PEBBLE PROJECT
ENVIRONMENTAL BASELINE DOCUMENT
2004 through 2008
(with updates in 2009)

CHAPTER 21.
SOCIOECONOMICS
Bristol Bay Drainages

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ACRONYMS AND ABBREVIATIONS

ABWE	Alaska Bureau of Wildlife Enforcement
ADCCED	Alaska Department of Commerce, Community, and Economic Development
ADCRA	Alaska Department of Community and Regional Affairs
ADEC	Alaska Department of Environmental Conservation
ADEED	Alaska Department of Education and Early Development
ADF&G	Alaska Department of Fish and Game
ADHSS	Alaska Department of Health and Social Services
ADOLWD	Alaska Department of Labor and Workforce Development
ADOR	Alaska Department of Revenue
ADOT&PF	Alaska Department of Transportation and Public Facilities
AEA	Alaska Energy Authority
AEA-AEEE	Alternative Energy and Energy Efficiency
AEA-BF	Alaska Energy Authority, Bulk Fuel
AEA-RPSU	Alaska Energy Authority, Rural Power System Upgrades
ANCSA	Alaska Native Claims Settlement Act
ANTHC	Alaska Native Tribal Health Consortium
APA	Alaska Packers Association
ARCS	Alaska Rural Communication Service
BBAHC	Bristol Bay Area Health Corporation
BBEDC	Bristol Bay Economic Development Corporation
BBNA	Bristol Bay Native Association
BBNC	Bristol Bay Native Corporation
BEA	Bureau of Economic Analysis (U.S. Department of Commerce)
BIA	Bureau of Indian Affairs
BP	before present
CAE	Cominco Alaska Exploration
CDQ	community development quota
CEDS	Comprehensive Economic Development Strategy(ies)
CFEC	Commercial Fisheries Entry Commission
EEZ	Exclusive Economic Zone
EMT	emergency medical technician
ETT	emergency trauma technician
FAA	Federal Aviation Administration
FY	fiscal year

H&G	headed and gutted (fish)
HUD	U.S. Department of Housing and Urban Development
ISER	Institute of Social and Economic Research (University of Alaska)
N/A	not available or not applicable
NAHASDA	Native American Housing Assistance and Self Determination Act
ppm	parts per million
REAA	Regional Educational Attendance Area
SHA	Special Harvest Area
SWAMC	Southwest Alaska Municipal Conference
UAF	University of Alaska Fairbanks
USGS	U.S. Geological Survey
VPSO	Village Public Safety Officer
VSW	Village Safe Water

21. SOCIOECONOMICS—Bristol Bay Region

21.1 INTRODUCTION

This chapter includes detailed data and information on study area demographics, economy, and infrastructure, as well as a brief overview of the area's history and culture. Demographics include population size, age, race, and household characteristics. The discussion of economy covers data on employment, labor force status, key employers, basic industries, income, occupational information, and other data. The discussion of community infrastructure provides information on utilities, housing, education, health care, and public safety.

This socioeconomic baseline description includes the most recent demographic and economic data available at the time of writing, from government sources, typically 2009, and in some instances 2008 or earlier. Long-term historical trend analysis relies on 1990 and 2000 U.S. census data.

The accuracy of the demographic and economy analysis is limited by the accuracy of the government data and the effectiveness of the sources that compile and publish the data. Where possible, primary research has been conducted to corroborate the baseline data.

21.2 STUDY OBJECTIVES

The objective of the socioeconomic baseline study is to characterize the baseline socioeconomic conditions in the study area.

21.3 STUDY AREA

The Bristol Bay drainages study area considered in this socioeconomic baseline study is composed of two parts: the area of the Iliamna Lake/Lake Clark communities and the area of the Nushagak/Bristol Bay Borough communities. The Iliamna Lake/Lake Clark study area consists of eight communities in the Lake and Peninsula Borough: Nondalton, Newhalen, Kokhanok, Port Alsworth, Iliamna, Pedro Bay, Levelock, and Igiugig. The Nushagak/Bristol Bay Borough study area consists of the entire Lake and Peninsula Borough and its communities (excluding those Iliamna Lake/Lake Clark communities listed above), the Bristol Bay Borough, and the Dillingham Census Area. The Lake and Peninsula Borough communities considered part of the Nushagak/Bristol Bay Borough study area are Chignik City, Chignik Lagoon, Chignik Lake, Egegik, Ivanof Bay, Perryville, Pilot Point, Pope-Vanoy Landing, Port Heiden, and Ugashik.

21.4 PREVIOUS STUDIES

This socioeconomic baseline research is the first of its kind in the study area as of the time of this writing. Socioeconomic data and information related to the study area were obtained from a number of sources. Key data, including those on population, employment, unemployment, and payroll, are from the Alaska

Department of Labor and Workforce Development (ADOLWD). A broad range of demographic data was taken from 1990 and 2000 census documentation.

21.5 SCOPE OF WORK

The primary topics that are addressed in this socioeconomic baseline description are as follows:

- History and culture—culture and developmental history of the study area.
- Demographics—population size, composition, and trends.
- Economy—traditional economic resources and economic structure, resident and non-resident workforce and workforce participation, employment and unemployment rates, workforce education, wage and income levels, sources of cash income, local suppliers of business goods and services, basic industry overviews, economic trends and forecasts, and outlook for traditional economy.
- Community infrastructure—community utilities, facilities, and services; housing; public safety; health; education; etc. (except energy supply, which is addressed separately in Chapter 20).
- Governance—city, borough, and traditional/tribal governments and nonprofit service organizations; their legal status, powers, and finances; and their inter-relationships.

Because of their proximity to possible project facilities, communities in the Iliamna Lake/Lake Clark area are characterized in greater detail and depth than communities and regions in the Nushagak/Bristol Bay Borough area. Conversely, the description of communities and regions in the Nushagak/Bristol Bay Borough area (excluding the Iliamna Lake/Lake Clark communities) focuses mainly on demographic and economic characteristics.

21.6 METHODS

Information required for the description of socioeconomic baseline conditions is available from published and unpublished data sources, supplemented by interviews of local public officials and similar informants. The basic approach in developing this baseline included collecting all available documentation (primarily from government sources), assessing the quality and limitations of the data, and supplementing the data with primary research (key informant interviews) where necessary and possible.

A number of data sources were used for this baseline study. Many of the data were obtained from the U.S. Census Bureau (USCB, n.d.). This data source provides demographic data, including age, race, household characteristics, languages spoken, gender, labor force information, income, educational attainment, and occupational data, as well as household and per capita income. Census data are collected every 10 years, with the most recent census available for use in this document occurring in 2000; therefore, data from this source may become less accurate towards the end of each 10-year period. Occupational data may under-represent seasonal occupations such as fishing because the census survey asks respondents to report their occupation in reference to a stated week of the year. Respondents holding more than one job are asked to report the job at which they worked the most hours. Additionally, economic data may underestimate the summer season peaks in employment and population. Nevertheless, census data provide the most detailed data available concerning many economic characteristics for small communities. All census data are gathered as of April 1 every 10 years, and the income data gathered reflect the previous year.

Gender data are based on census data where individuals are asked to mark either male or female to indicate their sex. If a person's gender was not reported, it was determined from the individual's name and household relationship. Individual age is usually derived from date of birth information. Reported age is used when date of birth information is unavailable. Median age is the middle of the age distribution, with one-half of the ages falling below the median value and one-half above the value. Median age is not the same as average (mean) age. "Race," as used by the U.S. Census Bureau, reflects self-identification according to the race or races with which people most closely identify. The U.S. Census Bureau stresses that these categories are sociopolitical constructs and should not be interpreted as being scientific or anthropological in nature.

The "Alaska Native" designation includes written-in responses of Eskimo, Aleut, and Alaska Indian, as well as responses such as Arctic Slope, Inupiat, Yup'ik, Alutiiq, Egegik, and Pribilovian. The tribal information for census 2000 is based on the American Indian Tribal Classification List for the 1990 census, which was expanded to list the individual Alaska Native villages when provided as a written response for race. Not all race information was determined through individual response however. If a person did not provide a response for race, individual race information was assigned using specific rules.

A household includes all of the people who occupy a "housing unit." A housing unit is a house, an apartment, a mobile home, a group of rooms, or a single room occupied as separate living quarters. Two types of householders are distinguished: family householders and nonfamily householders. A family includes a householder and one or more other people living in the same household who are related to the householder by birth, marriage, or adoption. For the purposes of census tabulations, a household can contain only one family, although it can contain more than one nonfamily householder. A married-couple family is a family in which the householder and his or her spouse are enumerated as members of the same household. The married-couple family with children includes children under 18 years old who are a son or daughter by birth, marriage (a stepchild), or adoption. The category excludes sons-in-law, daughters-in-law, and foster children.

Information on language spoken at home was derived from responses to the U.S. Census Bureau's long-form questionnaire, which was provided to only a sample in each community. If a person responded that a language other than English was spoken in their home, but failed to specify which language, the language was assigned based on the language of other speakers in the household, of a person of the same origin or detailed race group living in the same or a nearby area, or of a person of the same place of birth or ancestry. Most people who reported speaking a language other than English at home reported also speaking English.

Three main sources of data from the ADOLWD were used in this study:

- **Annual population estimates** are calculated using a formula and "the estimates for each year are independent and not built on prior year estimates," (ADOLWD DRA, n.d.[a]).
- **Employment and earnings data** contain information on business-, industry-, and government-sector employment by borough, including the average number of jobs in each business, industry, and government sector on a monthly and annual basis. These data do not include self-employment or commercial-fisheries employment, which is covered by the Alaska Commercial Fisheries Entry Commission (CFEC). Payroll data are available only in aggregated form because of confidentiality restrictions; however, data on total payroll by community on a quarterly and

annual basis are available. Employment and earnings data become available after a 6-month lag. This data set is imperfect because, in limited instances, employers reported all their employment at the location of company headquarters even if the jobs were actually located in other communities or locations. ADOLWD attempted to identify and correct these reporting errors; however, it was not possible to account for all such instances.

- **Unemployment rate data** at the census-area level also are available from ADOLWD, but the data are based on how many individuals apply for unemployment benefits and exclude workers whose unemployment benefits have expired; therefore, for rural Alaska in particular, published unemployment data are most useful as an indicator of change in unemployment rates rather than as an absolute measure of the number of unemployed workers in a particular location.

This report also uses data from a household survey of select Lake and Peninsula Borough communities conducted in 2005 by the Alaska Department of Fish and Game (ADF&G) Division of Subsistence. The survey was developed to collect demographic data, and resource harvest and use data, as well as employment and other economic data. Members of year-round households in several of the Iliamna Lake/Lake Clark communities were surveyed. For the purposes of this report, survey data concerning place of employment for residents of each community were used. These data indicate the number and location of jobs held by employed individuals living in the study area communities. Many employed residents have more than one job during the year (either temporary jobs or part-time employment), thus the total number of jobs counted in this study is higher than the total number of employed residents shown in U.S. Census Bureau data. It should be noted that the 2005 data on job-site locations exclude the communities of Kokhanok, Levelock, and Igiugig.

Data concerning commercial fishing activity were obtained from the Alaska Department of Revenue (ADOR) Tax Division, ADF&G, and CFEC. Data used in this report include commercial fishing activity from 1990 through 2009 for each community and census area.

ADF&G collects detailed information on salmon harvests, escapements, total runs, participation, and value. The CFEC collect data, by permit holder, on participation, harvest volume, and harvest value. Specifically, data were obtained from the CFEC concerning the number of permit holders in each community, the number of permits issued, the number of crew licenses issued, total pounds landed, estimated gross earnings, estimated earnings per pound, number of fishermen who fished, and number of permits fished. While these data provide important information, there are three main disadvantages to consider when using these data. Often the preliminary data exclude key fisheries (such as halibut fisheries), and therefore, the totals understate harvest and value. Additionally, confidentiality requirements mask the pounds landed and the estimated gross earnings for specific fisheries when three or fewer people or permits participate in a particular fishery. For the crew-member license data, there is a time lag. At the time of this writing, only 2009 data are available. These data indicate the number of individuals who purchased crew-member licenses; however, the data do not indicate whether or not they fished or how much they earned. Data from the ADOR Tax Division provide information on state, borough, and city revenue from commercial fishing operations in the Bristol Bay region.

Data concerning public-assistance receipts and payments and data presented in the sections of this report on health and social indicators were obtained from the Alaska Department of Health and Social Services (ADHSS). Assistance data used in this report include the number of households and individuals in each of the Iliamna Lake/Lake Clark communities receiving temporary assistance, food stamps, adult public

assistance, and Medicare/Medicaid, as well as the total payments for each of these types of assistance in each community. Data on health and social indicators include birth, death, and disease statistics; school information; and educational assessment figures.

Data concerning personal income at the census-area level were obtained from the U.S. Department of Commerce, Bureau of Economic Analysis (BEA). The most current BEA data available at the time of this study were for 2007.

21.7 RESULTS AND DISCUSSION

21.7.1 History and Culture

The region around Iliamna Lake and Lake Clark has been inhabited for millennia; the earliest dated archaeological sites in the area were found at Pedro Bay and date from approximately 4,500 years before present (BP).

During the historic period (1794 to present), the study area has been the traditional homeland for Native peoples of three major language groups:

- The Central Yup'ik Eskimos.
- Linguistically related Alutiiq speakers (also known as Aleut or Suspiaq).
- The Dena'ina, speakers of an Athabascan Indian language related to interior Alaskan and Canadian languages.

Central Yup'ik Eskimo speakers live in the coastal regions of Southwest Alaska, from Ugashik Bay on the Alaska Peninsula north to Norton Sound. Their range also extends inland along rivers such as the Nushagak, Mulchatna, and Kvichak, around much of Iliamna Lake and then farther east to Kamishak Bay on Cook Inlet.

Alutiiq speakers (Aleuts) live on the north side of the Alaska Peninsula from Port Moller to Ugashik, and along the south side of the peninsula on the Pacific Ocean coast to Cordova in Prince William Sound, including the Kodiak Archipelago and part of the Kenai Peninsula at Seldovia.

The Dena'ina language is spoken from Kamishak Bay north inland to Lime Village, then easterly along the Alaska Range Mountains to Talkeetna, south to the vicinity of Chickaloon, and then along the north side of the Chugach Mountains from Chickaloon to Homer.

European and American influences on Alaska Natives began with Russian fur traders and Russian Orthodox missionaries in the 18th and 19th centuries. After the sale of Alaska to the United States, the fur trade continued until the 1980s as a source of cash income. The United States purchase of Alaska brought new influences such as Bureau of Education teachers and reindeer herders, missionaries, judges and courts, Bureau of Indian Affairs schools, commercial fishing and cannery work, itinerant traders, mineral prospectors, and homesteaders.

Numerous communities have existed in the study area throughout history, serving different purposes and supporting human habitation for different lengths of time. For example, some sites served primarily as

seasonal camps, such as fish camps, trap-line camps, and waiting camps such as Indian Point on Lake Clark, where people waited for the lake ice to break up in the spring. Some camps were used only occasionally while others were used repeatedly; the latter often grew to become settled communities. Many factors contributed at different times to the movement of residents between communities, the establishment of new communities, and the abandonment of old communities. Epidemic diseases reduced populations and fostered the movement of many Native people into once-seasonal camps such as Nondalton for use as permanent villages. Volcanic activity spurred some to move from the Alaska Peninsula to the Iliamna region following the 1912 Katmai eruption. Mandatory school attendance drove the establishment of permanent communities, often around a core of missionary activities or commercial operations such as roadhouses, canneries, and trading posts.

At the time of this study, most residents of the area reside in the established communities of Nondalton, Newhalen, Kokhanok, Port Alsworth, Iliamna, Levelock, Pedro Bay, and, Igiugig. Some area residents live at remote sites. Inhabitants of the study area rely on subsistence resources for a substantial portion of their economies, and these resources have cultural implications. Area residents have traditionally participated in fur trapping and hunting, as well as in the Bristol Bay fisheries. Tourism, firefighting, and other activities also contribute to the regional economy, with greater or lesser effects on the various communities.

21.7.1.1 Pre-European Era

Archaeological evidence identified in the Bristol Bay area dates back to the American Paleoarctic tradition (NPS, 2006c). Evidence of human inhabitance before the end of the Pleistocene Era (roughly 10,000 years ago) may exist on the submerged continental shelf of the present Bering Sea, which at one time was a vast grassy plain; other evidence may have been erased by glacial activity in the region (Alaska Geographic, 1978). In any case, clear evidence exists that human occupation of the region could have begun following the retreat of glaciers in the area beginning 12,600 years BP, with most glacial retreats completed by 9,500 BP. (For more detailed discussions of the prehistory of the region see Chapter 22.)

21.7.1.2 Russian and Other European Contact and Influence in the Study Area

Vitus Bering and Alexei Chirikov sailed from Okhotsk to the northern Gulf of Alaska, discovering Alaska for Russia, which was one of several European powers then intent on territorial acquisition and expansion in the New World. Trade voyages began almost immediately after the survivors of the voyage to Alaska returned to Okhotsk in 1742. Indirect effects, such as a dramatic decline in the numbers of sea otters, likely resulted from trade and fur-hunting missions that began in the far western Aleutian Islands and spread southward along the coast of North America, ultimately reaching Chile. Russian fur traders and explorers were in direct contact with peoples in the study area in the latter part of the 1780s. The Lebedev-Lastochkin Company, established in Cook Inlet by 1786, operated a trading post at Old Iliamna at the east end of Iliamna Lake, explored north to the Yukon and Kuskokwim rivers, and interacted with the region's various inhabitants. Shelikhov-Golikov's company operated from Kodiak and accessed Bristol Bay by portages across the Alaska Peninsula via Becharof Lake, named for the Russian explorer who mapped it in the 1780s.

Competition between these and other independent companies rapidly descended into open hostilities that used local Native people as proxies, thus drawing the interest of disapproving church and government

officials who sought to protect the Native people as citizens of the Russian empire. Interactions between the fur-trading companies and the Native peoples were not always positive and included several fur-trading practices that the Russian Government had outlawed in Siberia. These practices included forcing labor by threat, beating and murder, taking child hostages (*amenaty*), private collection of taxes, and forced seizure of tribute (*iasak*) in the form of furs and other valuables from Natives. Villages that were allied with particular companies were attacked by rival companies seeking to disadvantage their rivals by eliminating their local hunters, whose expertise at hunting sea otters made the fur trade possible (Black, 2004; Solovjova and Vovnyanko, 2002; VanStone, 1973, 1988). Russian Orthodox clergy opposed the harsh treatment of Alaska Natives by the independent companies and agitated with the Imperial Government for an oversight role as protectors of Alaska Natives as Russian citizens, as well as for government representation in the colonies as another check on the power of the merchants. The chartered monopoly company established in 1798, the Russian America Company, became a kind of hybrid that was tasked with commercial, governmental, and religious duties until the company assets were sold to the United States in 1867 (Black, 2004).

The Russian Lebedev-Lastochkin Company established fur-trading posts at Tyonek on Cook Inlet and near Old Iliamna in 1794. In 1798, Native groups burned down the trading posts in coordinated attacks, in response to disease outbreaks attributed to the Russians in some accounts or to other offenses in other accounts. It is possible that these events were precipitated by Baranov, the manager of the Shelikhov-Golikov Company in Kodiak, who sought to gain monopoly in Cook Inlet and Prince William Sound from the competing company. The newly chartered Russian America Company quickly re-established these two posts, establishing additional posts on the Kenai Peninsula, Kodiak Archipelago, and Shelikof Strait. The decline in sea-otter numbers resulted in a need to find a new source of fur wealth, thus spurring efforts to explore Bristol Bay. In 1818, Governor Alexander Baranof directed Petr Korsakovskiy to explore the Bristol Bay area and to establish trade relations there. Korsakovskiy's party constructed a fur-trading post at Nushagak. Following this, the party explored the coastal areas of Bristol and Nushagak bays to the mouth of the Kuskokwim River and explored the Nushagak-to-Mulchatna-to-Lake Clark route (VanStone, 1988). Ensign Vasilev explored the lakes and streams tributary to Nushagak Bay in 1829 and created the first maps of the Wood-Tikchik Lakes as well as other lake systems in the vicinity (VanStone, 1988).

Russian Orthodoxy was the first Christian sect to proselytize in the study area. Initial efforts came in the 1790s as laymen were given limited authority to baptize and Christianize converts, and activity increased with the arrival of Russian Orthodox clergymen. The Russian Orthodox Church was a crucial shield for Native peoples against the abuses of first unregulated and later monopoly capitalism in Alaska, and it became a de facto Native religion in many parts of Alaska (Black, 2004). The influence of the Russian Orthodox Church endures to this day, and Russian Orthodoxy continues to be the primary religion in the inland communities of Nondalton, Newhalen, Kokhanok, and Igiugig.

Other nations were interested in expanding their territories to include the west coast of North America including England, Spain, France, and the United States. Captain James Cook, sailing on behalf of Great Britain, visited the Bristol Bay area during his Alaska expedition in 1778 and named many features during his voyage. Subsequent voyages by George Vancouver, also sailing on behalf of Great Britain, increased the number of British place names in coastal regions of Alaska, including Cook Inlet, Bristol Bay, Cape Vancouver, and numerous others. Spain and France sent explorers to the North Pacific, and independent American merchantmen were proceeding up the west coast of North America in pursuit of

furs. There were no government expeditions into the study area on behalf of the U.S. government, however (Gibson, 1976; Solovjova and Vovnyanko, 2002).

In spite of this potential competition for land in the North Pacific, the newly chartered Russian America Company consolidated ownership of Alaska for Russia. Ongoing competition for fur wealth and later mineral resources, as well as conflicts between Russia and Great Britain in other areas of the world, inspired the Russian government to pursue the sale of Alaska to the United States lest Great Britain take it as a spoil of war and add the territory to Canada, putting an unfriendly nation at Russia's back door in Siberia. The United States, occupied by the Civil War, delayed purchasing the territory until 1867 in the face of political opposition, which characterized Alaska as "Seward's folly" or "Seward's icebox." The Treaty of Cession outlining the policies and conditions of the exchange was signed on March 30, 1867, and ratified by the Senate on May 28, 1867; 7.2 million dollars were appropriated for the purchase in July of 1868, nearly a year later.

Alaska Purchase of 1867 to 1980

Following the purchase of Russian America by the United States, the Department of Alaska was managed in turn by the Army (1867-1877), the Department of the Treasury's Revenue Cutter Service (1877-1879), and finally the Navy (1879-1884). In 1884 it was organized as the District of Alaska, with an appointed civil government. Education, health care, and other services for Native people were managed by the Bureau of Education under Sheldon Jackson, a Presbyterian minister who assigned missions of various denominations the task of Christianizing and educating Native people throughout the district, including those already baptized to Russian Orthodoxy.

From 1867 to 1897 fishing, lumbering, whaling, and mineral prospecting were the main pursuits of Alaska residents, both permanent and seasonal. Early oil exploration within the region took place at Oil Bay on Cook Inlet. Copper mining took place within the region at Millet Point, Port Alsworth, and Iliamna Bay. Gold prospecting took place throughout the region and many areas of Alaska. Fur trade continued throughout Alaska and was a source of revenue for Iliamna area residents, as was seasonal fishing and packing work and the collection of bounty on various animals thought to need management, such as rainbow trout and wolves (Branson, 1998). This relatively minor level of local economic activity was disrupted in 1897 by the discovery of substantial deposits of placer gold in the Klondike region of Canada.

