest																					
Source: Marcotte 1991.																								

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Table E-109. Chistochina Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1982-83	All Resources	100	-	100	-	-	-	9,545	308	115	100.0%
	Salmon	77	-	27	-	-	762	3,554	115	43	37.2%
	Non-Salmon Fish	64	-	32	-	-	-	758	24	9	7.9%
	Large Land Mammals	73	-	32	-	-	16	3,579	115	43	37.5%
	Small Land Mammals	73	-	73	-	-	364	408	13	5	4.3%
	Migratory Birds	23	-	23	-	-	38	82	3	1	0.9%
	Upland Game Birds	41	-	41	-	-	93	47	2	1	0.5%
	Vegetation	91	-	77	-	-	-	1,118	36	13	11.7%
1987	All Resources	100	100	100	64	75	-	20,584	710	262	100.0%
	Salmon	82	54	46	14	50	2,053	10,197	352	130	49.5%
	Non-Salmon Fish	79	57	57	11	50	-	2,199	76	28	10.7%
	Large Land Mammals	75	79	57	32	36	26	6,598	228	84	32.1%
	Small Land Mammals	39	39	36	21	14	226	322	11	4	1.6%
	Migratory Birds	7	11	7	4	0	65	102	4	1	0.5%
	Upland Game Birds	39	36	36	11	7	169	84	3	1	0.4%
	Marine Invertebrates	11	7	7	0	7	34	34	1	0	0.2%
	Vegetation	89	89	89	32	18	-	1,048	36	13	5.1%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

Sources: ADFG 2011 (1987); Stratton and Georgette 1984 (1982-83).

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Table E-110. Chistochina Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
2002	Salmon	-	-	-	-	-	77	-	-	-
2003	Salmon	-	-	-	-	-	192	-	-	-
Non-Salmon Fish										
2001	Non-Salmon Fish	67	57	57	20	13	409	534	14	7
Migratory Birds										
2000	Migratory Birds	78	65	61	30	65	120	112	5	2
Upland Game Birds										
2000	Upland Game Birds	44	39	39	22	17	110	91	4	1

Sources: ADFG 2009 (2002, 2003); ADFG 2011 (2000), Simeone and Kari 2005 (2001).

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Table E-111. Chistochina Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
1982-83	Sockeye	77	-	23	-	-	737	3,095	100	37	32.4%
	Moose	64	-	14	-	-	4	2,114	68	25	22.1%
	Caribou	55	-	23	-	-	11	1,465	47	18	15.3%
	Berries	91	-	73	-	-	-	1,056	34	13	11.1%
	Chinook	41	-	23	-	-	25	459	15	6	4.8%
	Arctic Grayling	32	-	27	-	-	440	308	10	4	3.2%
	Hare	55	-	55	-	-	192	287	9	3	3.0%
	Char	14	-	-	-	-	221	233	8	3	2.4%
	Dolly Varden	9	-	9	-	-	190	171	6	2	1.8%
	Whitefish	27	-	9	-	-	158	142	5	2	1.5%
1987	Sockeye	71	43	43	14	39	1,712	7,011	242	89	34.1%
	Moose	54	61	29	21	25	9	4,195	145	53	20.4%
	Chinook	43	29	25	4	21	115	1,992	69	25	9.7%
	Caribou	50	61	36	14	21	15	1,885	65	24	9.2%
	Coho	39	32	21	4	21	220	1,176	41	15	5.7%
	Berries	71	71	71	25	11	237	948	33	12	4.6%
	Halibut	43	21	21	7	32	839	839	29	11	4.1%
	Black Bear	11	11	7	7	4	2	518	18	7	2.5%
	Whitefish	32	18	18	4	21	425	382	13	5	1.9%
	Arctic Grayling	46	43	43	4	18	450	315	11	4	1.5%
	Arctic Char	-	-	-	4	7	140	251	9	3	1.2%
	Lake Trout	11	14	11	4	7	114	228	8	3	1.1%
	Beaver	7	14	7	4	0	15	218	8	3	1.1%
2000	Ducks	78	61	57	30	65	117	107	4	2	-
	Willow Ptarmigan	26	26	22	13	4	45	45	2	1	-
	Spruce Grouse	26	26	26	9	13	55	39	2	1	-
	Sharp-Tailed Grouse	9	9	9	4	0	9	6	0	0	-
	Geese	13	9	9	0	13	2	5	0	0	-
2001	Burbot	10	10	10	0	0	70	169	5	2	-
	Lake Trout	20	20	20	0	3	84	168	5	2	-
	Arctic Grayling	43	43	43	10	10	185	130	4	2	-
	Whitefish	20	13	13	10	3	65	59	2	1	-
	Northern Pike	3	3	3	0	0	2	7	0	0	-
2002	Sockeye	-	-	-	-	-	73	-	-	-	-
	Chinook	-	-	-	-	-	4	-	-	-	-
2003	Sockeye	-	-	-	-	-	182	-	-	-	-
	Chinook	-	-	-	-	-	10	-	-	-	-

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Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

For All Resources study years (1982-83, 1987), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (2002, 2003); ADFG 2011 (1987, 2000); Simeone and Kari 2005 (2001); Stratton and Georgette 1984 (1982-83).

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Table E-112. Copper River Region Annual Cycle of Subsistence Activities

	Winter										Spring				Summer						Fall			
	Nov		Dec		Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct	
Chinook															■	■	■	■	■					
Sockeye														▒	■	■	■	■	■	▒				
Coho																				■	■	■		
Arctic Grayling													■	■	■	■	■	■	■	■	■	■	■	
Dolly Varden	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Rainbow Trout	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Lake Trout	▒	▒	▒	▒	▒	▒	▒	▒							■	■	■	■				■	■	■
Whitefish															▒	▒	▒	▒	▒	▒			■	■
Burbot	■	■	■	■	■	■	■	■	■	■														■
Moose																				■	■			
Caribou					■	■	■	■												■	■			
Black Bear												■	■	■	■	■	■	■	■	■	■	■	■	
Hare	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Porcupine	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Muskrat		■	■	■	■	■	■	■	■	■	■	■	■	■	■									
Beaver		■	■	■	■	■	■	■	■	■	■	■												
Marten		■	■	■	■	■																		
Red Fox		■	■	■	■	■	■	■																
Mink	■	■	■	■	■	■																		
Wolverine		■	■	■	■	■	■	■																
Coyote		■	■	■	■	■	■	■	■	■														
Wolf		■	■	■	■	■	■	■	■	■														
Otter		■	■	■	■	■	■	■	■	■														
Ducks	■	■	■																		■	■	■	■
Geese	■	■	■																		■	■	■	■
Ptarmigan	■	■	■	■	■	■	■	■	■	■	■									■	■	■	■	■
Grouse	■	■	■	■	■	■	■	■	■	■	■									■	■	■	■	■
Berries																			■	■	■	■		
Other Plants										■	■	■	■	■	■	■	■	■	■	■	■			
Wood	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	▒		Occasional Harvest Effort																					
	■		Usual Period of Harvest, Peak Harvesting																					
Source: McMillan and Cuccarese, 1988																								

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Table E-113. Chitina Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1982-83	All Resources	100	-	87	-	-	-	8,166	340	191	100.0%
	Salmon	87	-	48	-	-	944	4,963	207	116	60.8%
	Non-Salmon Fish	65	-	57	-	-	-	349	15	8	4.3%
	Large Land Mammals	74	-	13	-	-	5	1,836	77	43	22.5%
	Small Land Mammals	52	-	52	-	-	274	378	16	9	4.6%
	Migratory Birds	9	-	9	-	-	15	22	1	1	0.3%
	Upland Game Birds	39	-	39	-	-	102	51	2	1	0.6%
	Vegetation	78	-	78	-	-	-	566	24	13	6.9%
1987	All Resources	94	89	89	50	72	-	11,925	628	342	100.0%
	Salmon	72	61	61	33	17	1,726	8,337	439	239	69.9%
	Non-Salmon Fish	83	61	61	11	39	-	902	47	26	7.6%
	Large Land Mammals	50	61	28	6	22	6	1,837	97	53	15.4%
	Small Land Mammals	50	44	44	6	6	178	279	15	8	2.3%
	Migratory Birds	6	6	6	6	0	26	19	1	1	0.2%
	Upland Game Birds	33	39	33	6	0	83	42	2	1	0.4%
	Vegetation	89	83	83	33	17	-	509	27	15	4.3%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

Sources: ADFG 2011 (1987); Stratton and Georgette 1984 (1982-83).

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Table E-114. Chitina Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1988	Salmon	-	-	-	-	-	4,705	-	-	-
1989	Salmon	-	-	-	-	-	2,241	-	-	-
1990	Salmon	-	-	-	-	-	1,727	-	-	-
1991	Salmon	-	-	-	-	-	1,938	-	-	-
1992	Salmon	-	-	-	-	-	1,596	-	-	-
1993	Salmon	-	-	-	-	-	2,017	-	-	-
1994	Salmon	-	-	-	-	-	1,730	-	-	-
1995	Salmon	-	-	-	-	-	2,270	-	-	-
1996	Salmon	-	-	-	-	-	1,800	-	-	-
1997	Salmon	-	-	-	-	-	2,839	-	-	-
1998	Salmon	-	-	-	-	-	2,181	-	-	-
1999	Salmon	-	-	-	-	-	2,148	-	-	-
2000a	Salmon	-	-	-	-	-	1,446	-	-	-
2001a	Salmon	-	-	-	-	-	2,484	-	-	-
2002	Salmon	-	-	-	-	-	2,914	-	-	-
2003	Salmon	-	-	-	-	-	4,287	-	-	-
2004	Salmon	-	-	-	-	-	3,188	-	-	-
2005	Salmon	-	-	-	-	-	2,319	-	-	-
2006	Salmon	-	-	-	-	-	3,667	-	-	-
2007	Salmon	-	-	-	-	-	3,491	-	-	-
2008	Salmon	-	-	-	-	-	1,842	-	-	-
2009	Salmon	-	-	-	-	-	2,586	-	-	-
Non-Salmon Fish										
2001b	Non-Salmon Fish	44	50	38	13	0	206	241	7	3
Migratory Birds										
2000b	Migratory Birds	10	10	10	10	5	47	37	1	1
Upland Game Birds										
2000b	Upland Game Birds	20	20	10	5	15	81	66	2	1
Sources: ADFG 2009 (1988-1999, 2000a, 2001a, 2002-2009); ADFG 2011 (2000b); Simeone and Kari 2005 (2001b).										

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Table E-115. Chitina Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1982-83	Sockeye	87	-	48	-	-	835	3,506	146	82	42.9%
	Moose	65	-	13	-	-	3	1,565	65	37	19.2%
	Chinook	39	-	39	-	-	66	1,190	50	28	14.6%
	Berries	78	-	74	-	-	433	433	18	10	5.3%
	Hare	48	-	48	-	-	201	302	13	7	3.7%
	Caribou	26	-	9	-	-	2	271	11	6	3.3%
	Coho	9	-	4	-	-	44	267	11	6	3.3%
	Arctic Grayling	44	-	39	-	-	195	137	6	3	1.7%
	Plants/Greens/ Mushrooms	39	-	39	-	-	133	132	6	3	1.6%
	Rainbow Trout	39	-	35	-	-	68	95	4	2	1.2%
1987	Sockeye	72	61	61	28	17	1,460	5,978	315	172	50.1%
	Chinook	50	50	50	22	0	113	1,957	103	56	16.4%
	Moose	28	61	17	6	11	3	1,425	75	41	11.9%
	Caribou	17	39	11	0	6	3	412	22	12	3.5%
	Berries	78	72	72	22	11	103	412	22	12	3.5%
	Rainbow Trout	50	33	33	11	17	257	359	19	10	3.0%
	Hare	44	39	39	0	6	173	260	14	7	2.2%
	Coho	17	17	17	6	0	48	254	13	7	2.1%
	Arctic Grayling	33	33	33	6	0	258	180	9	5	1.5%
1988	Sockeye	-	-	-	-	-	4,505	-	-	-	-
	Coho	-	-	-	-	-	105	-	-	-	-
	Chinook	-	-	-	-	-	95	-	-	-	-
1989	Sockeye	-	-	-	-	-	2,205	-	-	-	-
	Chinook	-	-	-	-	-	31	-	-	-	-
	Coho	-	-	-	-	-	4	-	-	-	-
1990	Sockeye	-	-	-	-	-	1,684	-	-	-	-
	Chinook	-	-	-	-	-	41	-	-	-	-
	Coho	-	-	-	-	-	2	-	-	-	-
1991	Sockeye	-	-	-	-	-	1,901	-	-	-	-
	Chinook	-	-	-	-	-	37	-	-	-	-
1992	Sockeye	-	-	-	-	-	1,553	-	-	-	-
	Chinook	-	-	-	-	-	29	-	-	-	-
	Coho	-	-	-	-	-	15	-	-	-	-
1993	Sockeye	-	-	-	-	-	1,986	-	-	-	-
	Chinook	-	-	-	-	-	31	-	-	-	-
1994	Sockeye	-	-	-	-	-	1,702	-	-	-	-
	Chinook	-	-	-	-	-	28	-	-	-	-
1995	Sockeye	-	-	-	-	-	2,160	-	-	-	-
	Coho	-	-	-	-	-	71	-	-	-	-

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
	Chinook	-	-	-	-	-	39	-	-	-	-
1996	Sockeye	-	-	-	-	-	1,764	-	-	-	-
	Chinook	-	-	-	-	-	19	-	-	-	-
	Coho	-	-	-	-	-	16	-	-	-	-
1997	Sockeye	-	-	-	-	-	2,794	-	-	-	-
	Chinook	-	-	-	-	-	46	-	-	-	-
1998	Sockeye	-	-	-	-	-	2,117	-	-	-	-
	Coho	-	-	-	-	-	42	-	-	-	-
	Chinook	-	-	-	-	-	21	-	-	-	-
1999	Sockeye	-	-	-	-	-	1,956	-	-	-	-
	Chinook	-	-	-	-	-	105	-	-	-	-
	Coho	-	-	-	-	-	87	-	-	-	-
2000a	Sockeye	-	-	-	-	-	1,357	-	-	-	-
	Chinook	-	-	-	-	-	86	-	-	-	-
	Coho	-	-	-	-	-	3	-	-	-	-
2000b	Ducks	10	10	10	10	5	47	37	1	1	-
	Spruce Grouse	20	20	10	5	15	50	35	1	1	-
	Willow Ptarmigan	5	5	5	5	0	31	31	1	0	-
2001a	Sockeye	-	-	-	-	-	2,273	-	-	-	-
	Coho	-	-	-	-	-	117	-	-	-	-
	Chinook	-	-	-	-	-	93	-	-	-	-
2001b	Rainbow Trout	31	44	25	6	0	58	81	1	0	-
	Lake Trout	19	31	19	0	0	30	60	2	1	-
	Arctic Grayling	19	13	13	6	0	69	49	1	1	-
	Dolly Varden	38	31	25	13	0	46	42	2	1	-
	Steelhead	6	13	6	0	0	2	10	0	0	-
2002	Sockeye	-	-	-	-	-	2,794	-	-	-	-
	Chinook	-	-	-	-	-	106	-	-	-	-
	Coho	-	-	-	-	-	14	-	-	-	-
2003	Sockeye	-	-	-	-	-	3,998	-	-	-	-
	Chinook	-	-	-	-	-	149	-	-	-	-
	Coho	-	-	-	-	-	140	-	-	-	-
2004	Sockeye	-	-	-	-	-	2,897	-	-	-	-
	Coho	-	-	-	-	-	172	-	-	-	-
	Chinook	-	-	-	-	-	118	-	-	-	-
2005	Sockeye	-	-	-	-	-	2,220	-	-	-	-
	Coho	-	-	-	-	-	57	-	-	-	-
	Chinook	-	-	-	-	-	42	-	-	-	-
2006	Sockeye	-	-	-	-	-	3,500	-	-	-	-
	Chinook	-	-	-	-	-	140	-	-	-	-
	Coho	-	-	-	-	-	28	-	-	-	-

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
2007	Sockeye	-	-	-	-	-	3,317	-	-	-	-
	Chinook	-	-	-	-	-	168	-	-	-	-
	Coho	-	-	-	-	-	7	-	-	-	-
2008	Sockeye	-	-	-	-	-	1,747	-	-	-	-
	Chinook	-	-	-	-	-	95	-	-	-	-
2009	Sockeye	-	-	-	-	-	2,427	-	-	-	-
	Chinook	-	-	-	-	-	141	-	-	-	-
	Coho	-	-	-	-	-	18	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

For All Resources study years (1982-83, 1987), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (1988-1999, 2000a, 2001a, 2002-2009); ADFG 2011 (1987, 2000b); Simeone and Kari 2005 (2001b); Stratton and Georgette 1984 (1982-83).

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COPPER CENTER

Table E-116. Copper Center Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1982-83	All Resources	100	-	85	-	-	-	49,533	384	114	100.0%
	Salmon	85	-	70	-	-	6,627	30,676	238	71	61.9%
	Non-Salmon Fish	44	-	37	-	-	-	10,021	78	23	20.2%
	Large Land Mammals	70	-	22	-	-	43	5,590	43	13	11.3%
	Small Land Mammals	30	-	30	-	-	401	858	7	2	1.7%
	Migratory Birds	4	-	4	-	-	48	72	1	0	0.1%
	Upland Game Birds	15	-	15	-	-	115	57	0	0	0.1%
	Vegetation	67	-	67	-	-	-	2,260	18	5	4.6%
1987	All Resources	100	100	100	44	93	-	85,895	534	174	100.0%
	Salmon	90	77	68	30	59	10,215	51,006	317	104	59.4%
	Non-Salmon Fish	78	61	58	6	44	-	3,317	21	7	3.9%
	Large Land Mammals	78	81	52	9	49	153	28,338	176	58	33.0%
	Small Land Mammals	39	39	27	4	24	237	405	3	1	0.5%
	Migratory Birds	6	6	6	5	0	244	329	2	1	0.4%
	Upland Game Birds	43	39	34	16	10	763	382	2	1	0.4%
	Vegetation	88	88	88	6	35	-	1,911	12	4	2.2%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

Sources: ADFG 2011 (1987); Stratton and Georgette 1984 (1982-83).

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Table E-117. Copper Center Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1988	Salmon	-	-	-	-	-	10,407	-	-	-
1989	Salmon	-	-	-	-	-	10,202	-	-	-
1990	Salmon	-	-	-	-	-	9,348	-	-	-
1991	Salmon	-	-	-	-	-	9,374	-	-	-
1992	Salmon	-	-	-	-	-	10,528	-	-	-
1993	Salmon	-	-	-	-	-	12,428	-	-	-
1994	Salmon	-	-	-	-	-	13,694	-	-	-
1995	Salmon	-	-	-	-	-	11,073	-	-	-
1996	Salmon	-	-	-	-	-	10,523	-	-	-
1997	Salmon	-	-	-	-	-	13,034	-	-	-
1998	Salmon	-	-	-	-	-	12,005	-	-	-
1999	Salmon	-	-	-	-	-	13,247	-	-	-
2000a	Salmon	-	-	-	-	-	10,589	-	-	-
2001a	Salmon	-	-	-	-	-	13,057	-	-	-
2002	Salmon	-	-	-	-	-	7,986	-	-	-
2003	Salmon	-	-	-	-	-	8,460	-	-	-
2004	Salmon	-	-	-	-	-	10,916	-	-	-
2005	Salmon	-	-	-	-	-	14,065	-	-	-
2006	Salmon	-	-	-	-	-	10,667	-	-	-
2007	Salmon	-	-	-	-	-	11,859	-	-	-
2008	Salmon	-	-	-	-	-	7,174	-	-	-
2009	Salmon	-	-	-	-	-	6,454	-	-	-
Non-Salmon Fish										
2001b	Non-Salmon Fish	48	47	45	13	11	2,822	3,257	18	5.84
Migratory Birds										
2000b	Migratory Birds	4	4	2	2	4	25	26	1	0
Upland Game Birds										
2000b	Upland Game Birds	9	9	6	0	2	20	14	0	0
Sources: ADFG 2009 (1988-99, 2000a, 2001a, 2002-09); ADFG 2011 (2000b); Simeone and Kari 2005 (2001b).										

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Table E-118. Copper Center Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1982-83	Sockeye	78	-	63	-	-	5,432	22,816	177	52	46.1%
	Halibut	15	-	15	-	-		7,740	60	18	15.6%
	Caribou	44	-	22	-	-	43	5,590	43	13	11.3%
	Coho	26	-	19	-	-	798	4,867	38	11	9.8%
	Chinook	41	-	37	-	-	143	2,594	20	6	5.2%
	Berries	63	-	59	-	-	1,949	1,949	15	4	3.9%
	Burbot	19	-	11	-	-	272	654	5	2	1.3%
	Hare	19	-	19	-	-	330	494	4	1	1.0%
	Arctic Grayling	19	-	15	-	-	678	475	4	1	1.0%
1987	Sockeye	84	67	62	29	50	8,903	36,460	226	74	42.4%
	Moose	53	77	19	8	40	31	13,870	86	28	16.1%
	Caribou	73	79	48	8	31	100	12,942	80	26	15.1%
	Chinook	63	52	46	13	33	685	11,874	74	24	13.8%
	Coho	23	13	13	0	14	347	1,861	12	4	2.2%
	Berries	81	76	76	5	23	387	1,546	10	3	1.8%
	Arctic Grayling	55	50	47	3	16	1,537	1,076	7	2	1.3%
	Dall Sheep	9	13	5	0	5	15	979	6	2	1.1%
1988	Sockeye	-	-	-	-	-	9,964	-	-	-	-
	Chinook	-	-	-	-	-	416	-	-	-	-
	Coho	-	-	-	-	-	27	-	-	-	-
1989	Sockeye	-	-	-	-	-	9,937	-	-	-	-
	Chinook	-	-	-	-	-	249	-	-	-	-
	Coho	-	-	-	-	-	16	-	-	-	-
1990	Sockeye	-	-	-	-	-	9,155	-	-	-	-
	Chinook	-	-	-	-	-	161	-	-	-	-
	Coho	-	-	-	-	-	31	-	-	-	-
1991	Sockeye	-	-	-	-	-	9,064	-	-	-	-
	Chinook	-	-	-	-	-	262	-	-	-	-
	Coho	-	-	-	-	-	48	-	-	-	-
1992	Sockeye	-	-	-	-	-	10,147	-	-	-	-
	Chinook	-	-	-	-	-	354	-	-	-	-
	Coho	-	-	-	-	-	27	-	-	-	-
1993	Sockeye	-	-	-	-	-	12,052	-	-	-	-
	Chinook	-	-	-	-	-	316	-	-	-	-
	Coho	-	-	-	-	-	60	-	-	-	-
1994	Sockeye	-	-	-	-	-	13,381	-	-	-	-
	Chinook	-	-	-	-	-	290	-	-	-	-
	Coho	-	-	-	-	-	22	-	-	-	-
1995	Sockeye	-	-	-	-	-	10,472	-	-	-	-
	Chinook	-	-	-	-	-	352	-	-	-	-

Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
	Coho	-	-	-	-	-	249	-	-	-	-
1996	Sockeye	-	-	-	-	-	10,141	-	-	-	-
	Chinook	-	-	-	-	-	268	-	-	-	-
	Coho	-	-	-	-	-	115	-	-	-	-
1997	Sockeye	-	-	-	-	-	12,619	-	-	-	-
	Chinook	-	-	-	-	-	415	-	-	-	-
1998	Sockeye	-	-	-	-	-	11,559	-	-	-	-
	Chinook	-	-	-	-	-	374	-	-	-	-
	Coho	-	-	-	-	-	72	-	-	-	-
1999	Sockeye	-	-	-	-	-	12,589	-	-	-	-
	Chinook	-	-	-	-	-	576	-	-	-	-
	Coho	-	-	-	-	-	82	-	-	-	-
2000a	Sockeye	-	-	-	-	-	9,784	-	-	-	-
	Chinook	-	-	-	-	-	624	-	-	-	-
	Coho	-	-	-	-	-	181	-	-	-	-
2000b	Ducks	4	2	2	2	4	23	21	0	0	-
	Spruce Grouse	6	9	4	0	2	17	12	0	0	-
	Geese	2	2	2	0	0	2	5	0	0	-
	Willow Ptarmigan	2	6	2	0	0	2	2	0	0	-
2001a	Sockeye	-	-	-	-	-	12,341	-	-	-	-
	Chinook	-	-	-	-	-	423	-	-	-	-
	Coho	-	-	-	-	-	291	-	-	-	-
	Chum	-	-	-	-	-	1	-	-	-	-
2001b	Rainbow Trout	30	32	30	3	-	841	1,178	7	2	-
	Arctic Grayling	35	34	33	5	6	805	564	3	1	-
	Whitefish	17	17	14	7	3	543	489	3	1	-
	Burbot	15	17	13	2	5	156	375	2	1	-
	Lake Trout	21	18	17	6	6	128	256	1	-	-
2002	Sockeye	-	-	-	-	-	7,449	-	-	-	-
	Chinook	-	-	-	-	-	459	-	-	-	-
	Coho	-	-	-	-	-	77	-	-	-	-
	Chum	-	-	-	-	-	1	-	-	-	-
2003	Sockeye	-	-	-	-	-	8,138	-	-	-	-
	Chinook	-	-	-	-	-	303	-	-	-	-
	Coho	-	-	-	-	-	19	-	-	-	-
2004	Sockeye	-	-	-	-	-	10,232	-	-	-	-
	Chinook	-	-	-	-	-	595	-	-	-	-
	Coho	-	-	-	-	-	89	-	-	-	-
2005	Sockeye	-	-	-	-	-	13,718	-	-	-	-
	Chinook	-	-	-	-	-	332	-	-	-	-
	Coho	-	-	-	-	-	15	-	-	-	-

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Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
2006	Sockeye	-	-	-	-	-	10,337	-	-	-	-
	Chinook	-	-	-	-	-	289	-	-	-	-
	Coho	-	-	-	-	-	41	-	-	-	-
2007	Sockeye	-	-	-	-	-	11,413	-	-	-	-
	Chinook	-	-	-	-	-	411	-	-	-	-
	Coho	-	-	-	-	-	35	-	-	-	-
2008	Sockeye	-	-	-	-	-	6,845	-	-	-	-
	Chinook	-	-	-	-	-	320	-	-	-	-
	Coho	-	-	-	-	-	10	-	-	-	-
2009	Sockeye	-	-	-	-	-	6,106	-	-	-	-
	Chinook	-	-	-	-	-	320	-	-	-	-
	Coho	-	-	-	-	-	28	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

For All Resources study years (1982-83, 1987), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (1988-1999, 2000a, 2001a, 2002-2009); ADFG 2011 (1987, 2000b); Simeone and Kari 2005 (2001b); Stratton and Georgette 1984 (1982-83).