The Klondike gold rush brought tremendous numbers of people to interior Alaska beginning in 1897 and 1898. Soon, however, the limited ground in the Klondike was taken up by larger firms until no ground was left. Some prospectors retreated to Alaska in poverty to accept government-sponsored return tickets to the United States, while others began flooding into the Yukon Valley, Cook Inlet, and the Kuskokwim and smaller river valleys, including those of the Nushagak and Mulchatna rivers (Brooks, 1973). Many stayed and married Alaska Native women. As husbands to Native women, these men were also entitled to take advantage of rules designed to provide for the subsistence of Native people, enabling prospectors to trap and fish for trade and to prospect in their spare time.

Natives, however, were excluded from staking mineral claims and often were treated as "colored" people when they came to Euroamerican settlements (Brooks, 1973). The Mining Act of 1872, for example, stated that only U.S. Citizens and those intending to become U.S. Citizens could file mining claims; American Indians were not considered citizens until the 1924 Indian Citizenship Act (Snyder Act) (43

U.S. Stats. At Large, Ch. 233, p. 253(1924)). Jim Crow racial segregation laws in Alaska began to be challenged in the 1940s (Blueberry Productions, 2009; UAA-ISER 2004; Cole, 1992). Land issues in Alaska would not be addressed substantially until 1970, when the Alaska Native Claims Settlement Act was passed, and again in 1980 with the Alaska National Interest Lands Conservation Act further addressed issues of land ownership and use rights. Outstanding issues continue to be litigated, including Indian Country, subsistence priorities, and land selections (Anderson, 2007).

In 1912 Alaska became a formal territory of the United States at the urging of organized groups of miners who sought a way to legitimize mineral claims. Other residents wished to establish Alaska as a potential state and emphasized its global strategic and resource value. Reindeer herding spread to southwest Alaska as a proposed solution for the lack of economic opportunity. It met with some success in the Iliamna area, with herds at Eagle Bay and Newhalen. Herd management was taught at public schools, and the teachers were responsible for part of the herd (Madenwald, 1992). Steamships already plied Cook Inlet, connecting Anchorage to Kenai, Homer, Seldovia, Snug Harbor, Iliamna Bay, and Tyonek, and visits by steamships would increase in frequency for several years (Goforth, 2003). Some children were sent to schools in Sitka, Wrangell, and elsewhere in the state, as well as to Bureau of Indian Affairs (BIA) schools in Oregon and Oklahoma. Some of these children never returned; some died, and others remained in the contiguous 48 states.

Regulations regarding commercial fishing would guide the territory towards sustained-yield principles and outlaw impediments to fish passage and, ultimately, to fish traps. Native people would increasingly be allowed to participate in fishing for canneries, in addition to working in the canneries at low-paying jobs using dangerous equipment for long hours. Native employment at canneries reached its peak just before and during World War II, when many cannery and fishery workers were drafted or interned for the war. Filipinos, Chinese, Japanese, and Scandinavians continued to be seasonal and sometimes year-round workers at the Bristol Bay canneries, while others, like Hans Severson at Iliamna, became entrepreneurs (Branson, 1998).

World War II would be the next economic boom for Alaska—a boom that would echo through the Cold War years and then resurge as oil was discovered in Cook Inlet (1957) and later at Prudhoe Bay (1968). Many Alaska Native men joined units of local troops intended to provide intelligence and fight a guerilla war against the Japanese, who had invaded the Aleutian Islands and bombed targets including Dutch Harbor (Marston, 1972). In addition, commercial fishing continued at a low level to support the war effort. Construction of bases and facilities for national defense created a labor market that overlooked former ethnic biases in favor of getting needed work done, such as the Alaska Highway. Airstrips were built to support the lend-lease program that supplied Russia with arms against the Germans' Eastern Front, and ports were improved to support naval vessels. Many of these facilities were reused during the Cold War, when former ally Russia became the "Red Menace," and a network of radar and communications facilities was constructed in rural coastal Alaska to defend against surprise attacks over the pole; one such facility was located across the lake from Iliamna at Big Mountain.

Oil exploration, which began in Cook Inlet on the nearby Iniskin Peninsula, first boomed in the 1950s and required laborers and other support for the new boomtowns on the Kenai Peninsula (KPB, 2004). New fishing methods and new species of seafood, including king and tanner crab, would become commercially viable in the 1960s and 1970s, especially after the legally mandated sailboat fishery was abandoned in favor of independently owned fishing boats and shore fishing sites, many owned by Native people from

the region (Colt, 1999). Fur prices continued to cycle with fashion trends, reaching a peak most recently in the 1970s.

21.7.1.3 Disease and Health Care

Interaction and trade between Russians, Euroamericans, and Native peoples resulted in the exposure of Alaska Natives to a variety of diseases for which they had no immunity, as well as to variant strains of diseases that were already present. Additionally, the rush phenomena, where a large and diverse population suddenly occupies a confined area, drove the incubation and evolution of epidemic and pandemic diseases during the Klondike gold rush. Further, a series of diseases devastated communities in southwest Alaska, where just as one disease was declining another arrived, afflicting an already weakened population as in the 1900 to 1904 epidemic (Fortuine, 1992).

Numerous villages on the coast and inland were diminished by epidemic disease during the historic period, resulting in the relocation of surviving populations, abandonment of former communities, and the development of new synthetic multi-ethnic communities (Alaska Geographic, 1978, 1986; Fortuine, 1992; Znamenski, 2003). For example, the village of Kijik was located on the northern shore of Lake Clark. Archaeological evidence suggests the community had been in place since the early 1600s. In the winter of 1901-1902, an outbreak of influenza followed by measles spread through the village of 200, leaving only 22 survivors (Fortuine, 1992; Alaska Geographic, 1986; Petroff 1881). This epidemic depopulated much of Southwest Alaska.

Three communities on the Mulchatna River were almost completely depopulated, with the survivors joining those of Kijik at Old Nondalton. The villages on Stoney River and Twin, Telaquana, and other lakes in the area also consolidated at Old Nondalton after encouragement from a Russian Orthodox priest; however, many still returned to their traditional lands, establishing Lime Village in 1907 (Znamenski, 2003). Soon the Dena'ina discontinued year-round use of Kijik, and the remaining residents relocated to the village of First Nondalton (a few miles northeast of the present-day community). A 1918 influenza epidemic devastated the coastal village of Nushagak. The inland village of Kaskanak was also affected by this epidemic, and survivors relocated to what became Igiugig.

Health care for Alaska Natives was dependent initially on the skills and knowledge of local healers, including both specialists using mystical powers, the anjatkuq or el'egen, as well as massage or deep tissue manipulation techniques used by unatelek, "one with hands" (Ellanna and Balluta, 1992; Fienup-Riordan, 1994). Under the Russians, the priests and outposts of the company provided some medical care and primitive medicines and made efforts at improving the hygiene of the people, including immunizing Alaska Natives with an early vaccine against smallpox (Fortuine, 1992).

After the sale of Russian America to the United States, medical care was delivered rarely if at all by the Revenue Cutter Service, missionaries, Orthodox clergy, canneries, and fur traders (Fortuine, 1992). In Bristol Bay, the canneries had doctors in the summer beginning in 1885. Moravian missionary and Superintendent of U.S. Public Schools for Natives, Joseph Romig, opened a hospital at the Carmel Mission on the Nushagak River. The hospital moved to school buildings in Kanakanak across the river in 1913. The Department of Interior operated a public hospital in some school buildings in Dillingham in 1911.

The first statewide, organized federal health-care programs were established in 1914, with the first federal hospital of 20 beds opening in Juneau in 1915. The 1918 Spanish Influenza engulfed the world, leading to the death of possibly a fourth of all residents of the region, and the hospital/school became an orphanage as well (BBAHC, 2003). In 1931 the responsibility for providing health care to Alaska Natives was transferred to the Office (later Bureau) of Indian Affairs and became the Alaska Native Service, under whose auspices several hospitals were built, including a new facility at Kanakanak near Dillingham in 1941. A statewide facility was opened in Anchorage in 1953, supplementing a former military hospital at Mount Edgecumbe in Sitka, which was transferred to the BIA in 1946 (USDHEW, 1963).

Contracts were maintained with hospitals in Washington and Oregon for both Alaska Natives and indigent Whites, particularly for surgery and mental health problems. Many rural Alaska residents were sent to Mount Edgecumbe and other facilities for treatment before chemotherapies for tuberculosis and other diseases were available, sometimes for years with some never returning. A 1954 report by the head of the Public Health Service called "Alaska's Health" or the Parran Report (AHST, 1954) showed the vast disparity in health attainment between urban and rural Alaska and initiated a period of increased investment in health-care delivery in rural Alaska including communities in the study area (USDHEW, 1963).

Mobile health-care facilities were put in service using boats and aircraft to assess patients for tuberculosis and other disease, and efforts were made to get local health aids and clinical facilities constructed (US Public Health Service, 1963). Additional funds were dedicated to improve health aide training, connect health aides to doctors by radio and telephone, and increase local control over health-care delivery. In 1973 the Bristol Bay Area Health Corporation was incorporated and took control of the Community Health Aide Program (CHAP) formerly managed by the Indian Health Service (IHS). As oil money flowed into the state's budgets, infrastructure improvements began to improve communication and transportation between rural and urban communities, with airfields, roads, telephone, satellite and microwave links, and other improvements built in rural communities (BBAHC, 2003).

21.7.1.4 Commercial Fishing

Fish resources are a very important underpinning of the culture and history of the study area. Bristol Bay is the location of the world's largest salmon fishery, with sockeye and other species of salmon returning to multiple major river systems that flow into Bristol Bay. Two of these river systems, the Kvichak River (which contains Iliamna Lake, the Newhalen River, and Lake Clark) and the Nushagak River (which includes the Nuyakuk and Mulchatna rivers), have tributary streams that arise near the Pebble site (Upper Talarik Creek, North Fork Koktuli River, and South Fork Koktuli River).

Subsistence use of salmon along the river systems around Bristol Bay, and the bay itself, likely has occurred in various forms during the entire history of human presence in the region. That use, and its importance to the economic and social well-being of Bristol Bay residents, is still very strong today. (Subsistence fishing in the vicinity of Pebble Deposit is discussed in Chapter 23.)

Some minimal commercial harvest occurred during Russian ownership of Alaska before 1867. Commercial exploitation of the salmon populations from rivers tributary to Bristol Bay began in earnest in the last two decades of the 19th century. Salteries were established in the Bristol Bay area in the late 1880s and early 1890s (Alaska Humanities Forum, 2004a) and operated for only a few years before the first Bristol Bay cannery was established and operational by Joseph Haller of the Arctic Packing

Company in 1883 at Kanulik, east of Nushagak Point (King, 2007). Other canneries quickly became established; William Bradford built a sister cannery across the Nushagak River the next year, and additional facilities were built in short order on the Kvichak and Egegik rivers. By 1908 there were 10 canneries operating in the Nushagak area alone, and by 1920 there were 20 facilities on rivers feeding Bristol Bay (Hebert, 2008). Harvest activity was intense. For example, in 1891 three canneries (Bristol Bay Canning, Nushagak Canning, Arctic Packing) packed a total of 90,300 48-pound cases (Jordan, 1898). Although data on the species split are not available for that year, the 1895 pack was composed of 88 percent sockeye, 8 percent coho, and 5 percent Chinook.

In 1893, the Nushagak canneries and several others merged to form a conglomerate, the Alaska Packers Association (APA), headquartered in San Francisco, which was to dominate Bristol Bay commercial salmon fisheries for decades to come; indeed, in the early 20th century APA owned 90 percent of all salmon canneries in Alaska and controlled about two-thirds of all salmon canning on the west coast (Dyal, 2008a; Hebert, 2008; King, 2007). APA supported their West Coast canneries and shipped product with a fleet of mostly steel-hulled tall sailing ships (500 to 2,000 tons) numbering at least 36, plus barges and leased vessels (Photo 21-1).

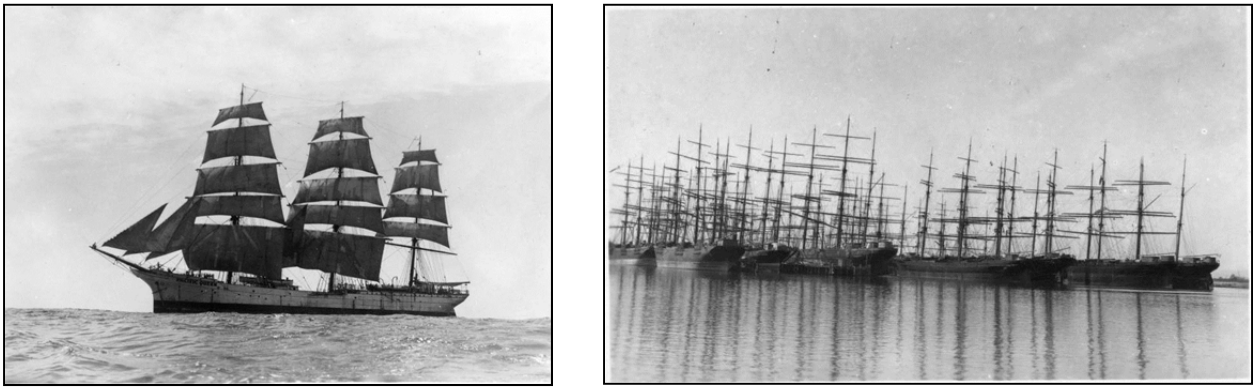

PHOTO 21-1: Star of Alaska under sail and some of the APA fleet docked at Alameda, California. These tall ships were used to bring workers and supplies to Bristol Bay canneries and transport canned salmon back to San Francisco (Source: Texas Tech Libraries, Digital Images Collection, reproduced with permission).

By 1929, APA's tall ships were replaced by steam-driven vessels, but the commercial system in Bristol Bay remained controlled by interests outside the region. APA operated its Bristol Bay canneries with Chinese, Filipino, Italian, Mexican, and a few local natives who commanded the lowest possible wages (Hebert, 2008). Workers were brought in each season by the company's ships, in some years numbering as many as 300 or more on each vessel (Dyal, 2008b), and returned to San Francisco in the fall. APA brought in crews of fishers (usually Scandinavians or Italians) as well as the Chinese and Filipino cannery hands. As Cooley (1963) writes, this was the beginning of the "commercial era" for Bristol Bay fisheries, during which "the main outfitting, employment, and financial centers for the Alaska salmon industry grew up outside the territory, primarily in Seattle and San Francisco." According to Hebert (2008), "Alaska residents were prohibited or actively discouraged from participating in the industry." This condition was recognized very early (Jordan, 1898), but little was done to rectify this situation until statehood. Jordon wrote:

> It is true that the foreigners are brought from San Francisco to fish the streams of Alaska, and that they actually look upon the streams and fish as their own individual property. The unfortunate native Aleuts… are hustled out of the way of these Mediterranean fishermen with scant ceremony, and forbidden to fish in their native streams. They must obey. Appeal? To whom are they to appeal? There is no one within reach who would listen to them.

Canneries ringing Bristol Bay were supplied by small (28-foot), double-ended, gaff-rigged sailing vessels that set and retrieved drift gillnets in the bay (Photo 21-2). These oak-frame boats were first developed by J.J. Griffin of San Francisco in 1868 to harvest salmon in the Sacramento River and Delta; they later were deployed to the lower Columbia River, Puget Sound, the lower Fraser River and, when these salmon stocks were depleted, to Bristol Bay in 1868 (Center for Wooden Boats, n.d.). More than 8,000 of these boats were mass-produced for the Bristol Bay salmon fishery (Alaska Humanities Forum, 2004b). Motorized boats were banned from the Bristol Bay fishery until 1951, primarily to promote conservation of salmon stocks through forced inefficiency of the fishing fleet. Although by 1910 motorized tugs ("monkey boats") would tow the "Bristol Bays" to the fishing grounds, power boats were banned from the harvest itself (Alaska Humanities Forum, 2004b).

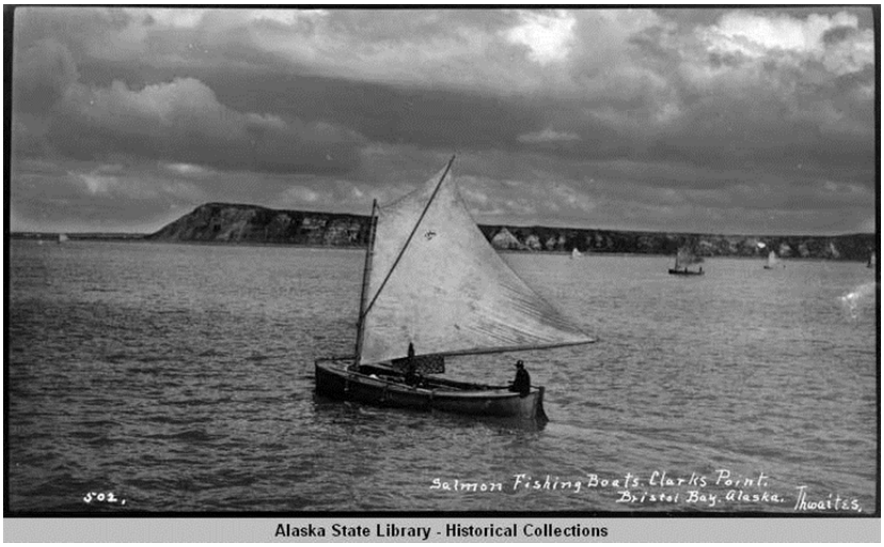

PHOTO 21-2: One of several thousand double-ended sailing gillnetters in the Bristol Bay salmon harvest fleet off Clark's Point, Bristol Bay (Source: Alaska State Library, John E. Thwaites Collection, ASL-P18-118. Reproduced with permission).

The need for conservation of Bristol Bay and other Alaskan salmon stocks was recognized very early in the history of the fishery. The first conservation legislation was enacted in 1889, which banned erection of dams and barricades on spawning streams, called for research into the natural history of Alaskan salmon, and called for the "domination" of waters of the Bering Sea by the United States for the purpose of excluding foreign fishing vessels from intercepting Alaskan salmon. However, no monies were appropriated by Congress to carry out the terms of the Act (Jordan, 1898). Initially backed almost unanimously by canners, J. Murray, Special Agent for the Protection of Salmon fisheries in Alaska, sent

several pieces of additional proposed legislation, modeled largely on Oregon and Scottish statutes, to Congress in 1895 for the purpose of conserving salmon stocks and regulating the fisheries. Language prohibiting fish traps, weirs, and wheels drew the ire of San Francisco-based companies, however, and stalled this legislation (Jordan, 1898).

In 1922 President Harding set aside Bristol Bay and Kodiak Island fishing areas as "fishery reservations" subdivided into zones or "units" requiring permits from the Secretary of Commerce for fishing within each unit. Processing within units was limited, and catchers could not transport fish to another unit for processing. This system was replaced by the White Act (1924), which gave the Secretary of Commerce authority over gear, harvest levels, and closures and established a catch-to-escapement ratio of 50 percent (Alaska Humanities Forum, 2004b). The sail-only (no motorized catching vessels) rule was maintained as part of this management strategy and stayed in place until 1951, when this restriction was replaced by a 34-foot-length overall limit for fishing boats in the Bristol Bay fishery.

Sockeye salmon have always dominated the Bristol Bay harvest, generally accounting for about 80 percent of the total (Clark et al., 2006). The peak harvest of sockeye before statehood came in the 1910s when average annual harvest reached about 17 million fish and occasionally exceeded 20 million. Harvest remained relatively steady during the 1920s and 1930s, but declined after 1940 to an average of about 6 million fish in the 1950s (Clark et al., 2006).

Foreign interest in Bristol Bay salmon stocks accelerated in the 1920s and 1930s, with Japan making claims to fishing rights in the Bering Sea and sending large fleets of floating cannery boats using 2-mile-long seines into the area to target salmon. Protests of the U.S. government, expansion of the U.S. Navy in the Pacific, tension over the request by the Japanese to expel U.S. nationals from China, the bombing and sinking of the U.S. gunboat Panay on the Yangtze River in December 1937, and the subsequent apology and desire of the Japanese government to appear friendly to U.S. interests in Asia all led to a "voluntary" withdrawal of claims and abandonment by Japan of fisheries in the Bering Sea in early 1938 (Dorris, 1938; Atcheson, 1943; L.A. Times, 1938; Morison, 2001).

Lack of management and federal funding for research and management led to declines in Bristol Bay runs in the late 1940s and early 1950s, and by 1953 stocks were is such decline that President Eisenhower declared Alaska a Federal Disaster Area; this was unusual at the time, since the "disaster" was attributed to human causes (Meacham and Clark, 1994). After World War II, Japanese interests in Bristol Bay salmon were re-kindled, and Bristol Bay salmon were significantly overfished between 1940 and 1959 (Bellotti, 2004; ADF&G, 2003). By 1955 the re-built Japanese fleet, consisting largely of a mother-ship and drift net catcher-ship fishery, had re-entered the Bering Sea and North Pacific fisheries. Salmon harvests by this fleet soared from about 3,800 metric tons in 1952 to about 100,000 metric tons (est. 50 million fish, many of which were thought to be immature Bristol Bay salmon) in 1955.

The International North Pacific Fisheries Commission (INPFC) was established in 1953 by treaty among the United States, Canada, and Japan, which established the "abstention principle" governing fishing in the North Pacific. However, the United States and Canada on one hand and Japan on the other could never agree on whether "salmon of North American origin," including those from Bristol Bay, qualified for abstention. Eventually, however, the Japanese mother-ship/catcher-ship salmon driftnet fishery activities disappeared from the 200-mile Exclusive Economic Zone (EEZ) and parts of the Bering Sea by 1988 (Alverson et al., 1994). By statehood in 1959, statewide salmon harvest had dropped to about 25 million fish or about 20 percent of current sustainable production levels, requiring about 20 years of

sound management and gradual increases in research funding to successfully rebuild stocks to current sustainable levels (Meacham and Clark 1994).

Success was not without exceptions, however. In 1967 and again in 1974, salmon runs were so low that in both years Bristol Bay was again declared a disaster area (Alaska Humanities Forum, 2004c). After several failed attempts in the 1960s, the State of Alaska amended the state constitution and established the Commercial Fisheries Entry Commission (CFEC) and a "limited entry program" for Bristol Bay fisheries in 1973 (Homan, 2006). Under limited entry, permits could be issued to "natural persons" only, permits could not be leased, permits could not be used as collateral, but permits could be transferred. This move was designed to maintain a high level of resident Alaskan participation within the fishery and stem the rapid growth of fishing fleet power. The limited entry program, together with other management innovations, resulted in a rapid rebound of both escapement and harvest to the contemporary range, and a marked, if temporary, rebound in overall value of the fisheries (Figure 21-1). Over 80 percent of permits were originally issued to Alaska residents; although the distribution of permits within Alaska resident categories has changed significantly, the proportion held by non-residents has remained about the same (Homan, 2006; Iverson, 2009). Permit holdings are not reflected in average earnings of participants in the Bristol Bay drift gillnet fisheries, however. Local Alaskans consistently have the smallest average earnings and non-residents the highest, and the gap between residents and non-residents appears to be highest in years of abundant harvests (Iverson, 2009).