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Table E-119. Gakona Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1982-83	All Resources	100	-	100	-	-	-	21,745	640	202	100.0%
	Salmon	96	-	83	-	-	2,269	12,522	368	116	57.6%
	Non-Salmon Fish	91	-	91	-	-	-	2,783	82	26	12.8%
	Large Land Mammals	87	-	57	-	-	35	4,932	145	46	22.7%
	Small Land Mammals	52	-	52	-	-	627	627	18	6	2.9%
	Migratory Birds	22	-	22	-	-	77	115	3	1	0.5%
	Upland Game Birds	35	-	35	-	-	263	132	4	1	0.6%
	Marine Invertebrates	9	-	9	-	-	0	0	0	0	0.0%
	Vegetation	87	-	87	-	-	-	634	19	6	2.9%
1987	All Resources	93	100	86	52	83	-	19,916	285	95	100.0%
	Salmon	68	67	58	22	36	1,195	6,074	87	29	30.5%
	Non-Salmon Fish	70	74	58	20	64	-	2,476	35	12	12.4%
	Large Land Mammals	64	70	62	41	48	58	9,936	142	48	49.9%
	Small Land Mammals	46	54	46	3	7	625	140	2	1	0.7%
	Migratory Birds	9	10	9	9	0	140	99	1	0	0.5%
	Marine Invertebrates	32	17	10	1	23	-	93	1	0	0.5%
	Vegetation	84	86	84	17	31	-	774	11	4	3.9%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

Sources: ADFG 2011 (1987); Stratton and Georgette 1984 (1982-83).

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Table E-120. Gakona Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds
Salmon										
1988	Salmon	-	-	-	-	-	4,787	-	-	-
1989	Salmon	-	-	-	-	-	4,072	-	-	-
1990	Salmon	-	-	-	-	-	6,278	-	-	-
1991	Salmon	-	-	-	-	-	4,917	-	-	-
1992	Salmon	-	-	-	-	-	5,258	-	-	-
1993	Salmon	-	-	-	-	-	6,579	-	-	-
1994	Salmon	-	-	-	-	-	5,231	-	-	-
1995	Salmon	-	-	-	-	-	6,023	-	-	-
1996	Salmon	-	-	-	-	-	5,257	-	-	-
1997	Salmon	-	-	-	-	-	8,446	-	-	-
1998	Salmon	-	-	-	-	-	6,561	-	-	-
1999	Salmon	-	-	-	-	-	6,179	-	-	-
2000	Salmon	-	-	-	-	-	6,771	-	-	-
2001a	Salmon	-	-	-	-	-	7,594	-	-	-
2002	Salmon	-	-	-	-	-	2,660	-	-	-
2003	Salmon	-	-	-	-	-	1,429	-	-	-
2004	Salmon	-	-	-	-	-	4,013	-	-	-
2005	Salmon	-	-	-	-	-	6,571	-	-	-
2006	Salmon	-	-	-	-	-	4,455	-	-	-
2007	Salmon	-	-	-	-	-	5,265	-	-	-
2008	Salmon	-	-	-	-	-	2,475	-	-	-
2009	Salmon	-	-	-	-	-	3,400	-	-	-
Non-Salmon Fish										
2001b	Non-Salmon Fish	58	72	58	8	16	2,022	2,039	24	8

Notes: *Estimated numbers represent individuals.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

Sources: ADFG 2009 (1988-2000, 2001a, 2002-2009); Simeone and Kari 2005 (2001b).

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Table E-121. Gakona Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1982-83	Sockeye	96	-	74	-	-	1,823	7,655	225	71	35.2%
	Chinook	74	-	65	-	-	200	3,612	106	33	16.6%
	Moose	44	-	13	-	-	4	2,217	65	21	10.2%
	Caribou	61	-	30	-	-	15	1,922	57	18	8.8%
	Greenling	39	-	39	-	-	528	1,267	37	12	5.8%
	Burbot	39	-	39	-	-	528	1,267	37	12	5.8%
	Coho	17	-	17	-	-	173	1,055	31	10	4.9%
	Arctic Grayling	74	-	74	-	-	854	598	18	6	2.8%
	Berries	87	-	87	-	-	-	517	15	5	2.4%
	Hare	48	-	48	-	-	297	446	13	4	2.1%
	Deer	17	-	13	-	-	10	440	13	4	2.0%
	Halibut	26	-	13	-	-	340	340	10	3	1.6%
	Whitefish	22	-	22	-	-	288	259	8	2	1.2%
	Black Bear	22	-	13	-	-	4	257	8	2	1.2%
1987	Caribou	51	67	45	25	13	35	4,609	66	22	23.1%
	Moose	54	55	14	14	41	10	4,500	64	22	22.6%
	Sockeye	58	49	48	20	20	953	3,901	56	19	19.6%
	Chinook	65	57	35	17	31	98	1,699	24	8	8.5%
	Dall Sheep	23	23	16	0	7	11	727	10	3	3.7%
	Berries	73	67	65	7	7	162	649	9	3	3.3%
	Arctic Grayling	58	59	51	3	15	725	508	7	2	2.6%
	Burbot	28	35	26	3	4	201	483	7	2	2.4%
	Pink	10	12	10	1	9	124	366	5	2	1.8%
	Halibut	61	12	12	1	52	-	342	5	2	1.7%
	Lake Trout	30	49	28	16	6	170	340	5	2	1.7%
	Rainbow Trout	19	33	19	3	0	179	251	4	1	1.3%
	Dolly Varden	19	19	19	1	0	221	199	3	1	1.0%
	Whitefish	17	17	17	7	0	215	194	3	1	1.0%
1988	Sockeye	-	-	-	-	-	4,410	-	-	-	-
	Coho	-	-	-	-	-	297	-	-	-	-
	Chinook	-	-	-	-	-	80	-	-	-	-
1989	Sockeye	-	-	-	-	-	3,941	-	-	-	-
	Chinook	-	-	-	-	-	131	-	-	-	-
1990	Sockeye	-	-	-	-	-	6,175	-	-	-	-
	Chinook	-	-	-	-	-	103	-	-	-	-
1991	Sockeye	-	-	-	-	-	4,624	-	-	-	-
	Chinook	-	-	-	-	-	294	-	-	-	-
1992	Sockeye	-	-	-	-	-	5,068	-	-	-	-
	Chinook	-	-	-	-	-	190	-	-	-	-
1993	Sockeye	-	-	-	-	-	6,252	-	-	-	-
	Chinook	-	-	-	-	-	328	-	-	-	-

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Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
1994	Sockeye	-	-	-	-	-	4,903	-	-	-	-
	Chinook	-	-	-	-	-	328	-	-	-	-
1995	Sockeye	-	-	-	-	-	5,625	-	-	-	-
	Chinook	-	-	-	-	-	395	-	-	-	-
	Coho	-	-	-	-	-	3	-	-	-	-
1996	Sockeye	-	-	-	-	-	5,166	-	-	-	-
	Chinook	-	-	-	-	-	81	-	-	-	-
	Coho	-	-	-	-	-	10	-	-	-	-
1997	Sockeye	-	-	-	-	-	8,064	-	-	-	-
	Chinook	-	-	-	-	-	208	-	-	-	-
	Coho	-	-	-	-	-	174	-	-	-	-
1998	Sockeye	-	-	-	-	-	6,451	-	-	-	-
	Chinook	-	-	-	-	-	104	-	-	-	-
	Coho	-	-	-	-	-	6	-	-	-	-
1999	Sockeye	-	-	-	-	-	5,308	-	-	-	-
	Coho	-	-	-	-	-	539	-	-	-	-
	Chinook	-	-	-	-	-	332	-	-	-	-
2000	Sockeye	-	-	-	-	-	6,395	-	-	-	-
	Chinook	-	-	-	-	-	309	-	-	-	-
	Coho	-	-	-	-	-	67	-	-	-	-
2001a	Sockeye	-	-	-	-	-	7,188	-	-	-	-
	Chinook	-	-	-	-	-	263	-	-	-	-
	Coho	-	-	-	-	-	126	-	-	-	-
	Chum	-	-	-	-	-	17	-	-	-	-
2001b	Whitefish	9	9	9	0	4	1,089	980	12	4	-
	Arctic Grayling	49	58	49	4	12	499	349	4	1	-
	Burbot	20	20	20	4	0	133	320	4	1	-
	Rainbow Trout	16	16	16	0	0	96	134	2	1	-
	Lake Trout	16	24	12	4	0	65	130	2	1	-
2002	Sockeye	-	-	-	-	-	2,474	-	-	-	-
	Chinook	-	-	-	-	-	186	-	-	-	-
2003	Sockeye	-	-	-	-	-	1,377	-	-	-	-
	Chinook	-	-	-	-	-	52	-	-	-	-
2004	Sockeye	-	-	-	-	-	3,865	-	-	-	-
	Chinook	-	-	-	-	-	148	-	-	-	-
2005	Sockeye	-	-	-	-	-	6,421	-	-	-	-
	Chinook	-	-	-	-	-	151	-	-	-	-
2006	Sockeye	-	-	-	-	-	4,306	-	-	-	-
	Chinook	-	-	-	-	-	145	-	-	-	-
	Coho	-	-	-	-	-	4	-	-	-	-
2007	Sockeye	-	-	-	-	-	5,030	-	-	-	-
	Chinook	-	-	-	-	-	235	-	-	-	-

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
2008	Sockeye	-	-	-	-	-	2,300	-	-	-	-
	Chinook	-	-	-	-	-	153	-	-	-	-
	Coho	-	-	-	-	-	21	-	-	-	-
2009	Sockeye	-	-	-	-	-	3,351	-	-	-	-
	Chinook	-	-	-	-	-	45	-	-	-	-
	Coho	-	-	-	-	-	5	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

For All Resources study years (1982-83, 1987), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (1988-2000, 2001a, 2002-2009); ADFG 2011 (1987); Simeone and Kari 2005 (2001b); Stratton and Georgette 1984 (1982-83).

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Table E-122. Glennallen Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1982-83	All Resources	100	-	80	-	-	-	61,157	227	67	100.0%
	Salmon	90	-	61	-	-	5,369	27,018	100	30	44.2%
	Non-Salmon Fish	59	-	47	-	-	-	6,009	22	7	9.8%
	Large Land Mammals	67	-	29	-	-	111	24,345	91	27	39.8%
	Small Land Mammals	28	-	26	-	-	659	912	3	1	1.5%
	Migratory Birds	4	-	4	-	-	26	40	0	0	0.1%
	Upland Game Birds	22	-	22	-	-	891	447	2	0	0.7%
	Marine Invertebrates	4	-	4	-	-	0	0	0	0	0.0%
	Vegetation	63	-	57	-	-	-	2,389	9	3	3.9%
1987	All Resources	100	92	92	64	86	-	46,684	275	99	100.0%
	Salmon	95	61	60	37	63	3,785	19,136	113	41	41.0%
	Non-Salmon Fish	63	43	42	17	27	-	6,152	36	13	13.2%
	Large Land Mammals	75	45	39	32	50	106	20,053	118	43	43.0%
	Small Land Mammals	8	13	8	4	0	306	366	2	1	0.8%
	Migratory Birds	4	3	3	0	1	40	25	0	0	0.1%
	Upland Game Birds	20	21	19	1	2	299	150	1	0	0.3%
	Marine Invertebrates	1	1	1	1	0	-	26	0	0	0.1%
	Vegetation	75	65	65	23	28	-	778	5	2	1.7%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

Sources: ADFG 2011 (1987); Stratton and Georgette 1984 (1982-83).

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Table E-123. Glennallen Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1986	Salmon	-	-	-	-	-	74	-	-	-
1987	Salmon	-	-	-	-	-	51	-	-	-
1988	Salmon	-	-	-	-	-	7,450	-	-	-
1989	Salmon	-	-	-	-	-	7,276	-	-	-
1990	Salmon	-	-	-	-	-	8,591	-	-	-
1991	Salmon	-	-	-	-	-	8,686	-	-	-
1992	Salmon	-	-	-	-	-	10,267	-	-	-
1993	Salmon	-	-	-	-	-	9,081	-	-	-
1994	Salmon	-	-	-	-	-	11,867	-	-	-
1995	Salmon	-	-	-	-	-	10,508	-	-	-
1996	Salmon	-	-	-	-	-	10,457	-	-	-
1997	Salmon	-	-	-	-	-	13,650	-	-	-
1998	Salmon	-	-	-	-	-	10,905	-	-	-
1999	Salmon	-	-	-	-	-	12,806	-	-	-
2000	Salmon	-	-	-	-	-	9,173	-	-	-
2001a	Salmon	-	-	-	-	-	9,543	-	-	-
2002	Salmon	-	-	-	-	-	7,257	-	-	-
2003	Salmon	-	-	-	-	-	4,378	-	-	-
2004	Salmon	-	-	-	-	-	5,831	-	-	-
2005	Salmon	-	-	-	-	-	9,083	-	-	-
2006	Salmon	-	-	-	-	-	8,467	-	-	-
2007	Salmon	-	-	-	-	-	8,608	-	-	-
2008	Salmon	-	-	-	-	-	3,198	-	-	-
2009	Salmon	-	-	-	-	-	3,316	-	-	-
Non-Salmon Fish										
2001b	Non-Salmon Fish	39	45	37	7	10	1,494	1,638	8	3

Sources: ADFG 2009 (1986-2000, 2001a, 2002-2009); Simeone and Kari 2005 (2001b).

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Table E-124. Glennallen Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1982-83	Sockeye	77	-	45	-	-	4,441	18,652	69	20	30.5%
	Moose	39	-	12	-	-	32	15,823	59	17	25.9%
	Caribou	51	-	14	-	-	58	7,543	28	8	12.3%
	Chinook	63	-	47	-	-	295	5,345	20	6	8.7%
	Coho	14	-	12	-	-	433	2,639	10	3	4.3%
	Halibut	16	-	4	-	-	-	2,636	10	3	4.3%
	Berries	57	-	55	-	-	-	1,783	7	2	2.9%
	Arctic Grayling	41	-	39	-	-	2,152	1,506	6	2	2.5%
	Burbot	14	-	8	-	-	401	963	4	1	1.6%
	Hare	26	-	24	-	-	522	783	3	1	1.3%
	Deer	6	-	4	-	-	16	673	3	1	1.1%
	Plants/Greens/Mushrooms	28	-	20	-	-	-	605	2	1	1.0%
1986	Sockeye	-	-	-	-	-	68	-	-	-	-
	Chinook	-	-	-	-	-	6	-	-	-	-
1987a	Sockeye	-	-	-	-	-	45	-	-	-	-
	Chinook	-	-	-	-	-	5	-	-	-	-
	Coho	-	-	-	-	-	1	-	-	-	-
1987b	Sockeye	83	35	35	27	57	3,138	12,849	76	27	27.5%
	Moose	49	40	14	24	36	24	10,688	63	23	22.9%
	Caribou	57	43	33	17	25	68	8,840	52	19	18.9%
	Chinook	47	41	36	18	14	309	5,345	31	11	11.4%
	Halibut	22	3	3	3	20	-	1,645	10	4	3.5%
	Rainbow Trout	16	20	16	6	0	1,099	1,538	9	3	3.3%
	Arctic Grayling	37	28	27	10	10	2,119	1,483	9	3	3.2%
	Berries	57	52	52	19	14	171	686	4	1	1.5%
1988	Sockeye	-	-	-	-	-	7,112	-	-	-	-
	Chinook	-	-	-	-	-	336	-	-	-	-
	Coho	-	-	-	-	-	1	-	-	-	-
1989	Sockeye	-	-	-	-	-	7,054	-	-	-	-
	Chinook	-	-	-	-	-	222	-	-	-	-
1990	Sockeye	-	-	-	-	-	8,297	-	-	-	-
	Chinook	-	-	-	-	-	271	-	-	-	-
	Coho	-	-	-	-	-	22	-	-	-	-
1991	Sockeye	-	-	-	-	-	8,387	-	-	-	-
	Chinook	-	-	-	-	-	299	-	-	-	-
1992	Sockeye	-	-	-	-	-	9,924	-	-	-	-
	Chinook	-	-	-	-	-	328	-	-	-	-
	Coho	-	-	-	-	-	15	-	-	-	-
1993	Sockeye	-	-	-	-	-	8,805	-	-	-	-

Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
	Chinook	-	-	-	-	-	272	-	-	-	-
	Coho	-	-	-	-	-	4	-	-	-	-
1994	Sockeye	-	-	-	-	-	11,462	-	-	-	-
	Chinook	-	-	-	-	-	399	-	-	-	-
	Coho	-	-	-	-	-	6	-	-	-	-
1995	Sockeye	-	-	-	-	-	10,065	-	-	-	-
	Chinook	-	-	-	-	-	372	-	-	-	-
	Coho	-	-	-	-	-	71	-	-	-	-
1996	Sockeye	-	-	-	-	-	10,067	-	-	-	-
	Chinook	-	-	-	-	-	332	-	-	-	-
	Coho	-	-	-	-	-	57	-	-	-	-
1997	Sockeye	-	-	-	-	-	13,235	-	-	-	-
	Chinook	-	-	-	-	-	415	-	-	-	-
1998	Sockeye	-	-	-	-	-	10,510	-	-	-	-
	Chinook	-	-	-	-	-	376	-	-	-	-
	Coho	-	-	-	-	-	19	-	-	-	-
1999	Sockeye	-	-	-	-	-	12,302	-	-	-	-
	Chinook	-	-	-	-	-	441	-	-	-	-
	Coho	-	-	-	-	-	64	-	-	-	-
2000	Sockeye	-	-	-	-	-	8,065	-	-	-	-
	Chinook	-	-	-	-	-	1,028	-	-	-	-
	Coho	-	-	-	-	-	80	-	-	-	-
2001a	Sockeye	-	-	-	-	-	8,753	-	-	-	-
	Chinook	-	-	-	-	-	413	-	-	-	-
	Coho	-	-	-	-	-	376	-	-	-	-
2001b	Lake Trout	18	23	16	2	3	349	488	2	1	-
	Burbot	16	23	16	2	2	421	477	2	1	-
	Dolly Varden	23	31	23	0	2	487	341	2	1	-
	Arctic Grayling	13	15	11	3	3	79	190	1	0	-
	Rainbow Trout	15	21	13	2	0	89	178	1	0	-
2002	Sockeye	-	-	-	-	-	6,621	-	-	-	-
	Chinook	-	-	-	-	-	461	-	-	-	-
	Coho	-	-	-	-	-	175	-	-	-	-
2003	Sockeye	-	-	-	-	-	4,113	-	-	-	-
	Chinook	-	-	-	-	-	169	-	-	-	-
	Coho	-	-	-	-	-	96	-	-	-	-
2004	Sockeye	-	-	-	-	-	5,386	-	-	-	-
	Chinook	-	-	-	-	-	408	-	-	-	-
	Coho	-	-	-	-	-	38	-	-	-	-
2005	Sockeye	-	-	-	-	-	8,676	-	-	-	-
	Chinook	-	-	-	-	-	380	-	-	-	-

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Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
	Coho	-	-	-	-	-	26	-	-	-	-
2006	Sockeye	-	-	-	-	-	7,868	-	-	-	-
	Chinook	-	-	-	-	-	574	-	-	-	-
	Coho	-	-	-	-	-	24	-	-	-	-
2007	Sockeye	-	-	-	-	-	7,971	-	-	-	-
	Chinook	-	-	-	-	-	511	-	-	-	-
	Coho	-	-	-	-	-	126	-	-	-	-
2008	Sockeye	-	-	-	-	-	2,923	-	-	-	-
	Chinook	-	-	-	-	-	178	-	-	-	-
	Coho	-	-	-	-	-	97	-	-	-	-
2009	Sockeye	-	-	-	-	-	3,160	-	-	-	-
	Chinook	-	-	-	-	-	144	-	-	-	-
	Coho	-	-	-	-	-	12	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

For All Resources study years (1982-83, 1987b), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (1986,1987a, 1988-2000, 2001a, 2002-2009); ADFG 2011 (1987b); Simeone and Kari 2005 (2001b); Stratton and Georgette 1984 (1982-83).

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GULKANA

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Table E-125. Gulkana Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1982-83	All Resources	100	-	89	-	-	-	13,524	315	111	100.0%
	Salmon	81	-	72	-	-	1,218	6,971	162	57	51.5%
	Non-Salmon Fish	44	-	44	-	-	-	1,408	33	12	10.4%
	Large Land Mammals	44	-	19	-	-	14	3,996	93	33	29.5%
	Small Land Mammals	42	-	36	-	-	299	352	8	3	2.6%
	Migratory Birds	8	-	8	-	-	44	66	2	1	0.5%
	Upland Game Birds	22	-	22	-	-	145	72	2	1	0.5%
	Marine Invertebrates	3	-	3	-	-	0	0	0	0	0.0%
	Vegetation	81	-	81	-	-	-	659	15	5	4.9%
1987	All Resources	95	100	90	40	80	-	10,237	465	153	100.0%
	Salmon	85	70	60	15	45	1,296	5,777	263	86	56.4%
	Non-Salmon Fish	70	70	70	15	20	-	629	29	9	6.1%
	Large Land Mammals	70	70	35	15	45	13	3,036	138	45	29.7%
	Small Land Mammals	55	50	50	10	15	308	527	24	8	5.1%
	Migratory Birds	25	15	15	10	10	58	63	3	1	0.6%
	Upland Game Birds	20	20	20	5	0	58	29	1	0	0.3%
	Vegetation	70	70	70	20	30	-	176	8	3	1.7%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

Sources: ADFG 2011 (1987); Stratton and Georgette 1984 (1982-83).

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Table E-126. Gulkana Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1996	Salmon	-	-	-	-	-	28	-	-	-
1999	Salmon	-	-	-	-	-	8	-	-	-
2002	Salmon	-	-	-	-	-	410	-	-	-
2003	Salmon	-	-	-	-	-	521	-	-	-
2004	Salmon	-	-	-	-	-	1,044	-	-	-
2008	Salmon	-	-	-	-	-	1,382	-	-	-
2009	Salmon	-	-	-	-	-	1,544	-	-	-
Non-Salmon Fish										
2001	Non-Salmon Fish	55	55	46	27	9	450	431	13	7
Migratory Birds										
2000	Migratory Birds	11	11	0	0	11	0	0	0	0

Sources: ADFG 2009 (1996,1999, 2002-2004, 2008-2009); ADFG 2011 (2000); Simeone and Kari 2005 (2001).

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Table E-127. Gulkana Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1982-83	Sockeye	69		61			1,050	4,410	103	36	32.6%
	Moose	28	-	14	-	-	6	2,986	69	25	22.1%
	Chinook	58	-	58	-	-	128	2,313	54	19	17.1%
	Caribou	33	-	11	-	-	7	932	22	8	6.9%
	Berries	78	-	78	-	-	-	644	15	5	4.8%
	Halibut	11	-	11	-	-	-	366	9	3	2.7%
	Longnose Sucker	6	-	6	-	-	481	337	8	3	2.5%
	Arctic Grayling	33	-	33	-	-	385	269	6	2	2.0%
	Coho	17	-	17	-	-	41	248	6	2	1.8%
	Hare	25	-	19	-	-	149	224	5	2	1.7%
	Whitefish	14	-	14	-	-	149	135	3	1	1.0%
1987	Sockeye	85	65	55	10	45	1,242	5,086	231	76	49.7%
	Moose	55	55	20	10	35	4	1,980	90	30	19.3%
	Caribou	55	50	30	10	30	8	1,001	46	15	9.8%
	Chinook	55	55	40	10	20	36	629	29	9	6.1%
	Muskrat	15	15	10	0	10	132	238	11	4	2.3%
	Berries	55	55	55	10	10	42	169	8	3	1.7%
	Burbot	20	15	15	0	5	67	161	7	2	1.6%

Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
	Whitefish	25	20	15	5	10	176	158	7	2	1.5%
	Arctic Grayling	65	65	65	10	10	209	146	7	2	1.4%
	Hare	35	30	30	10	10	81	122	6	2	1.2%
	Beaver	15	15	10	0	10	8	116	5	2	1.1%
1996	Sockeye	-	-	-	-	-	25	-	-	-	-
	Chinook	-	-	-	-	-	3	-	-	-	-
1999	Sockeye	-	-	-	-	-	8	-	-	-	-
2000	Ducks	11	11	0	0	11	0	0	0	0	-
2001	Arctic Grayling	46	36	36	27	0	360	252	8	4	-
	Burbot	18	9	9	0	0	45	108	3	2	-
	Rainbow Trout	18	18	18	0	0	42	59	2	1	-
	Steelhead	9	9	9	0	9	3	13	0	0	-
	Whitefish	0	9	0	0	0	0	0	0	0	-
2002	Sockeye	-	-	-	-	-	395	-	-	-	-
	Chinook	-	-	-	-	-	15	-	-	-	-
2003	Sockeye	-	-	-	-	-	390	-	-	-	-
	Chinook	-	-	-	-	-	131	-	-	-	-
2004	Sockeye	-	-	-	-	-	988	-	-	-	-
	Chinook	-	-	-	-	-	56	-	-	-	-
2008	Sockeye	-	-	-	-	-	1,212	-	-	-	-
	Chinook	-	-	-	-	-	170	-	-	-	-
2009	Sockeye	-	-	-	-	-	1,500	-	-	-	-
	Chinook	-	-	-	-	-	44	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

For All Resources study years (1982-83, 1987), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (1996,1999, 2002-2004, 2008-2009); ADFG 2011 (1987, 2000); Simeone and Kari 2005 (2001); Stratton and Georgette 1984 (1982-83).

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KENNY LAKE

Table E-128. Kenny Lake Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1982-83	All Resources	100	-	100	-	-	-	17,413	249	75	100.0%
	Salmon	92	-	83	-	-	1,342	6,957	99	30	40.0%
	Non-Salmon Fish	67	-	58	-	-	-	671	10	3	3.9%
	Large Land Mammals	33	-	17	-	-	29	7,688	110	33	44.2%
	Small Land Mammals	25	-	25	-	-	484	665	10	3	3.8%
	Migratory Birds	8	-	8	-	-	35	53	1	0	0.3%
	Upland Game Birds	42	-	42	-	-	309	155	2	1	0.9%
	Vegetation	92	-	92	-	-	-	1,225	18	5	7.0%
1987	All Resources	100	100	100	29	65	-	43,692	470	136	100.0%
	Salmon	65	65	57	11	26	4,315	21,616	232	67	49.5%
	Non-Salmon Fish	88	83	83	8	24	-	4,993	54	16	11.4%
	Large Land Mammals	73	73	61	16	30	81	15,061	162	47	34.5%
	Small Land Mammals	28	39	28	2	5	337	196	2	1	0.4%
	Migratory Birds	5	5	5	0	0	91	64	1	0	0.1%
	Upland Game Birds	44	44	44	8	1	968	484	5	2	1.1%
	Vegetation	80	80	80	13	4	-	1,279	14	4	2.9%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

Sources: ADFG 2011 (1987); Stratton and Georgette 1984 (1982-83).

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Table E-129. Kenny Lake Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1996	Salmon	-	-	-	-	-	96	-	-	-
1998	Salmon	-	-	-	-	-	161	-	-	-
2002	Salmon	-	-	-	-	-	2,528	-	-	-
2003	Salmon	-	-	-	-	-	3,628	-	-	-
2004	Salmon	-	-	-	-	-	3,029	-	-	-
2008	Salmon	-	-	-	-	-	1,849	-	-	-
Non-Salmon Fish										
2001	Non-Salmon Fish	59	68	59	14	0	1,352	1,416	10	5

Sources: ADFG 2009 (1996, 1998, 2002-04, 2008); Simeone and Kari 2005 (2001).

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Table E-130. Kenny Lake Subsistence Harvest Estimates by Selected Species, All Study Years

Study	Resource*	Percentage of Households	Estimated Harvest	of Tot al Ha rve

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Year		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1982-83	Moose	25	-	8	-	-	12	5,833	83	25	33.5%
	Sockeye	92	-	83	-	-	1,225	5,145	74	22	29.5%
	Chinook	67	-	67	-	-	99	1,795	26	8	10.3%
	Caribou	17	-	8	-	-	12	1,517	22	7	8.7%
	Berries	83	-	83	-	-	-	1,167	17	5	6.7%
	Hare	17	-	17	-	-	286	429	6	2	2.5%
	Black Bear	8	-	8	-	-	6	338	5	1	1.9%
	Arctic Grayling	33	-	33	-	-	373	261	4	1	1.5%
	Rainbow Trout	17	-	17	-	-	187	261	4	1	1.5%
	Lynx	17	-	17	-	-	53	210	3	1	1.2%
1987	Sockeye	65	65	57	9	26	3,849	15,762	169	49	36.1%
	Moose	37	44	17	15	20	16	7,216	78	23	16.5%
	Caribou	41	40	37	1	4	43	5,578	60	17	12.8%
	Chinook	52	52	52	8	10	285	4,940	53	15	11.3%
	Char	-	-	-	-	0	1,217	2,029	22	6	4.6%
	Black Bear	11	11	11	0	0	10	1,749	19	5	4.0%
	Lake Trout	32	32	32	1	0	849	1,699	18	5	3.9%
	Halibut	44	38	38	2	24	-	1,636	18	5	3.7%
	Berries	68	68	68	13	4	256	1,023	11	3	2.3%
	Coho	17	17	17	0	1	134	720	8	2	1.6%
	Arctic Grayling	72	72	72	1	0	996	697	8	2	1.6%
	Deer	11	11	11	2	0	12	517	6	2	1.2%
1996	Sockeye	-	-	-	-	-	96	-	-	-	-
1998	Sockeye	-	-	-	-	-	158	-	-	-	-
	Chinook	-	-	-	-	-	3	-	-	-	-
2001	Rainbow Trout	46	59	46	0	0	475	664	5	2	-
	Dolly Varden	41	46	41	0	0	436	392	3	1	-
	Arctic Grayling	32	41	27	5	0	410	287	2	1	-
	Burbot	18	5	9	9	0	20	47	0	0	-
	Lake Trout	5	9	5	0	0	13	26	0	0	-
2002	Sockeye	-	-	-	-	-	2,276	-	-	-	-
	Chinook	-	-	-	-	-	234	-	-	-	-
	Coho	-	-	-	-	-	18	-	-	-	-
2003	Sockeye	-	-	-	-	-	3,464	-	-	-	-
	Chinook	-	-	-	-	-	131	-	-	-	-
	Coho	-	-	-	-	-	33	-	-	-	-
2004	Sockeye	-	-	-	-	-	2,915	-	-	-	-
	Chinook	-	-	-	-	-	108	-	-	-	-
	Coho	-	-	-	-	-	6	-	-	-	-
2008	Sockeye	-	-	-	-	-	1,633	-	-	-	-
	Coho	-	-	-	-	-	169	-	-	-	-
	Chinook	-	-	-	-	-	47	-	-	-	-
2009	Sockeye	-	-	-	-	-	2,648	-	-	-	-

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
	Chinook	-	-	-	-	-	160	-	-	-	-
	Coho	-	-	-	-	-	1	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

For All Resources study years (1982-83, 1987), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (1996, 1998, 2002-04, 2008-09); ADFG 2011 (1987); Simeone and Kari 2005 (2001); Stratton and Georgette 1984 (1982-83).

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MENTASTA LAKE

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Table E-131. Mentasta Lake Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1982-83	All Resources	100	-	90	-	-	-	11,012	393	115	100.0%
	Salmon	95	-	16	-	-	421	2,001	71	21	18.2%
	Non-Salmon Fish	90	-	26	-	-	-	559	20	6	5.1%
	Large Land Mammals	90	-	37	-	-	34	6,119	219	64	55.6%
	Small Land Mammals	63	-	63	-	-	311	538	19	6	4.9%
	Migratory Birds	37	-	37	-	-	103	170	6	2	1.5%
	Upland Game Birds	37	-	37	-	-	115	57	2	1	0.5%
	Marine Invertebrates	11	-	5	-	-	0	0	0	0	0.0%
	Vegetation	79	-	79	-	-	-	1,567	56	16	14.2%
1987	All Resources	96	92	92	58	83	-	9,672	387	125	100.0%
	Salmon	71	29	25	21	58	658	2,736	109	36	28.3%
	Non-Salmon Fish	83	67	63	50	46	-	2,058	82	27	21.3%
	Large Land Mammals	67	54	29	25	63	14	3,094	124	40	32.0%
	Small Land Mammals	58	54	54	29	13	200	323	13	4	3.3%
	Migratory Birds	29	13	13	13	21	54	46	2	1	0.5%
	Upland Game Birds	67	50	50	13	21	181	91	4	1	0.9%
	Marine Invertebrates	4	0	0	0	4	0	0	0	0	0.0%
	Vegetation	88	79	79	38	17	-	1,323	53	17	13.7%
1987***	All Resources	100	100	100	70	80	-	4,962	451	188	100.0%
	Salmon	90	50	50	30	70	145	805	73	30	16.2%
	Non-Salmon Fish	100	100	100	30	40	-	988	90	37	19.9%
	Large Land Mammals	90	90	40	40	80	17	2,552	232	97	51.4%
	Small Land Mammals	60	60	60	10	0	147	73	7	3	1.5%
	Migratory Birds	30	20	20	10	10	55	51	5	2	1.0%
	Upland Game Birds	60	50	50	0	10	212	106	10	4	2.1%
	Vegetation	90	90	90	30	30	-	387	35	15	7.8%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
***Data collected in Mentasta Pass.

Sources: ADFG 2011 (1987); Stratton and Georgette 1984 (1982-83).

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Table E-132. Mentasta Lake Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1989	Salmon	-	-	-	-	-	38	-	-	-
1990	Salmon	-	-	-	-	-	50	-	-	-
1991	Salmon	-	-	-	-	-	90	-	-	-
1992	Salmon	-	-	-	-	-	285	-	-	-
1993	Salmon	-	-	-	-	-	320	-	-	-
1995	Salmon	-	-	-	-	-	27	-	-	-
1997	Salmon	-	-	-	-	-	427	-	-	-
1998	Salmon	-	-	-	-	-	595	-	-	-
1999	Salmon	-	-	-	-	-	110	-	-	-
2001a	Salmon	-	-	-	-	-	62	-	-	-
2002	Salmon	-	-	-	-	-	220	-	-	-
2003	Salmon	-	-	-	-	-	209	-	-	-
2004	Salmon	-	-	-	-	-	260	-	-	-
2005	Salmon	-	-	-	-	-	380	-	-	-
2006	Salmon	-	-	-	-	-	33	-	-	-
2008	Salmon	-	-	-	-	-	267	-	-	-
2009	Salmon	-	-	-	-	-	341	-	-	-
Non-Salmon Fish										
2001b	Non-Salmon Fish	75	69	69	41	28	1,168	967	18	7

Sources: ADFG 2009 (1989-93, 1995, 1997-99, 2001a, 2002-06, 2008-09); Simeone and Kari 2005 (2001b).

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Table E-133. Mentasta Lake Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1982-83	Moose	90	-	32	-	-	9	4,421	158	46	40.1%
	Sockeye	84	-	16	-	-	402	1,690	60	18	15.3%
	Berries	79	-	79	-	-	-	1,303	47	14	11.8%
	Caribou	58	-	11	-	-	4	575	21	6	5.2%
	Black Bear	16	-	16	-	-	7	427	15	4	3.9%
	Dall Sheep	16	-	11	-	-	6	383	14	4	3.5%
	Deer	5	-	5	-	-	7	313	11	3	2.8%
	Chinook	47	-	16	-	-	16	293	10	3	2.7%
	Plants/Greens/ Mushrooms	42	-	42	-	-	-	264	9	3	2.4%
	Beaver	11	-	11	-	-	25	219	8	2	2.0%
	Arctic Grayling	26	-	21	-	-	239	167	6	2	1.5%
	Hare	42	-	42	-	-	102	153	5	2	1.4%
	Ducks	37	-	37	-	-	99	148	5	2	1.3%
	Whitefish	79	-	21	-	-	162	146	5	2	1.3%
	Porcupine	42	-	42	-	-	25	113	4	1	1.0%
1987a	Sockeye	54	25	21	17	46	646	2,645	106	34	27.3%
	Moose	63	46	17	13	50	4	1,875	75	24	19.4%
	Whitefish	75	63	58	42	42	1,495	1,345	54	17	13.9%
	Caribou	58	54	21	21	42	9	1,219	49	16	12.6%
	Berries	79	67	67	38	13	224	898	36	12	9.3%
	Plants/Greens/ Mushrooms	67	67	67	29	4	-	426	17	6	4.4%
	Burbot	21	13	13	8	13	132	317	13	4	3.3%
	Arctic Grayling	54	46	46	25	17	426	298	12	4	3.1%
	Hare	42	33	33	8	8	153	230	9	3	2.4%
	Porcupine	42	38	38	25	13	21	94	4	1	1.0%
1987b****	Moose	70	80	30	20	50	3	1,485	135	56	29.9%
	Caribou	70	40	20	30	60	4	572	52	22	11.5%
	Whitefish	40	30	30	20	10	591	532	48	20	10.7%
	Sockeye	70	20	20	0	50	114	468	43	18	9.4%
	Arctic Grayling	90	90	90	0	0	444	311	28	12	6.3%
	Berries	90	80	80	20	30	72	286	26	11	5.8%
	Chinook	40	30	30	20	10	14	248	23	9	5.0%
	Deer	20	10	10	10	20	4	187	17	7	3.8%
	Black Bear	10	20	10	10	0	2	165	15	6	3.3%
	Dall Sheep	20	20	10	0	10	2	143	13	5	2.9%
	Plants/Greens/ Mushrooms	50	50	50	10	0	-	101	9	4	2.0%
	Coho	10	10	10	10	10	17	88	8	3	1.8%
	Ptarmigan	30	30	30	0	0	130	65	6	2	1.3%

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Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
	Northern Pike	40	30	30	0	10	19	52	5	2	1.0%
1989	Sockeye	-	-	-	-	-	38	-	-	-	-
1990	Sockeye	-	-	-	-	-	50	-	-	-	-
1991	Sockeye	-	-	-	-	-	90	-	-	-	-
1992	Sockeye	-	-	-	-	-	245	-	-	-	-
	Coho	-	-	-	-	-	39	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
1993	Sockeye	-	-	-	-	-	320	-	-	-	-
1995	Sockeye	-	-	-	-	-	27	-	-	-	-
1997	Sockeye	-	-	-	-	-	427	-	-	-	-
1998	Sockeye	-	-	-	-	-	595	-	-	-	-
1999	Sockeye	-	-	-	-	-	110	-	-	-	-
2001a	Sockeye	-	-	-	-	-	61	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
2001b	Whitefish	63	56	53	41	19	680	612	11	4	-
	Arctic Grayling	47	44	44	22	16	467	327	6	2	-
	Lake Trout	6	6	6	0	3	7	14	0	0	-
	Dolly Varden	6	6	6	0	0	12	11	0	0	-
	Burbot	3	3	3	0	0	2	4	0	0	-
2002	Sockeye	-	-	-	-	-	219	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
2003	Sockeye	-	-	-	-	-	209	-	-	-	-
2004	Sockeye	-	-	-	-	-	209	-	-	-	-
	Coho	-	-	-	-	-	27	-	-	-	-
	Chinook	-	-	-	-	-	24	-	-	-	-
2005	Sockeye	-	-	-	-	-	348	-	-	-	-
	Chinook	-	-	-	-	-	32	-	-	-	-
2006	Sockeye	-	-	-	-	-	28	-	-	-	-
	Chinook	-	-	-	-	-	5	-	-	-	-
2008	Sockeye	-	-	-	-	-	255	-	-	-	-
	Chinook	-	-	-	-	-	9	-	-	-	-
	Coho	-	-	-	-	-	3	-	-	-	-
2009	Sockeye	-	-	-	-	-	271	-	-	-	-
	Chinook	-	-	-	-	-	70	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
****Data collected in Mentasta Pass.

Species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (1989-93, 1995, 1997-99, 2001a, 2002-06, 2008-09); ADFG 2011 (1987a, 1987b); Simeone and Kari 2005 (for 2001b); Stratton and Georgette 1984 (1982-83).

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Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	

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Table E-134. Nabesna Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1982-83	All Resources	100	-	100	-	-	-	12,239	1,224	280	100.0%
	Salmon	100	-	50	-	-	815	3,458	346	79	28.3%
	Non-Salmon Fish	100	-	63	-	-	-	2,889	289	66	23.6%
	Large Land Mammals	88	-	63	-	-	25	5,084	508	116	41.5%
	Small Land Mammals	75	-	75	-	-	421	589	59	13	4.8%
	Migratory Birds	0	-	0	-	-	0	0	0	0	0.0%
	Upland Game Birds	63	-	50	-	-	79	39	4	1	0.3%
	Marine Invertebrates	0	-	0	-	-	0	0	0	0	0.0%
	Vegetation	88	-	88	-	-	-	180	18	4	1.5%
1987	All Resources	100	92	92	67	92	-	9,212	709	250	100.0%
	Salmon	100	58	50	50	67	775	3,435	264	93	37.3%
	Non-Salmon Fish	92	83	83	42	42	-	1,250	96	34	13.6%
	Large Land Mammals	100	83	75	42	75	21	4,128	318	112	44.8%
	Small Land Mammals	58	67	58	8	0	121	7	1	0	0.1%
	Upland Game Birds	50	50	50	8	8	212	106	8	3	1.2%
	Vegetation	100	92	92	33	42	-	287	22	8	3.1%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

Nabesna studies are reported as Nabesna Road.

Sources: ADFG 2011 (1987); Stratton and Georgette 1984 (1982-83).

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Table E-135. Nabesna Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1994	Salmon	-	-	-	-	-	43	-	-	-
1997	Salmon	-	-	-	-	-	25	-	-	-
2000	Salmon	-	-	-	-	-	19	-	-	-
2002	Salmon	-	-	-	-	-	5	-	-	-
2003	Salmon	-	-	-	-	-	111	-	-	-
2004	Salmon	-	-	-	-	-	268	-	-	-

Nabesna studies are reported as Nabesna Road.

Sources: ADFG 2009 (1994, 1997, 2000, 2002-04).

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Table E-136. Nabesna Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1982-83	Sockeye	100	-	50	-	-	813	3,413	341	78	27.9%
	Moose	75	-	38	-	-	6	3,125	313	71	25.5%
	Whitefish	50	-	25	-	-	1,969	1,772	177	41	14.5%
	Caribou	75	-	63	-	-	11	1,463	146	33	12.0%
	Burbot	63	-	50	-	-	313	750	75	17	6.1%
	Dall Sheep	50	-	25	-	-	6	406	41	9	3.3%
	Lynx	63	-	63	-	-	94	375	38	9	3.1%
	Berries	88	-	88	-	-	-	174	17	4	1.4%
	Lake Trout	38	-	25	-	-	75	150	15	3	1.2%
	Arctic Grayling	88	-	50	-	-	200	140	14	3	1.1%
1987	Sockeye	92	42	33	42	67	720	2,950	227	80	32.0%
	Moose	92	67	42	42	67	5	2,438	188	66	26.5%
	Caribou	58	58	42	25	50	11	1,408	108	38	15.3%
	Burbot	75	75	75	33	25	182	437	34	12	4.7%
	Lake Trout	58	58	58	33	17	169	338	26	9	3.7%
	Chinook	42	42	42	17	8	16	282	22	8	3.1%
	Dall Sheep	83	50	25	17	75	4	282	22	8	3.1%
	Arctic Grayling	92	83	83	33	33	384	268	21	7	2.9%
	Berries	67	67	67	33	33	52	207	16	6	2.2%
	Coho	33	25	25	17	17	38	203	16	6	2.2%
	Whitefish	17	17	8	0	8	217	195	15	5	2.1%
1994	Sockeye	-	-	-	-	-	41	-	-	-	-

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
	Chinook	-	-	-	-	-	2	-	-	-	-
1997	Sockeye	-	-	-	-	-	25	-	-	-	-
2000	Sockeye	-	-	-	-	-	19	-	-	-	-
2002	Sockeye	-	-	-	-	-	5	-	-	-	-
2003	Sockeye	-	-	-	-	-	111	-	-	-	-
2004	Sockeye	-	-	-	-	-	267	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).

For All Resources study years (1982-83, 1987), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Nabesna studies are reported as Nabesna Road.

Sources: ADFG 2009 (1994, 1997, 2000, 2002-04); ADFG 2011 (1987); Stratton and Georgette 1984 (1982-83).

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Table E-137. Paxson Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1982-83***	All Resources	100	-	100	-	-	-	6,822	310	124	100.0%
	Salmon	90	-	60	-	-	139	1,047	48	19	15.3%
	Non-Salmon Fish	100	-	90	-	-	-	1,622	74	29	23.8%
	Large Land Mammals	70	-	40	-	-	11	3,058	139	56	44.8%
	Small Land Mammals	40	-	40	-	-	488	147	7	3	2.2%
	Migratory Birds	30	-	30	-	-	154	300	14	5	4.4%
	Upland Game Birds	80	-	70	-	-	438	219	10	4	3.2%
	Marine Invertebrates	10	-	10	-	-	0	0	0	0	0.0%
	Vegetation	80	-	80	-	-	-	429	20	8	6.3%
1987	All Resources	93	100	93	57	71	-	11,236	661	289	100.0%
	Salmon	64	57	43	29	50	317	1,730	102	45	15.4%
	Non-Salmon Fish	79	86	79	29	29	-	2,432	143	63	21.6%
	Large Land Mammals	86	100	50	43	57	23	5,404	318	139	48.1%
	Small Land Mammals	57	57	57	14	0	406	971	57	25	8.6%
	Migratory Birds	43	43	43	21	0	425	407	24	10	3.6%
	Upland Game Birds	71	71	71	21	0	353	177	10	5	1.6%
	Vegetation	79	79	79	21	0	-	115	7	3	1.0%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
***Harvest data combined for two communities, Paxson and Sourdough.

Sources: ADFG 2011 (1987); Stratton and Georgette 1984 (1982-83).

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Table E-138. Paxson Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1985	Salmon	-	-	-	-	-	376	-	-	-
1989	Salmon	-	-	-	-	-	147	-	-	-
1990	Salmon	-	-	-	-	-	44	-	-	-
1991	Salmon	-	-	-	-	-	58	-	-	-
1992	Salmon	-	-	-	-	-	224	-	-	-
1993	Salmon	-	-	-	-	-	281	-	-	-
1994	Salmon	-	-	-	-	-	29	-	-	-
1995	Salmon	-	-	-	-	-	68	-	-	-
1996	Salmon	-	-	-	-	-	248	-	-	-
1997	Salmon	-	-	-	-	-	395	-	-	-
1998	Salmon	-	-	-	-	-	156	-	-	-
1999	Salmon	-	-	-	-	-	76	-	-	-
2000	Salmon	-	-	-	-	-	234	-	-	-
2001a	Salmon	-	-	-	-	-	68	-	-	-
2002	Salmon	-	-	-	-	-	25	-	-	-
2003	Salmon	-	-	-	-	-	409	-	-	-
2004	Salmon	-	-	-	-	-	278	-	-	-
2005	Salmon	-	-	-	-	-	277	-	-	-
2006	Salmon	-	-	-	-	-	58	-	-	-
2007	Salmon	-	-	-	-	-	4	-	-	-
2008	Salmon	-	-	-	-	-	223	-	-	-
2009	Salmon	-	-	-	-	-	99	-	-	-
Non-Salmon Fish										
2001b	Non-Salmon Fish	60	70	60	30	20	246	240	11	6
Sources: ADFG 2009 (1985, 1989-2000, 2001a, 2002-2009); Simeone and Kari 2005 (2001b).										