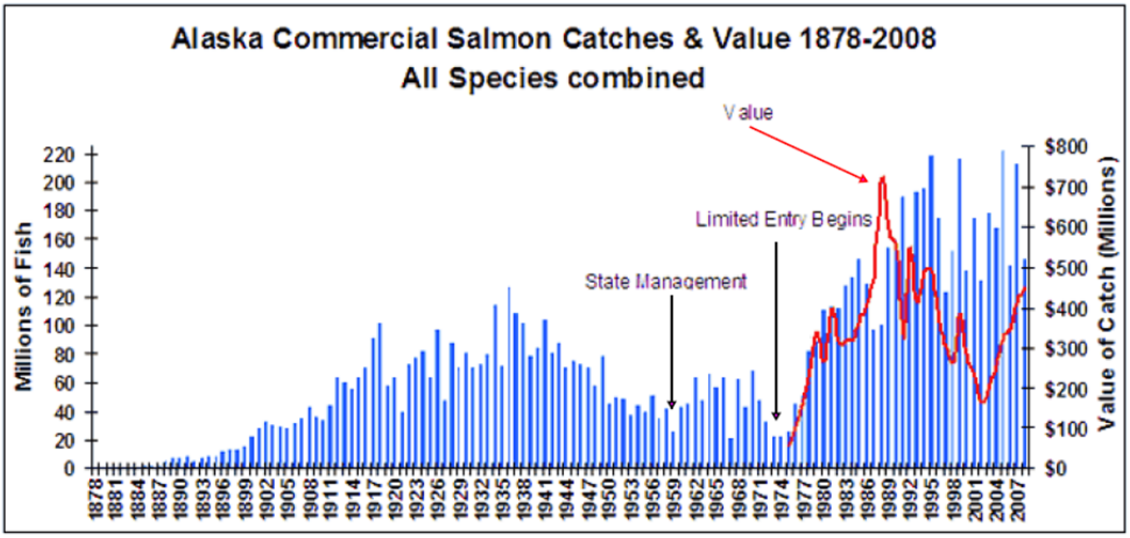

FIGURE 21-1
Alaska Salmon Harvest Before and After Limited Entry
Adapted from: ADF&G, 2008.

The federal Magnuson Fishery Conservation and Management Act was passed in 1976 (PL-94-265, 16-USC-1801 et eq.; subsequently amended at least 18 times), which established the U.S. right and authority to manage and control fish resources in a Fish Conservation Zone extending seaward 197 miles from the 3-mile state-waters limit (200 miles total). Management under the Magnuson Act employs regional fishery management councils responsible for generating annual management plans; federal waters off

Alaska are under the management of the North Pacific Fisheries Management Council. National management standards include prevention of overfishing through observance of "optimum yield" principles, use of best available scientific information, individual stock conservation, efficient utilization of fish resources, and contingency planning (NRC, 1994).

Since statehood, average harvest breakdown for Bristol Bay has been about 17 million sockeye (approximately 91 percent), about 880,000 chum (approximately 5 percent), about 550,000 pinks (approximately 3 percent), about 120,000 coho (approximately 0.6 percent , and about 100,000 Chinook (approximately 0.5 percent). By 1979 Bristol Bay sockeye returned in record numbers and have remained "healthy" since (Alaska Humanities Forum, 2004c; Hilborn, 2006). Average sockeye harvest was about 22 million in the 1980s, 28 million fish in the 1990s, and about 23 million in the 2000s (Clark et al., 2006; Morstad et al., 2010). Hilborn (2006) attributes success of sockeye management in Bristol Bay to four factors: a clear objective of maximum sustainable yield; the escapement-goal system, assuring the maintenance of biological productive capacity; management by a single agency with clear objectives and direct-line responsibilities; and good luck, especially with respect to lack of habitat degradation and favorable ocean conditions during the period. An intensive Stock Assessment Program is an integral part of the Bristol Bay fisheries management system and is designed to promote scientifically based in-season fishery management (Clark et al., 2006). In-season information is used on a daily basis between mid-June and mid-July in the Bristol Bay fisheries to achieve a near-real-time management of harvest in each of the five fishing districts in the bay (Togiak, Nushagak, Naknek-Kvichak, Egegik, and Ugshik). Some districts are further subdivided into sections and "Special Harvest Areas" to provide increased management flexibility for stocks returning to several rivers within a district (Sands, 2009).

Despite progressive management and resulting sustainability and relative stability of Bristol Bay salmon stocks themselves in the last quarter-century, the fishery fell on turbulent times. The rapid rise of farmed salmon between the late 1980s and the present day cut into the previous dominance of commercial fisheries on a world-wide scale have profoundly affected the Bristol Bay fishery. In the 1980s, more than 99 percent of salmon consumed world-wide were harvested by commercial fisheries; this has fallen to less than 40 percent today (Iizuka, 2004; UN, 2006). To meet their insatiable demand for fresh salmon, and having been effectively shut out of the 200-mile EEZ off the Alaskan (and Canadian) shore, the Japanese, who had been major consumers of Bristol Bay salmon, invested heavily in farmed salmon production in Chile. In 1979, Nichiro, a Japanese conglomerate, began investing in salmon and trout farming in Chile, followed by partnerships formed with domestic producers by Japanese fishing interests (Iizuka, 2004). Nichiro's investments focused on advancing salmon farming techniques from tank incubation and rearing to net-pen grow-out to achieve very high cost efficiencies. Advances in Chile, Norway, Canada, and Scotland and an increased global demand for fresh salmon drove production up and prices for wild-caught salmon down (Knapp et al., 2007) (Figure 21-2).

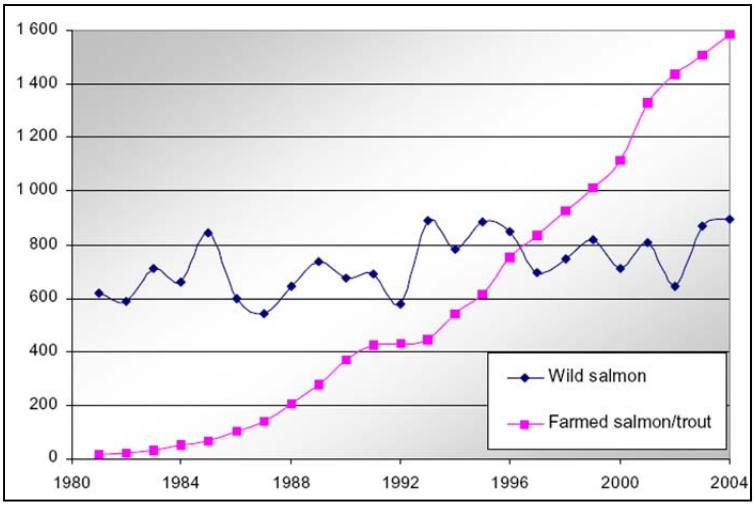

FIGURE 21-2
Comparison of wild salmon harvested and farmed salmon produced world-wide, in metric tons
Source: UN, 2006.

Although catches of Bristol Bay salmon remained high between 1990 and the present, the value of the harvest fell precipitously (Figure 21-3), along with values of permits. The number of fishermen participating in the harvest since 1990 has fallen nearly 40 percent; although the fishery is biologically stable and sustainable, it is arguably no longer viable economically for many who have traditionally participated (Gilbertsen, 2003; Eagle et al., 2004; Ulmer and Knapp, 2004).

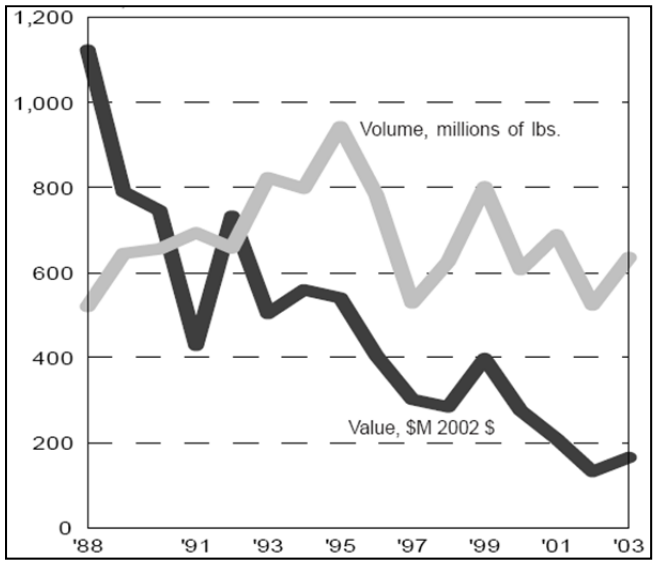

FIGURE 21-3
Volume (light line) and value (dark line) of Alaska salmon harvest
Source: Gilbertsen, 2004.

For sockeye, the dominant species in the Bristol Bay salmon fisheries, ex-vessel prices fell from an inflation-adjusted peak of nearly $3.75 per pound in 1988 to a 10-year average of just under $1.00 per pound in the 1990s to $0.60 per pound in the 2000s, with lows of less than $0.50 in 2001 and 2002 (Knapp et al., 2007; Morstad et al., 2010). Processors tried to remain competitive with farmed fish and dropped wholesale prices, further hurting catchers. During this period the CFEC estimated that the market value of all salmon limited entry permits combined plummeted from about $1.25 billion to $204 million, a six-fold decline (Gilbertsen, 2003).

Because of the apparent lack of economic viability, calls to restructure the salmon fishery began to be discussed in serious terms in 2003 and 2004, when policy white papers began to appear and a Joint Legislative Task Force requested in 2004 that the Alaska Board of Fisheries explore regulatory and statutory changes needed to benefit the fishery (Knapp, 2003; ADF&G, 2010). The Alaska Board of Fisheries responded by forming a committee and the Salmon Industry Restructuring Panel to receive restructuring recommendations from industry participants and the public. The debate revolving around restructuring Alaska's salmon fishery, with emphasis on Bristol Bay, continues (ADF&G, 2010; Cox, 2009).

The present-day structure of the salmon harvest work force in Bristol Bay is complex. While most of the permits fished are held by Alaskan residents, most of the revenue goes to non-residents, both in the fishing fleet and in the processing component (Hadland and Laurent, 2008). The non-resident share of the seafood processing and fishing work forces is the highest of any industry sector in Alaska (Gilbertsen, 2004; Hadland and Laurent, 2008; Warren and Hadland, 2009). For the industry as a whole in 2008, 46 percent of harvesters and 74 percent of processing workers were non-residents (Warren and Hadland, 2009). In the U.S. census areas covering the Bristol Bay fishery (Aleutians East, Bristol Bay, Dillingham, Lake and Peninsula), the proportion of non-resident workers is somewhat more. The percent of non-resident workers and wages for 2008 for the seafood processing segment is shown in Table 21-1.

TABLE 21-1
Bristol Bay Fishery, Non-resident Workers and Wages for Seafood Processing, 2008

Census Area	Workers (% non-res)	Wages (% non-res)
Aleutians East	91.1	84.2
Bristol Bay	88.7	84.4
Dillingham	86.2	84.3
Lake and Peninsula	92.8	88.9

Comparable data are not available for harvesters at this time.

The Bristol Bay salmon commercial fishery has endured a turbulent history. From its open-access beginnings in the 1880s to the present day, this fishery has been either dominated or strongly influenced by economic interests outside Alaska. The long struggle to achieve biological stability and sustainability has now given way to a new struggle to achieve economic stability and sustainability. Whether this can be achieved remains to be seen, but the goals of equitable allocation of fish resources to Alaskans, biological sustainability of fish stocks, and economic viability of the Bristol Bay commercial salmon fishery have been elevated to a high statewide priority.

21.7.1.5 Mining and Prospecting

The study area has witnessed mining and prospecting activity since the gold rush of 1898. Silver, copper, and gold were all sought in the region. Early claims for silver and copper were staked during 1901 and 1902. Placer mining for gold occurred in the study area in the first decades of that century, as well. Actual mine shafts and trenches were built at Millet Point and Cottonwood Bay at Dutton. The study area generally has had little mining activity compared to many other places in Alaska. An overview of mining activity in the region is published in the Alaska Resource Data Files by the U.S. Geological Survey (USGS, n.d.).

Cominco Alaska Exploration (CAE) began mining investigations in the Pebble area in 1986 and filed its claims for the Pebble deposit with the State of Alaska in 1988. Discovery of the near-surface Pebble West deposit occurred during the first exploration drilling season in 1988. CAE continued annual drilling and other work through 1993. After 1993, the only drilling for nearly a decade occurred in 1997. In 2001 Northern Dynasty Minerals Ltd. (NDM) optioned the property from Teck Cominco (the successor company to CAE's parent company) and began an extensive exploration program in 2002 that is still in progress 8 years later. (Recent mining claims and exploration activity in the vicinity of the Pebble deposit are discussed in detail in Chapter 18.)

21.7.1.6 Trapping and Hunting

Trapping and hunting are part of the traditional subsistence culture of the inhabitants of the study area. Fur hunting was the major motivator behind much of the Russian activity in Alaska. After the United States purchased Alaska from Russia, two major American fur-trading companies operated in the region—the Alaska Commercial Company and the Western Fur and Trading Company. (Subsistence activities in the vicinity of Pebble Deposit are discussed in detail in Chapter 23).

Big-game hunting began to develop in tandem with the development of the fishing and mining industries in the 1890s and 1900s. Tales of abundant game attracted big-game hunters from around the world. The presence of miners, fishermen, explorers, and other newcomers to Alaska and to the study area resulted in increased use of game resources. (Recreational hunting and fishing in the vicinity of Pebble Deposit are discussed in detail in Chapter 25).

Land ownership evolved over the next century. The establishment of national parks, preserves, and refuges; statehood; and the settlement of Native land claims all contributed to varied ownership and harvest regulations. Today, lodges service hunters and sport fishers, with land access varying by ownership. (Recreation is discussed in Chapter 25, and land and water use are discussed in Chapter 18).

21.7.2 Community Baseline Profiles—Iliamna Lake/Lake Clark Communities

The two major groups of Alaska Natives that presently live in the overall study area are Dena'ina, Athabascans, and Central Yup'ik Eskimos. Alutiiq also are present in the coastal communities of Bristol Bay. The Central Yup'ik presence in the region may date to the last two centuries, whereas the Dena'ina were recorded as the major indigenous population at the time of first European contact in the 1780s, not only in the study area but throughout much of Cook Inlet, the Susitna drainage, the Kenai Peninsula, and other areas in southcentral Alaska. The regional Native corporation for all the communities described below is the Bristol Bay Native Corporation (BBNC).

The Iliamna Lake/Lake Clark study area consists of eight communities in the Lake and Peninsula Borough: Nondalton, Newhalen, Kokhanok, Port Alsworth, Iliamna, Pedro Bay, Levelock, and Igiugig. The demographics, economic conditions, and infrastructure for each of these communities are described in the following sections; communities are listed in order of highest population to lowest, based on 2009 data from ADOLWD.

21.7.2.1 Nondalton

Nondalton was incorporated as a second-class city in 1971. The community is located on the west shore of Six Mile Lake, between Lake Clark and Iliamna Lake, and is accessible only by air and water. Nondalton is a Dena'ina Athabascan village. The few residents of the village of Kijik who survived the measles outbreak of 1901/1902 relocated to Nondalton shortly thereafter, and the community was first officially recorded by the U.S. Geological Survey (USGS) in 1909 (Alaska Geographic, 1986; ADCCED, n.d.[a]). The current village site was established in 1940, after the residents of a village of the same name (now Old Nondalton) relocated to Six Mile Lake for better access to Iliamna Lake and wood resources, and because of groundwater issues at the old town site (ADCCED, n.d.[a]; Ellanna and Balluta, 1992).

Demographics

Population. The 2009 population of Nondalton was 186 (Figure 21-4). There was an overall gain in population of 14 percent from 1990 to 2000; however, the community's population declined 16 percent from 2000 to 2009.

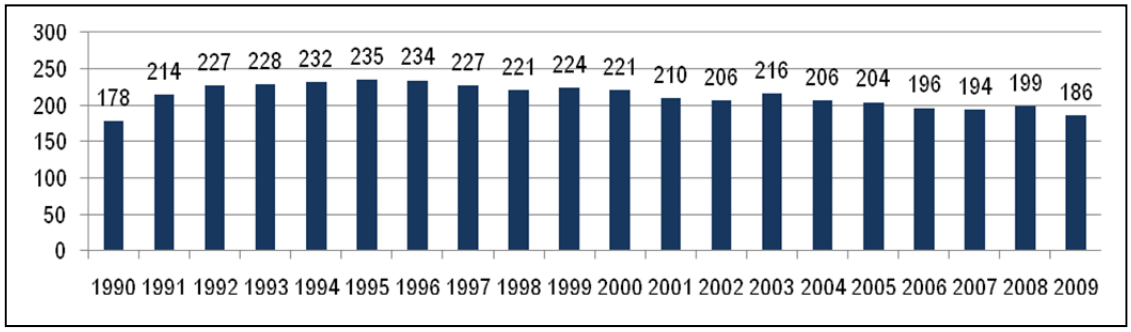

FIGURE 21-4
Nondalton Population, 1990 through 2009
Source: ADOLWD DRA, n.d.[a].

In 2000 Nondalton had more males (55 percent) than females (45 percent). The population distribution between males and females did not change substantially from the 1990 census to the 2000 census (Table 21-2).

TABLE 21-2
Nondalton, Population by Gender, 1990 and 2000

	1990 Count	1990 Percentage	2000 Count	2000 Percentage
Total male population	97	54	121	55
Total female population	81	46	100	45
Total population	**178**		**221**	

Source: USCB, n.d.

Age. According to the U.S. Census Bureau, the median age in Nondalton in 2000 was 28.5 years (Table 21-3); this represents an increase of 4.4 years from the 1990 census. The median age of Nondalton females increased by 9 years between the 1990 and 2000 censuses.

TABLE 21-3
Nondalton, Median Age, 1990 and 2000

	1990	2000
Median age	24.1	28.5
Median male age	28.3	31.3
Median female age	16	25

Source: USCB, n.d.

In 2000 nearly one-third (32 percent) of Nondalton residents was under the age of 15 (Table 21-4, Figure 21-5); this was a decrease from 1990 when more than one-third (38 percent) of the population was under 15.

TABLE 21-4
Nondalton, Age by Count and Percentage, 1990 and 2000

	1990 Count	1990 Percentage	2000 Count	2000 Percentage
Under 5 years	29	16	17	8
5 to 9 years	25	14	23	10
10 to 14 years	14	8	32	14
15 to 17 years	5	3	16	7
18 and 19 years	3	2	8	4
20 to 24 years	9	5	9	4
25 to 29 years	18	10	8	4
30 to 34 years	18	10	10	5
35 to 39 years	12	7	21	10
40 to 44 years	2	1	27	12
45 to 49 years	7	4	15	7
50 to 54 years	9	5	4	2
55 to 59 years	10	6	5	2
60 and 61 years	3	2	3	1

	1990 Count	1990 Percentage	2000 Count	2000 Percentage
62 to 64 years	4	2	6	3
65 to 69 years	4	2	3	1
70 to 74 years	1	1	5	2
75 to 79 years	2	1	4	2
80 to 84 years	2	1	3	1
85 years and older	1	1	1	0

Source: USCB, n.d.

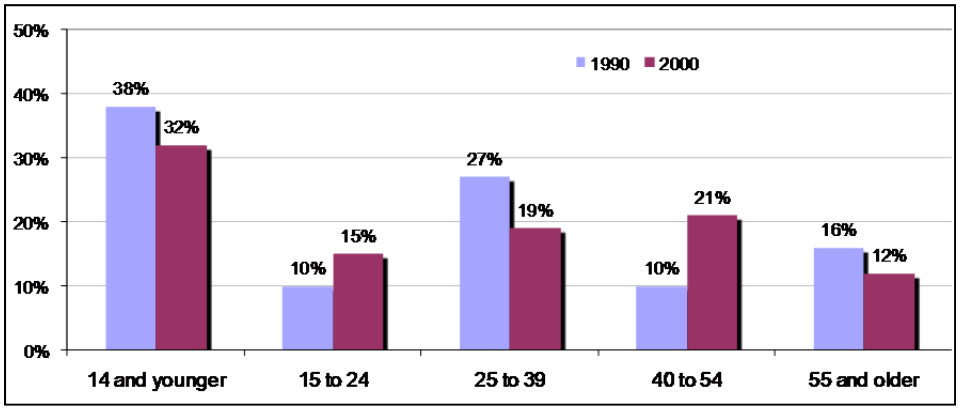

FIGURE 21-5
Nondalton, Age by Percentage, 1990 and 2000

Note: Age groupings by the McDowell Group.

Source: USCB, n.d.

Race. In 2000 the majority (90 percent) of the Nondalton population identified itself as being of American Indian or Alaska Native descent (Table 21-5). Most of the Nondalton Alaska Native population (98 percent) was Athabascan (Table 21-6).

TABLE 21-5
Nondalton, Race by Count and Percentage, 2000

	2000 Count	2000 Percentage
American Indian or Alaska Native alone or in combination with one or more other races	198	90
Population of one race	219	99
White alone	21	10
Alaska Native alone	197	90
Black or African American alone	0	0
Asian alone	0	0
Native Hawaiian or other Pacific Islander alone	1	0

	2000 Count	2000 Percentage
Some other race alone	0	0
Population of two or more races	2	1
Total population	**221**	

Note: Percentages may add up to more than 100 percent because of rounding; calculated by the McDowell Group.

Source: USCB, n.d., 2000 census.

TABLE 21-6
Nondalton, Specific Alaska Native Designation, 2000

	2000
Number of people who are Alaska Native alone	183
Athabascan	98%
Aleut	1%
Eskimo	1%
Tlingit-Haida	0%
Alaska Native—not specified	1%

Note: Percentages may add up to more than 100 percent because of rounding; calculated by the McDowell Group.

Source: USCB, n.d., 2000 census.

Households and Families. Between the 1990 census and the 2000 census, the number of nonfamily households nearly doubled (from 10 to 19), while family household numbers remained nearly steady, increasing from 44 to 49 (Table 21-7).

TABLE 21-7
NONDALTON, HOUSEHOLDS AND FAMILIES, 1990 AND 2000

	1990	2000
Total households	54	68
Family households	44	49
Married-couple family, no children	7	8
Married-couple family with children	18	17
Other family household	19	24
Nonfamily households	10	19
1-person household	8	16
2-or-more person nonfamily household	2	3
Average household size	3.47	3.25
Average family size	3.68	3.78
Total population in families	162	185
Total population	178	221

Source: USCB, n.d.

Language. Eighteen percent of the Nondalton population spoke a Native North American language at home in 2000 (Table 21-8). While there are no census data specifying the Native language spoken, 98 percent of the Alaska Native population in Nondalton was Athabascan; therefore, it was likely that the language spoken in these homes was an Alaska Native language.

TABLE 21-8
Nondalton, Language Spoken at Home by People Age Five and Older, 2000

	2000
Total population (number of people)	221
English only	80%
Native North American language	18%
Spanish	1%
Indo-European language	0%
Asian and Pacific Island language	1%

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d., 2000 census.

Migration. Over three-fourths (76 percent) of the Nondalton population (age 5 and older) in 2000 did not change residences between 1995 and 2000 (Table 21-9). Fifteen percent of the Nondalton population remained in Nondalton between 1995 and 2000 but moved to a different residence. Members of the 2000 community that had migrated into Nondalton since 1995 included 7 percent that had lived outside the Lake and Peninsula Borough but in Alaska in 1995,1 percent that had lived in the United States but not in Alaska in 1995, and 1 percent that had lived outside the United States in 1995.