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Table E-139. Paxson Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1982-83****	Moose	60	-	20	-	-	4	2,200	100	40	32.2%
	Caribou	30	-	20	-	-	7	858	39	16	12.6%
	Burbot	60	-	50	-	-	218	523	24	10	7.7%
	Chinook	50	-	40	-	-	29	518	24	9	7.6%
	Berries	80	-	80	-	-	-	414	19	8	6.1%
	Arctic Grayling	70	-	60	-	-	508	356	16	6	5.2%
	Sockeye	60	-	20	-	-	75	314	14	6	4.6%
	Whitefish	30	-	30	-	-	275	248	11	5	3.6%
	Halibut	20	-	20	-	-	-	220	10	4	3.2%
	Coho	30	-	30	-	-	35	215	10	4	3.2%
	Lake Trout	50	-	50	-	-	106	211	10	4	3.1%
	Ducks	30	-	30	-	-	134	201	9	4	2.9%
	Ptarmigan	80	-	70	-	-	383	191	9	3	2.8%
	Lynx	20	-	20	-	-	29	114	5	2	1.7%
	Geese	20	-	20	-	-	20	99	5	2	1.5%
1985	Sockeye	-	-	-	-	-	250	-	-	-	-
	Coho	-	-	-	-	-	78	-	-	-	-
	Chum	-	-	-	-	-	23	-	-	-	-
	Chinook	-	-	-	-	-	20	-	-	-	-
	Pink	-	-	-	-	-	5	-	-	-	-
1987	Moose	64	93	43	36	21	7	3,279	193	84	29.2%
	Whitefish	29	29	29	7	0	1,665	1,498	88	39	13.3%
	Caribou	57	100	43	7	21	10	1,263	74	33	11.2%
	Beaver	36	36	36	0	0	94	838	49	22	7.5%
	Sockeye	43	29	21	14	21	158	647	38	17	5.8%
	Coho	50	57	43	29	14	103	553	33	14	4.9%
	Bison	21	14	7	7	21	1	546	32	14	4.9%
	Chinook	36	29	21	14	21	27	463	27	12	4.1%
	Dall Sheep	29	29	29	7	0	5	316	19	8	2.8%
	Lake Trout	64	64	64	29	0	137	274	16	7	2.4%
	Ducks	43	43	43	21	0	396	262	15	7	2.3%
	Burbot	50	43	43	21	7	83	198	12	5	1.8%
	Crane	14	14	14	7	0	22	131	8	3	1.2%
	Arctic Grayling	79	86	79	7	0	182	128	8	3	1.1%
	Berries	79	79	79	21	0	29	114	7	3	1.0%
1989	Sockeye	-	-	-	-	-	100	-	-	-	-
	Coho	-	-	-	-	-	45	-	-	-	-
	Chinook	-	-	-	-	-	2	-	-	-	-
1990	Sockeye	-	-	-	-	-	40	-	-	-	-
	Chinook	-	-	-	-	-	4	-	-	-	-
1991	Sockeye	-	-	-	-	-	56	-	-	-	-

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Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
	Chinook	-	-	-	-	-	2	-	-	-	-
1992	Sockeye	-	-	-	-	-	172	-	-	-	-
	Pink	-	-	-	-	-	25	-	-	-	-
	Chinook	-	-	-	-	-	17	-	-	-	-
	Chum	-	-	-	-	-	10	-	-	-	-
1993	Sockeye	-	-	-	-	-	273	-	-	-	-
	Chinook	-	-	-	-	-	8	-	-	-	-
1994	Sockeye	-	-	-	-	-	29	-	-	-	-
1995	Sockeye	-	-	-	-	-	62	-	-	-	-
	Chinook	-	-	-	-	-	6	-	-	-	-
1996	Sockeye	-	-	-	-	-	239	-	-	-	-
	Chinook	-	-	-	-	-	9	-	-	-	-
1997	Sockeye	-	-	-	-	-	375	-	-	-	-
	Chum	-	-	-	-	-	12	-	-	-	-
	Chinook	-	-	-	-	-	7	-	-	-	-
	Coho	-	-	-	-	-	1	-	-	-	-
1998	Sockeye	-	-	-	-	-	150	-	-	-	-
	Chinook	-	-	-	-	-	6	-	-	-	-
1999	Sockeye	-	-	-	-	-	71	-	-	-	-
	Chinook	-	-	-	-	-	5	-	-	-	-
2000	Sockeye	-	-	-	-	-	219	-	-	-	-
	Chinook	-	-	-	-	-	13	-	-	-	-
	Chum	-	-	-	-	-	2	-	-	-	-
2001a	Sockeye	-	-	-	-	-	61	-	-	-	-
	Chinook	-	-	-	-	-	7	-	-	-	-
2001b	Arctic Grayling	40	40	40	0	20	132	93	4	2	-
	Dolly Varden	40	40	40	10	10	53	47	2	1	-
	Burbot	10	10	10	10	0	17	40	2	1	-
	Lake Trout	40	40	30	10	0	17	34	2	1	-
	Whitefish	20	20	20	0	0	23	21	1	1	-
2002	Sockeye	-	-	-	-	-	23	-	-	-	-
	Chinook	-	-	-	-	-	2	-	-	-	-
2003	Sockeye	-	-	-	-	-	310	-	-	-	-
	Coho	-	-	-	-	-	93	-	-	-	-
	Chinook	-	-	-	-	-	6	-	-	-	-
2004	Sockeye	-	-	-	-	-	268	-	-	-	-
	Chinook	-	-	-	-	-	10	-	-	-	-
2005	Sockeye	-	-	-	-	-	228	-	-	-	-
	Chinook	-	-	-	-	-	50	-	-	-	-
2006	Sockeye	-	-	-	-	-	54	-	-	-	-
	Chinook	-	-	-	-	-	4	-	-	-	-
2007	Sockeye	-	-	-	-	-	3	-	-	-	-

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
	Chinook	-	-	-	-	-	1	-	-	-	-
2008	Sockeye	-	-	-	-	-	222	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
2009	Sockeye	-	-	-	-	-	97	-	-	-	-
	Chinook	-	-	-	-	-	2	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
****Harvest data combined for two communities, Paxson and Sourdough.

For All Resources study years (1982-83, 1987), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (1985, 1989-2000, 2001a, 2002-2009); ADFG 2011 (1987); Simeone and Kari 2005 (2001b); Stratton and Georgette 1984 (1982-83).

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SLANA

Table E-140. Slana Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1982-83	All Resources	100	-	100	-	-	-	17,653	679	253	100.0%
	Salmon	94	-	75	-	-	1,695	7,421	285	106	42.0%
	Non-Salmon Fish	81	-	69	-	-	-	1,301	50	19	7.4%
	Large Land Mammals	88	-	56	-	-	33	7,694	296	110	43.6%
	Small Land Mammals	50	-	50	-	-	289	192	7	3	1.1%
	Migratory Birds	6	-	6	-	-	20	29	1	0	0.2%
	Upland Game Birds	38	-	38	-	-	223	111	4	2	0.6%
	Vegetation	94	-	94	-	-	-	904	35	13	5.1%
1987	All Resources	96	96	96	77	73	-	14,185	567	250	100.0%
	Salmon	96	59	59	18	36	1,105	4,963	199	87	35.0%
	Non-Salmon Fish	86	73	73	27	36	-	1,943	78	34	13.7%
	Large Land Mammals	73	59	50	32	46	24	6,227	249	110	43.9%
	Small Land Mammals	36	41	36	14	9	323	239	10	4	1.7%
	Upland Game Birds	32	32	32	0	0	208	104	4	2	0.7%
	Vegetation	96	96	96	36	9	-	709	28	12	5.0%
1987***	All Resources	100	100	100	50	88	-	10,638	304	174	100.0%
	Salmon	75	25	25	0	50	140	769	22	13	7.2%
	Non-Salmon Fish	88	75	75	0	25	-	242	7	4	2.3%
	Large Land Mammals	88	63	63	38	38	44	6,585	188	108	61.9%
	Small Land Mammals	38	38	25	13	13	1,015	2,218	63	36	20.8%
	Migratory Birds	13	13	13	0	0	13	9	0	0	0.1%
	Upland Game Birds	63	63	63	13	0	941	470	13	8	4.4%
	Marine Invertebrates	13	0	0	0	13	0	0	0	0	0.0%
	Vegetation	88	88	88	25	13	-	346	10	6	3.3%
1987****	All Resources	94	94	94	65	82	-	22,606	343	121	100.0%
	Salmon	82	53	47	12	47	1,580	7,051	107	38	31.2%
	Non-Salmon Fish	88	71	71	24	59	-	3,901	59	21	17.3%
	Large Land Mammals	71	65	41	29	47	58	8,813	134	47	39.0%
	Small Land Mammals	53	47	47	29	12	1,739	1,853	28	10	8.2%
	Migratory Birds	0	6	0	0	0	0	0	0	0	0.0%
	Upland Game Birds	59	53	53	24	12	1,289	644	10	3	2.8%
	Marine Invertebrates	6	0	0	0	6	0	0	0	0	0.0%
	Vegetation	94	94	94	29	18	-	344	5	2	1.5%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
***Data reported for Slana Homestead North.
****Data reported for Slana Homestead South.

Sources: ADFG 2011 (1987); Stratton and Georgette 1984 (1982-83).

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Table E-141. Slana Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
1988	Salmon	-	-	-	-	-	2,743	-	-	-
1989	Salmon	-	-	-	-	-	1,292	-	-	-
1990	Salmon	-	-	-	-	-	2,916	-	-	-
1991	Salmon	-	-	-	-	-	2,509	-	-	-
1992	Salmon	-	-	-	-	-	1,553	-	-	-
1993	Salmon	-	-	-	-	-	2,484	-	-	-
1994	Salmon	-	-	-	-	-	2,251	-	-	-
1995	Salmon	-	-	-	-	-	1,647	-	-	-
1996	Salmon	-	-	-	-	-	1,533	-	-	-
1997	Salmon	-	-	-	-	-	1,786	-	-	-
1998	Salmon	-	-	-	-	-	1,042	-	-	-
1999	Salmon	-	-	-	-	-	1,066	-	-	-
2000	Salmon	-	-	-	-	-	785	-	-	-
2001a	Salmon	-	-	-	-	-	1,283	-	-	-
2002	Salmon	-	-	-	-	-	769	-	-	-
2003	Salmon	-	-	-	-	-	1,401	-	-	-
2004	Salmon	-	-	-	-	-	2,701	-	-	-
2005	Salmon	-	-	-	-	-	1,356	-	-	-
2006	Salmon	-	-	-	-	-	1,369	-	-	-
2007	Salmon	-	-	-	-	-	675	-	-	-
2008	Salmon	-	-	-	-	-	1,236	-	-	-
2009	Salmon	-	-	-	-	-	1,763	-	-	-
Non-Salmon Fish										
2001b	Non-Salmon Fish	88	88	88	36	24	1,929	2,199	35	18

Sources: ADFG 2009 (1988-2000, 2001a, 2002-2009); Simeone and Kari 2005 (2001b).

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Table E-142. Slana Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
1982-83	Sockeye	88	-	75	-	-	1,638	6,880	265	98	39.0%
	Moose	63	-	44	-	-	11	5,688	219	81	32.2%
	Caribou	56	-	25	-	-	10	1,268	49	18	7.2%
	Berries	88	-	88	-	-	-	897	35	13	5.1%
	Dall Sheep	31	-	31	-	-	11	739	28	11	4.2%
	Arctic Grayling	63	-	56	-	-	749	524	20	8	3.0%
	Burbot	63	-	50	-	-	163	390	15	6	2.2%
	Chinook	38	-	31	-	-	16	294	11	4	1.7%
	Coho	6	-	6	-	-	41	248	10	4	1.4%
	Whitefish	38	-	31	-	-	190	171	7	2	1.0%
1987	Moose	59	59	41	27	23	10	4,602	184	81	32.4%
	Sockeye	96	59	59	18	36	1,025	4,197	168	74	29.6%
	Caribou	73	46	36	18	36	11	1,477	59	26	10.4%
	Berries	86	86	86	36	9	173	691	28	12	4.9%
	Chinook	32	27	27	14	5	28	492	20	9	3.5%
	Arctic Grayling	59	64	55	9	5	626	438	18	8	3.1%
	Whitefish	32	32	32	18	0	466	419	17	7	3.0%
	Halibut	36	5	5	5	32	-	355	14	6	2.5%
	Coho	14	14	14	5	0	51	274	11	5	1.9%
	Burbot	41	41	36	9	9	107	256	10	5	1.8%
	Lake Trout	23	18	18	5	5	98	196	8	3	1.4%
	Dall Sheep	18	14	9	5	9	2	148	6	3	1.0%
1987****	Caribou	88	63	63	38	38	31	3,981	114	65	37.4%
	Moose	13	25	13	13	0	4	1,969	56	32	18.5%
	Hare	25	25	25	13	0	928	1,391	40	23	13.1%
	Beaver	25	13	13	13	13	53	788	23	13	7.4%
	Black Bear	25	13	13	13	13	4	350	10	6	3.3%
	Ptarmigan	25	25	25	13	0	683	341	10	6	3.2%
	Berries	63	63	63	13	13	85	341	10	6	3.2%
	Dall Sheep	13	13	13	13	0	4	285	8	5	2.7%
	Chinook	38	13	13	0	25	13	228	7	4	2.1%
	Sockeye	50	13	13	0	38	44	179	5	3	1.7%
	Coho	50	13	13	0	38	26	141	4	2	1.3%
	Pink	25	13	13	0	13	44	129	4	2	1.2%
	Grouse	63	63	63	13	0	258	129	4	2	1.2%
1987*****	Sockeye	59	35	29	12	35	1,347	5,517	84	30	24.4%
	Caribou	65	53	41	24	29	39	5,047	76	27	22.3%
	Moose	41	59	12	0	29	8	3,494	53	19	15.5%
	Hare	41	35	35	24	12	1,103	1,654	25	9	7.3%
	Dolly Varden	35	29	29	12	12	1,576	1,418	21	8	6.3%
	Arctic Grayling	77	71	71	24	6	1,452	1,016	15	5	4.5%

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
	Coho	41	24	24	6	24	144	770	12	4	3.4%
	Lake Trout	18	18	18	18	6	353	707	11	4	3.1%
	Chinook	41	29	29	12	18	35	605	9	3	2.7%
	Burbot	29	24	24	12	12	198	475	7	3	2.1%
	Grouse	53	47	47	24	6	765	382	6	2	1.7%
	Ptarmigan	41	41	41	24	6	524	262	4	1	1.2%
	Dall Sheep	6	12	6	6	0	4	252	4	1	1.1%
1988	Sockeye	-	-	-	-	-	2,686	-	-	-	-
	Chinook	-	-	-	-	-	57	-	-	-	-
1989	Sockeye	-	-	-	-	-	1,252	-	-	-	-
	Chinook	-	-	-	-	-	40	-	-	-	-
1990	Sockeye	-	-	-	-	-	2,902	-	-	-	-
	Chinook	-	-	-	-	-	13	-	-	-	-
1991	Sockeye	-	-	-	-	-	2,482	-	-	-	-
	Chinook	-	-	-	-	-	27	-	-	-	-
1992	Sockeye	-	-	-	-	-	1,526	-	-	-	-
	Chinook	-	-	-	-	-	20	-	-	-	-
	Pink	-	-	-	-	-	6	-	-	-	-
	Chum	-	-	-	-	-	1	-	-	-	-
1993	Sockeye	-	-	-	-	-	2,466	-	-	-	-
	Chinook	-	-	-	-	-	18	-	-	-	-
1994	Sockeye	-	-	-	-	-	2,181	-	-	-	-
	Chinook	-	-	-	-	-	71	-	-	-	-
1995	Sockeye	-	-	-	-	-	1,620	-	-	-	-
	Chinook	-	-	-	-	-	27	-	-	-	-
1996	Sockeye	-	-	-	-	-	1,515	-	-	-	-
	Chinook	-	-	-	-	-	18	-	-	-	-
1997	Sockeye	-	-	-	-	-	1,767	-	-	-	-
	Chinook	-	-	-	-	-	19	-	-	-	-
1998	Sockeye	-	-	-	-	-	1,032	-	-	-	-
	Chinook	-	-	-	-	-	10	-	-	-	-
1999	Sockeye	-	-	-	-	-	981	-	-	-	-
	Chinook	-	-	-	-	-	85	-	-	-	-
2000	Sockeye	-	-	-	-	-	759	-	-	-	-
	Chinook	-	-	-	-	-	25	-	-	-	-
	Coho	-	-	-	-	-	1	-	-	-	-
2001a	Sockeye	-	-	-	-	-	1,266	-	-	-	-
	Chinook	-	-	-	-	-	17	-	-	-	-
2001b	Arctic Grayling	84	80	76	12	20	945	661	11	5	-
	Burbot	44	44	40	16	8	201	482	8	4	-
	Lake Trout	44	44	44	16	0	193	387	6	3	-
	Dolly Varden	32	32	32	8	4	255	230	4	2	-

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Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
	Whitefish	32	32	32	8	8	226	203	3	2	-
2002	Sockeye	-	-	-	-	-	760	-	-	-	-
	Chinook	-	-	-	-	-	9	-	-	-	-
2003	Sockeye	-	-	-	-	-	1,393	-	-	-	-
	Chinook	-	-	-	-	-	9	-	-	-	-
2004	Sockeye	-	-	-	-	-	2,653	-	-	-	-
	Chinook	-	-	-	-	-	48	-	-	-	-
2005	Sockeye	-	-	-	-	-	1,330	-	-	-	-
	Chinook	-	-	-	-	-	26	-	-	-	-
2006	Sockeye	-	-	-	-	-	1,363	-	-	-	-
	Chinook	-	-	-	-	-	6	-	-	-	-
2007	Sockeye	-	-	-	-	-	665	-	-	-	-
	Chinook	-	-	-	-	-	10	-	-	-	-
2008	Sockeye	-	-	-	-	-	1,220	-	-	-	-
	Chinook	-	-	-	-	-	16	-	-	-	-
2009	Sockeye	-	-	-	-	-	1,756	-	-	-	-
	Chinook	-	-	-	-	-	7	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
****Data reported for Slana Homestead North.
*****Data reported for Slana Homestead South.

For All Resources study years (1982-83, 1987a, 1987b, 1987c), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Sources: ADFG 2009 (1988-2000, 2001a, 2002-2009); ADFG 2011 (1987a, 1987b, 1987c); Simeone and Kari 2005 (2001b); Stratton and Georgette 1984 (1982-83).

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TONSINA

Table E-143. Tonsina Subsistence Harvest Estimates by Resource Category, All Resources Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number*	Total Pounds**	Average HH Pounds	Per Capita Pounds	
1982-83***	All Resources	100	-	93	-	-	-	22,644	298	99	100.0%
	Salmon	80	-	53	-	-	2,701	12,624	166	55	55.8%
	Non-Salmon Fish	80	-	53	-	-	-	1,911	25	8	8.4%
	Large Land Mammals	80	-	27	-	-	30	5,535	73	24	24.4%
	Small Land Mammals	47	-	40	-	-	542	874	12	4	3.9%
	Migratory Birds	13	-	13	-	-	71	106	1	0	0.5%
	Upland Game Birds	47	-	40	-	-	329	165	2	1	0.7%
	Vegetation	73	-	73	-	-	-	1,429	19	6	6.3%
1982-83****	All Resources	100	-	100	-	-	4,479	4,479	498	128	100.0%
	Salmon	100	-	88	-	-	563	2,541	282	73	56.7%
	Non-Salmon Fish	50	-	50	-	-	-	471	52	14	10.5%
	Large Land Mammals	63	-	63	-	-	8	827	92	24	18.5%
	Small Land Mammals	88	-	88	-	-	177	302	34	9	6.7%
	Upland Game Birds	50	-	50	-	-	63	32	4	1	0.7%
	Vegetation	88	-	88	-	-	-	306	34	9	6.8%
1987	All Resources	92	92	92	62	80	-	46,310	482	156	100.0%
	Salmon	83	64	64	19	37	4,028	19,238	200	65	41.5%
	Non-Salmon Fish	70	69	67	23	24	-	2,492	26	8	5.4%
	Large Land Mammals	90	82	70	44	46	123	22,003	229	74	47.5%
	Small Land Mammals	40	50	40	18	1	542	402	4	1	0.9%
	Migratory Birds	10	10	10	1	0	105	79	1	0	0.2%
	Upland Game Birds	43	42	42	24	3	949	475	5	2	1.0%
	Marine Invertebrates	10	2	2	1	8	-	326	3	1	0.7%
	Vegetation	73	64	64	22	28	-	1,296	14	4	2.8%

Notes: *Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
**Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
***Data for Upper Tonsina
****Data for Lower Tonsina

Sources: ADFG 2011 (1987); Stratton and Georgette 1984 (1982-83).

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Table E-144. Tonsina Subsistence Harvest Estimates by Resource Category, Non-Comprehensive Study Years

Study Year	Resource	Percentage of Households					Estimated Harvest			
		Use	Try to Harvest	Harvest	Give	Receive	Number	Total Pounds	Average HH Pounds	Per Capita Pounds
Salmon										
2002	Salmon	-	-	-	-	-	24	-	-	-
2003	Salmon	-	-	-	-	-	365	-	-	-
2004	Salmon	-	-	-	-	-	164	-	-	-
2008	Salmon	-	-	-	-	-	178	-	-	-
2009	Salmon	-	-	-	-	-	48	-	-	-
Non-Salmon Fish										
2001	Non-Salmon Fish	39	42	39	4	15	319	352	10	5

Sources: ADFG 2009 (2002-2004, 2008, 2009); Simeone and Kari 2005 (2001).

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Table E-145. Tonsina Subsistence Harvest Estimates by Selected Species, All Study Years

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
1982-83****	Sockeye	73	-	53	-	-	2,265	9,512	125	42	42.0%
	Caribou	53	-	13	-	-	20	2,635	35	12	11.6%
	Moose	40	-	7	-	-	5	2,533	33	11	11.2%
	Chum	7	-	7	-	-	203	1,237	16	5	5.5%
	Berries	73	-	73	-	-	-	1,221	16	5	5.4%
	Chinook	27	-	20	-	-	61	1,100	14	5	4.9%
	Lake Trout	33	-	20	-	-	507	1,013	13	4	4.5%
	Hare	40	-	40	-	-	522	783	10	3	3.5%
	Coho	33	-	27	-	-	91	556	7	2	2.5%
	Arctic Grayling	67	-	53	-	-	770	539	7	2	2.4%
	Goat	7	-	7	-	-	5	367	5	2	1.6%
	Dolly Varden	13	-	13	-	-	304	274	4	1	1.2%
	Pink	7	-	7	-	-	81	219	3	1	1.0%
1982-83*****	Sockeye	100	-	88	-	-	525	2,207	245	63	49.3%
	Caribou	50	-	50	-	-	6	731	81	21	16.3%
	Berries	75	-	75	-	-	-	239	27	7	5.3%
	Hare	75	-	75	-	-	124	186	21	5	4.2%
	Arctic Grayling	38	-	38	-	-	248	173	19	5	3.9%
	Coho	25	-	25	-	-	28	172	19	5	3.8%
	Chinook	50	-	50	-	-	9	163	18	5	3.6%
	Halibut	13	-	13	-	-	-	113	13	3	2.5%
	Deer	13	-	13	-	-	2	96	11	3	2.1%
	Rainbow Trout	25	-	25	-	-	63	88	10	3	2.0%

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Study Year	Resource*	Percentage of Households: Use	Try to Harvest	Harvest	Give	Receive	Estimated Harvest: Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	% of Total Harvest
	Porcupine	63	-	63	-	-	16	71	8	2	1.6%
	Plants/Greens/ Mushrooms	75	-	75	-	-	-	68	8	2	1.5%
	Unknown Non-Salmon Fish	13	-	13	-	-	-	62	7	2	1.4%
1987	Sockeye	72	63	63	14	25	3,169	12,975	135	44	28.0%
	Moose	57	78	25	14	43	25	11,037	115	37	23.8%
	Caribou	76	69	64	29	22	75	9,743	101	33	21.0%
	Chinook	41	41	33	6	11	204	3,537	37	12	7.6%
	Coho	26	18	8	3	19	240	1,287	13	4	2.8%
	Berries	67	58	58	19	26	248	994	10	3	2.1%
	Pink	16	15	15	1	1	261	767	8	3	1.7%
	Dall Sheep	11	19	11	8	0	11	691	7	2	1.5%
	Dolly Varden	25	25	25	4	1	662	595	6	2	1.3%
	Chum	17	17	17	0	0	80	568	6	2	1.2%
	Halibut	26	12	4	2	22	-	536	6	2	1.2%
	Arctic Grayling	52	52	51	18	1	728	509	5	2	1.1%
2001	Rainbow Trout	39	42	39	0	0	118	165	5	2	-
	Dolly Varden	31	31	31	0	15	118	106	3	2	-
	Arctic Grayling	27	31	27	0	0	65	46	1	1	-
	Lake Trout	4	4	4	0	4	10	21	1	0	-
	Burbot	12	12	8	4	0	5	13	0	0	-
2002	Sockeye	-	-	-	-	-	23	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
2003	Sockeye	-	-	-	-	-	358	-	-	-	-
	Chinook	-	-	-	-	-	7	-	-	-	-
2004	Sockeye	-	-	-	-	-	151	-	-	-	-
	Chinook	-	-	-	-	-	13	-	-	-	-
2008	Sockeye	-	-	-	-	-	177	-	-	-	-
	Chinook	-	-	-	-	-	1	-	-	-	-
2009	Sockeye	-	-	-	-	-	41	-	-	-	-
	Chinook	-	-	-	-	-	4	-	-	-	-
	Coho	-	-	-	-	-	3	-	-	-	-

Notes: *Except in the case of ducks and geese, which are lumped into more general species categories, this table shows individual species unless they are not available for a given study year.
**Estimated numbers represent individuals in all cases except vegetation, where they represent gallons.
***Estimated pounds include only edible pounds and therefore do not include estimates for resources that are not typically eaten by community residents (e.g., furbearers).
****Data reported for Upper Tonsina.
*****Data reported for Lower Tonsina.

For All Resources study years(1982-83, 1987), species are listed in descending order by percent of total harvest and are limited to species accounting for at least 1.0 percent of the total harvest; for single-resource study years, species are listed in descending order by total estimated pounds (or total number harvested, in the case of salmon study years) and limited to the five top species. Years lacking "% of total harvest" data were not comprehensive (i.e., all resources) study years.

Study Year	Resource*	Percentage of Households					Estimated Harvest				% of Total Harvest
		Use	Try to Harvest	Harvest	Give	Receive	Number**	Total Pounds***	Average HH Pounds	Per Capita Pounds	
Sources: ADFG 2009 (2002-04, 2008-09); ADFG 2011 (1987); Simeone and Kari 2005 (2001); Stratton and Georgette 1984 (1982-83).											

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SUBSISTENCE DATA GAPS

Table E-146. Most Recent Subsistence Data and Data Gaps by Study Community

Community	Subsistence Use Area	Harvest Amount	Harvest Effort	Harvest Timing	Harvest Success	Harvest Partici-pation	Harvest Sharing	Harvest Diversity	Transpor-tation Method	Duration of Trips	Frequency of Trips	Resource Change
North Slope Region												
Anaktuvuk Pass	2001-2010 (SRB&A Forthcoming)	2002-03 (Bacon et al. 2009)	2001-2010 (SRB&A Forthcoming)	2001-2010 (SRB&A Forthcoming)	2001-2010 (SRB&A Forthcoming)	1994-95 (Brower and Opie 1996)	-	2002-03 (Bacon et al. 2009)	2001-2010 (SRB&A Forthcoming)	2001-2010 (SRB&A Forthcoming)	2001-2010 (SRB&A Forthcoming)	2001-2010 (SRB&A Forthcoming)
Barrow	1996-2007 (SRB&A 2010a)	2003 (Bacon et al. 2009)	1989 (SRB&A and ISER 1993)	1996-2007 (SRB&A 2010a)	1989 (SRB&A and ISER 1993)	1989 (SRB&A and ISER 1993)	-	2003 (Bacon et al. 2009)	1996-2007 (SRB&A 2010a)	1996-2007 (SRB&A 2010a)	-	-
Kaktovik	1996-2006 (SRB&A 2010a)	2002-2003 (Bacon et al. 2009)	1992a (ADFG 2011)	1996-2007 (SRB&A 2010a)	1992a (ADFG 2011)	1992a (ADFG 2011)	1992a (ADFG 2011)	2002-2003 (Bacon et al. 2009)	1996-2007 (SRB&A 2010a)	1996-2007 (SRB&A 2010a)	-	-
Nuiqsut	1995-2006 (SRB&A 2010a)	2000-2001 (Bacon et al. 2009)	1994 (ADFG 2011)	1996-2007 (SRB&A 2010a)	1993 (ADFG 2011)	1994 (ADFG 2011)	1995 (ADFG 2011)	2000-2001 (Bacon et al. 2009)	1996-2007 (SRB&A 2010a)	1996-2007 (SRB&A 2010a)	-	-
Prudhoe Bay	-	-	-	-	-	-	-	-	-	-	-	-
Yukon River Region												
Alatna	1981-1983 (Marcotte and Haynes, 1985)	1983-1984 (Marcotte and Haynes, 1985)	-	1982 (Marcotte and Haynes, 1985)	-	-	-	1983-1984 (Marcotte and Haynes, 1985)	-	-	-	-
Allakaket	1981-1983 (Marcotte and Haynes, 1985)	1983-1984 (Marcotte and Haynes, 1985)	-	1982 (Marcotte and Haynes, 1985)	-	-	-	1983-1984 (Marcotte and Haynes, 1985)	-	-	-	-
Beaver	1997-2006 (SRB&A 2007)	1996 (ADFG 2011)	1997-2006 (SRB&A 2007)	1997-2006 (SRB&A 2007)	1997-2006 (SRB&A 2007)	1985 (Sumida, 1989)	1985 (Sumida, 1989)	1996 (ADFG 2011)	1997-2006 (SRB&A 2007)	-	1997-2006 (SRB&A 2007)	1997-2006 (SRB&A 2007)
Bettles	1981-1983 (Marcotte and Haynes, 1985)	1984 (Marcotte and Haynes, 1985)	-	1982 (Marcotte and Haynes, 1985)	-	-	-	1984 (Marcotte and Haynes, 1985)	-	-	-	-
Coldfoot	-	-	-	-	-	-	-	-	-	-	-	-

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Community	Subsistence Use Area	Harvest Amount	Harvest Effort	Harvest Timing	Harvest Success	Harvest Partici-pation	Harvest Sharing	Harvest Diversity	Transpor-tation Method	Duration of Trips	Frequency of Trips	Resource Change
Evansville	1981-1983 (Marcotte and Haynes, 1985)	1984 (Marcotte and Haynes, 1985)	-	1982 (Marcotte and Haynes, 1985)	-	-	-	1984 (Marcotte and Haynes, 1985)	-	-	-	-
Fort Yukon	1997-2006 (SRB&A 2007)	1998 (ADFG 2011)	1997-2006 (SRB&A 2007)	1987 (Sumida and Andersen, 1990)	1997-2006 (SRB&A 2007)	1986-1987 (Sumida and Andersen, 1990)	1986-1987 (Sumida and Andersen, 1990)	1998 (ADFG 2011)	1997-2006 (SRB&A 2007)	-	1997-2006 (SRB&A 2007)	1997-2006 (SRB&A 2007)
Livengood	-	-	-	-	-	-	-	-	-	-	-	-
Nolan	-	-	-	-	-	-	-	-	-	-	-	-
Rampart	1975-1995 (Betts 1997)	1997 (ADFG 2011)	-	(Betts 1997)	-	-	-	1997 (ADFG 2011))	-	-	-	-
Stevens Village	1974-1984 (Sumida, 1988)	1994 (ADFG 2011)	1984-1985 (Sumida, 1988)	(Sumida, 1988)	1984-1985 (Sumida, 1988)	1984-1985 (Sumida, 1988)	1984-1985 (Sumida, 1988)	1994 (ADFG 2011)	-	-	-	-
Wiseman	1992 (Scott, 1998)	1991 (Scott, 1998)	-	1991-1993 (Scott, 1998)	-	-	-	-	-	-	-	-
Tanana River Region												
Alcan Border	-	-	-	-	-	-	-	-	-	-	-	-
Chisana	1964-1984 (Stratton and Georgette 1985)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	-	-	-
Delta Junction	-	-	-	-	-	-	-	-	-	-	-	-
Dot Lake	1946-1982 (Martin, 1983)	1987-1988 (Marcotte 1991)	1987-1988 (Marcotte 1991)	1983 (Marcotte 1991)	1987-1988 (Marcotte 1991)	1987-1988 (Marcotte 1991)	1987-1988 (Marcotte 1991)	1987-1988 (Marcotte 1991)	-	-	-	-
Dry Creek	-	-	-	-	-	-	-	-	-	-	-	-
Fairbanks	-	-	-	-	-	-	-	-	-	-	-	-

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Community	Subsistence Use Area	Harvest Amount	Harvest Effort	Harvest Timing	Harvest Success	Harvest Partici-pation	Harvest Sharing	Harvest Diversity	Transpor-tation Method	Duration of Trips	Frequency of Trips	Resource Change
Healy	Unidentified Time Period (Wolfe et al. Unpublished)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	-	-	-
Healy Lake	1992-2001 (SRB&A 2002)	-	-	-	-	-	-	-	-	-	-	-
Manley Hot Springs	1975-1995 (Betts 1997)	-	-	(Betts 1997)	-	-	-		-	-	-	-
Minto	1960-1984 (Andrews 1988)	1983-1984 (Andrews 1988)	1983-1984 (Andrews 1988)	1960-1984 (Andrews 1988)	1983-1984 (Andrews 1988)	1983-1984 (Andrews 1988)	-	1983-1984 (Andrews 1988)	-	-	-	-
Nenana	1981-1982 (Shinkwin and Case 1984)	-	-	-	-	-	-	-	-	-	-	-
Northway	1974-1984 (Case 1986)	1987-1988 (Marcotte 1991)	1987-1988 (Marcotte 1991)	1985 (Marcotte 1991)	1987-1988 (Marcotte 1991)	1987-1988 (Marcotte 1991)	1987-1988 (Marcotte 1991)	1987-1988 (Marcotte 1991)	-	-	-	-
Tanacross	1968-1988 (Marcotte 1991)	1987-1988 (Marcotte 1991)	1987-1988 (Marcotte 1991)	1984 (Marcotte 1991)	1987-1988 (Marcotte 1991)	1987-1988 (Marcotte 1991)	1987-1988 (Marcotte 1991)	1987-1988 (Marcotte 1991)	-	-	-	-
Tanana	1968-1988 (Case and Halpin 1990)	1987 (Case and Halpin 1990)	1987 (Case and Halpin 1990)	1987 (Case and Halpin 1990)	1987 (Case and Halpin 1990)	1987 (Case and Halpin 1990)	1987 (Case and Halpin 1990)	1987 (Case and Halpin 1990)	-	-	-	-
Tetlin	1976-1984 (Halpin 1987)	1987-1988 (Marcotte 1991)	1987-1988 (Marcotte 1991)	1983-1984 (Marcotte 1991)	1987-1988 (Marcotte 1991)	1987-1988 (Marcotte 1991)	1987-1988 (Marcotte 1991)	1987-1988 (Marcotte 1991)	-	-	-	-
Tok	1968-1988 (Marcotte 1991)	1987-1988 (Marcotte 1991)	1987-1988 (Marcotte 1991)	1984 (Marcotte 1991)	1987-1988 (Marcotte 1991)	1987-1988 (Marcotte 1991)	1987-1988 (Marcotte 1991)	1987-1988 (Marcotte 1991)	-	-	-	-
Copper River Region												
Chistochina	1964-1984 (ADFG 1985; Stratton and Georgette 1985)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	-	-	-

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Community	Subsistence Use Area	Harvest Amount	Harvest Effort	Harvest Timing	Harvest Success	Harvest Partici-pation	Harvest Sharing	Harvest Diversity	Transpor-tation Method	Duration of Trips	Frequency of Trips	Resource Change
Chitina	1964-1984 (ADFG 1985; Stratton and Georgette 1985)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	-	-	-
Copper Center	1964-1984 (ADFG 1985; Stratton and Georgette 1985)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	-	-	-
Gakona	1964-1984 (ADFG 1985; Stratton and Georgette 1985)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	-	-	-
Glennallen	1964-1984 (ADFG 1985; Stratton and Georgette 1985)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	-	-	-
Gulkana	1964-1984 (ADFG 1985; Stratton and Georgette 1985)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	-	-	-
Kenny Lake	1964-1984 (ADFG 1985; Stratton and Georgette 1985)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	-	-	-

Community	Subsistence Use Area	Harvest Amount	Harvest Effort	Harvest Timing	Harvest Success	Harvest Partici-pation	Harvest Sharing	Harvest Diversity	Transpor-tation Method	Duration of Trips	Frequency of Trips	Resource Change
Mentasta Lake	1964-1984 (ADFG 1985; Stratton and Georgette 1985)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	-	-	-
Nabesna	1964-1984 (ADFG 1985; Stratton and Georgette 1985)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	-	-	-
Paxson	1964-1984 (ADFG 1985; Stratton and Georgette 1985)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	-	-	-
Slana	1964-1984 (ADFG 1985; Stratton and Georgette 1985)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	-	-	-
Tonsina	1964-1984 (ADFG 1985; Stratton and Georgette 1985)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	1987 (ADFG 2011)	-	-	-	-

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Table E-147.

Criteria for Identification of Most Recent Baseline Indicator

Harvest Category	**Identification Locations**
Subsistence Use Area	Most recent all resources mapping study
Harvest Amount	Most recent harvest study that reports either harvest number or harvest pounds for all resources
Harvest Effort	Most recent harvest study that reports either harvest participation or frequency of trips
Harvest Timing	Most recent seasonal round study that shows all resources harvest amount by month, use area by month, or general seasonal round
Harvest Success	Most recent harvest study that reports "Harvest" all resources or SRB&A use area success.
Harvest Participation	Most recent harvest study that reports "Try to Harvest" or "Harvest" all resources
Harvest Sharing	Most recent harvest study that reports both "Give" and "Receive" all resources
Harvest Diversity	Most recent harvest study that reports all resources
Transportation Method	Most recent study that reports transportation variable
Duration of Trips	Most recent study that reports duration of trips
Frequency of Trips	Most recent study that reports frequency of trips
Resource Change	Most recent study that reports resource change.

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FIGURES

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Figure E-1. Federally Designated Nonrural Areas in Relation to the Alaska Pipeline Project

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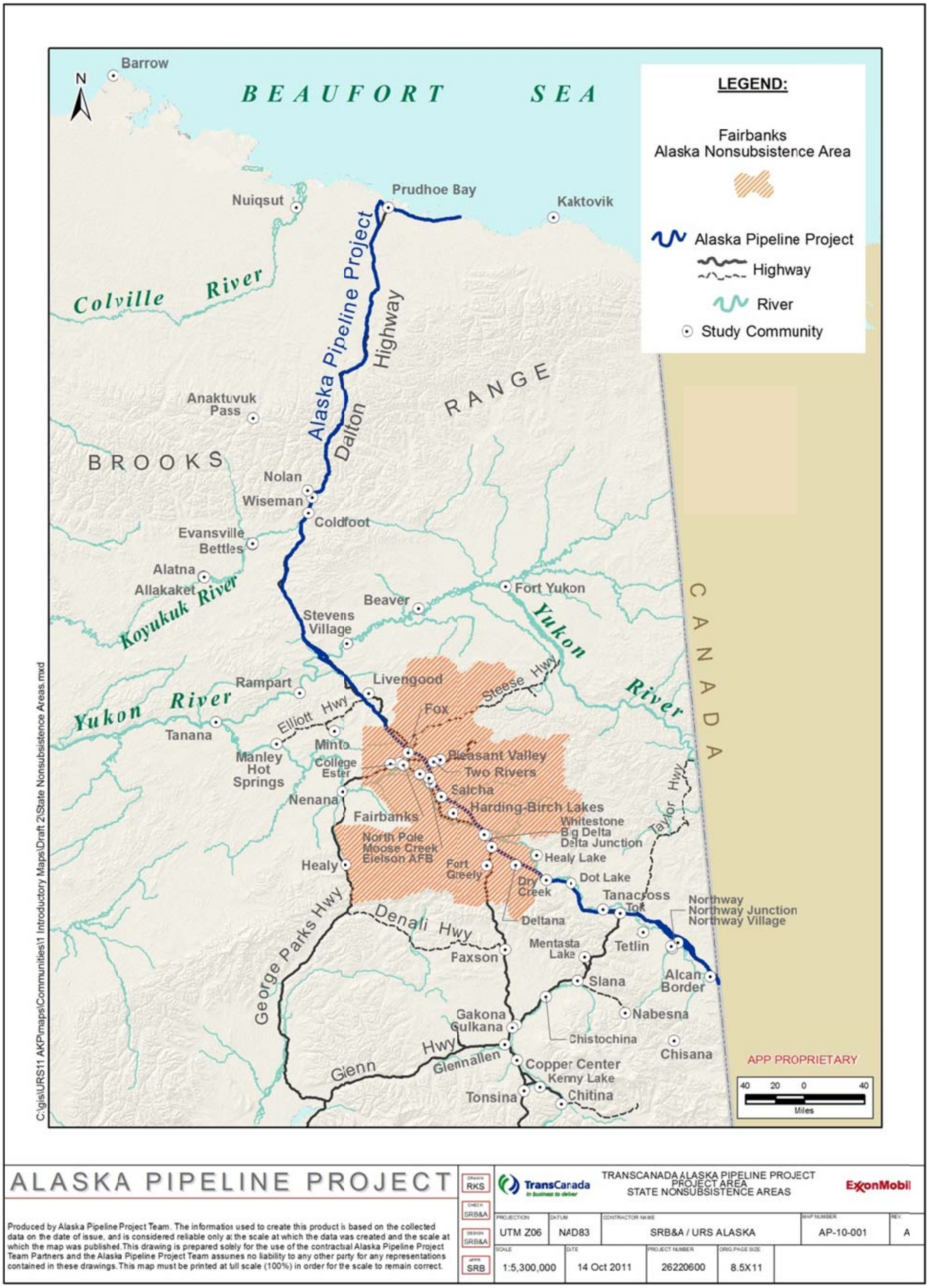

Figure E-2. Alaska Nonsubsistence Areas in Relation to the Alaska Pipeline Project

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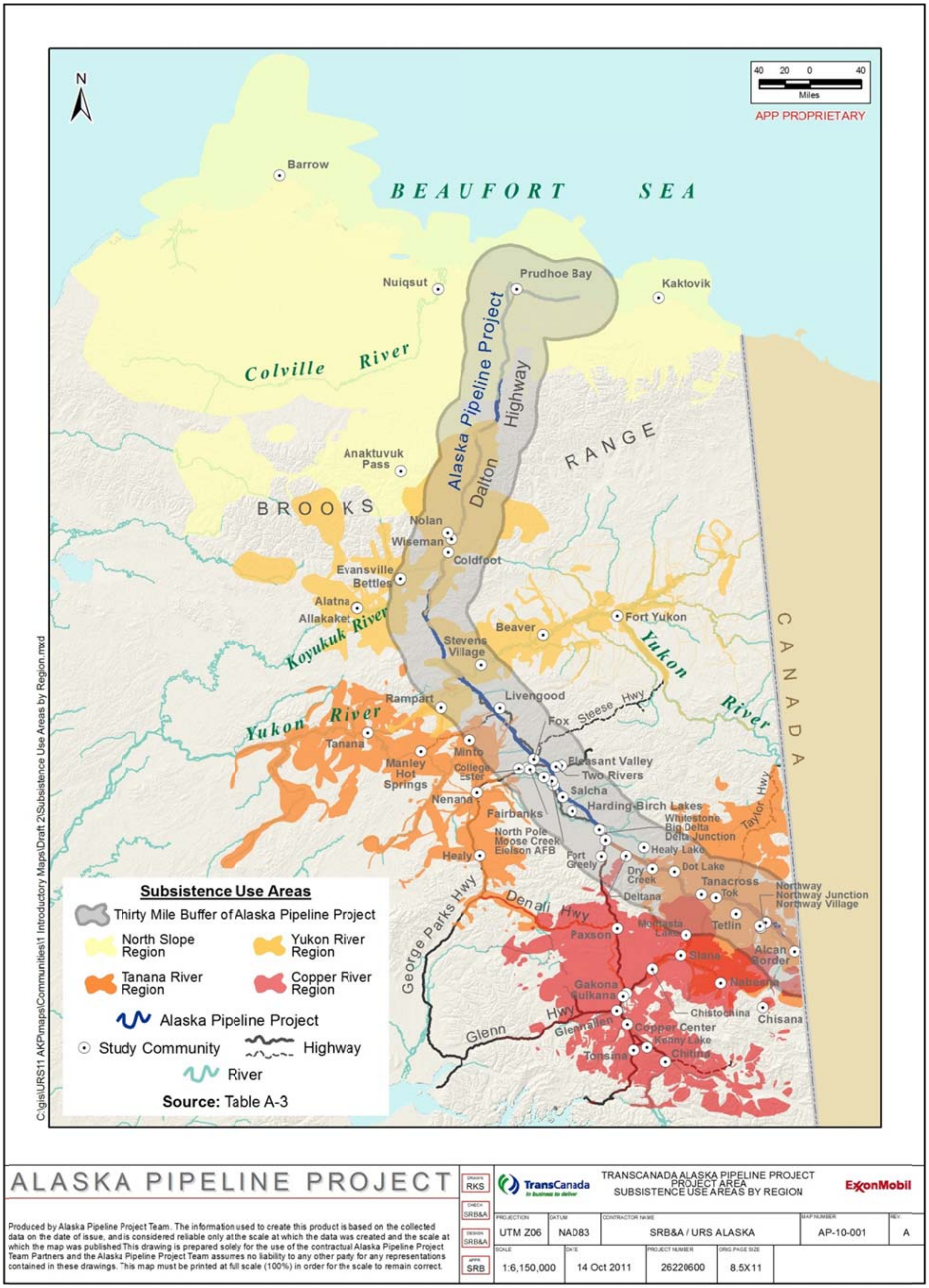

Figure E-3. Overview of Alaska Pipeline Project Study Communities

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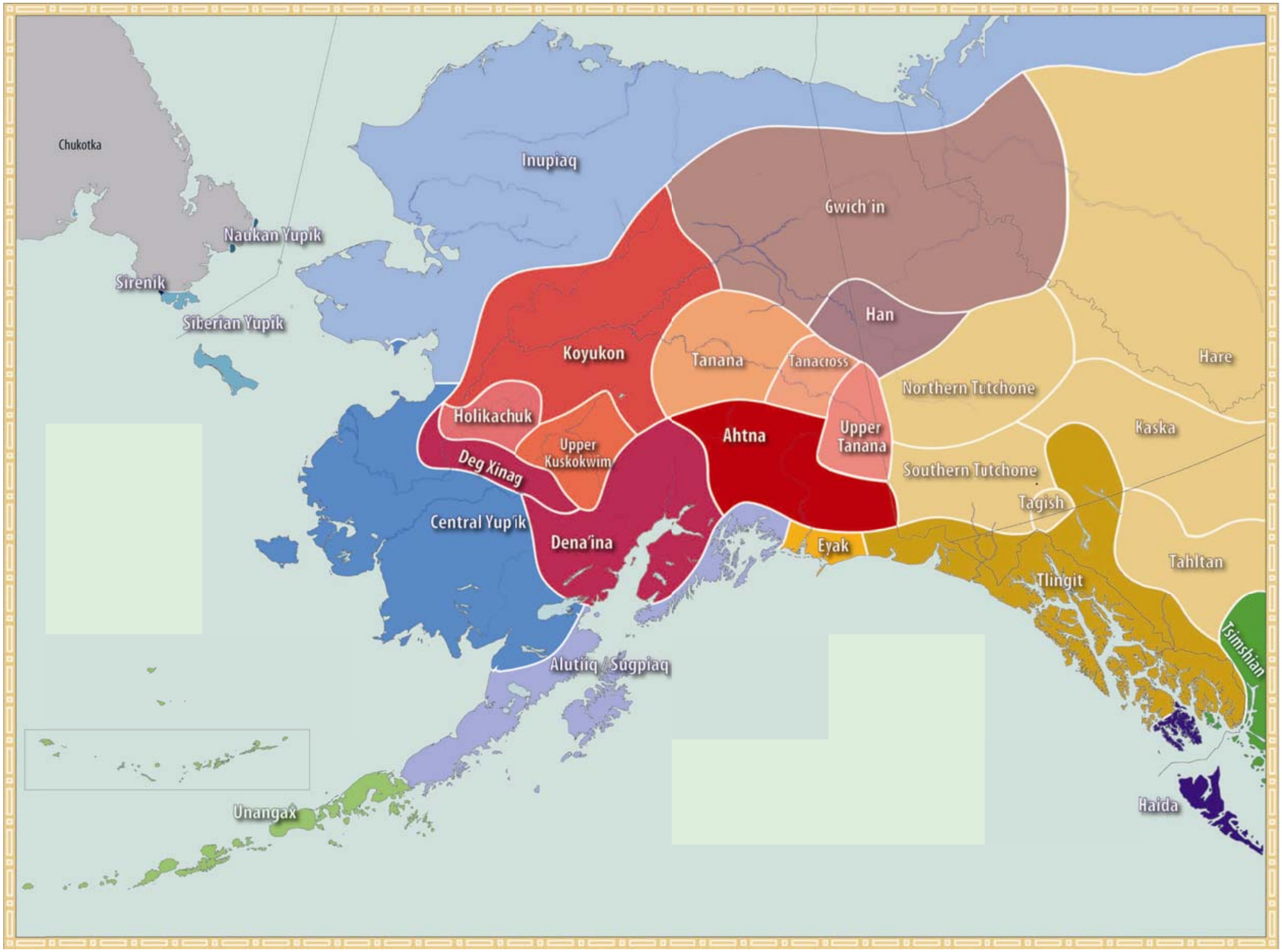

Figure E-4. Alaska Native Languages Map (Krauss et al., 2011)