TABLE 21-9
Nondalton 2000-census Population Age 5 and Older, Residence Status in 1995

1995 Residence	Number of People	Percentage of 2000 Population [b]
Same house as in 2000	156	76
In Nondalton but different house than in 2000	31	15
In Alaska (not in Lake and Peninsula Borough)	14	7
In U.S. (not in Alaska)	2	1
Outside of U.S.	3	1
Total population in 2000 [a]	**206**	

Notes:
a. Population figure here may differ from other population figures for this community because different data sets for the 2000 census provide slightly varying figures.
b. Percentages calculated by the McDowell Group.
Source: USCB, n.d., 2000 census.

Economy

Tribal government, commercial fishing, and subsistence form Nondalton's economic foundation. Firefighting and construction are also sources of cash income. In 2004 the mean annual household harvest

of subsistence resources was 1,365 pounds, with an annual per capita harvest of 358 pounds (Fall et al., 2006).

The community is remote, and access is by small plane or boat/barge. Transportation infrastructure includes a 2,800-foot gravel runway. Freight is moved through Iliamna to Fish Camp by road, then across Six Mile Lake by skiff or barge (ADCCED, n.d.[a]).

Annual per capita income in Nondalton was $8,411 in 2000, well below the borough average of $15,361 and the statewide average of $22,660 (USCB, n.d.). Thirty-seven percent of families and 45 percent of individuals in the community lived below poverty level in 1999, according to the 2000 census.

Employment/Unemployment. The Nondalton population aged 16 and over totaled 150 according to the 2000 census (USCB, n.d.). This was an increase of 20 persons from the 1990 census (Table 21-4). More than half of this population was male (54 percent, or 81 men) and 46 percent (69 women) was female. Fifty percent (75 persons) of this population was considered not in the labor force; these individuals were neither working nor actively looking for employment.

Of the 47 employed residents of Nondalton in 2000, three worked outside the community (Table 21-10). Unemployed workers comprised 19 percent of the labor force. (Unemployed workers either are laid off from their jobs and are collecting unemployment or are actively looking for employment.)

TABLE 21-10
Nondalton, Employment by Gender and Place of Work, 1990 and 2000

	1990	2000
Males in labor force	46	44
Employed	23	23
Unemployed	23	21
Males not in labor force	30	37
Females in labor force	22	31
Employed	16	24
Unemployed	6	7
Females not in labor force	32	38
Total population 16 years and older	130	150
Place of work for workers 16 years and older: [a]		
Worked in Nondalton	N/A	44
Worked outside Nondalton	N/A	3
Total employed	**N/A**	**47**

Note:
a. For the 1990 census, place-of-work data were not available.
Source: USCB, n.d.

Local Employment. There were seven employers in Nondalton in 2007 (Table 21-11; ADOLWD DRA, 2007). The Lake and Peninsula School District was the largest employer, with a peak monthly employment of 31 and an average annual employment of 23.

TABLE 21-11
Nondalton, Employers, 2007

Employer	Peak Monthly Employment	Average Annual Employment
Lake and Peninsula School District	31	24
City of Nondalton	12	8
Nondalton Tribal Council	15	10
Newhalen Lodge, Inc.	17	7
Alaska's Valhalla Lodge Inc.	6	1
Nondalton Knechek Coop Store	2	1
US Postal Service	2	1
TOTAL	**85**	**52**

Source: ADOLWD DRA, 2007.

According to an ADF&G subsistence survey, 34 percent of jobs held by Nondalton residents in 2004 were located outside the community (Table 21-12; Fall et al., 2006).

TABLE 21-12
Job Locations for Nondalton Residents, 2004

Location of Job	Number of Jobs [a]	Percentage
Nondalton	88	66
Iliamna	8	6
Port Alsworth	1	1
Anchorage	1	1
Balance of Yukon Flats census Subarea	2	2
Egegik	1	1
Fairbanks	7	5
McGrath	17	13
Pilot Station	1	1
Port Heiden	1	1
Prudhoe Bay	1	1
Balance of Lake and Peninsula Borough	1	1
Statewide	1	1
Total	**130**	

Note:

a. Many employed residents have more than one job during the year (either temporary jobs or part-time employment); thus, the total number of jobs in this table is much higher than the total number of employed residents in Table 21-10.

Source: Fall et al., 2006.

Capital Improvement Projects. Capital improvement projects are often a critical part of the cash economy for Alaska's smallest rural communities. Table 21-13 shows a sampling of the capital improvement projects in Nondalton since 2009.

TABLE 21-13
Funded Capital Improvement Projects in Nondalton, Fiscal Years 2002 to 2009

Lead Agency	Fiscal Year	Project Description	Total Cost
ANTHC	2008	Water Treatment Plant	$1,259,940
ADCRA	2007	Community Roads Upgrade	$30,000
ANTHC	2006	Health Clinic Construction	$2,714,570
HUD	2006	Indian Housing Block Grant NAHASDA	$172,118
ADEC/VSW	2005	Water Treatment Plant and Storage Tank	$1,838,200
BIA	2002	Community Roads Upgrade	$1,900,000

Notes:
ADCRA = Alaska Department of Community and Regional Affairs.
ADEC = Alaska Department of Environmental Conservation.
ANTHC = Alaska Native Tribal Health Consortium.
BIA = Bureau of Indian Affairs.
HUD = U.S. Department of Housing and Urban Development.
NAHASDA = Native American Housing Assistance and Self Determination Act.
VSW = Village Safe Water.
Source: ADCCED, n.d.[b].

Commercial Fishing Activity. Table 21-14 shows the commercial fishing activity of Nondalton residents from 1990 through 2009. Though commercial fishing activity among Nondalton residents remains low, there is evidence of improvement since 2002. In 1990 estimated annual gross earnings for Nondalton fishermen were $694,235. Earnings declined between 1990 and 2000, when earnings totaled $57,185. Because three or fewer permit-holders participated in all fisheries, harvest and earnings data for 2001 through 2004 and 2007 through 2009 are confidential. Estimated gross earnings increased from $57,185 in 2000 to $247,403 in 2006; however, participation has declined from the 1990s. Participation bottomed out in 2002 and 2009 at two permits fished.

TABLE 21-14
Nondalton, Residents' Commercial Fishing Activity, 1990 through 2009

Year	Number of Permit Holders	Number of Permits Issued	Total Pounds Landed	Estimated Gross Earnings	Estimated Earnings per Pound	Number of Fishermen who Fished	Number of Permits Fished
1990	17	17	641,181	$694,235	$1.08	14	14
1991	17	17	333,226	$245,826	$0.74	16	16
1992	20	20	549,202	$610,502	$1.11	14	14
1993	21	22	669,242	$451,177	$0.67	16	16
1994	21	21	460,112	$450,999	$0.98	13	13
1995	19	19	585,073	$462,138	$0.79	15	15

Year	Number of Permit Holders	Number of Permits Issued	Total Pounds Landed	Estimated Gross Earnings	Estimated Earnings per Pound	Number of Fishermen who Fished	Number of Permits Fished
1996	15	15	121,333	$97,687	$0.81	5	5
1997	15	15	191,147	$178,124	$0.93	12	12
1998	16	16	566,631	$157,677	$0.28	12	12
1999	10	10	189,208	$138,656	$0.73	6	6
2000	13	13	86,502	$57,185	$0.66	6	6
2001	11	11	(a)	(a)	—	3	3
2002	8	8	(a)	(a)	—	2	2
2003	5	5	(a)	(a)	—	3	3
2004	6	6	(a)	(a)	—	3	3
2005	8	10	215,383	$197,357	$0.92	4	4
2006	7	9	268,835	$247,403	$0.92	4	5
2007	6	6	(a)	(a)	—	3	3
2008	5	5	(a)	(a)	—	3	3
2009	5	5	(a)	(a)	—	2	2

Note:

a. When three or fewer permit-holders participate in all commercial fisheries combined, pounds landed and estimated gross earnings are not reported at all because of confidentiality requirements.

Source: CFEC, 2010a.

Fishing-vessel Crews. Participation on fishing-vessel crews by Nondalton residents has declined since 2000, although it has increased since its low in 2002 (Table 21-15). In 2000, 28 crew-member licenses were issued to Nondalton residents (CFEC, 2010b). Two years later, only four crew-member licenses were issued. By 2009, 11 crew-member licenses were issued.

TABLE 21-15
Nondalton, Residents' Crew-member Licenses, 2000 through 2009

	2000	2001 [a]	2002	2003	2004	2005	2006	2007	2008	2009
Number of crew-member licenses	28	N/A	4	13	12	8	15	11	10	11

Note:

a. Crew-member data for 2001 are not available because of problems with the data.

Source: CFEC, 2010b.

Workforce Attributes. Sixty-six percent of the Nondalton population 25 and older in 2000 had at least a high school education, with 8.5 percent holding a bachelor's degree or higher, according to the 2000 census (Table 21-16). This compares to the statewide averages of 88 percent with high school diplomas and 25 percent with a bachelor's degree or higher in 2000 (USCB, n.d.).

TABLE 21-16
Nondalton, Educational Attainment, 1990 and 2000

Educational Attainment	1990 [a]	2000
Population 25 and older	108	118
Less than high school	52	40
High school graduate (includes equivalency)	38	49
Some college, less than 1 year	5	2
Some college, 1 or more years, no degree	0	13
Associate degree	0	4
Bachelor's degree	9	6
Master's degree	0	4
Professional school degree	4	0
Male	N/A	63
Less than high school	N/A	15
High school graduate (includes equivalency)	N/A	34
Some college, less than 1 year	N/A	0
Some college, 1 or more years, no degree	N/A	7
Associate degree	N/A	4
Bachelor's degree	N/A	3
Master's degree	N/A	0
Professional school degree	N/A	0
Female	N/A	55
Less than high school	N/A	25
High school graduate (includes equivalency)	N/A	15
Some college, less than 1 year	N/A	2
Some college, 1 or more years, no degree	N/A	6
Associate degree	N/A	0
Bachelor's degree	N/A	3
Master's degree	N/A	4
Professional school degree	N/A	0

Note:

a. For the 1990 census, data on educational attainment by gender were not available.

Source: USCB, n.d.

Occupations for the Employed Civilian Population. Table 21-17 shows the number of Nondalton residents in various occupations in 2000.

TABLE 21-17
Nondalton, Occupations for the Employed Civilian Population Age 16 and Older, 2000

Occupations [a]	2000
Management, professional, and related	22
Service	11
Sales and office	12
Farming, fishing, and forestry	0
Construction, extraction, and maintenance	0
Production, transportation, and materials moving	2
Total	**47**

Note:

a. Occupation data may under-represent seasonal occupations such as commercial fishing and construction because the survey asked respondents to report their occupation in reference to a stated week of the year. Respondents holding more than one job were asked to report the job at which they worked the most hours. Additionally, economic data may underestimate the summer season peaks in employment and population.

Source: USCB, n.d.

Household Income. The 2000 census recorded 73 households in Nondalton, an increase from the 1990 census of 16 households (Table 21-18). In 2000, 55 households had earnings, with an annual median household income of $19,583, a decrease of 10 percent from the 1990 census, which recorded a median household income of $21,750. Nondalton households had a median income that was 46 percent below the Lake and Peninsula Borough annual median income of $36,442 and 62 percent below the annual statewide median income of $51,571 in 2000 (USCB, n.d.).

TABLE 21-18
Nondalton, Household Income, 1990 and 2000

Household Information	1990	2000
Total number of households [a]	57	73
With earnings	50	55
Without earnings	7	18
With wage or salary income	48	55
With self-employment income	11	2
With interest, dividends, or net rental income	47	73
With Social Security income	6	18
With Supplemental Security Income	(b)	2
With public assistance income	9	15
With retirement income	2	6
With other types of income	4	10
Median household income	$21,750	$19,583

Notes:

a. This data set in the census reports a different number of households than the data set for households and families discussed elsewhere in this section.

b. For the 1990 census, Supplemental Security Income data were not available.

Source: USCB, n.d.

Households and Individuals Receiving Public Assistance. No households and no individuals in Nondalton received temporary assistance in 2009 (Table 21-19; ADHSS, 2010b). Nineteen households and 64 individuals received food stamps in that same year, and seven individuals received adult public assistance. A total of 36 households and 69 residents received Medicare/Medicaid payments in 2009.

TABLE 21-19
Nondalton, Numbers of Households and Individuals Receiving Public Assistance, 2005 through 2009

	Number of Households					Number of Individuals				
Program	**2005**	**2006**	**2007**	**2008**	**2009**	**2005**	**2006**	**2007**	**2008**	**2009**
Temporary assistance	11	8	0	0	0	41	29	0	0	0
Food stamps	24	19	17	15	19	93	72	61	55	64
Adult public assistance [a]	N/A	8	N/A	N/A	N/A	8	8	9	8	7
Medicare/Medicaid	59	53	38	40	36	91	96	84	83	69

Note:

a. Households receiving adult public assistance were not tracked before 2006..

Source: ADHSS, 2010.

Public Assistance Payments. Public assistance payments to Nondalton households totaled $481,958 in 2009 (Table 21-20; ADHSS, 2010b). This was a substantial decrease from 2006, when public assistance payments for the year totaled $702,216 per year, but higher than the total amount of payments received in 2008, $328,957.

TABLE 21-20
Nondalton, Amount of Public Assistance Payments, 2005 through 2009

Program	**2005**	**2006**	**2007**	**2008**	**2009**
Temporary assistance	$5,806	$28,332	$0	$0	$0
Food stamps	$16,768	$111,804	$9,457	$10,806	$14,585
Adult public assistance	$2,749	$33,468	$2,819	$2,491	$2,487
Medicare/Medicaid	$1,970,112	$528,612	$324,489	$324,489	$464,886
Total public assistance payments	**$1,995,435**	**$702,216**	**$336,765**	**$328,957**	**$481,958**

Source: ADHSS, 2010b.

Community Infrastructure

Utilities. *Water and Wastewater*—the city operates the Nondalton water supply, which is captured by well casings at Six Mile Lake and pumped to a pump station in the village. The city has recently been informed that this water source cannot be considered a groundwater source, as previously determined, but is a surface water source. Because treatment of surface water requires a different, more elaborate process, the system is being renovated to comply with required standards (Arne, pers. comm., 2006). The community has 88,000 gallons of storage capacity (ADCCED, n.d.[a]).

Sewage in Nondalton is gravity-fed to a lift station and then pumped to a sewage lagoon. The demand for sewer and water services has doubled in just over a decade (Arne, pers. comm., 2006). The wastewater

infrastructure is reaching capacity, and the sewage lagoon has flooded several times in recent years. The wastewater facility is located in a floodplain. The community is planning to expand the existing lagoon but not to relocate it (Agnew Beck Consulting, 2006). Seventy of the community's 120 housing units are connected to the piped water and sewer system and are plumbed. Plans are underway to extend the system to newly constructed homes and to make system improvements (ADCCED, n.d.[a]).

Solid Waste—Nondalton has a new fenced landfill with a burn box that opened in September 2005. The old landfill site has been cleaned and closed. ADEC officials call the Nondalton solid waste program one of the best in the region (Marcorelle, pers. comm., 2007). The community has a garbage-collection service with curbside pickup run by the city. Recycling efforts are being made to reduce the amount of waste going into the landfill (Agnew Beck Consulting, 2006).

Communications—in-state phone service in Nondalton is provided by ACS of the Northland, while long-distance phone service is provided by AT&T Alascom and by GCI. Teleconferencing services are provided by the Alaska Teleconferencing Network and the Dillingham Legislative Information Office (ADCCED, n.d.[a]). GCI provides wireless and dial-up internet services to the community (RCA, 2006).

Nondalton has no local radio stations and does not receive radio reception from any nearby communities. Locally transmitted television includes the Alaska Rural Communication Service (ARCS). ARCS is a system of satellite-fed, low-power television transmitters providing free over-the-air service to 235 communities throughout Alaska. This system is owned and funded by the state. The program content is a mix of public and commercial television networks and syndicated product, Alaskan-produced news and public affairs, and educational and informational programs from various sources. This service is managed by Alaska Public Broadcasting, Inc. (Geesin, pers. comm., 2006). While there is no cable television provider in Nondalton, a large variety of stations are available via satellite.

Housing. In 2000 there were 120 housing units in Nondalton, compared to 65 units in 1990 (Table 21-21; USCB, n.d.). This increase may reflect a change in counting methodology, since the number of occupied housing units increased from 54 in 1990 to 68 in 2000. Housing units in 2000 included 30 rental units, 38 owner-occupied homes, and 50 vacant households, except for seasonal use. Single-family homes accounted for 108 of the housing units. The average household size in 2000 was 3.25 persons (USCB, n.d.). At the time of this writing, Nondalton was experiencing a housing shortage (Carltikoff, pers. comm., 2006).

Of the 68 occupied residences in 2000, 3 percent (two residences) lacked complete plumbing facilities, 6 percent (four residences) lacked complete kitchen facilities, and 10 percent (seven residences) had no phone service. The median value of the specified owner-occupied residences in 2000 was $118,800.

TABLE 21-21
Nondalton, Housing Characteristics, 1990 and 2000

Characteristic	1990 Count	Percentage	2000 Count	Percentage
Total housing units, by occupancy status	65	100	120	100
Occupied	54	83	68	57
Vacant	11	17	52	43
Vacant except for seasonal, recreational, or occasional use	0	0 [a]	50	96 [a]
Homes with heat, by heat type	53	100	69	100
Electricity	0	0	2	3
Fuel oil, kerosene, etc.	27	51	53	77
Wood	26	49	14	20
Specified owner-occupied units [b], by value	33	100	35	100
Less than $50,000	14	42	6	17
$50,000 to $99,999	13	39	10	29
$100,000 to $149,999	3	9	4	11
$150,000 to $199,999	1	3	14	40
$200,000 to $299,999	2	6	0	0
$300,000 to $499,999	0	0	1	3
Median value	$56,300		$118,800	

Notes:

a. Percentage of total vacant units.

b. Specified owner-occupied units, a subgroup of owner-occupied homes, are either one-family homes that are detached from any other house or a one-family house attached to one or more houses on less than 10 acres with no business on the property.

Source: USCB, n.d.

Education Services and Facilities. Nondalton has one school for grades kindergarten through 12th grade, the Nondalton School, with an enrollment for fiscal year (FY) 2010 of 33 students (Figure 21-6). This is an enrollment drop of 55 percent, or 41 students, from 1997. The school has five teachers (ADEED, n.d.). The school building itself is an older building with recent renovations and is in fair condition (Atwater, pers. comm., 2006). The Nondalton School is part of the Lake and Peninsula School District.

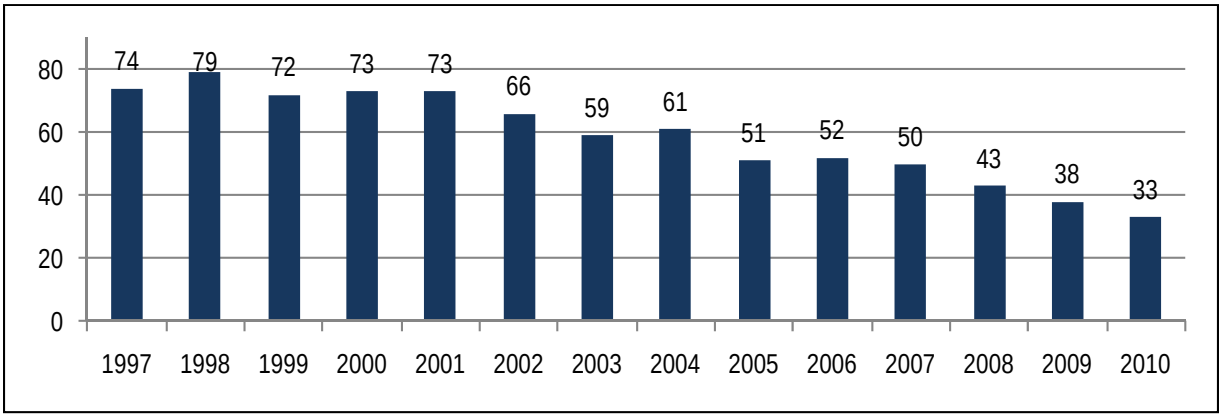

FIGURE 21-6
Nondalton School Enrollment, FY1997 through FY2010
Sources: ADEED, n.d.; Atwater, pers. comm., 2006.

Health-care Services and Facilities. The Nondalton Health Clinic is owned by the city and operated by the Bristol Bay Area Health Corporation. Construction of the new clinic, which replaced the community's aging clinic, was completed in August 2007. The new clinic has three exam rooms, a dental suite, and a behavioral health room. The community has two health aides. Most patients needing additional care are transported to Anchorage; however, patients may also be sent to the Nilavena subregional health clinic in Iliamna. (Clinic details are described in the *Health-care Services and Facilities* section under *Community Infrastructure* for Iliamna [Section 21.7.2.5].)

Public Safety. Nondalton receives support from the Alaska State Troopers located in King Salmon and, occasionally, from those in Dillingham. An Alaska Bureau of Wildlife Enforcement (ABWE) trooper in Iliamna also occasionally will respond to requests for assistance. The community does have a holding cell located at City Hall, but the cell has been unused for nearly a decade. Nondalton does not have a Village Public Safety Officer (VPSO), although it has had one in previous years. Fire-protection services are provided by the local volunteer fire department, while rescue services are provided by the all-volunteer Nondalton First Responders. The community has a fire truck that is in good condition, but keeping the water in the truck unfrozen in winter is difficult. The community also has a patient-transport vehicle (Nondalton Health Clinic, 2010). Nondalton has one emergency medical technician (EMT) (Nondalton Health Clinic, 2010).

21.7.2.2 Kokhanok

Kokhanok is an unincorporated community located on Iliamna Lake at the mouth of Kokhanok Bay. It was relocated to higher ground (at the same location) in the early 2000s, when the rising level of Iliamna Lake threatened several community buildings. The original site of Kokhanok, called "Isigiug," was located 2 1/2 miles down the beach from its present location. Kokhanok is accessible primarily by air.

Demographics

Population. Kokhanok's 2009 population was 184 (Figure 21-7). The population of the community increased 21 percent between 1990 and 2009.

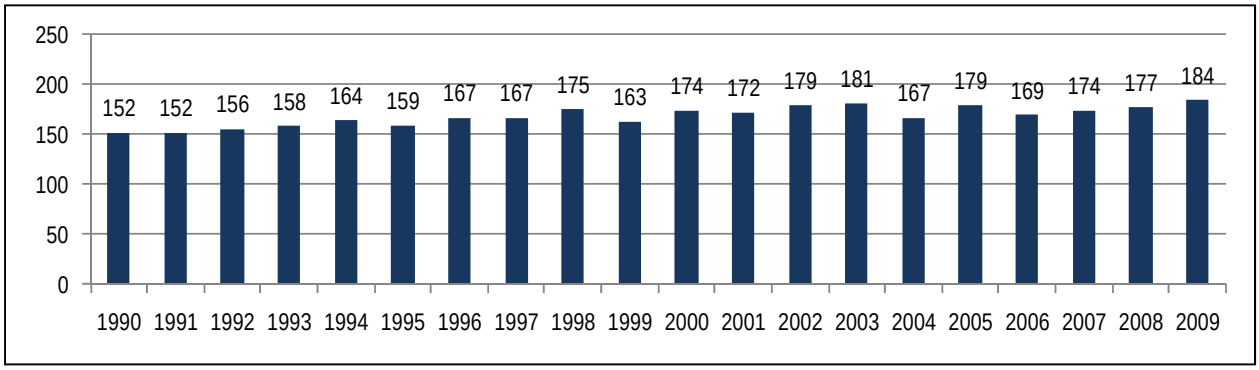

FIGURE 21-7
Kokhanok Population, 1990 through 2009
Source: ADOLWD DRA, n.d.[a].

According to the 1990 census (USCB, n.d.), males slightly outnumbered females (Table 21-22). By the 2000 census, that difference had widened, with males comprising 59 percent of the population in Kokhanok.

TABLE 21-22
Kokhanok, Population by Gender, 1990 and 2000

	1990 Count	1990 Percentage	2000 Count	2000 Percentage
Male population	79	52	102	59
Female population	73	48	72	41
Total	**152**		**174**	

Source: USCB, n.d.

Age. The median age of Kokhanok residents increased by 5 years between the 1990 census and the 2000 census, with a median age of 29.5 years in 2000 (Table 21-23).

TABLE 21-23
Kokhanok, Median Age, 1990 and 2000

	1990	2000
Median age	24.6	29.5
Median male age	16.5	25.5
Median female age	25.9	34.3

Source: USCB, n.d.

At the time of the 1990 census, children under the age of 15 made up approximately one-third of the Kokhanok population, and another third of the population consisted of those between the ages of 25 to 39 (Table 21-24 and Figure 21-8). By 2000, those percentages had fallen to 27 percent and 21 percent, respectively.

TABLE 21-24
Kokhanok, Age by Count and Percentage, 1990 and 2000

	1990 Count	1990 Percentage	2000 Count	2000 Percentage
Under 5 years	20	13	11	6
5 to 9 years	20	13	13	7
10 to 14 years	14	9	23	13
15 to 17 years	9	6	14	8
18 and 19 years	1	1	11	6
20 to 24 years	10	7	9	5
25 to 29 years	23	15	6	3
30 to 34 years	14	9	14	8
35 to 39 years	12	8	16	9
40 to 44 years	4	3	17	10
45 to 49 years	5	3	13	7
50 to 54 years	5	3	4	2
55 to 59 years	3	2	9	5
60 and 61 years	3	2	1	1
62 to 64 years	1	1	3	2
65 to 69 years	5	3	1	1
70 to 74 years	1	1	2	1
75 to 79 years	0	0	2	1
80 to 84 years	2	1	4	2
85 years and older	0	0	0	0

Source: USCB, n.d.

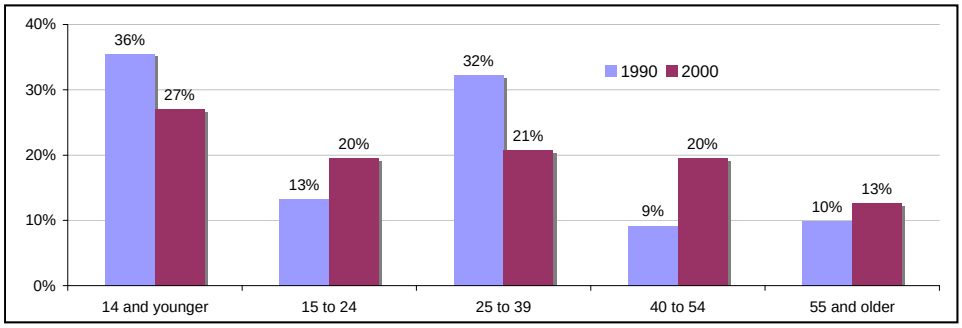

FIGURE 21-8
Kokhanok, Age by Percentage, 1990 and 2000
Note: Age groupings by the McDowell Group.
Source: USCB, n.d.

Race. Most (91 percent) of the Kokhanok population was of American Indian or Alaska Native descent according to the 2000 census (Table 21-25), when the majority of this population was categorized as unspecified Alaska Native (Table 21-26).

TABLE 21-25
Kokhanok, Race by Count and Percentage, 2000

	2000 Count	2000 Percentage
American Indian or Alaska Native alone or in combination with one or more other races	158	91
Population of one race	167	96
White alone	14	8
Alaska Native alone	151	87
Black or African American alone	0	0
Asian alone	0	0
Native Hawaiian or other Pacific Islander alone	0	0
Some other race alone	2	1
Population of two or more races	7	4
Total population	**174**	

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d.

TABLE 21-26
Kokhanok, Specific Alaska Native Designation, 2000

	2000
Number of people who are Alaska Native alone	151
Athabascan	7%
Aleut	12%
Eskimo	1%
Tlingit-Haida	0%
Alaska Native—not specified	81%

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d.

Households and Families. In 2000 the number of family households in Kokhanok outnumbered nonfamily households, with 41 family households and 11 nonfamily households (Table 21-27). The number of nonfamily households nearly doubled between the 1990 and 2000 censuses, while the average household size decreased by nearly one person per household.

TABLE 21-27
Kokhanok, Households and Families, 1990 and 2000

	1990	2000
Total households	38	52
Family households	32	41
Married-couple family, no children	6	10
Married-couple family with children	12	8
Other family household	14	23
Nonfamily households	6	11
1-person household	6	9
2-or-more person nonfamily households	0	2
Average household size	4.00	3.35
Average family size	4.34	3.68
Total population in families	139	151
Total population	152	174

Source: USCB, n.d.

Language. Despite having a population that was more than 90 percent Alaska Natives or American Indian, less than one in five Kokhanok residents (18 percent) speak a Native American language at home (Table 21-28).

TABLE 21-28
Kokhanok, Language Spoken at Home by People Age Five and Older, 2000

	2000
Total population (number of people)	174
English only	81%
Native North American language	18%
Spanish	0%
Indo-European language	0%
Asian and Pacific Island language	1%

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d.

Migration. Two-thirds (67 percent) of the Kokhanok population (age five and older) in 2000 did not change residences between 1995 and 2000 (Table 21-29). Seven percent of Kokhanok residents in 2000 had lived in Kokhanok in 1995 but moved to a different house by 2000. Sixteen percent of the residents had migrated into Kokhanok between 1995 and 2000. These residents had lived outside the Lake and Peninsula Borough but in Alaska in 1995.

TABLE 21-29
Kokhanok, 2000-census Population Age Five and Older, Residence Status in 1995

1995 Residence	Number of People	Percentage of 2000 Population [a]
Same house as in 2000	110	67
In Kokhanok but different house than in 2000	12	7
In Alaska (not in Lake and Peninsula Borough)	27	16
In U.S. (not in Alaska)	16	10
Total population in 2000 [b]	**165**	

Notes:

a. Percentages calculated by the McDowell Group.

b. Population figure here may differ from other population figures for this community because different data sets for the 2000 census provide slightly varying figures.

Source: USCB, n.d.

Economy

Tribal government, commercial fishing, and subsistence form Kokhanok's economic foundation. In 2005 the mean annual household harvest of subsistence resources was 2,563 pounds. Annual per capita harvest was 680 pounds (Fall et al., 2006).

Access to the community is by aircraft via a state-owned gravel airstrip or a floatplane base. Bulk freight is delivered by barges (ADCCED, n.d.[a]).

The annual per capita income in Kokhanok in 2000 was $7,732, the lowest among the Iliamna Lake/Lake Clark communities (USCB, n.d.). Forty percent of families and 43 percent of individuals in the community lived below the poverty level in 1999 according to the 2000 census.

Employment/Unemployment. The Kokhanok population 16 years and older consisted of 121 persons in 2000 according to the census (Table 21-30). This was an increase of 17 persons from the 1990 census. More than half of this population (57 percent or 69 men) was male, and 43 percent was female (52 women). Sixty-four percent (77 persons) of this population was not in the labor force; these individuals were neither working nor actively looking for employment.

Of the 39 employed workers in Kokhanok in 2000, four worked outside the community. Unemployed workers comprised 4 percent of the labor force.

TABLE 21-30
Kokhanok, Employment by Gender and Place of Work, 1990 and 2000

	1990	2000
Males in labor force	18	23
Employed	18	18
Unemployed	0	5
Males not in labor force	32	46
Females in labor force	21	21

	1990	2000
Employed	18	21
Unemployed	3	0
Females not in labor force	33	31
Total population 16 years and older	104	121
Place of work for workers (16 years and older) [a]		
Worked in Kokhanok	N/A	35
Worked outside Kokhanok	N/A	4
Total employed	N/A	39

Note:

a. For the 1990 census, place-of-work data were not available.

Source: USCB, n.d.

Local Employment. There were three employers in Kokhanok in 2007 (Table 21-31; ADOLWD DRA, 2007). The Kokhanok Village Council - Utility was the largest employer in 2007 with a peak monthly employment of 13 and annual average employment of nine.

TABLE 21-31
Kokhanok, Employers, 2007

Employer	Peak Monthly Employment	Average Annual Employment
Kokhanok Village Council – Utility	13	9
Kokhanok Village Council	12	8
Nielsen's General Store	3	2
Total	**28**	**19**

Source: ADOLWD DRA, 2007.

Capital Improvement Projects. Capital improvement projects can be a critical part of the cash economy for small rural communities around the state. A sampling of such projects for the village of Kokhanok between 2002 and 2009 are listed in Table 21-32.

TABLE 21-32
FUNDED CAPITAL IMPROVEMENT PROJECTS IN KOKHANOK, FISCAL YEARS 2002 TO 2009

Lead Agency	Fiscal Year	Project Description	Total Cost
AEA-AEEE	2009	Wind Diesel	$162,063
HUD	2008	Indian Housing Block Grant NAHASDA	$115,843
AEA-AEEE	2007	Wind Generator	$148,000
HUD	2006	Indian Housing Block Grant NAHASDA	$143,895
FAA	2005	Runway Extension	$2,589,474
AEA-RPSU	2005	Powerhouse and Distribution-system Upgrade	$1,110,656
ANTHC	2004	Construction of New Health Clinic	$1,770,773
U.S. Army Corps of Engineers	2002	Harbor Feasibility Study, Design, and Construction	$2,500,000

Notes:

AEA-AEEE = Alaska Energy Authority, Alternative Energy and Energy Efficiency.

AEA-RPSU = Alaska Energy Authority, Rural Power System Upgrades.

FAA = Federal Aviation Administration.
Source: ADCCED, n.d.[b].

Commercial Fishing Activity. Table 21-33 shows the fishing activity of Kokhanok resident fishermen from 1990 through 2009. Commercial fishing activity decreased from a high of 12 active fishermen in 1992 and 1993 to a low of four active fishermen in 1999 and 2000. Participation has since increased to nine fishermen and permits each in 2009. Estimated annual gross earnings for Kokhanok fishermen ranged from $361,000 in 1992 to a record low of $14,193 in 2002. Because three or fewer permit-holders participated in all fisheries, harvest and earnings data for 2007 through 2009 are confidential.

TABLE 21-33
Kokhanok, Residents' Commercial Fishing Activity, 1990 through 2009

Year	Number of Permit Holders	Number of Permits Issued	Total Pounds Landed	Estimated Gross Earnings	Estimated Earnings per Pound	Number of Fishermen who Fished	Number of Permits Fished
1990	10	11	238,437	$253,174	$1.06	8	8
1991	11	12	99,732	$72,294	$0.72	6	6
1992	10	10	326,366	$361,000	$1.11	12	12
1993	12	12	424,127	$285,523	$0.67	12	12
1994	12	12	311,178	$302,761	$0.97	11	11
1995	11	11	234,847	$185,350	$0.79	9	9
1996	8	8	112,256	$90,262	$0.80	5	5
1997	8	8	40,765	$37,974	$0.93	5	5
1998	8	8	53,414	$62,954	$1.18	8	8
1999	7	7	111,394	$91,578	$0.82	4	4
2000	8	8	115,309	$75,642	$0.66	4	4
2001	9	9	199,604	$84,092	$0.42	8	8
2002	8	8	29,075	$14,193	$0.49	5	5
2003	9	9	51,185	$25,368	$0.50	5	5
2004	7	7	55,676	$27,757	$0.50	6	6
2005	7	7	187,909	$110,484	$0.59	8	8
2006	7	7	253,225	$133,841	$0.53	8	8
2007	9	9	(a)	(a)	—	10	10
2008	9	9	(a)	(a)	—	9	9
2009	9	9	(a)	(a)	—	9	9

Note:
a. When three or fewer permit-holders participate in all commercial fisheries combined, pounds landed and estimated gross earnings are not reported at all because of confidentiality requirements.

Source: CFEC, 2010a.

Fishing-vessel Crews. In 2000, 32 crew-member licenses for fishing-vessel crews were issued to Kokhanok residents (Table 21-34). The number of crew-member licenses has varied since then, with a low of 13 licenses issued in 2006.

TABLE 21-34
Kokhanok, Residents' Crew-member Licenses, 2000 through 2009

	2000	2001 a	2002	2003	2004	2005	2006	2007	2008	2009
Number of crew-member licenses	32	N/A	17	24	16	22	13	15	18	15

Note:
a. Crew-member data for 2001 are not available because of problems with the data.
Source: CFEC, 2010b.

Workforce Attributes. According to the 2000 census, 78 percent of the Kokhanok population 25 years and older had at least a high school education in 2000, with 12 percent holding a bachelor's degree or higher. Table 21-35 shows the educational attainment of Kokhanok residents 25 years and older.

TABLE 21-35
Kokhanok, Educational Attainment, 1990 and 2000

Educational Attainment	1990 [a]	2000
Population 25 years and older	93	85
Less than high school	38	19
High school graduate (includes equivalency)	39	35
Some college, less than 1 year	9	5
Some college, 1 or more years, no degree	0	9
Associate degree	2	7
Bachelor's degree	2	8
Master's degree	0	2
Professional school degree	3	0
Male	N/A	45
Less than high school	N/A	10
High school graduate (includes equivalency)	N/A	23
Some college, less than 1 year	N/A	2
Some college, 1 or more years, no degree	N/A	2
Associate degree	N/A	0
Bachelor's degree	N/A	6
Master's degree	N/A	2
Professional school degree	N/A	0
Female	N/A	40
Less than high school	N/A	9
High school graduate (includes equivalency)	N/A	12
Some college, less than 1 year	N/A	3
Some college, 1 or more years, no degree	N/A	7
Associate degree	N/A	7
Bachelor's degree	N/A	2
Master's degree	N/A	0
Professional school degree	N/A	0

Note:
a. For the 1990 census, data on educational attainment by gender were not available.
Source: USCB, n.d.

Occupations for the Employed Civilian Population. Table 21-36 shows the number of people in various occupations living in Kokhanok in 2000.

TABLE 21-36
Kokhanok, Occupations for the Employed Civilian Population Age 16 and Older, 2000

Occupations [a]	2000
Management, professional, and related	24
Service	5
Sales and office	7
Farming, fishing, and forestry	0
Construction, extraction, and maintenance	0
Production, transportation, and material moving	3
Total	**39**

Note:

a. Occupation data may under-represent seasonal occupations such as commercial fishing and construction because the survey asked respondents to report their occupation in reference to a stated week of the year. Respondents holding more than one job were asked to report the job at which they worked the most hours. Additionally, economic data may underestimate the summer season peaks in employment and population.

Source: USCB, n.d.

Household Income. The 2000 census recorded 53 households in Kokhanok, an increase of nine households from the 1990 census (Table 21-37). Forty-three of those households had earnings, with an annual median household income of $19,583. This amount was an increase of 37 percent from the 1990 census, which recorded an annual median household income of $14,286 in the community. Kokhanok households had an annual median income that was 46 percent below the Lake and Peninsula Borough median of $36,442 and 62 percent below the statewide median of $51,571 (USCB, n.d.).

TABLE 21-37
Kokhanok, Household Income, 1990 and 2000

Household Information	1990	2000
Total number of households [a]	44	53
With earnings	39	43
Without earnings	5	10
With wage or salary income	39	41
With self-employment income	15	15
With interest, dividends, or net rental income	44	45
With Social Security income	5	6
With Supplemental Security Income	(b)	12
With public assistance income	9	18
With retirement income	9	6

Household Information	1990	2000
With other types of income	3	10
Median household income	$14,286	$19,583

Notes:

a. This data set in the census reports a different number of households than the data set for households and families discussed elsewhere in this section.

b. For the 1990 census, Supplemental Security Income data were not available.

Source: USCB, n.d.

Households and Individuals Receiving Public Assistance. No individuals in Kokhanok received temporary public assistance in 2009 (Table 21-38); the number of households that received temporary assistance that year was zero. Nineteen households and 61 individuals received food stamps in that year, and seven individuals received adult public assistance, though household numbers were unavailable because of confidentiality policies. A total of 38 households and 73 residents in Kokhanok received Medicare/Medicaid payments in 2009.

TABLE 21-38
Kokhanok, Numbers of Households and Individuals Receiving Public Assistance, 2005 through 2009

	Number of Households					Number of Individuals				
Program	2005	2006	2007	2008	2009	2005	2006	2007	2008	2009
Temporary assistance	9	(b)	0	0	0	34	14	0	0	0
Food stamps	20	16	11	14	19	75	59	34	49	61
Adult public assistance [a]	N/A	9	(b)	(b)	(b)	7	9	7	6	7
Medicare/Medicaid	35	34	30	31	38	71	63	52	59	73

Notes:

a. Households receiving adult public assistance were not tracked before 2006.

b. Data not released to protect confidentiality.

Source: ADHSS, 2010b.

Public Assistance Payments. Public assistance payments to Kokhanok households from all four sources listed in Table 21-38 totaled $271,547 in 2009 (Table 21-39). Public assistance payments have been reasonably steady between $200,000 and $300,000 per year since 2008 with the exception of $159,998 in 2007.

TABLE 21-39
Kokhanok, Amount of Public Assistance Payments, 2005 through 2009

Program	2005	2006	2007	2008	2009
Temporary assistance	$10,511	$2,822	$0	$0	$0
Food stamps	$17,649	$69,648	$5,935	$13,550	$16,825
Adult public assistance	$2,107	$21,252	$1,888	$1,780	$2,046
Medicare/Medicaid	$267,035	$122,682	$152,175	$233,850	$252,676
Total public assistance payments	**$297,302**	**$216,404**	**$159,998**	**$249,180**	**$271,547**

Source: ADHSS, 2010b.

Community Infrastructure

Utilities. *Water and Wastewater*—the community operates its own water and sewer system that serves 35 to 40 households. Groundwater in the area is too far below the surface to access easily, so Kokhanok derives its water from Iliamna Lake (Woods, pers. comm., 2006). Because this is a surface water source, water is treated using a filtration system that has proven to be expensive for the community to run. Improvements were made to the pump house in 2006 after that facility froze and required several part replacements. The school operates its own well and water-treatment facility (Arne, pers. comm., 2006).

Solid Waste—the landfill in Kokhanok is located a mile above the village on a hill. The landfill is an open pit with no burn box or other facilities. The village council asks residents to first burn their garbage before bringing it to the landfill, although this policy is not always followed. The landfill was opened 10 years ago after it was determined that the old landfill was too close to Iliamna Lake (ADEC, n.d.; Woods, pers. comm., 2006).

Communications—Kokhanok in-state phone service is provided by ACS of the Northland, while long-distance phone service is provided by AT&T Alascom. Teleconferencing services are provided by the Alaska Teleconferencing Network (ADCCED, n.d.[a]). Dial-up and wireless internet is available through GCI (Gazaway and Manaois, pers. comm., 2006).

Radio stations in Kokhanok include KGTL-AM and KBBI-AM out of Homer and KDLG-AM out of Dillingham (Grindle, pers. comm., 2006).

The only television station transmitted locally is from ARCS. (For details about ARCS, see the *Communications* section under *Community and Infrastructure* for Nondalton [Section 21.7.2.1].) While there is no cable television provider in Kokhanok, a large variety of stations is available via satellite.

Housing. In 2000 there were 59 housing units in Kokhanok (Table 21-40), including 20 rental units, 32 owner-occupied homes, and six seasonal-use units. All but six of the housing units were single-family homes, and the average number of people per household was 3.35.

Of the 52 occupied residences in 2000, 8 percent (four residences) lacked complete plumbing facilities, 12 percent (six residences) lacked complete kitchen facilities, and 16 percent (eight residences) had no phone services. The median value of the specified owner-occupied residences was $23,800 (USCB, n.d.).

TABLE 21-40
Kokhanok, Housing Characteristics, 1990 and 2000

Characteristic	1990 Count	Percentage	2000 Count	Percentage
Total housing units, by occupancy status	41	100	59	100
Occupied	38	93	52	88
Vacant	3	7	7	12
Vacant except for seasonal, recreational, or occasional use	0	0 [a]	6	86 [a]
Homes with heat, by heat type	53	100	69	100
Utility gas	0	0	1	2

Characteristic	1990 Count	Percentage	2000 Count	Percentage
Bottled, tank, or liquid propane gas	1	3	2	4
Fuel oil, kerosene, etc.	12	35	46	90
Wood	18	53	2	4
Other	3	9	0	0
Specified owner-occupied units [b], by value	29	100	21	100
Less than $50,000	19	66	14	67
$50,000 to $99,999	9	31	6	29
$100,000 to $149,999	1	3	0	0
$150,000 to $199,999	0	0	1	5
$200,000 or more	0	0	0	0
Median value	$40,800		$23,800	

Notes:

a. Percentage of total vacant units.

b. Specified owner-occupied units, a subgroup of owner-occupied homes, are either one-family homes that are detached from any other house or a one-family house attached to one or more houses on less than 10 acres with no business on the property.

Source: USCB, n.d.

Education Services and Facilities. The Kokhanok School is the only school in Kokhanok serving kindergarten through 12th grade and was attended by 35 students in FY 2010 (Figure 21-9). This represents a decline in student population of 39 percent from FY 1997. At the time of this writing, the school has seven teachers (ADEED, n.d.). The school building is in good condition and was renovated in the early 1990s to increase its size. New floors were put in during the summer of 2006. The school facilities have slightly less space than needed for the student population however (Atwater, pers. comm., 2006). The Kokhanok School is part of the Lake and Peninsula School District.

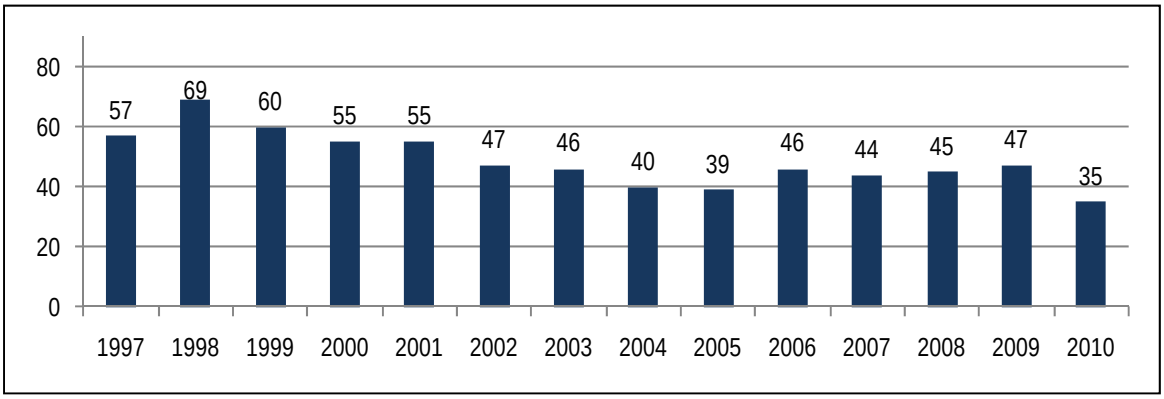

FIGURE 21-9
Kokhanok School Enrollment, FY1997 through FY2010

Sources: ADEED, n.d.; Atwater, pers. comm., 2006.