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ANAKTUVUK PASS

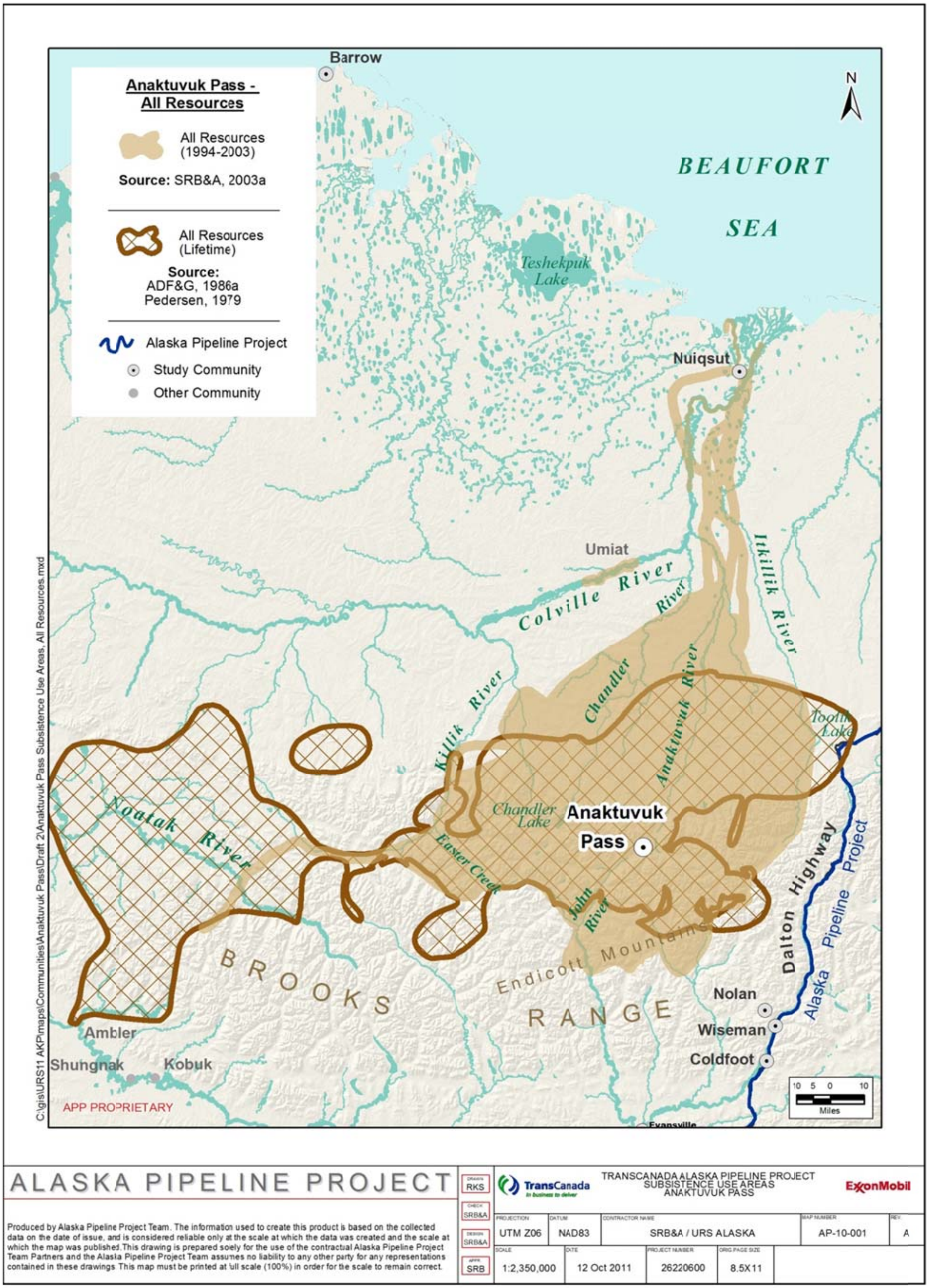

Figure E-5. Anaktuvuk Pass Subsistence Use Areas, All Resources

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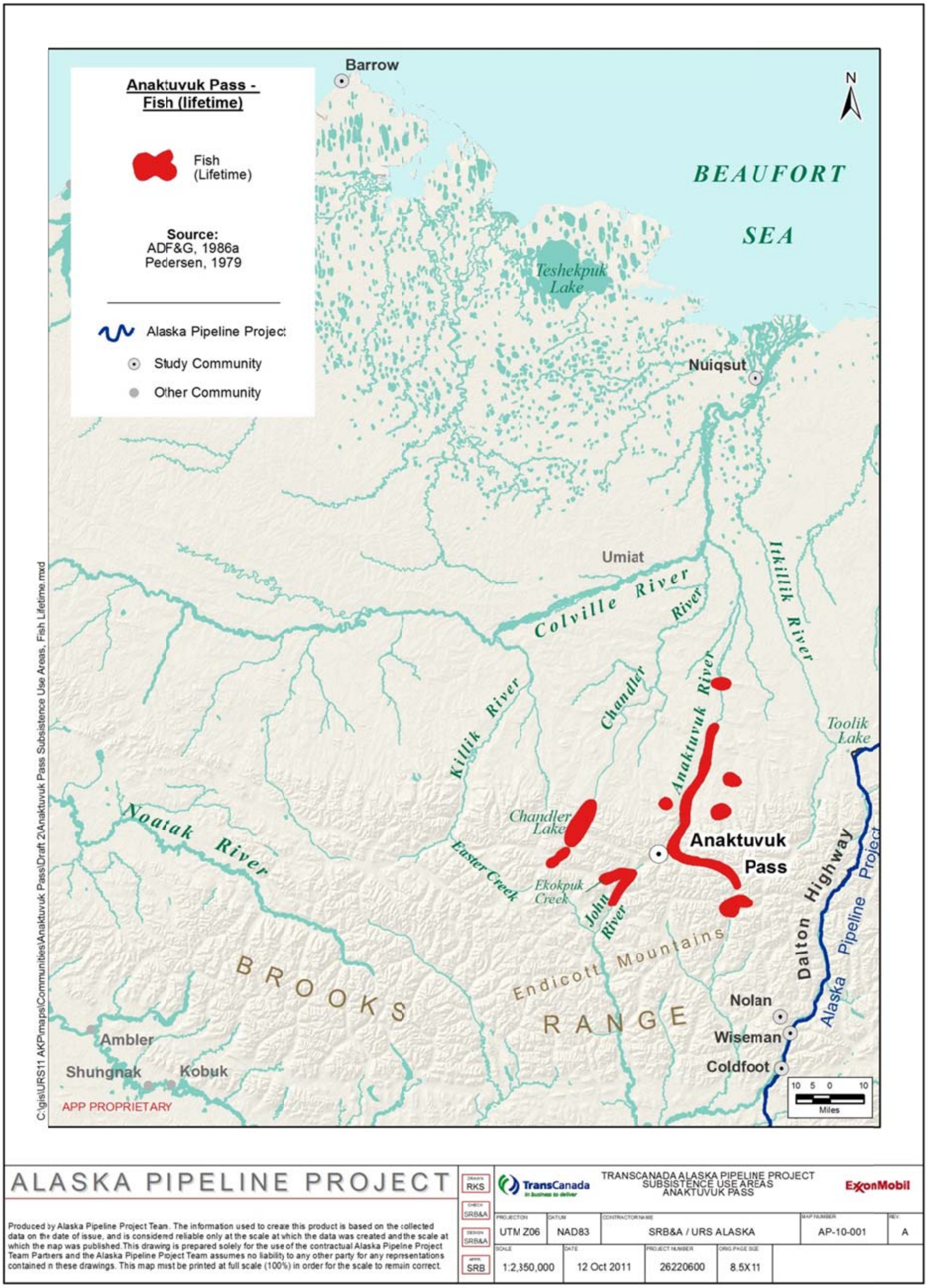

Figure E-6. Anaktuvuk Pass Subsistence Use Areas, Fish (Lifetime)

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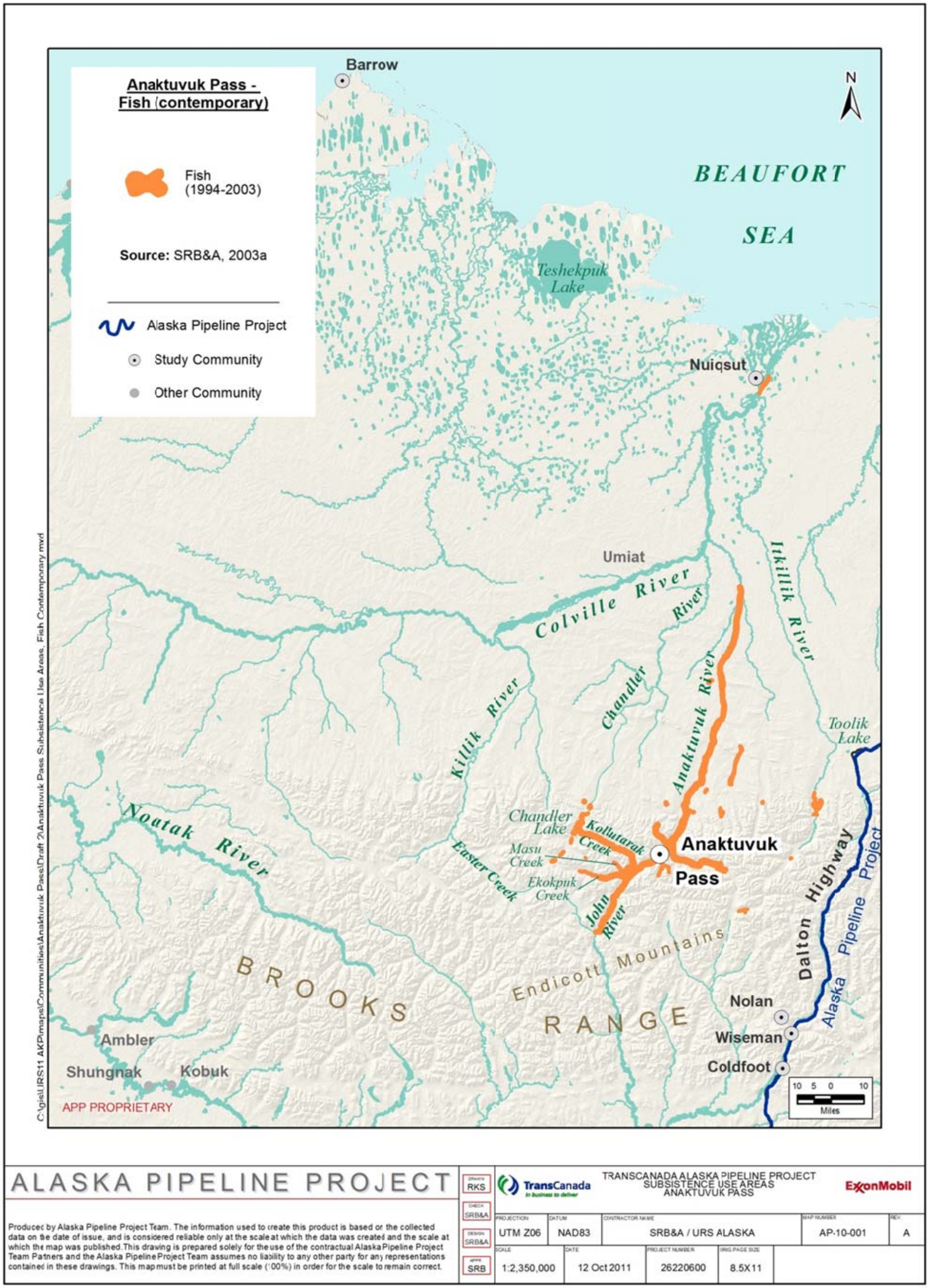

Figure E-7. Anaktuvuk Pass Subsistence Use Areas, Fish (Contemporary)

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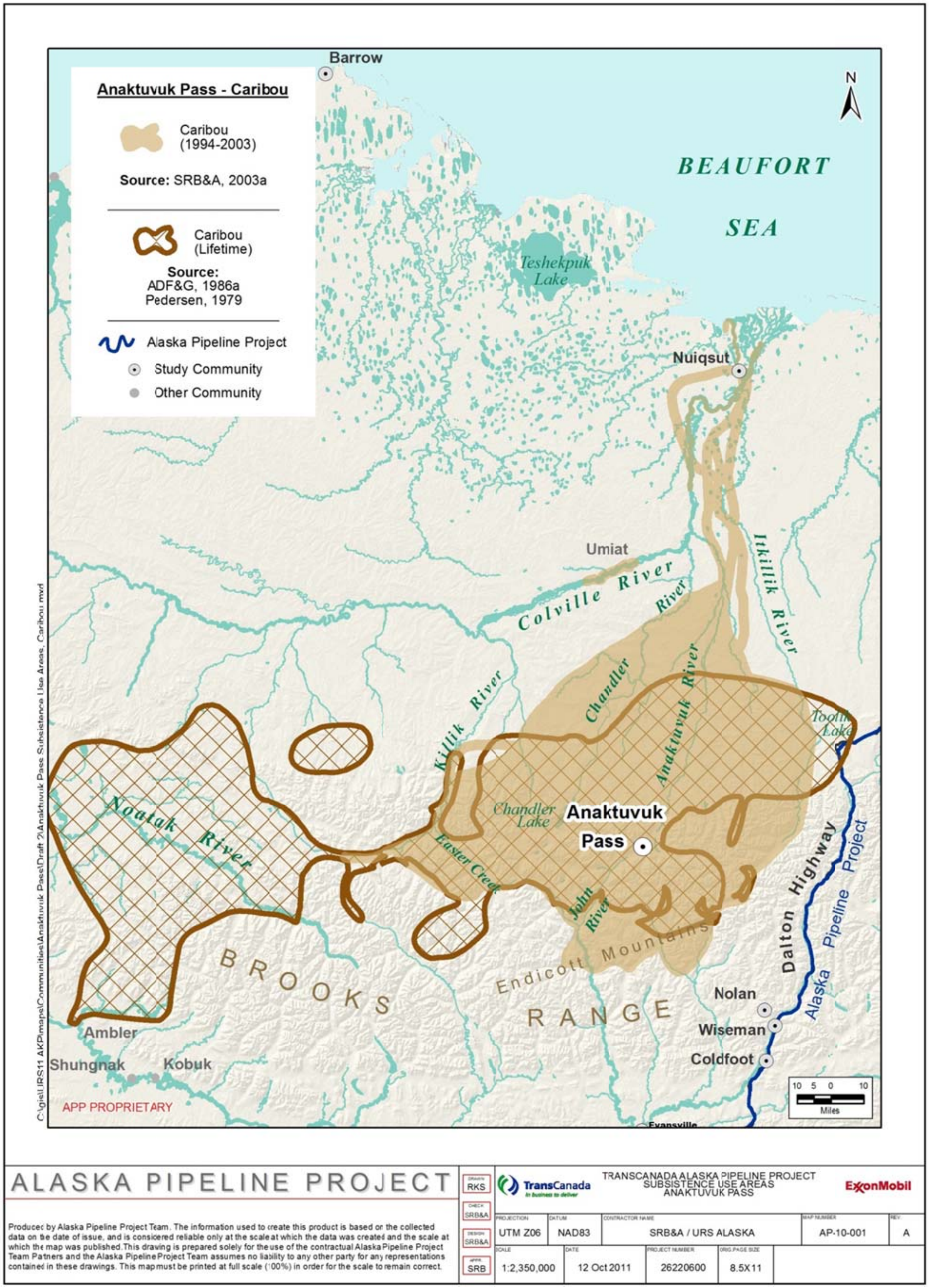

Figure E-8. Anaktuvuk Pass Subsistence Use Areas, Caribou

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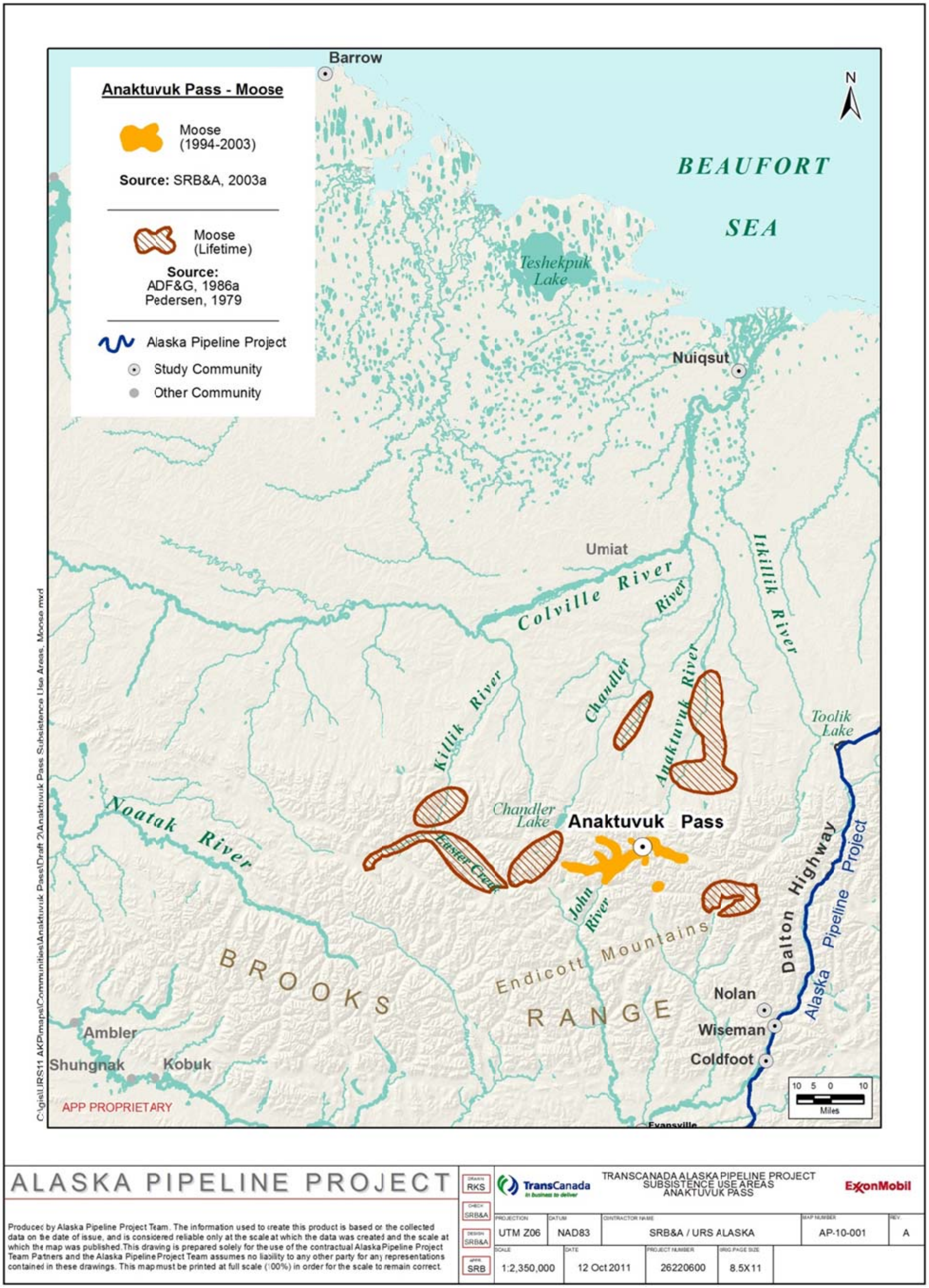

Figure E-9. Anaktuvuk Pass Subsistence Use Areas, Moose

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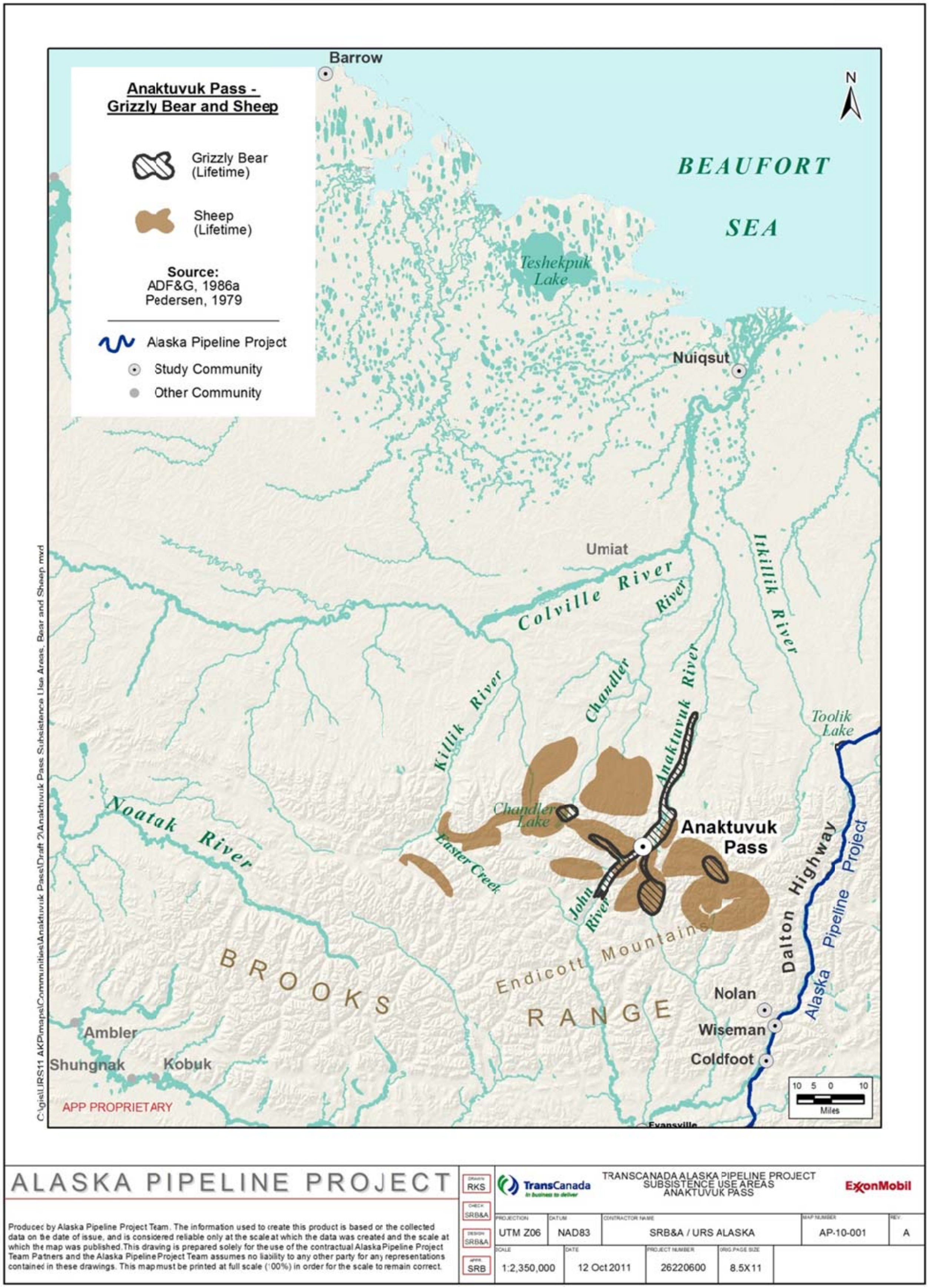

Figure E-10. Anaktuvuk Pass Subsistence Use Areas, Grizzly Bear and Dall Sheep

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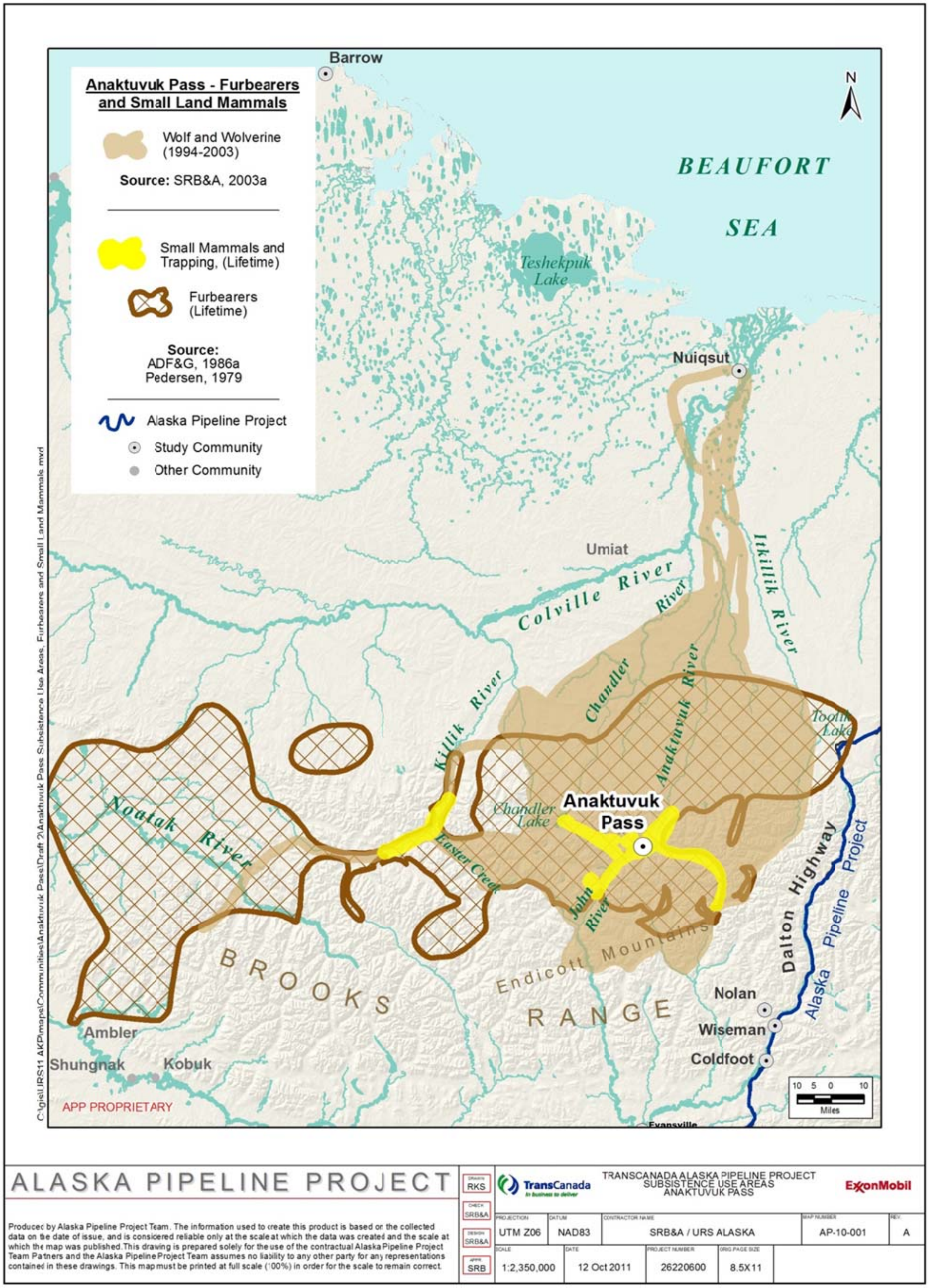

Figure E-11. Anaktuvuk Pass Subsistence Use Areas, Small Land Mammals

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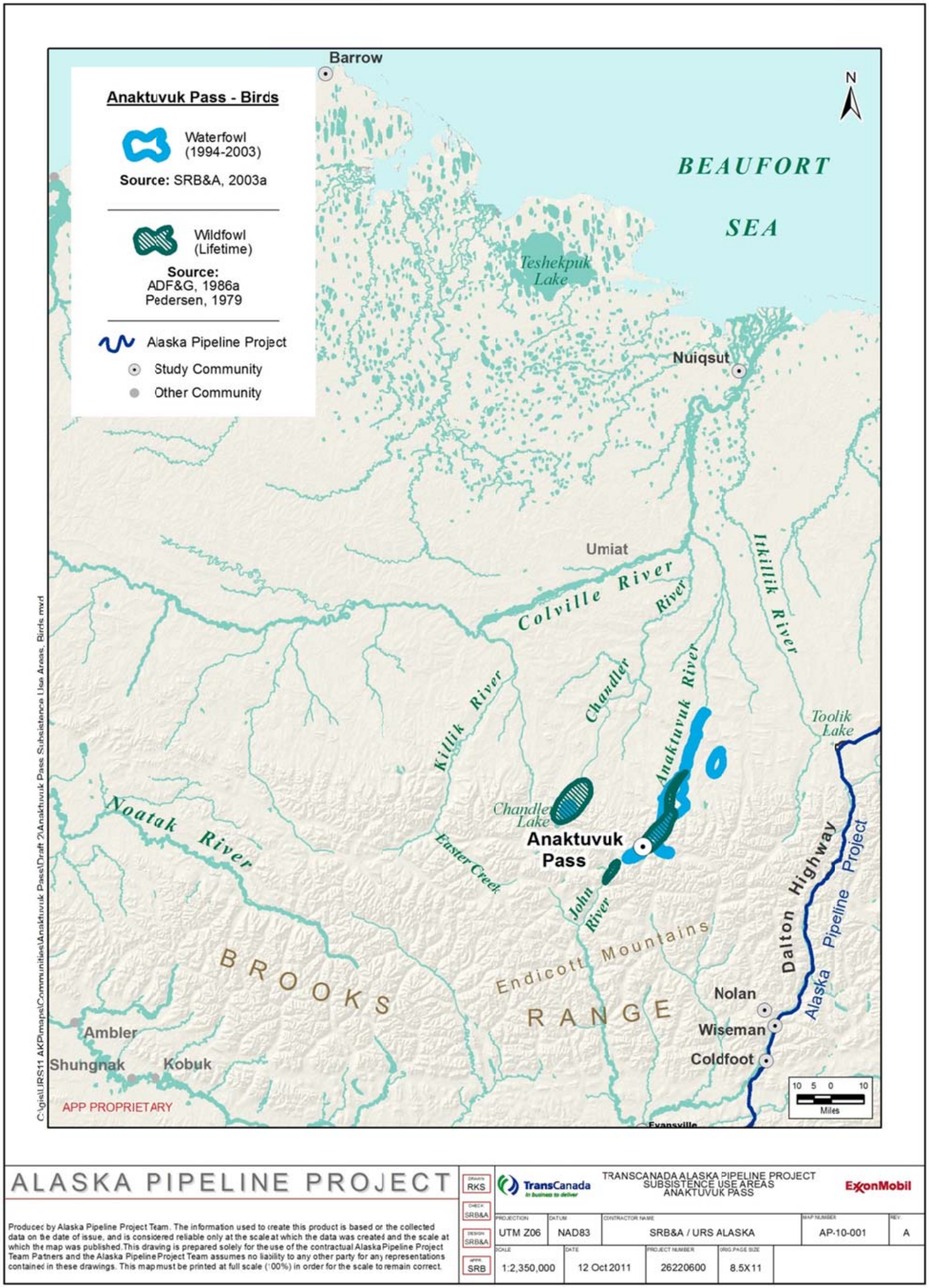