Health-care Services and Facilities. The local health-care facility, the Kokhanok Health Clinic, is owned by the Kokhanok Village Council and is operated by the Bristol Bay Area Health Corporation (BBAHC). In May 2007 the clinic moved to a new, larger, more modern facility, which was built to replace an older facility. The new clinic has two dental rooms, three exam rooms, a laboratory, and offices for the community health representatives. Kokhanok has one community health representative (Kokhanok Health Clinic, pers. comm., 2010). A joint facility, housing an emergency services garage and the village council office, also was built recently (SWAMC, n.d.). Additionally, the Nilavena subregional health clinic in Iliamna provides a full spectrum of primary health-care services. (Clinic details are described in the *Health-care Services and Facilities* section under *Community Infrastructure* for Iliamna [Section 21.7.2.5].)

Public Safety. Kokhanok is served by a VPSO, although the position is currently vacant, as well as by Alaska State Troopers located in King Salmon and Iliamna (Akelkok, pers. comm., 2007). Kokhanok has a volunteer fire department and a firehouse, but no fire truck or ambulance. Rescue services are provided by the volunteer Kokhanok First Responders. Kokhanok has two EMTs (Kokhanok Health Clinic, pers. comm., 2010).

21.7.2.3 Newhalen

Newhalen, which was incorporated as a second-class city in 1971, is located on the north shore of Iliamna Lake at the mouth of the Newhalen River. The name Newhalen was adapted from the traditional Eskimo name of the village, "Noghelingamiut," meaning people of Noghelin (ADCCED, n.d.[a].). The community has been in place for at least 130 years (an 1890 census noted a town of Noghelingamiut at this location), and the Yup'ik people who established it likely came to the region in the last 200 years (Alaska Geographic, 1986; ADCCED, n.d.[a]). Today the Alaska Native cultures represented in the community's residents include Yup'ik, Alutiiq, and Athabascan (ADCCED, n.d.[a]). A 5-mile-long road connects Newhalen and Iliamna (ADCCED, n.d.[a]). The community is also accessible by air and water.

Demographics

Population. The 2009 population of Newhalen was 162 (Figure 21-10), an increase of 1 percent from 2000; however, Newhalen's population declined by 12 percent from 2007 to 2009.

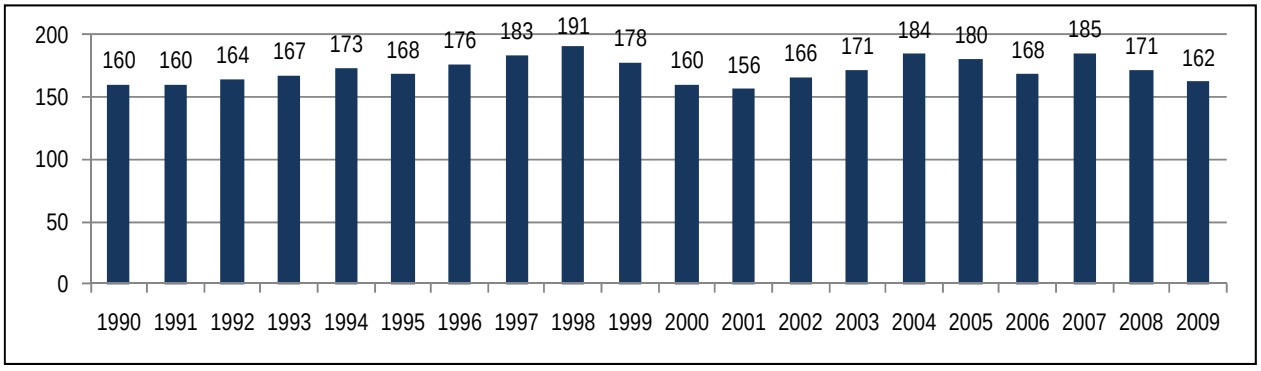

FIGURE 21-10
Newhalen Population, 1990 through 2009
Source: ADOLWD DRA, n.d.[a].

While the 1990 census showed a larger proportion of males than females in Newhalen, the gender ratio balanced out by 2000, with 50 percent males and 50 percent females (Table 21-41).

TABLE 21-41
Newhalen, Population by Gender, 1990 and 2000

	1990 Count	1990 Percentage	2000 Count	2000 Percentage
Male population	84	53	80	50
Female population	76	48	80	50
Total population	**160**		**160**	

Source: USCB, n.d.

Age. The median age in Newhalen in 2000 was 20.5 years old (Table 21-42). The median age of Newhalen males in 2000, 27, was 9 years older than that of Newhalen females, 18. The median age did not change substantially between 1990 and 2000.

TABLE 21-42
Newhalen, Median Age, 1990 and 2000

	1990	2000
Median age	19.8	20.5
Median male age	24.0	27.0
Median female age	16.5	18.0

Source: USCB, n.d.

In both the 1990 and 2000 censuses, the largest percentage of the Newhalen population was under the age of 15; however, this percentage decreased from 44 percent in 1990 to 37 percent in 2000 (Table 21-43, Figure 21-11).

TABLE 21-43
Newhalen, Age by Count and Percentage, 1990 and 2000

	1990 Count	1990 Percentage	2000 Count	2000 Percentage
Under 5 years	27	17	13	8
5 to 9 years	23	14	20	13
10 to 14 years	20	13	26	16
15 to 17 years	4	3	13	8
18 and 19 years	6	4	6	4
20 to 24 years	10	6	9	6
25 to 29 years	9	6	9	6
30 to 34 years	17	11	7	4
35 to 39 years	11	7	10	6
40 to 44 years	6	4	7	4

	1990 Count	1990 Percentage	2000 Count	2000 Percentage
45 to 49 years	9	6	13	8
50 to 54 years	4	3	5	3
55 to 59 years	3	2	7	4
60 and 61 years	2	1	2	1
62 to 64 years	5	3	5	3
65 to 69 years	2	1	1	1
70 to 74 years	1	1	3	2
75 to 79 years	1	1	2	1
80 to 84 years	0	0	1	1
85 years and older	0	0	1	1

Source: USCB, n.d.

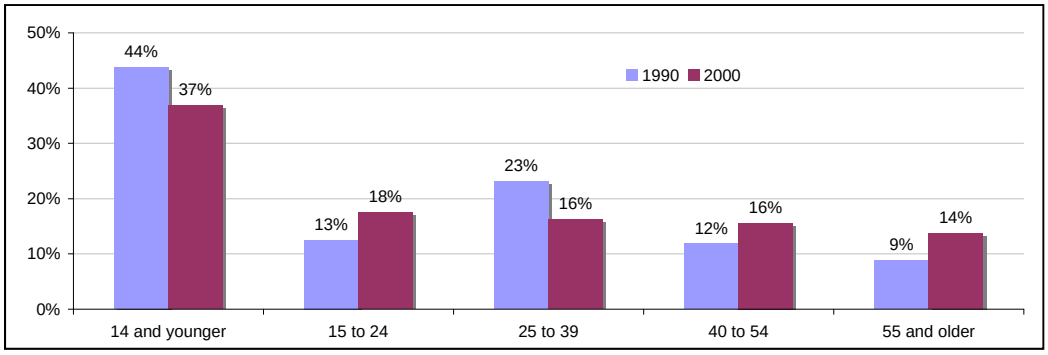

FIGURE 21-11
Newhalen, Age by Percentage, 1990 and 2000
Note: Age groupings by the McDowell Group.
Source: USCB, n.d.

Race. Newhalen is a Yup'ik Eskimo village. According to the 2000 census, 91 percent of the population identified itself as American Indian or Alaska Native, or partly so (Table 21-44).

TABLE 21-44
Newhalen, Race by Count and Percentage, 2000

	2000 Count	2000 Percentage
American Indian or Alaska Native alone or in combination with one or more other races	146	91
Population of one race	150	94
White alone	14	9
People who are Alaska Native alone	136	85
Black or African American alone	0	0
Asian alone	0	0
Native Hawaiian or other Pacific Islander alone	0	0

	2000 Count	2000 Percentage
Some other race alone	0	0
Population of two or more races	10	6
Total Population	**160**	

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d.

Of the people identified as Alaska Native alone, 88 percent identified themselves as Eskimo (Table 21-45).

TABLE 21-45
Newhalen, Specific Alaska Native Designation, 2000

	2000
Number of people who are Alaska Native alone	136
Athabascan	4%
Aleut	7%
Eskimo	88%
Tlingit-Haida	1%
Alaska Native—not specified	0%

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d.

Households and Families. In 2000 there were 37 family households and two nonfamily households in Newhalen (Table 21-46). While the number of family households increased between the 1990 and the 2000 census, the number of married-couple family households with children under the age of 18 decreased from 21 to 15.

TABLE 21-46
Newhalen, Households and Families, 1990 and 2000

	1990	2000
Total households	36	39
Family households	33	37
Married-couple family, no children	3	7
Married-couple family with children	21	15
Other family household	9	15
Nonfamily households	3	2
1-person household	3	2
2-or-more person nonfamily households	0	0
Average household size	4.44	4.10
Average family size	4.73	4.22

	1990	2000
Population in families	156	156
Total population	160	160

Source: USCB, n.d.

Language. In 2000 just under one-third (29 percent) of the Newhalen population spoke a Native North American language at home (Table 21-47). While there are no census data specifying the Native language spoken, 88 percent of the Alaska Native population in Newhalen was Yup'ik Eskimo in 2000; therefore, it is likely that the Native language most often spoken was Yup'ik.

TABLE 21-47
Newhalen, Language Spoken at Home by People Age Five and Older, 2000

	2000
Total population (number of people)	160
English only	71%
Native North American language	29%
Spanish	0%
Indo-European language	0%
Asian and Pacific Island language	0%

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d.

Migration. Nearly two-thirds (63 percent) of the Newhalen population (age five and older) in 2000 did not change residences between 1995 and 2000 (Table 21-48). Twenty percent of Newhalen residents in 2000 had lived in the community in 1995 but moved to a new house by 2000. Eighteen percent of the residents in 2000 had migrated into Newhalen. These residents had lived outside the Lake and Peninsula Borough but in Alaska in 1995.

TABLE 21-48
Newhalen 2000-census Population Age Five and Older, Residence Status in 1995

1995 Residence	Count	Percentage [a]
Same house as in 2000	82	63
In Newhalen but in different house than in 2000	26	20
In Alaska (not in Lake and Peninsula Borough)	23	18
Total population in 2000 [b]	**131**	

Note:
a. Percentages calculated by the McDowell Group.
b. Population figure here may differ from other population figures for this community because different data sets for the 2000 census provide slightly varying figures.

Source: USCB, n.d.

Economy

Tribal government, commercial fishing, and subsistence form Newhalen's economic foundation. Providing services to visitors (primarily sport fishermen) also creates employment and income opportunities for local residents. In 2004 the annual mean household harvest of subsistence resources was 2,794 pounds. The annual per capita harvest was 692 pounds (Fall et al., 2006).

Access to the community is by aircraft landing at one of two state-owned paved airstrips located between Iliamna and Newhalen. Barges deliver bulk freight to the community (ADCCED, n.d.[a]).

The annual per capita income in Newhalen in 2000 was $9,447, about 60 percent below the statewide average (USCB, n.d.). Twenty-seven percent of families and 16 percent of individuals in the community lived below poverty level in 1999 according to the 2000 census.

Employment/Unemployment. According to the 2000 census, the Newhalen population aged 16 and over totaled 84, a decrease of 14 persons from the 1990 census (Table 21-49). More than half of the 2000 population was male (52 percent, or 44 men), and 48 percent was female (40 women).

Forty-three percent (36 persons) of this population was not in the labor force; these individuals were neither working nor actively looking for employment. Of the 33 employed workers in Newhalen in 2000, 10 worked outside the community. Unemployed workers comprised 18 percent of the labor force.

TABLE 21-49
Newhalen, Employment by Gender and Place of Work, 1990 and 2000

	1990	2000
Males in labor force	32	27
Employed	29	14
Unemployed	3	13
Males not in labor force	22	17
Females in labor force	23	21
Employed	23	19
Unemployed	0	2
Females not in labor force	21	19
Total population 16 and over	98	84
Place of work for workers 16 and older: [a]		
Worked in Newhalen	N/A	23
Worked outside Newhalen	N/A	10
Total employed	N/A	33

Note:

a. For the 1990 census, place-of-work data were not available.

Source: USCB, n.d.

Local Employment. Two employers were reported in Newhalen in 2007 by ADOLWD (Table 21-50). The Newhalen Tribal Council was the largest employer, with a peak monthly employment of 25 and an average annual employment of 15.

TABLE 21-50
Newhalen, Employers, 2007

Employer	Peak Monthly Employment	Average Annual Employment
Newhalen Tribal Council	25	15
City of Newhalen	19	6
Total	**44**	**21**

Source: ADOLWD DRA, 2007.

According to an ADF&G subsistence survey, 42 percent of jobs held by Newhalen residents in 2004 were located outside the community (Table 21-51; Fall et al., 2006).

TABLE 21-51
Job Locations for Newhalen Residents, 2004

Location of Job	Number of Jobs [a]	Percentage
Newhalen	42	58
Iliamna	11	15
Balance of Lake and Peninsula Borough	1	1
Kokhanok	1	1
Prudhoe Bay	1	1
Naknek	1	1
Bristol Bay	15	21
Total	**72**	

Note:

a. Many employed residents have more than one job during the year (either temporary jobs or part-time employment); thus the total number of jobs in this table is much higher than the total number of employed residents in Table 21-49.

Source: Fall et al., 2006.

Capital Improvement Projects. Table 21-52 lists some of the capital improvement projects in Newhalen since 2002. These projects are often a critical part of the cash economy for rural Alaskan communities.

TABLE 21-52
Funded Capital Improvement Projects in Newhalen, Fiscal Years 2002 to 2009

Lead Agency	Fiscal Year	Project Description	Total Cost
ADCRA	2009	Septic Pumper Truck	$130,000
ADCRA	2008	Road Improvements	$10,000
ADCCED	2007	Newhalen Clinic Repairs	$32,000
HUD	2006	Indian Housing Block Grant NAHASDA	$75,952
HUD	2005	Indian Housing Block Grant NAHASDA	$81,049

Lead Agency	Fiscal Year	Project Description	Total Cost
HUD	2004	Indian Housing Block Grant NAHASDA	$87,454
AEA-BF	2002	Bulk Fuel Facility (Denali Commission)	$1,158,558

Notes:
ADCCED = Alaska Department of Commerce, Community, and Economic Development.
AEA-BF = Alaska Energy Authority, Bulk Fuel.
Source: ADCCED, n.d.[b].

Commercial Fishing Activity. Table 21-53 shows the commercial fishing activity of resident Newhalen fishermen from 1990 through 2009. Fishing activity in Newhalen has increased in recent years, from a low of two active fishermen in 1993 to a high of 11 active fishermen in 2004 and 2006. Total pounds landed and gross earnings increased from 2002 through 2005, then declined in 2006. Since three or fewer people or permits participated in the fisheries in 1990 through 1995, data on pounds landed and estimated gross earnings for those years are confidential. In 2008, nine fishermen fished nine permits and harvested a total of 487,381 pound of fish with an estimated ex-vessel value of $356,688. (The ex-vessel value is the amount paid to harvesters for their catch.)

TABLE 21-53
Newhalen, Residents' Commercial Fishing Activity, 1990 through 2009

Year	Number of Permit Holders	Number of Permits Issued	Total Pounds Landed	Estimated Gross Earnings	Estimated Earnings per Pound	Number of Fishermen who Fished	Number of Permits Fished
1990	5	5	(a)	(a)	—	3	3
1991	5	5	(a)	(a)	—	3	3
1992	4	4	(a)	(a)	—	3	3
1993	4	4	(a)	(a)	—	2	2
1994	4	4	(a)	(a)	—	3	3
1995	4	4	(a)	(a)	—	3	3
1996	5	5	184,451	$148,271	$0.80	4	4
1997	5	5	13,583	$12,656	$0.93	4	4
1998	7	7	56,357	$66,395	$1.18	5	5
1999	7	7	140,981	$115,365	$0.82	4	4
2000	8	8	74,129	$49,423	$0.67	4	4
2001	8	8	125,914	$53,027	$0.42	5	5
2002	9	9	55,385	$27,037	$0.49	4	4
2003	9	9	95,497	$47,399	$0.50	5	5
2004	12	12	225,242	$115,204	$0.51	11	11
2005	13	13	385,583	$239,664	$0.62	10	10
2006	14	14	298,525	$160,528	$0.54	11	11
2007	11	11	(a)	(a)	—	9	9

Year	Number of Permit Holders	Number of Permits Issued	Total Pounds Landed	Estimated Gross Earnings	Estimated Earnings per Pound	Number of Fishermen who Fished	Number of Permits Fished
2008	12	12	487,381	$356,688	$0.73	9	9
2009	10	10	288,932	200,193	$0.69	8	8

Note:

a. When three or fewer permit-holders participate in all commercial fisheries combined, pounds landed and estimated gross earnings are not reported at all because of confidentiality requirements.

Source: CFEC, 2010a.

Fishing-vessel Crews. From 2000 through 2004 and 2007, no crew-member licenses for fishing-vessel crews were issued to Newhalen residents (Table 21-54). In 2005, ten licenses were issued, and in 2006, the number of licenses increased to 13 before dropping to one in 2008. There were three licenses issued in 2009.

TABLE 21-54
Newhalen, Residents' Crew-member Licenses, 2000 through 2009

	2000	2001 [a]	2002	2003	2004	2005	2006	2007	2008	2009
Number of crew-member licenses	0	N/A	0	0	0	10	13	0	1	3

Note:

a. Crew-member data for 2001 are not available because of problems with the data.

Source: CFEC, 2010b.

Workforce Attributes. According to the 2000 census, in 2000, 73 percent of the Newhalen population ages 25 and older had at least a high school education, with 12 percent holding a bachelor's degree or higher. Table 21-55 shows the educational attainment of Newhalen residents 25 years old and older.

TABLE 21-55
Newhalen, Educational Attainment, 1990 and 2000

Educational Attainment	1990 [a]	2000
Population 25 years and older	74	66
Less than high school	21	18
High school graduate (includes equivalency)	30	31
Some college, less than 1 year	12	4
Some college, 1 or more years, no degree	0	4
Associate degree	2	1
Bachelor's degree	9	6
Master's degree	0	2
Professional school degree	0	0
Male	N/A	33
Less than high school	N/A	9
High school graduate (includes equivalency)	N/A	16
Some college, less than 1 year	N/A	2
Some college, 1 or more years, no degree	N/A	0

Educational Attainment	1990 [a]	2000
Associate degree	N/A	0
Bachelor's degree	N/A	4
Master's degree	N/A	2
Professional school degree	N/A	0
Female	N/A	33
Less than high school	N/A	9
High school graduate (includes equivalency)	N/A	15
Some college, less than 1 year	N/A	2
Some college, 1 or more years, no degree	N/A	4
Associate degree	N/A	1
Bachelor's degree	N/A	2
Master's degree	N/A	0
Professional school degree	N/A	0

Note:

a. For the 1990 census, data on educational attainment by gender were not available.

Source: USCB, n.d.

Occupations for the Employed Civilian Population. Table 21-56 shows the number of Newhalen residents age 16 and older in various occupations in 2000.

TABLE 21-56
Newhalen, Occupations for the Employed Civilian Population Age 16 and Older, 2000

Occupations [a]	2000
Management, professional, and related	7
Service	13
Sales and office	7
Farming, fishing, and forestry	2
Construction, extraction, and maintenance	2
Production, transportation, and material moving	2
Total	**33**

Note:

a. Occupation data may under-represent seasonal occupations such as commercial fishing and construction because the survey asked respondents to report their occupation in reference to a stated week of the year. Respondents holding more than one job were asked to report the job at which they worked the most hours. Additionally, economic data may underestimate the summer season peaks in employment and population.

Source: USCB, n.d.

Household Income. The 2000 census recorded 32 households in Newhalen, a decrease of ten households from the 1990 census (Table 21-57). Twenty-nine of the households had earnings, with an annual median household income of $36,250. This is a 38 percent increase from the 1990 census, which recorded an annual median household income of $26,250 in Newhalen. Newhalen household income was only slightly

below the Lake and Peninsula Borough annual median of $36,442 and was about 30 percent below the annual statewide median of $51,571 (USCB, n.d.).

TABLE 21-57
Newhalen, Household Income, 1990 and 2000

Household Information	1990	2000
Total number of households [a]	42	32
With earnings	41	29
Without earnings	1	3
With wage or salary income	39	27
With self-employment income	10	11
With interest, dividends, or net rental income	42	32
With Social Security income	1	9
With Supplemental Security Income	(b)	5
With public assistance income	6	13
With retirement income	3	2
With other types of income	7	11
Median household income	$26,250	$36,250

Notes:

a. This data set in the census reports a different number of households than the data set for households and families discussed elsewhere in this section.

b. For the 1990 census, Supplemental Security Income data were not available.

Source: USCB, n.d.

Households and Individuals Receiving Public Assistance. In 2009 no individuals in Newhalen received temporary assistance (Table 21-58); the number of households that received temporary assistance was also zero. Nine households and 30 individuals received food stamps in that same year. One household and one individual received adult public assistance in that same year. A total of 13 households and 39 residents received Medicare/Medicaid payments in 2009.

TABLE 21-58
Newhalen, Numbers of Households and Individuals Receiving Public Assistance, 2005 through 2009

	Number of Households					Number of Individuals				
Program	2005	2006	2007	2008	2009	2005	2006	2007	2008	2009
Temporary assistance	6	4	1	0	0	25	13	3	0	0
Food stamps	9	6	4	6	9	38	25	14	16	30
Adult public assistance	(a)	1	3	1	1	2	(b)	2	1	1
Medicare/Medicaid	30	27	22	17	13	52	62	53	38	39

Notes:

a. Households receiving adult public assistance were not tracked before 2006.

b. Data withheld to protect confidentiality.

Source: ADHSS, 2010b.

Public Assistance Payments. Public assistance payments from all four sources listed in Table 21-58 to Newhalen households in 2009 totaled $178,041 per year (Table 21-59). This was an increase from 2008.

TABLE 21-59
Newhalen, Amount of Public Assistance Payments, 2005 through 2009

Program	2005	2006	2007	2008	2009
Temporary assistance	$3,513	$2,632	$1,086	$0	$0
Food stamps	$6,512	$5,939	$2,456	$3,664	$8,354
Adult public assistance	$730	$362	$882	$362	$362
Medicare/Medicaid	$196,667	$203,960	$185,544	$130,480	$169,325
Total public assistance payments	**$207,422**	**$212,893**	**$189,968**	**$134,506**	**$178,041**

Source: ADHSS, 2010b.

Community Infrastructure

Utilities. *Water and Wastewater*—water for Newhalen is derived from three wells and is treated at the local pump house, which is currently in need of improvements. Most occupied residential units receive piped water (Arne, pers. comm., 2006).

Sewage in Newhalen is gravity-fed to a lift station and then pumped to a sewer lagoon. The lift station currently has repair needs. A quarter of community homes and facilities are served by the piped sewage system, while the rest of the community uses individual septic systems. Most residences are fully plumbed. The city provides septic-pumping services (Arne, pers. comm., 2006).

Solid Waste—Newhalen's landfill is nearing capacity, and the community is exploring location options for a new landfill. The landfill experiences heavy use during the summer tourist season. Aluminum and newspaper are collected at the school for recycling.