Figure E-12. Anaktuvuk Pass Subsistence Use Areas, Birds

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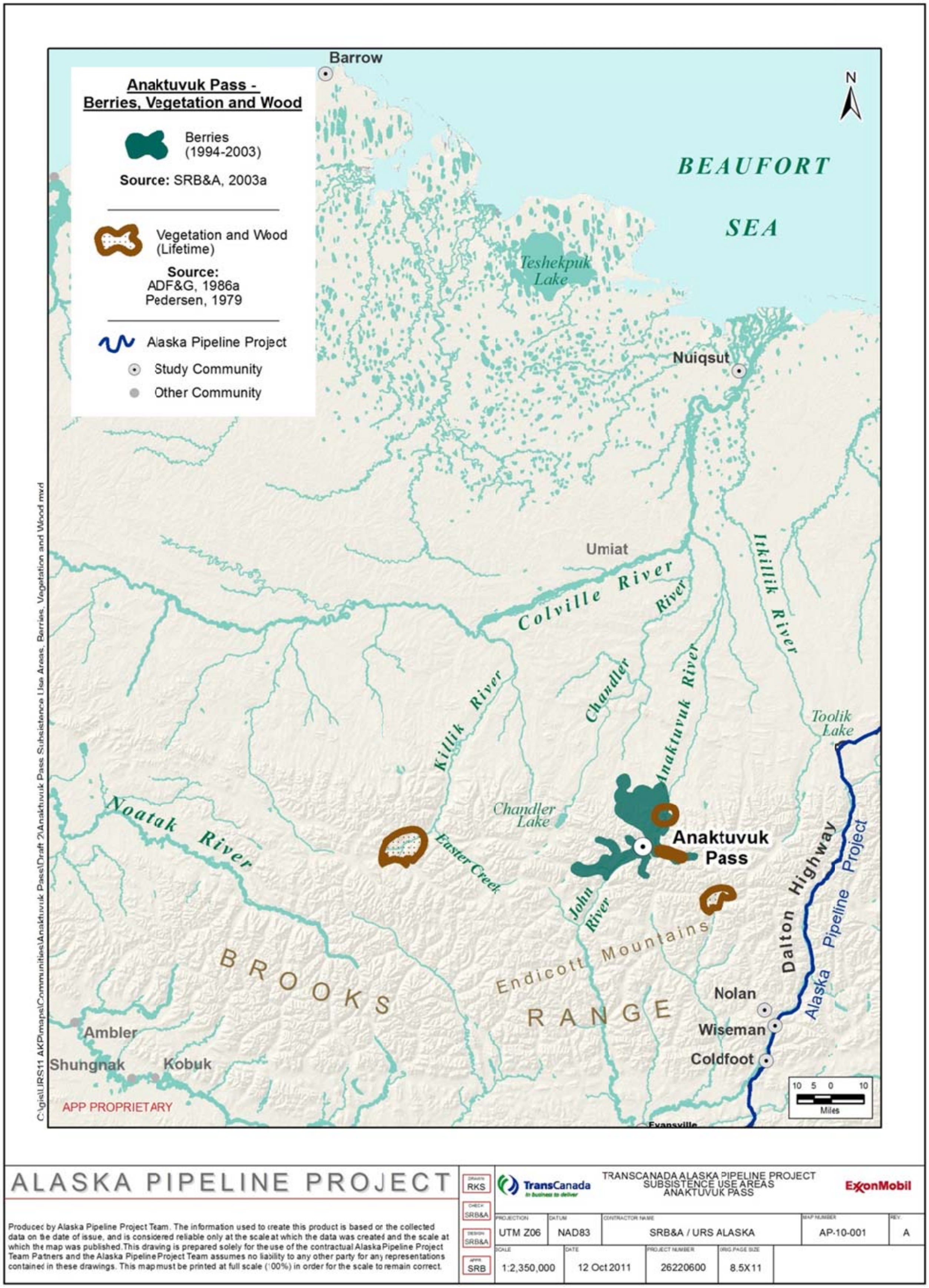

Figure E-13. Anaktuvuk Pass Subsistence Use Areas, Vegetation

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BARROW

DRAFT

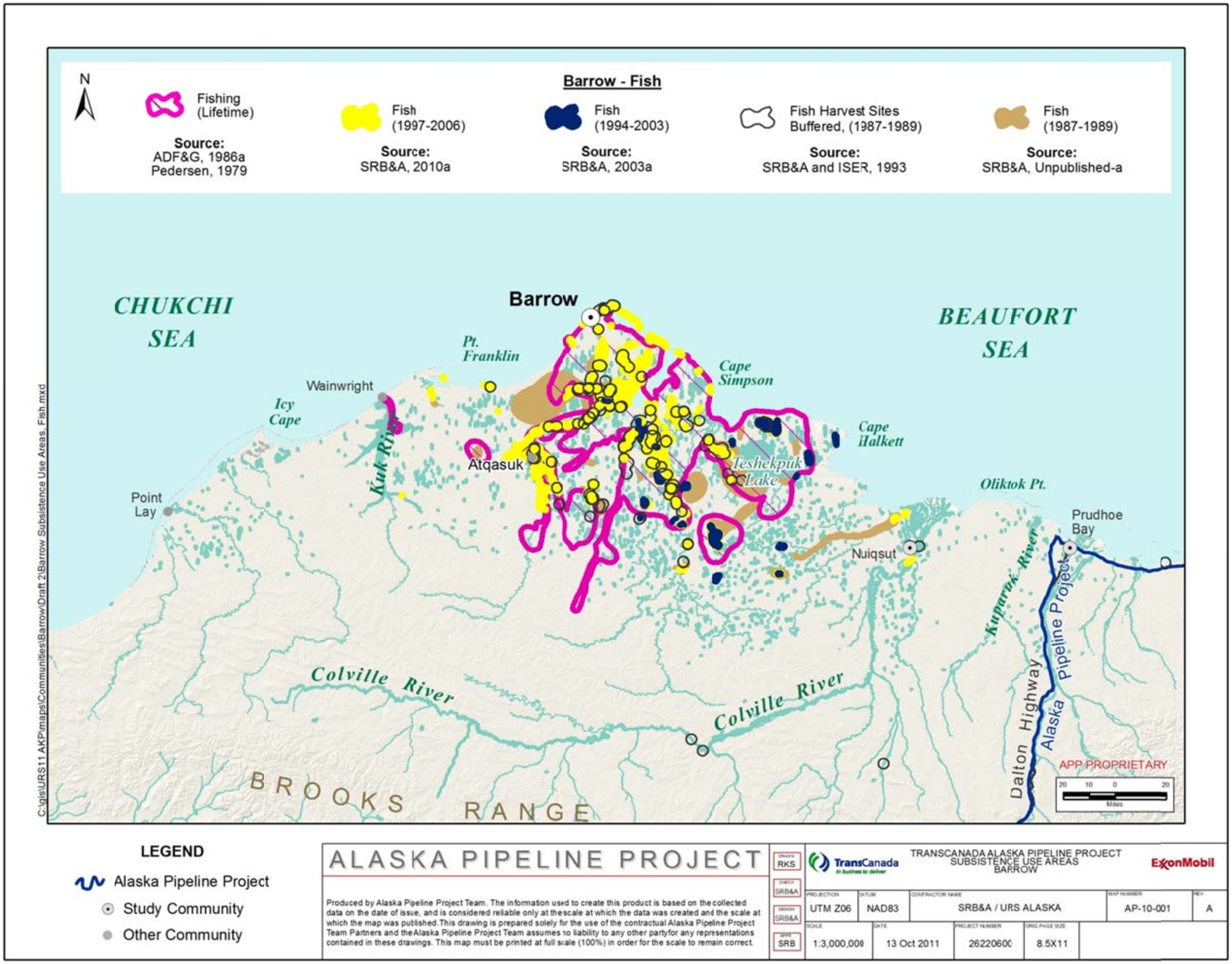

Figure E-15. Barrow Subsistence Use Areas, Fish

DRAFT

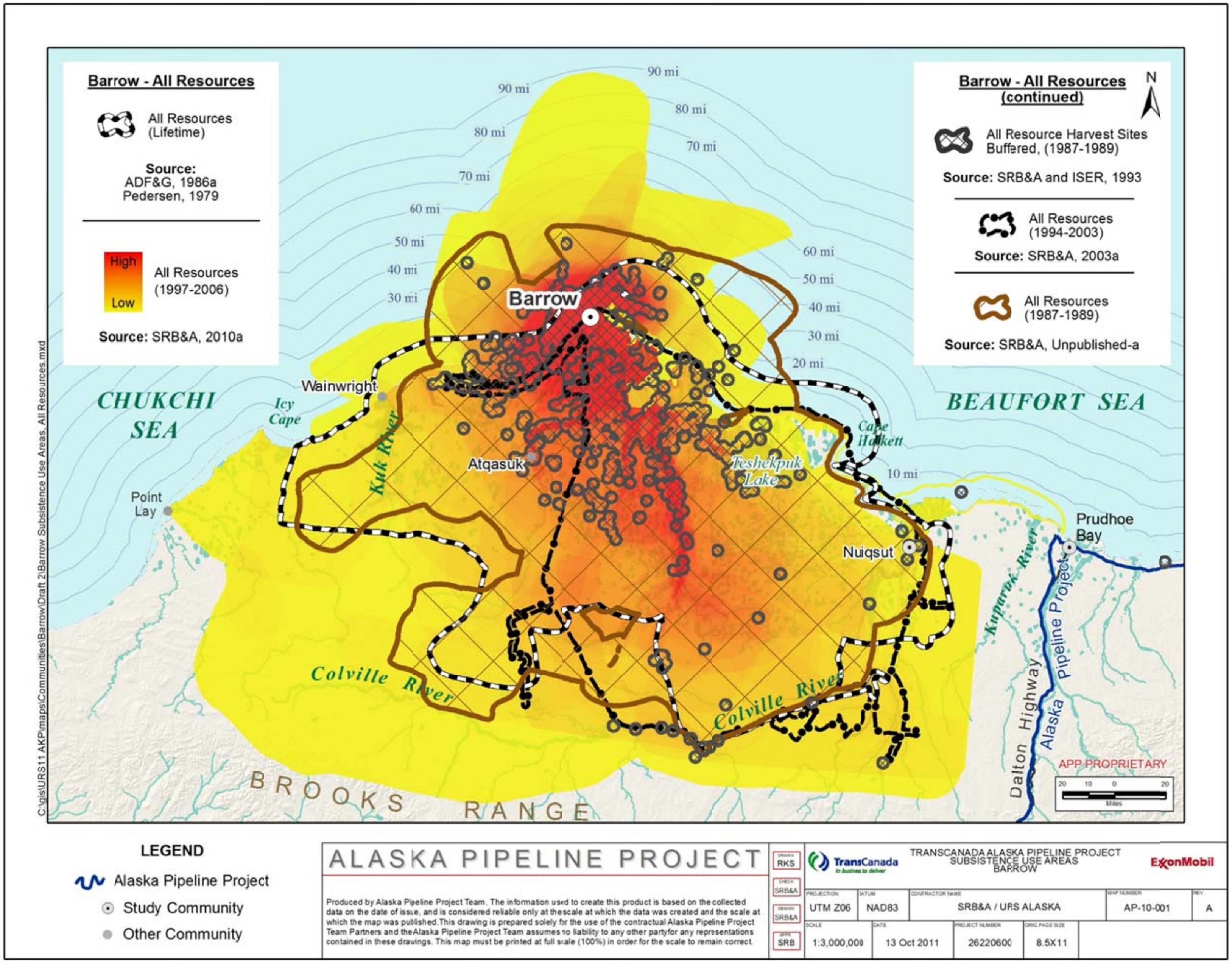

Figure E-14. Barrow Subsistence Use Areas, All Resources

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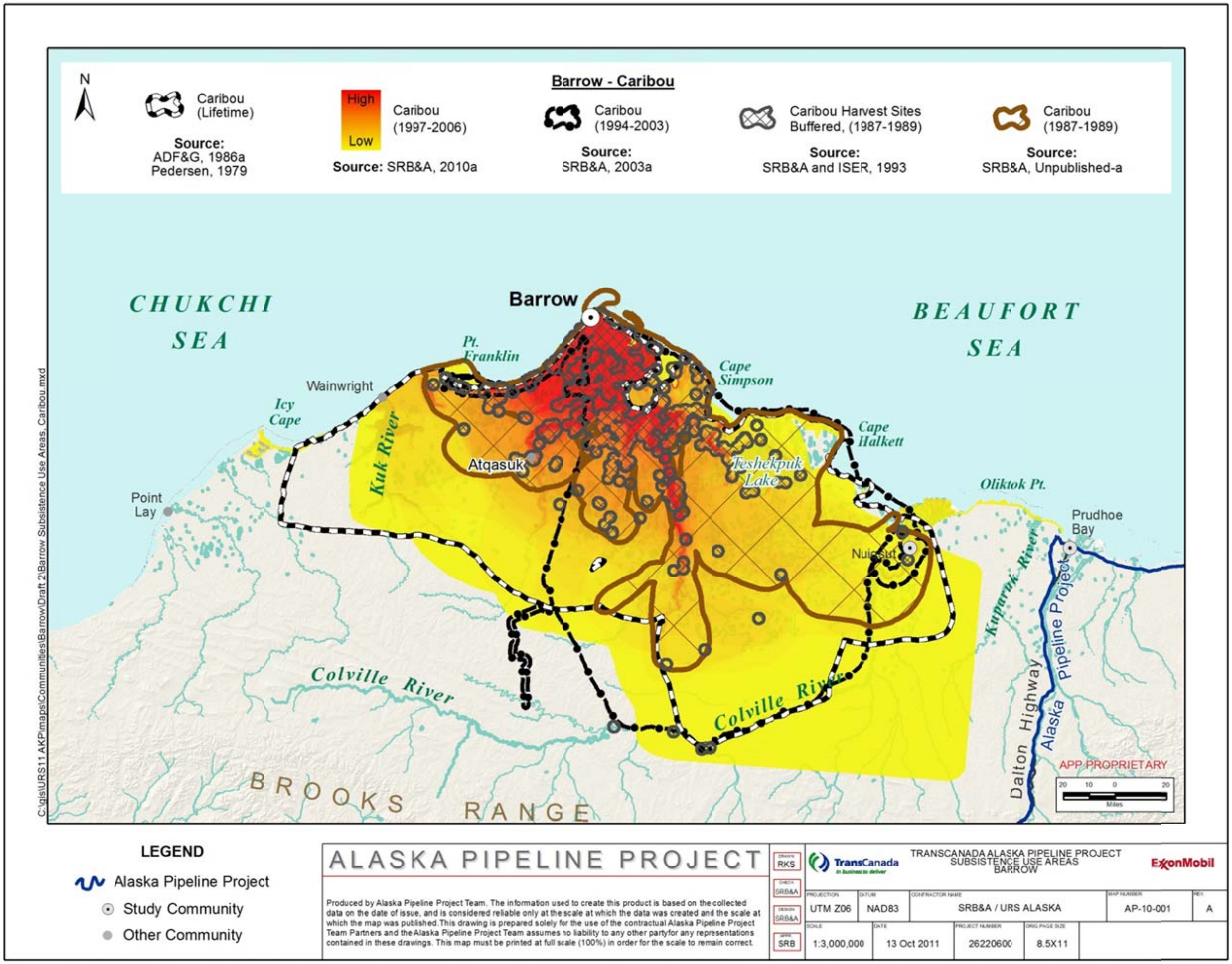

Figure E-16. Barrow Subsistence Use Areas, Caribou

DRAFT

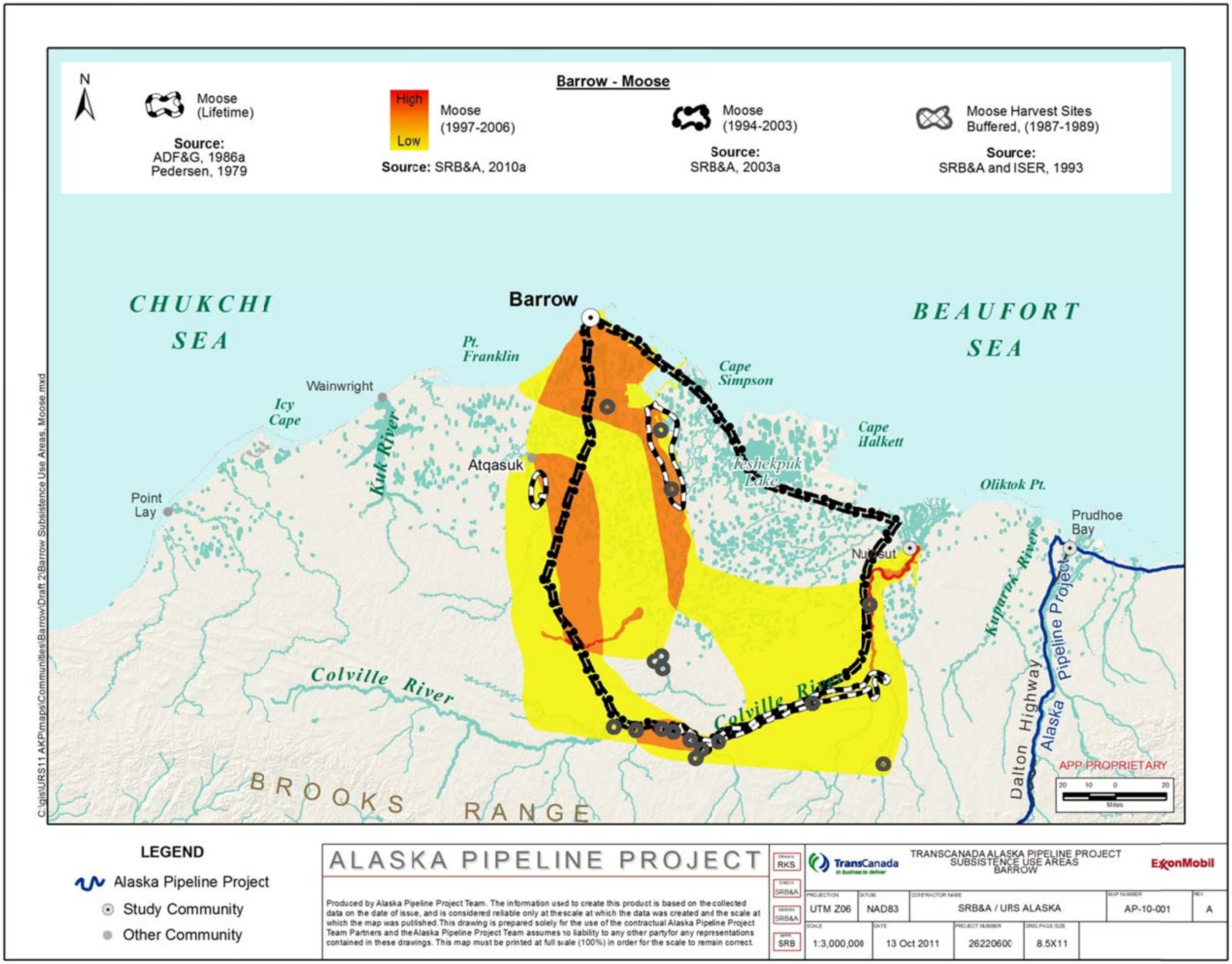

Figure E-17. Barrow Subsistence Use Areas, Moose

DRAFT

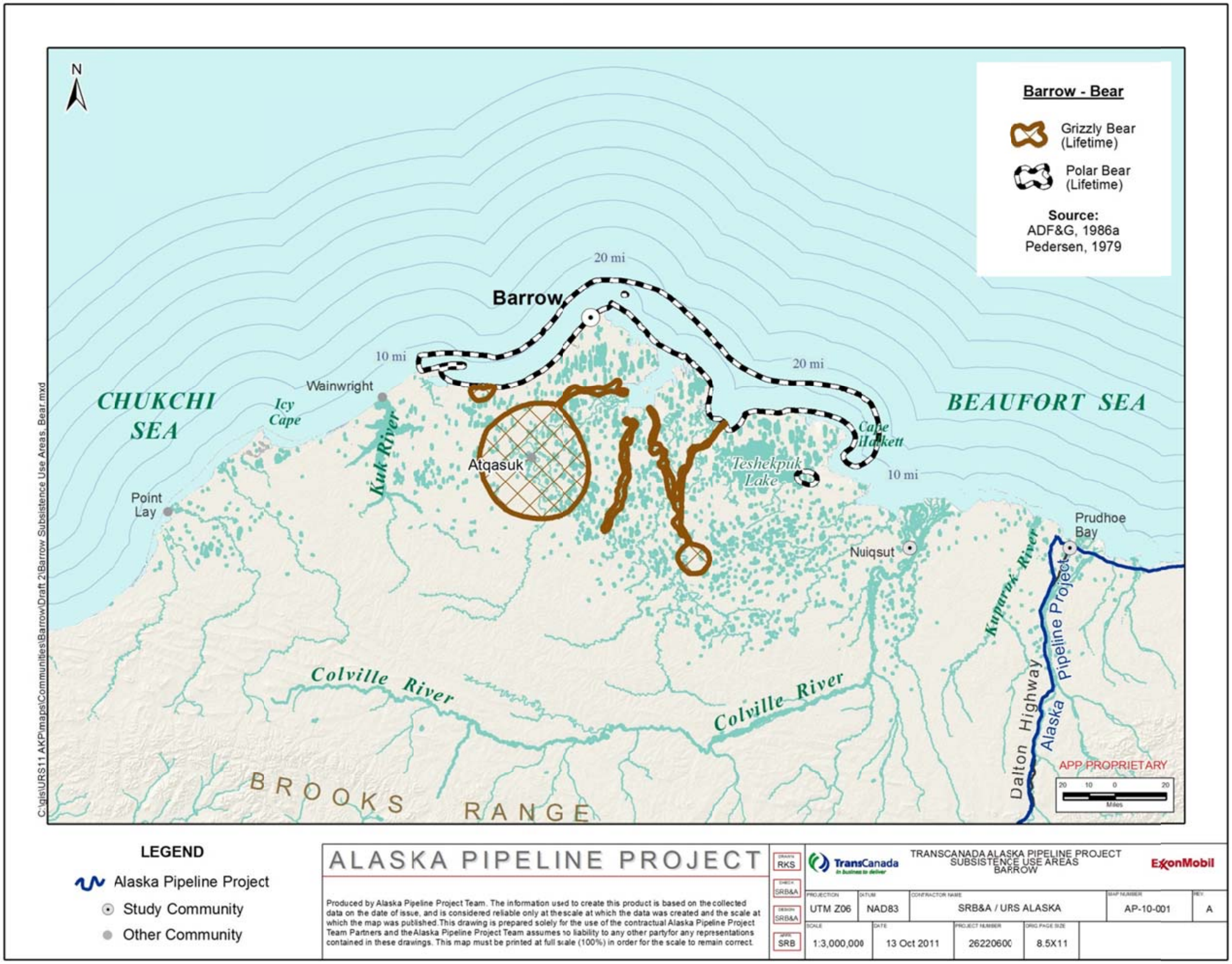

Figure E-18. Barrow Subsistence Use Areas, Bear

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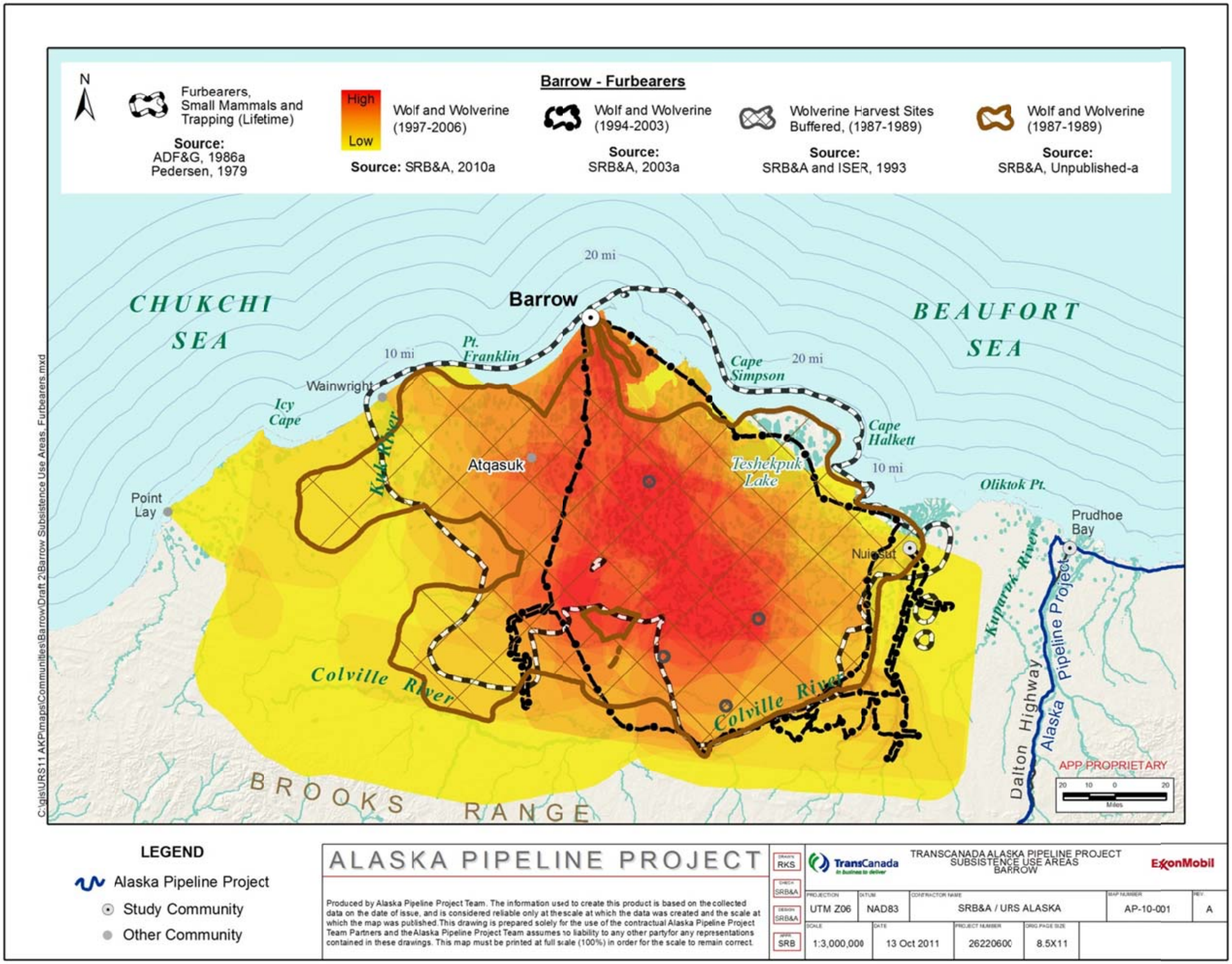

Figure E-19. Barrow Subsistence Use Areas, Small Land Mammals

DRAFT

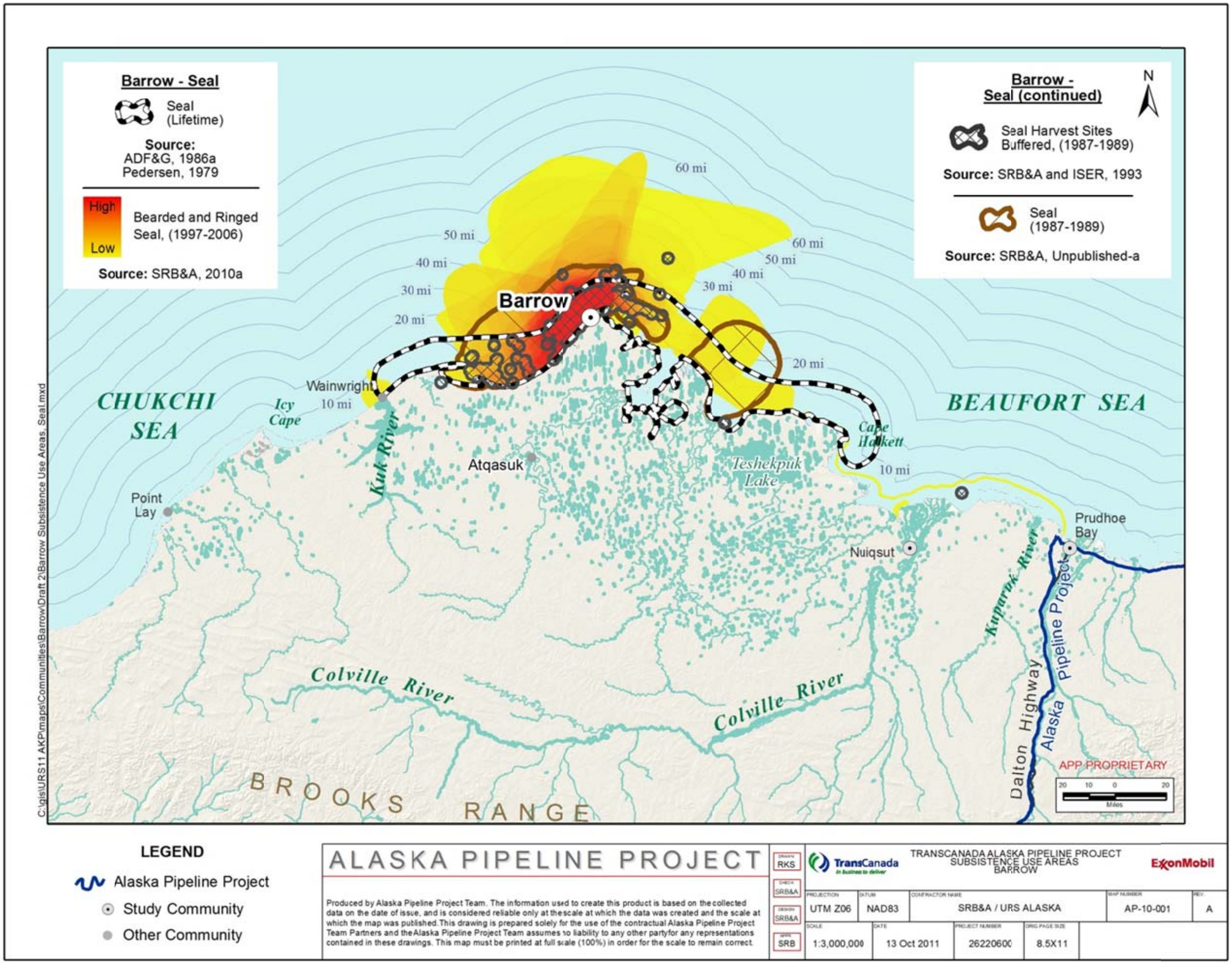

Figure E-20. Barrow Subsistence Use Areas, Seal

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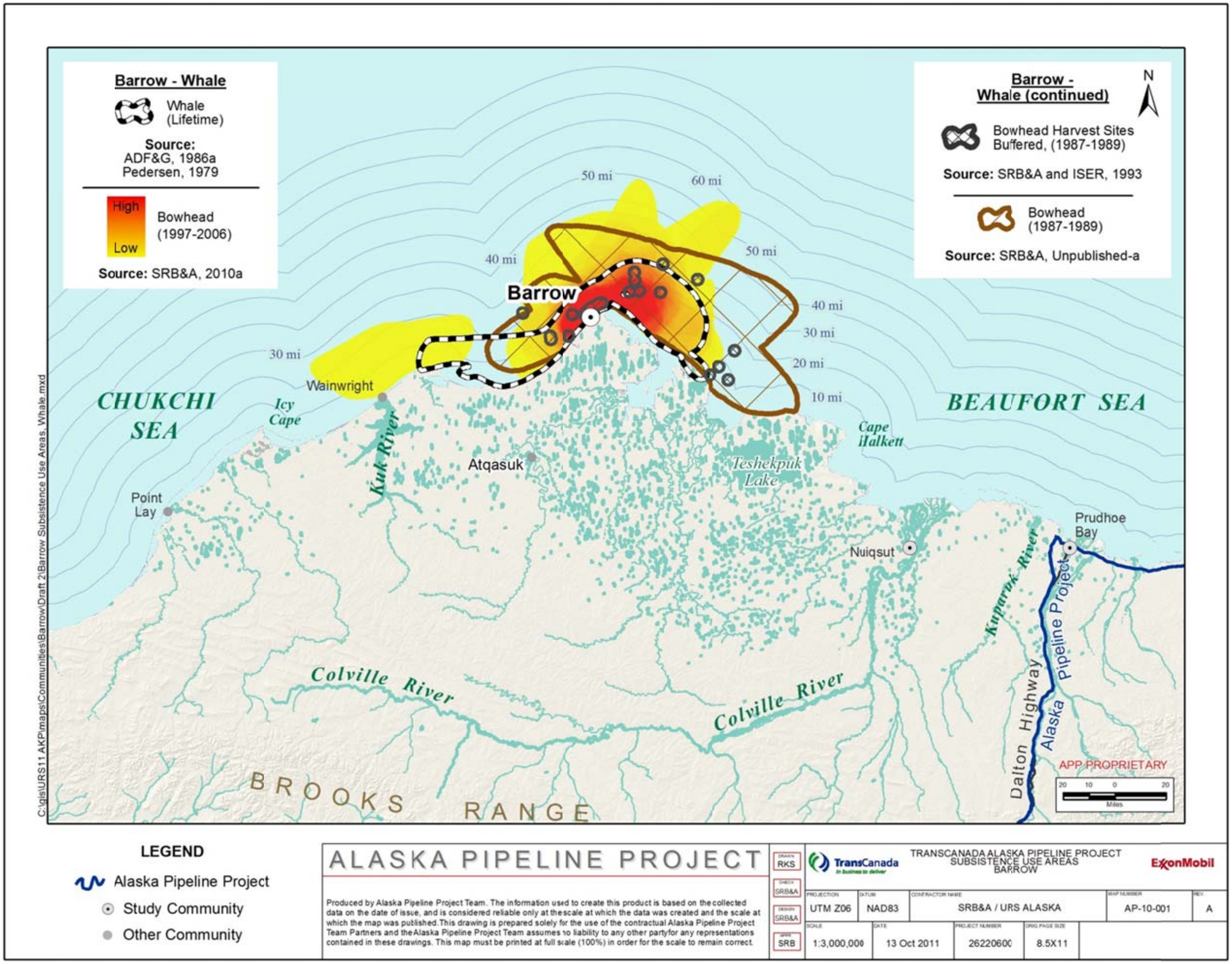

Figure E-21. Barrow Subsistence Use Areas, Whale

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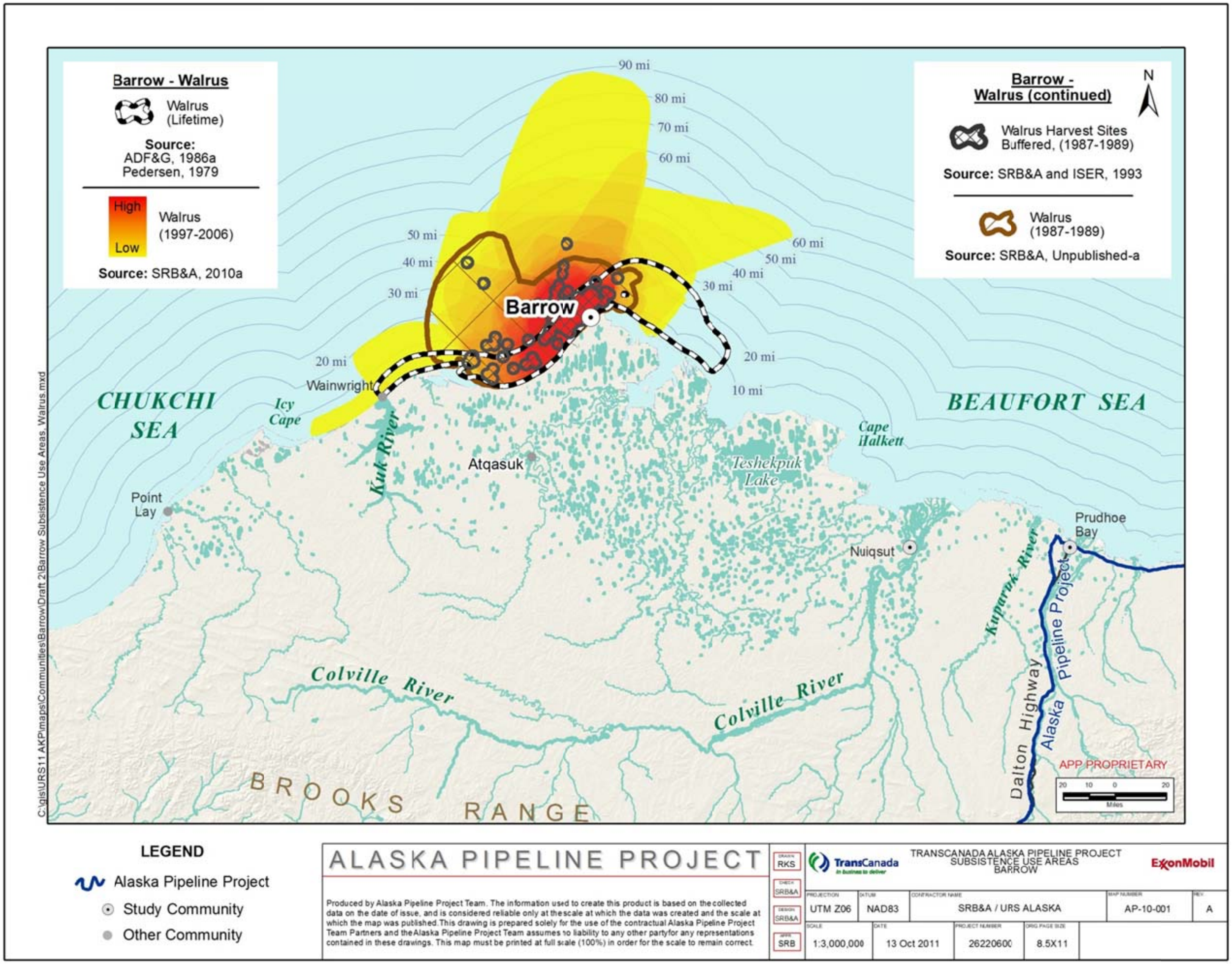

Figure E-22. Barrow Subsistence Use Areas, Walrus

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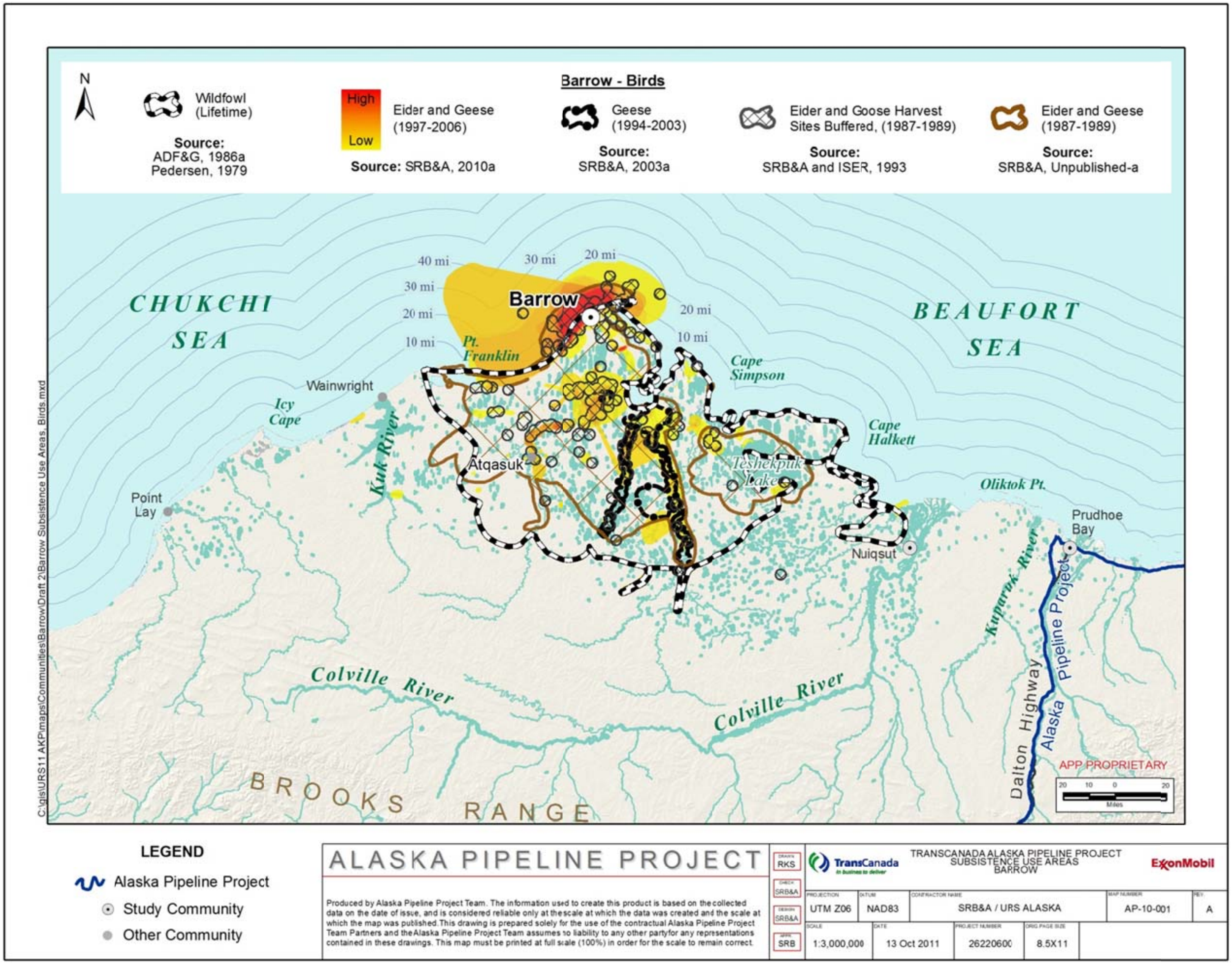

Figure E-23. Barrow Subsistence Use Areas, Birds

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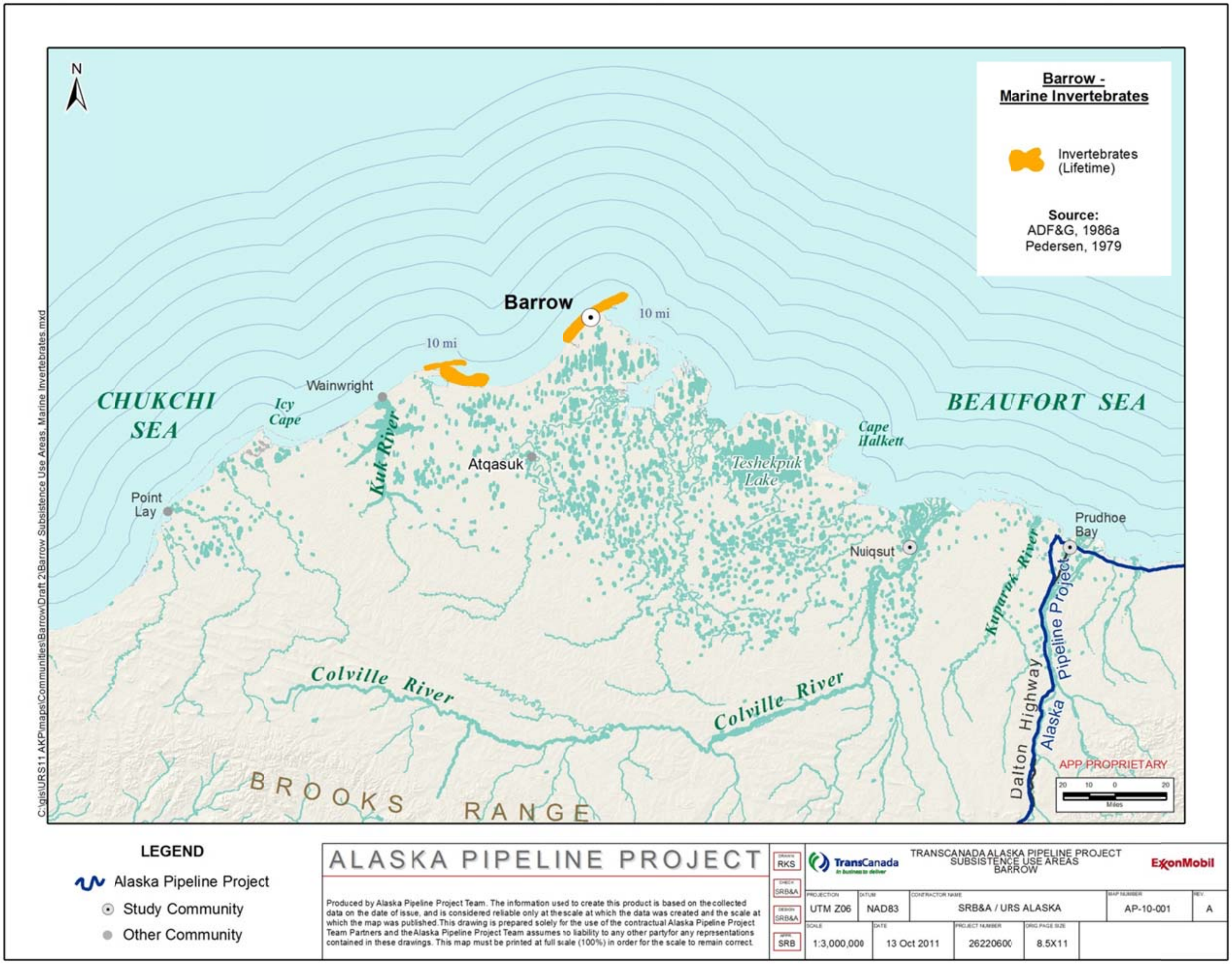

Figure E-24. Barrow Subsistence Use Areas, Marine Invertebrates

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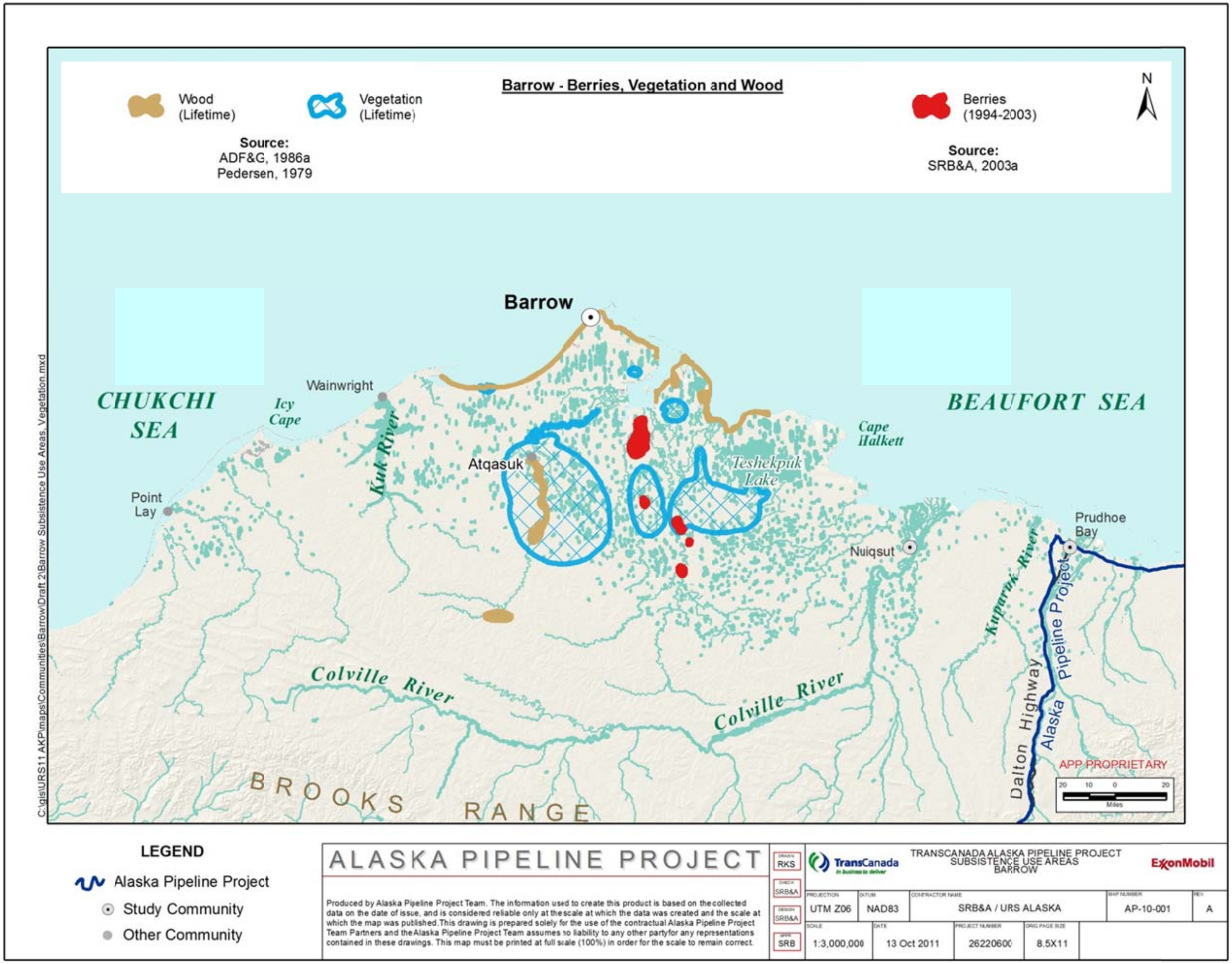

Figure E-25. Barrow Subsistence Use Areas, Vegetation

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