Communications—Newhalen in-state phone service is provided by Interior Telephone Company (a subsidiary of TelAlaska), while long-distance phone service is provided by AT&T Alascom. Teleconferencing services are provided by the Alaska Teleconferencing Network and the Dillingham Legislative Information Office (ADCCED, n.d.[a]). GCI provides dial-up and wireless internet services to the community (RCA, 2006).

Radio stations received in Newhalen include KGTL-AM and KBBI-AM out of Homer, KDLG-AM out of Dillingham, and FM stations out of Homer and Anchorage in perfect weather conditions (Grindle, pers. comm., 2006). Locally transmitted television is through ARCS (see *Communications* under *Community Infrastructure* for Nondalton [Section 21.7.2.1]). While there is no cable television provider in Newhalen, a large variety of stations is available via satellite.

Housing. In 2000 there were 51 housing units in Newhalen, up from 40 in 1990 (Table 21-60). Housing units included 13 rental units, 26 owner-occupied homes, and 10 vacant seasonal-use units. All of the housing units are single-family homes. The average household size was 4.1 persons. Of the 39 occupied residences, 8 percent (three residences) lacked complete plumbing facilities and 5 percent (two residences) had no phone service, and none lacked complete kitchen facilities. The median value of the specified owner-occupied residences was $133,300 (USCB, n.d.).

TABLE 21-60
Newhalen, Housing Characteristics, 1990 and 2000

Characteristic	1990 Count	Percentage	2000 Count	Percentage
Total housing units, by occupancy status	40	100	51	100
Occupied	36	90	39	76
Vacant	4	10	12	24
Vacant except for seasonal, recreational, or occasional use	1	25 [a]	10	83 [a]
Homes with heat, by heat type	40	100	32	100
Fuel oil, kerosene, etc.	40	100	32	100
Specified owner-occupied units [b], by value	26	100	22	100
Less than $50,000	8	31	0	0
$50,000 to $99,999	6	23	3	14
$100,000 to $149,999	10	38	10	46
$150,000 to $199,999	2	8	5	23
$200,000 to $299,999	0	0	4	18
$300,000 or more	0	0	0	0
Median value	$91,700		$133,300	

Notes:

a. Percentage of total vacant units.

b. Specified owner-occupied units, a subgroup of owner-occupied homes, are either one-family homes that are detached from any other house or a one-family house attached to one or more houses on less than 10 acres with no business on the property.

Source: USCB, n.d.

Education Services and Facilities. The Newhalen School, grades kindergarten through 12th grade, is the only school in Newhalen, with an FY 2010 enrollment of 75 students (Figure 21-12). This is 25 percent fewer students than in FY 1997. The school has eight teachers (ADEED, n.d.). The school building is in fair to good condition, with an older section that needs work. The Newhalen School is part of the Lake and Peninsula School District (Atwater, pers. comm., 2006).

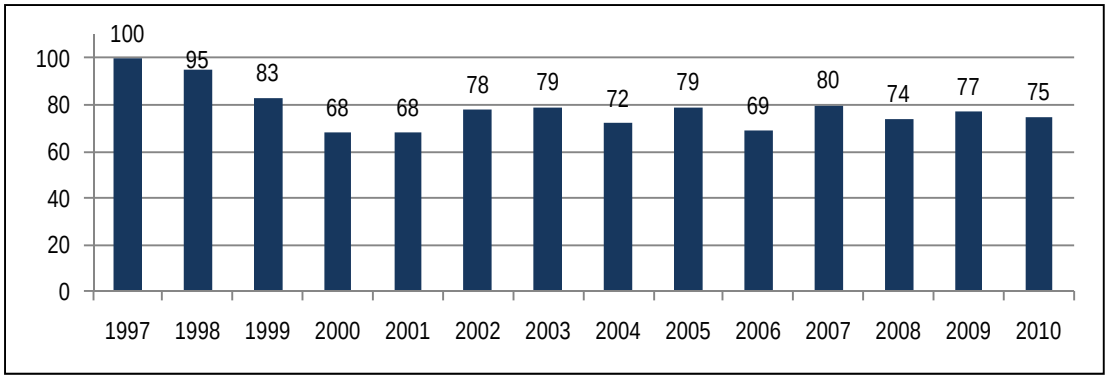

FIGURE 21-12
Newhalen, School Enrollment, FY 1997 through FY 2010
Sources: ADEED, n.d.; Atwater, pers. comm., 2006.

Health-care Services and Facilities. The city-owned local health clinic is the Newhalen Health Clinic, which is operated by BBAHC. Additionally, the Nilavena subregional health clinic is located approximately 3 miles from Newhalen on the road that connects Newhalen and Iliamna (Johnson, pers. comm., 2006). (Clinic details are described in the *Health-care Services and Facilities* section under *Community Infrastructure* for Iliamna [Section 21.7.2.5].)

Public Safety. Newhalen has a VPSO and receives additional support from Alaska State Troopers located in Dillingham, as well as from an ABWE Trooper located in Iliamna. Fire-protection services are provided by the Newhalen volunteer fire department. The community does not have a functioning fire truck; however, Newhalen is located just 5 miles from Iliamna, which is equipped with more fire-protection resources. Newhalen has an ambulance and three EMTs (Newhalen Health Clinic, pers. comm., 2010). Rescue services are provided by the all-volunteer Iliamna Newhalen Rescue Squad; however, it was noted that, when rescue services are required, the entire community will assist (Grindle, pers. comm., 2006). Newhalen has three EMTs (Seybert, pers. comm., 2006).

21.7.2.4 Port Alsworth

Port Alsworth is an unincorporated community located 22 miles northeast of Nondalton on the southeast shore of Lake Clark at Hardenburg Bay in the Lake Clark National Park and Preserve. Access is by water or air. Originally established near the traditional Native village at Tanalian Point, Port Alsworth began as the homestead of Leon "Babe" Alsworth and his wife, Mary (NPS, 2006a). It is now predominantly White consisting of private residencies, commercial recreational lodges, a school, a church, and the field management site for Lake Clark National Park and Preserve (Morris, 1986). The Alaskan Natives of Port Alsworth formed a Native corporation, Tanalian, Inc., which was certified under the Alaska Native Claims Settlement Act (ANCSA) in 1988 (Morris, 1986).

Demographics

Population. The Port Alsworth population was 118 residents in 2009 (Figure 21-13). The community's population more than doubled from 1990 to 2009.

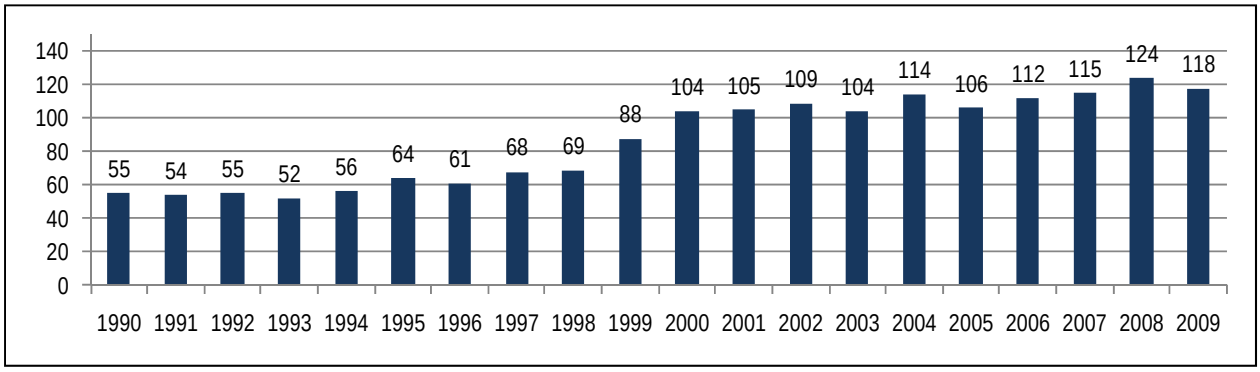

FIGURE 21-13
Port Alsworth, Population, 1990 through 2009
Source: ADOLWD DRA, n.d.[a].

According to the 1990 census, the male population in Port Alsworth then slightly outnumbered the female population (Table 21-61), with 53 percent males and 47 percent females. By the 2000 census, the gender distribution had reversed, with 46 percent males and 54 percent females.

TABLE 21-61
Port Alsworth, Population by Gender, 1990 and 2000

	1990 Count	1990 Percentage	2000 Count	2000 Percentage
Total male population	29	53	48	46
Total female population	26	47	56	54
TOTAL POPULATION	**55**		**104**	

Source: USCB, n.d.

Age. The median age for Port Alsworth residents in 2000 was 25.5 years (Table 21-62). Median age information for Port Alsworth was not available in the 1990 census.

TABLE 21-62
Port Alsworth, Median Age, 1990 and 2000

	1990	2000
Median age	N/A	25.5
Median male age	N/A	31.0
Median female age	N/A	24.5

Source: USCB, n.d.

Similar to the 1990 census, more than one-third (37 percent) of the Port Alsworth population in 2000 was under the age of 15 (Table 21-63, Figure 21-14).

TABLE 21-63
Port Alsworth, Age by Count and Percentage, 1990 and 2000

	1990 Count	1990 Percentage	2000 Count	2000 Percentage
Under 5 years	5	9	12	12
5 to 9 years	8	15	11	11
10 to 14 years	7	13	15	14
15 to 17 years	3	5	5	5
18 and 19 years	0	0	1	1
20 to 24 years	3	5	7	7
25 to 29 years	2	4	4	4
30 to 34 years	4	7	7	7
35 to 39 years	9	16	10	10
40 to 44 years	6	11	9	9
45 to 49 years	1	2	5	5
50 to 54 years	0	0	11	11
55 to 59 years	3	5	3	3
60 and 61 years	0	0	0	0
62 to 64 years	0	0	0	0
65 to 69 years	1	2	2	2
70 to 74 years	1	2	2	2
75 to 79 years	1	2	0	0
80 to 84 years	0	0	0	0
85 years and older	1	2	0	0

Source: USCB, n.d.

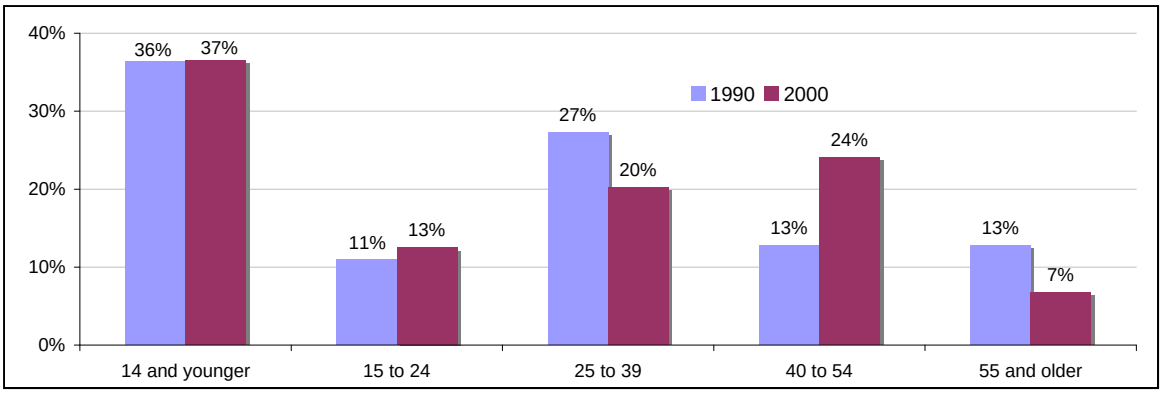

FIGURE 21-14
Port Alsworth, Age by Percentage, 1990 and 2000
Note: Age groupings by the McDowell Group.
Source: USCB, n.d.

Race. In 2000 the population of Port Alsworth was largely non-Native with less than a quarter of the community (22 percent) of American Indian or Alaska Native decent (Table 21-64). The remainder of the population (78 percent) identified itself as White. Only 5 percent of the population identified themselves as single-race Alaska Natives; of those, all were Athabascan (Table 21-65).

TABLE 21-64
Port Alsworth, Race by Count and Percentage, 2000

	2000 Count	2000 Percentage
American Indian or Alaska Native alone or in combination with one or more other races	23	22
Population of one race	86	83
White alone	81	78
People who are Alaska Native alone	5	5
Black or African American alone	0	0
Asian alone	0	0
Native Hawaiian or other Pacific Islander alone	0	0
Some other race alone	0	0
Population of two or more races	18	17
Total population	**104**	

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d.

TABLE 21-65
Port Alsworth, Specific Alaska Native Designation, 2000

	2000
Number of people who are Alaska Native alone	5
Athabascan	100%
Aleut	0%
Eskimo	0%
Tlingit-Haida	0%
Alaska Native - not specified	0%

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d.

Households and Families. The population in Port Alsworth increased considerably between the 1990 and 2000 censuses, as did the number of households, which doubled in that 10-year span (Table 21-66).

TABLE 21-66
Port Alsworth, Households and Families, 1990 and 2000

	1990	2000
Total households	17	34
Family households	15	25
Married-couple family, no children	6	9
Married-couple family with children	9	14
Other family household	0	2
Nonfamily households	2	9
1-person household	2	8
2-or-more person nonfamily households	0	1
Average household size	3.23	3.06
Average family size	3.53	3.64
Total population in families	53	91
Total population	55	104

Source: USCB, n.d.

Language. No language other than English was spoken in the homes of Port Alsworth residents, according to the 2000 census (Table 21-67).

TABLE 21-67
Port Alsworth, Language Spoken at Home by People Age Five and Older, 2000

	2000
Total population (number of people)	104
English only	100%
Native North American language	0%

Note: Percentages calculated by the McDowell Group.

Source: USCB, n.d.

Migration. Over half (58 percent) of the Port Alsworth population (age five and older) in 2000 did not change residences between 1995 and 2000 (Table 21-68). Six percent of the residents lived in the community in 1995 but moved to a different house by 2000. Of the residents that migrated into Port Alsworth between 1995 and 2000, 3 percent lived in the Lake and Peninsula Borough but not in Port Alsworth in 1995, 18 percent lived outside the borough but in Alaska in 1995, and 15 percent lived elsewhere in the United States (outside of Alaska) in 1995.

TABLE 21-68
Port Alsworth, 2000-census Population Age Five and Older, Residence Status in 1995

1995 Residence	Number of People	Percentage of 2000 Population [a]
Same house as in 2000	60	58
In Port Alsworth but different house than in 2000	6	6
In Lake and Peninsula Borough (not in Port Alsworth)	3	3

1995 Residence	Number of People	Percentage of 2000 Population [a]
In Alaska (not in Lake and Peninsula Borough)	19	18
In U.S. (not in Alaska)	15	15
Outside of U.S.	0	0
Total population in 2000 [b]	**103**	

Note:

a. Percentages calculated by the McDowell Group.

b. Population figure here may differ from other population figures for this community because different data sets for the 2000 census provide slightly varying figures.

Source: USCB, n.d.

Economy

Port Alsworth's economy is based primarily on sport-fishing-related visitor services. In 2004 annual household harvest of subsistence resources, at 483 pounds, was the lowest among the Iliamna Lake/Lake Clark communities. Annual per capita harvest was only 133 pounds (Fall et al., 2006).

Access to the community is through two privately owned gravel airstrips (ADCCED, n.d.[a]).

Annual per capita income in Port Alsworth was $21,716 in 2000, the highest among the Iliamna Lake/Lake Clark communities (USCB, n.d.). Six percent of individuals in the community lived below poverty level in 1999, according to the census.

Employment/Unemployment. The Port Alsworth population aged 16 and over totaled 86 persons according to the 2000 census, an increase of 49 persons from the 1990 census (Table 21-69). More than half of this population was male (56 percent or 48 men), and 44 percent was female (38 women). Twenty-nine percent (25 persons) of this population was not in the labor force. These individuals were neither working nor actively looking for employment.

Of the 58 employed workers in Port Alsworth in 2000, four worked outside the community. Unemployed workers comprised 3 percent of the labor force.

TABLE 21-69
Port Alsworth, Employment by Gender and Place of Work, 1990 and 2000

	1990 [a]	2000
Males in labor force	11	38
Employed	9	35
Unemployed	2	3
Males not in labor force	7	10
Females in labor force	8	23
Employed	8	23
Unemployed	0	0
Females not in labor force	11	15
Total population 16 years and older	37	86

	1990 [a]	2000
Place of work for workers 16 years and older		
Worked in Port Alsworth	N/A	54
Worked outside Port Alsworth	N/A	4
Total employed	**N/A**	**58**

Note:
a. For the 1990 census, place-of-work data were not available.
Source: USCB, n.d.

Local Employment. There were 11 employers in Port Alsworth in 2007 (ADOLWD DRA, 2007). The Department of the Interior, National Parks Service, was the largest employer, with a peak monthly employment of 23 and an average annual employment of 17 (Table 21-70).

TABLE 21-70
Port Alsworth, Employers, 2007

Employer	Peak Monthly Employment	Average Annual Employment
Department of the Interior, National Park Service	23	17
Lake Clark Air Inc.	17	12
Lake and Peninsula School District	16	9
Alaska Lodges Inc.	12	5
Farm Lodges Inc.	16	8
Lake and Peninsula Airlines Inc.	1	1
Alaska's Lake Clark Inn and Air LLC	5	2
US Postal Service	3	2
Port Alsworth Improvement Corporation	2	1
Total	**95**	**57**

Source: ADOLWD DRA, 2007.

According to an ADF&G subsistence survey, 6 percent of jobs held by Port Alsworth residents were located outside the community in 2004 (Table 21-71; Fall et al., 2006).

TABLE 21-71
Job Locations for Port Alsworth Residents, 2004

Location of Job	Number of Jobs [a]	Percentage
Port Alsworth	93	92
Anchorage	1	1
Balance of Lake and Peninsula Borough	4	4
Statewide (excluding Southeast)	1	1
Total	**99**	

Note:
a. Many employed residents have more than one job during the year (either temporary jobs or part-time employment), thus the total number of jobs in this table is much higher than the total number of employed residents in Table 21-69.
Source: Fall et al., 2006.

Capital Improvement Projects. According to the ADCCED, several capital improvement projects have been funded for Port Alsworth. Table 21-72 lists a sampling of the projects in Port Alsworth from 2002 through 2009.

TABLE 21-72
Funded Capital Improvement Projects in Port Alsworth, Fiscal Years 2002 through 2009

Lead Agency	Fiscal Year	Project Description	Total Cost
ADCRA	2009	Fire Hall/Meeting Hall	$150,000
ADOT&PF	2008	Airport Master Plan Legislative Grant	$500,000
ADCCED	2007	Port Alsworth Community Road Maintenance	$35,000
ADEED	2004	Port Alsworth Library Renovation	$536,550
ADCCED	2002	Office Complex Construction	$10,000

Notes:
ADOT&PF = Alaska Department of Transportation and Public Facilities.
ADEED =Alaska Department of Education and Early Development.
Source: ADCCED, n.d.[b].

Commercial Fishing Activity. Table 21-73 shows the commercial fishing activity of Port Alsworth resident fishermen from 1990 through 2009. Fishing activity has decreased in recent years from a high of four active fishermen in 1990 through 1993 to a low of zero active fishermen in 2004. There was only one active fishermen in 2009. Because three or fewer people or permits participated in the fishery, data on pounds landed and estimated gross earnings are confidential for the years 1994 through 2009.

TABLE 21-73
Port Alsworth, Residents' Commercial Fishing Activity, 1990 through 2009

Year	Number of Permit Holders	Number of Permits Issued	Total Pounds Landed	Estimated Gross Earnings	Estimated Earnings per Pound	Number of Fishermen who Fished	Number of Permits Fished
1990	4	5	166,793	$180,759	$1.08	4	4
1991	4	5	129,399	$95,402	$0.74	4	4
1992	4	5	191,958	$212,058	$1.10	4	4
1993	4	5	266,986	$180,249	$0.68	4	4
1994	4	4	(a)	(a)	—	3	3
1995	4	4	(a)	(a)	—	2	2
1996	4	4	(a)	(a)	—	2	2
1997	4	4	(a)	(a)	—	2	2
1998	4	4	(a)	(a)	—	2	2
1999	5	5	(a)	(a)	—	2	2
2000	4	4	(a)	(a)	—	1	1
2001	3	3	(a)	(a)	—	1	1
2002	3	3	(a)	(a)	—	1	1
2003	3	3	(a)	(a)	—	2	2
2004	3	3	(a)	(a)	—	0	0

Year	Number of Permit Holders	Number of Permits Issued	Total Pounds Landed	Estimated Gross Earnings	Estimated Earnings per Pound	Number of Fishermen who Fished	Number of Permits Fished
2005	3	3	(a)	(a)	—	1	1
2006	3	3	(a)	(a)	—	2	2
2007	2	2	(a)	(a)	—	1	1
2008	2	2	(a)	(a)	—	1	1
2009	2	2	(a)	(a)	—	2	2

Note:

a. When three or fewer permit-holders participate in all commercial fisheries combined, pounds landed and estimated gross earnings are not reported at all because of confidentiality requirements.

Source: CFEC, 2010a.

Fishing-vessel Crews. In 2000 and 2002, only two crew-member licenses for fishing-vessel crews were issued to Port Alsworth residents (Table 21-74). The number of crew-member licenses increased to four in 2003. In 2004 and 2005, no crew-member licenses were issued, and in 2009 three licenses were issued.

TABLE 21-74
Port Alsworth, Residents' Crew-member Licenses, 2000 through 2009

	2000	2001 [a]	2002	2003	2004	2005	2006	2007	2008	2009
Number of crew-member licenses	2	N/A	2	4	0	0	1	1	2	3

Note:

a. Crew-member data for 2001 are not available because of problems with the data.

Source: CFEC, 2010b.

Workforce Attributes. According to the 2000 census, in 2000, 93 percent of the Port Alsworth population age 25 and older had at least a high school education, with 44 percent holding a bachelor's degree or higher. Table 21-75 shows the educational attainment of Port Alsworth residents age 25 and older.

TABLE 21-75
Port Alsworth, Educational Attainment, 1990 and 2000

Educational Attainment	1990 [a]	2000
Population 25 and older	28	72
Less than high school	5	5
High school graduate (includes equivalency)	6	17
Some college, less than 1 year	7	1
Some college, 1 or more years, no degree	0	11
Associate degree	0	6
Bachelor's degree	7	29
Master's degree	0	3
Professional school degree	3	0

Educational Attainment	1990 [a]	2000
Male	N/A	40
Less than high school	N/A	3
High school graduate (includes equivalency)	N/A	10
Some college, less than 1 year	N/A	1
Some college, 1 or more years, no degree	N/A	0
Associate degree	N/A	6
Bachelor's degree	N/A	18
Master's degree	N/A	2
Professional school degree	N/A	0
Female	N/A	32
Less than high school	N/A	2
High school graduate (includes equivalency)	N/A	7
Some college, less than 1 year	N/A	0
Some college, 1 or more years, no degree	N/A	11
Associate degree	N/A	0
Bachelor's degree	N/A	11
Master's degree	N/A	1
Professional school degree	N/A	0

Note:

a. For the 1990 census, data on educational attainment by gender were not available.

Source: USCB, n.d.

Occupations for the Employed Civilian Population. Table 21-76 shows the number of Port Alsworth residents in various occupations in 2000.

TABLE 21-76
Port Alsworth, Occupations for the Employed Civilian Population Age 16 and Older, 2000

Occupations [a]	2000
Management, professional, and related	27
Service	4
Sales and office	10
Farming, fishing, and forestry	0
Construction, extraction, and maintenance	4
Production, transportation, and material moving	13
Total	**58**

Note:

a. Occupation data may under-represent seasonal occupations such as commercial fishing and construction because the survey asked respondents to report their occupation in reference to a stated week of the year. Respondents holding more than one job were asked to report the job at which they worked the most hours. Additionally, economic data may underestimate the summer season peaks in employment and population.

Source: USCB, n.d.

Household Income. The 2000 census recorded 43 households in Port Alsworth, an increase of 25 households from the 1990 census (Table 21-77). Forty of those households had earnings, with an annual median household income of $58,750, an increase from the 1990 census, when the annual median household income was $36,250. The 2000 median income for Port Alsworth households was 61 percent higher than the Lake and Peninsula Borough annual median of $36,442 and 14 percent above the annual statewide median of $51,571 (USCB, n.d.).

TABLE 21-77
Port Alsworth, Household Income, 1990 and 2000

Household Information	1990	2000
Total number of households [a]	18	43
With earnings	16	40
Without earnings	2	3
With wage or salary income	16	40
With self-employment income	10	13
With interest, dividends, or net rental income	16	37
With Social Security income	2	3
With Supplemental Security Income	(b)	0
With public assistance income	2	3
With retirement income	4	2
With other types of income	5	4
Median Household Income	$36,250	$58,750

Notes:

a. This data set in the census reports a different number of households than the data set for households and families discussed elsewhere in this section.

b. For the 1990 census, Supplemental Security Income data were not available.

Source: USCB, n.d.

Households and Individuals Receiving Public Assistance. No Port Alsworth households or individuals received temporary assistance, food stamps, or adult public assistance in 2009 (Table 21-78). Nineteen households and 36 residents received Medicare/Medicaid payments in 2009.

TABLE 21-78
Port Alsworth, Number of Households and Individuals Receiving Public Assistance, 2005 through 2009

	Number of Households					Number of Individuals				
Program	2005	2006	2007	2008	2009	2005	2006	2007	2008	2009
Temporary assistance	0	0	1	0	0	0	0	1	0	0
Food stamps	0	0	0	0	0	0	0	0	0	0
Adult public assistance	(a)	0	0	0	0	0	(b)	0	0	0
Medicare/Medicaid	8	6	9	13	19	12	9	17	24	36

Notes:

a. Households receiving adult public assistance were not tracked before 2006.

b. Data withheld to protect confidentiality.

Source: ADHSS, 2010b.

Public Assistance Payments. Total public assistance payments to Port Alsworth households in 2009 totaled $92,517 (Table 21-79).

TABLE 21-79
Port Alsworth, Amount of Public Assistance Payments, 2005 through 2009

Program	2005	2006	2007	2008	2009
Temporary assistance	$0	$0	$617	$0	$0
Food stamps	$0	$0	$0	$0	$0
Adult public assistance	$0	$324	$0	$0	$0
Medicare/Medicaid	$11,019	$42,683	$53,534	$65,994	$92,517
Total public assistance payments	**$11,019**	**$43,007**	**$54,151**	**$65,994**	**$92,517**

Source: ADHSS, 2010b.

Community Infrastructure

Utilities. *Water and Wastewater*—most occupied residences in Port Alsworth use individual wells and septic systems and are fully plumbed (McKinnon, pers. comm., 2006).

Solid Waste—while the community is studying options for a centralized landfill, there is currently no landfill or dump in Port Alsworth. Some residents and lodge owners burn their own refuse and place it in privately owned pits (ADEC, 2010). Refuse that is not burned is bagged, brought to a central location, and transported to Anchorage by airplane for disposal (McKinnon, pers. comm., 2006). Port Alsworth has one contaminated site with a conditional closure status at Lake Clark National Park. Examples of the contaminants include benzene, diesel-range organics, and petroleum (ADEC, n.d.).

Communications—in-state phone service for Port Alsworth is provided by ACS of the Northland, while long-distance phone service is provided by AT&T Alascom. Teleconferencing service is provided by the Alaska Teleconferencing Network (ADCCED, n.d.[a]). Internet services, both dial-up and wireless, recently have become available through GCI; these services previously were available only at the school (Gazaway and Manaois, pers. comm., 2006). The community receives no radio reception (McKinnon, pers. comm., 2006).

Locally transmitted television includes ARCS. (For details about ARCS see *Communications* section under *Community and Infrastructure* for Nondalton [Section 21.7.2.1].) While there is no cable television provider in Port Alsworth, a large variety of stations is available via satellite.

Housing. In 2000 there were 70 housing units in Port Alsworth (Table 21-80), including 18 owner-occupied units, 16 rental units, and an additional 34 units vacant except for seasonal use. Sixty-eight of the housing units were single-family dwellings. The average household size was 3.06 persons.

Of the 34 occupied residences, 9 percent (three residences) lacked complete plumbing facilities, 9 percent (three residences) lacked complete kitchen facilities, and 6 percent (two residences) had no phone service. The median value of the specified owner-occupied residences in 2000 was $80,000 (USCB, n.d.).

TABLE 21-80
Port Alsworth, Housing Characteristics, 1990 and 2000

Characteristic	1990 Count	Percentage	2000 Count	Percentage
Total housing units, by occupancy status	28	100	70	100
Occupied	17	61	34	49
Vacant	11	39	36	51
Vacant except for seasonal, recreational, or occasional use	4	36 [a]	34	94 [a]
Homes with heat, by heat type	19	100	47	100
Fuel oil, kerosene, etc.	14	74	39	83
Wood	5	26	8	17
Specified owner-occupied units [b], by value	10	100	14	100
Less than $50,000	3	30	0	0
$50,000 to $99,999	2	20	10	71
$100,000 to $149,999	3	30	2	14
$150,000 to $199,999	1	10	0	0
$200,000 to $299,999	1	10	2	14
$300,000 or more	0	0	0	0
Median value	$100,000		$80,000	

Notes:

a. Percentage of total vacant units.

b. Specified owner-occupied units, a subgroup of owner-occupied homes, are either one-family homes that are detached from any other house or a one-family house attached to one or more houses on less than 10 acres with no business on the property.

Source: USCB, n.d.

Education Services and Facilities. The Tanalian School, grades kindergarten through 12th grade, is Port Alsworth's only school, with an enrollment for FY 2010 of 41 students (Figure 21-15). This is a 20 percent increase from FY 1997 and a gain of seven students from 2009. The school has three teachers (ADEED, n.d.). The school building is in good condition, and an addition to the building was completed in 2005 (Atwater, pers. comm., 2006). The Tanalian School is part of the Lake and Peninsula School District.

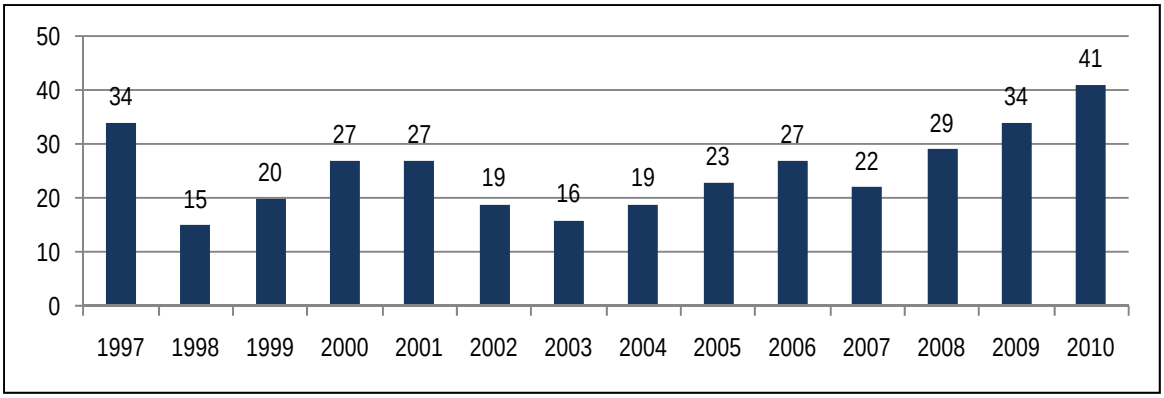

FIGURE 21-15
Port Alsworth School Enrollment, FY1997 through FY2010
Sources: ADEED, n.d.; Atwater, pers. comm., 2006.

Health-care Services and Facilities. Port Alsworth has no health clinic. While residents can use the Nilavena subregional health clinic in Iliamna, most residents instead fly to Anchorage for insurance reasons (McKinnon, pers. comm., 2006). A community health clinic is on the community's list of highest priorities for capital improvement projects for 2002 (L&PB, 2002). Nearly 40 percent of the Port Alsworth population is under the age of 15, and parents are eager to have local health care for their children (McKinnon, pers. comm., 2006).

Public Safety. Port Alsworth is served by the Alaska State Troopers in Iliamna and King Salmon. The community does not have a VPSO. There is a volunteer fire department, and the volunteer Port Alsworth First Responders provide rescue services. There is no fire truck or ambulance. In addition, the National Park Service has a post located in Port Alsworth to support the Lake Clark National Park and Preserve. National Park Service employees will assist local residents in case of emergency (McKinnon, pers. comm., 2006).

21.7.2.5 Iliamna

Iliamna is an unincorporated community located 200 miles southwest of Anchorage on the northern shore of Iliamna Lake near the mouth of the Newhalen River and south of Lake Clark National Park and Preserve. The community was moved to its present location around 1935. Old Iliamna, a traditional Athabascan village, was located approximately 40 miles to the east near the mouth of the Iliamna River. Old Iliamna was an important trading post for fur trappers and other regional explorers and inhabitants in the 19th century. The present community developed around a trading post established by Hans Seversen, and Old Iliamna now serves as a seasonal camp (Alaska Geographic, 1986). The community is ethnically diverse, with Dena'ina Athabascan, Alutiiq, and Yup'ik Eskimo residents, as well as non-Native residents (ADCCED, n.d.[a]). Iliamna is connected to the village of Newhalen by a 5-mile road. Water and air are the primary means of access to the community.

Demographics

Population. Iliamna had a population of 91 residents in 2009 (Figure 21-16). After a 9 percent increase between 1990 and 2000, the community's population decreased 11 percent from 2000 to 2009.

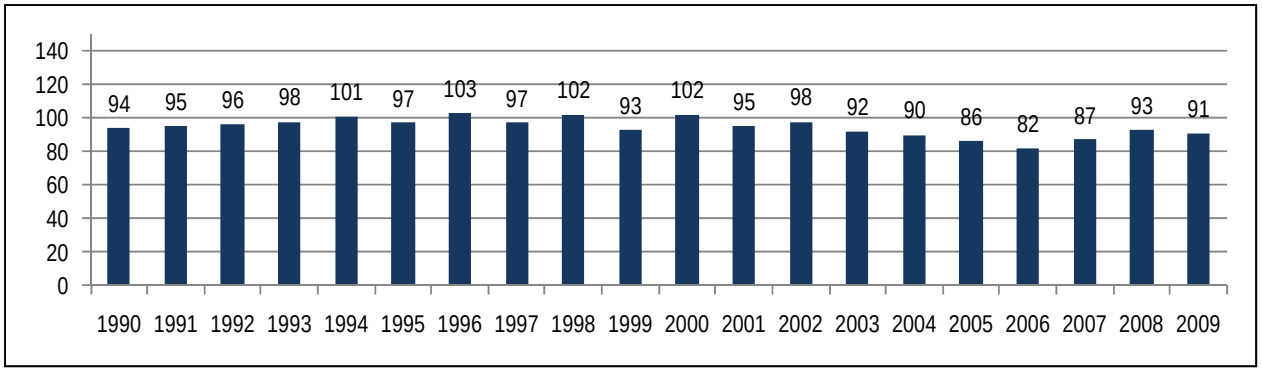

FIGURE 21-16
Iliamna, Population, 1990 through 2009
Source: ADOLWD DRA, n.d.[a].

In 2000 Iliamna's population of 102 was 53 percent male and 47 percent female (Table 21-81). This is a slight increase compared to the population of 94 in 1990, when the population was 52 percent male and 48 percent female.

TABLE 21-81
Iliamna, Population by Gender, 1990 and 2000

	1990 Count	1990 Percentage	2000 Count	2000 Percentage
Male population	49	52	54	53
Female population	45	48	48	47
Total	**94**		**102**	

Source: USCB, n.d.

Age. The median age of Iliamna residents increased by 6 years between the 1990 and 2000 censuses to 31.5 years of age (Table 21-82).

TABLE 21-82
Iliamna, Median Age, 1990 and 2000

	1990	2000
Median age	25.7	31.5
Median male age	25.8	31.0
Median female age	25.5	31.5

Source: USCB, n.d.

In 1990, one-third of the Iliamna population (34 percent) was under the age of 15 (Table 21-83, Figure 21-17). By 2000 only one-quarter of the population (26 percent) fell into that age group.

TABLE 21-83
Iliamna, Age by Count and Percentage, 1990 and 2000

	1990 Count	1990 Percentage	2000 Count	2000 Percentage
Under 5 years	11	12	11	11
5 to 9 years	14	15	6	6
10 to 14 years	7	7	10	10
15 to 17 years	2	2	8	8
18 and 19 years	0	0	2	2
20 to 24 years	4	4	5	5
25 to 29 years	9	10	8	8
30 to 34 years	10	11	5	5
35 to 39 years	8	9	7	7
40 to 44 years	6	6	9	9
45 to 49 years	9	10	6	6
50 to 54 years	6	6	8	8
55 to 59 years	2	2	12	12
60 and 61 years	0	0	1	1
62 to 64 years	3	3	2	2
65 to 69 years	0	0	0	0
70 to 74 years	1	1	0	0
75 to 79 years	2	2	0	0
80 to 84 years	0	0	1	0
85 years and older	0	0	1	1

Source: USCB, n.d.

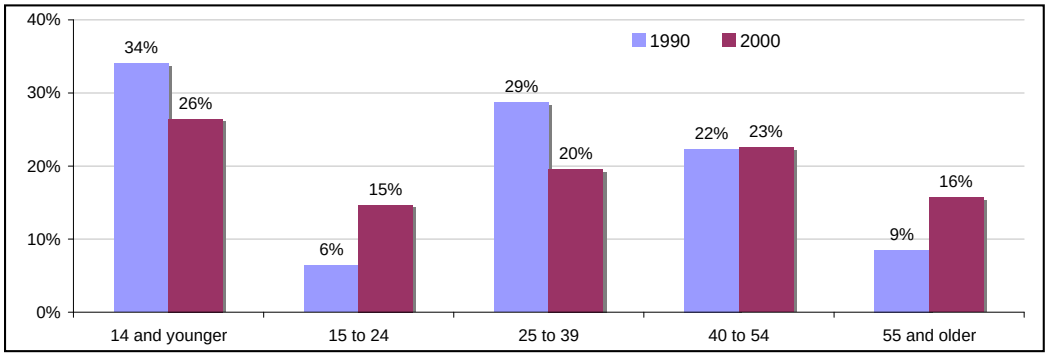

FIGURE 21-17
Iliamna, Age by Percentage, 1990 and 2000
Note: Age groupings by the McDowell Group.
Source: USCB, n.d.

Race. According to the 2000 census, just over half (58 percent) of the population was of American Indian or Alaska Native descent (Table 21-84). Of those designated as single-race Alaska Natives, two-thirds

were Eskimo and one-third were Athabascan (Table 21-85). Thirty-nine percent of the population was White, and 11 percent was of mixed race.

TABLE 21-84
Iliamna, Race by Count and Percentage, 2000

	2000 Count	2000 Percentage
American Indian or Alaska Native alone or in combination with one or more other races	59	58
Population of one race	91	89
White alone	40	39
Alaska Native alone	51	50
Black or African American alone	0	0
Asian alone	0	0
Native Hawaiian or other Pacific Islander alone	0	0
Some other race alone	0	0
Population of two or more races	11	11
Total population	**102**	

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d.

TABLE 21-85
Iliamna, Specific Alaska Native Designation, 2000

	2000
Number of people who are Alaska Native alone	51
Athabascan	33%
Aleut	2%
Eskimo	62%
Tlingit-Haida	0%
Alaska Native—not specified	2%

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d.

Households and Families. The number of households in Iliamna and the total number of persons in families increased slightly from 1990 to 2000 (Table 21-86). The average household size fell by 0.22 persons in that same time period.

TABLE 21-86
Iliamna, Households and Families, 1990 and 2000

	1990	2000
Total households	30	35
Family households	24	26
Married-couple family, no children	8	9

	1990	2000
Married-couple family with children	15	13
Other family household	1	4
Nonfamily households	6	9
1-person household	5	7
2-or-more person nonfamily households	1	2
Average household size	3.13	2.91
Average family size	3.46	3.42
Total population in families	83	89
Total population	94	102

Source: USCB, n.d.

Language. Even though half the population in Iliamna identified themselves as Alaska Native, no Native American languages were reported spoken in the home according to the 2000 census (Table 21-87). Two percent of the population speaks Japanese at home.

TABLE 21-87
Iliamna, Language Spoken at Home by People Age Five and Older, 2000

	2000
Total population	102
English only	98%
Native North American language	0%
Spanish	0%
Indo-European language	0%
Asian and Pacific Island language	2%

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d.

Migration. Over half (57 percent) of the Iliamna population (age five and older) in 2000 did not change residences between 1995 and 2000 (Table 21-88). Eight percent of 2000-census Iliamna residents lived in Iliamna in 1995 but moved to a different house by 2000. Of the residents who migrated into Iliamna between 1995 and 2000, 5 percent lived in the Lake and Peninsula Borough in 1995 but not in Iliamna, 10 percent lived outside the borough but in Alaska, 18 percent lived in the United States but outside of Alaska in 1995, and 2 percent lived outside the United States.

TABLE 21-88
Iliamna, 2000-census Population Age Five and Older, Residence Status in 1995

1995 Residence	Count	Percentage [a]
Same house as in 2000	71	57
In Iliamna but different house than in 2000	10	8
In Lake and Peninsula Borough (not in Iliamna)	6	5
In Alaska (not in Lake and Peninsula Borough)	13	10
In U.S. (not in Alaska)	22	18
Outside of U.S.	2	2
Total population in 2000 [b]	**124**	

Notes:

a. Percentages calculated by the McDowell Group.

b. Population figure here may differ from other population figures for this community because different data sets for the 2000 census provide slightly varying figures.

Source: USCB, n.d.

Economy

Tourism, tribal government, subsistence, commercial fishing, and local government form the economic foundation of Iliamna. In 2004 the annual mean household harvest of subsistence resources was 1,553 pounds, and the annual per capita harvest was 469 pounds (Fall et al., 2006).

Access to the community is by air through two state-owned paved airstrips and several floatplane bases. Barges deliver bulk freight via the Kvichak River (ADCCED, n.d.[a]).

The annual per capita income in Iliamna in 2000 was $19,741 (USCB, n.d.). Three percent of individuals in the community lived below the poverty level in 1999, according to the 2000 census.

Employment/Unemployment. According to the 2000 census, the Iliamna population age 16 and over consisted of 88 persons, an increase of 50 persons from 1990 (Table 21-89). More than half of the 2000 population was male (53 percent or 47 men) and 47 percent were female (41 women). Twenty-eight percent (25 persons) of Iliamna residents 16 and over were not in the labor force in 2000. These individuals were neither working nor actively looking for employment.

Of the 63 employed residents of Iliamna in 2000, 15 worked outside the community.

TABLE 21-89
Iliamna, Employment by Gender and Place of Work, 1990 and 2000

	1990	2000
Males in labor force	16	37
Employed	16	37
Unemployed	0	0
Males not in labor force	4	10
Females in labor force	6	26

	1990	2000
Employed	6	26
Unemployed	0	0
Females not in labor force	12	15
Total population 16 years and older	38	88
Place of work for workers 16 years and older: [a]		
Worked in Iliamna	N/A	48
Worked outside Iliamna	N/A	15
Total employed	N/A	63

Note:

a. For the 1990 census, place-of-work data were not available.

Source: USCB, n.d.

Local Employment. There were 18 employers in Iliamna in 2007 (ADOLWD DRA, 2007). Doyon/Universal Services was the largest employer in terms of annual average employment (43) (Table 21-90). Employment in the Iliamna area includes a high percentage of non-resident seasonal workers.

TABLE 21-90
Iliamna, Employers, 2007

Employer	Peak Monthly Employment	Average Annual Employment
Doyon/Universal Services J/V	72	43
Quest American Drilling Inc.	41	28
Iliamna Air Taxi Inc.	20	17
Condor Reliability Services Inc.	16	10
Iliamna Village Council	12	7
Crowley Marine Services Inc.	9	7
Rainbow King Lodge Inc.	22	6
Iliamna Development Corporation	13	6
Rainbow River Lodge	13	4
Iliamna Trading Co.	12	4
INN Electric Cooperative Inc.	6	3
APS Services Inc.	6	3
US Postal Service	5	2
Copper River Fly Fishing Lodge	14	2
Iliamna Fly Fishing Guides	2	1
Iliamna Natives Ltd.	5	1
Grams Café	3	1
E&M Enterprises Inc.	2	1
Total	**273**	**146**

Source: ADOLWD DRA, 2007.

According to an ADF&G subsistence survey, 11 percent of jobs held by Iliamna residents in 2004 were located outside the community (Table 21-91; Fall et al., 2006).

TABLE 21-91
Job Locations for Iliamna Residents, 2004

Location of Job	Number of Jobs	Percentage
Iliamna	51	89
Igiugig	3	6
Bristol Bay	3	6
Total	**57**	

Source: Fall et al., 2006.

Capital Improvement Projects. An important part of Iliamna's economy is local capital improvement projects. Table 21-92 lists some of the projects funded in Iliamna from 2002 through 2009.

TABLE 21-92
Funded Capital Improvement Projects in Iliamna, Fiscal Years 2002 through 2009

Lead Agency	Fiscal Year	Project Description	Total Cost
ADOT&PF	2010	Snow Removal Equipment/Sand and Chemical Storage/Office Building	$1,000,000
HUD	2009	Indian Housing Block Grant NAHASDA	$49,715
ADOT&PF	2008	Nondalton Road Completion	$7,500,000
ADOT&PF	2008	Snow Removal Equipment/Sand and Chemical Storage/Office Building	$1,150,000
HUD	2006	Indian Housing Block Grant NAHASDA	$35,961
ANTHC	2004	Sludge Disposal Site	$414,000
ADOT&PF	2003	Iliamna/Newhalen Roads Surface Treatment	$4,172,550
ADOT&PF	2003	Pebble Gold-Copper Mineral District Port and Road Design	$500,000
FAA	2002	Various	$3,873,064

Source: ADCCED, n.d.[b].

Commercial Fishing Activity. Table 21-93 shows the commercial fishing activity of resident Iliamna fishermen from 1990 through 2009. Commercial fishing activity decreased from a high of 34 fishermen in 1990 to a low of seven fishermen in 2002 and 2003. In 1990 the total estimated gross earnings for Iliamna fishermen were almost $2 million, but earnings declined to a low of just under $50,000 in 2002. Since 2002 participation and earnings have increased. Participation in 2009 was 15 fishermen and 15 permits, and earnings were $511,348 in that year.

TABLE 21-93
ILIAMNA, RESIDENTS' COMMERCIAL FISHING ACTIVITY, 1990 THROUGH 2009

Year	Number of Permit Holders	Number of Permits Issued	Total Pounds Landed	Estimated Gross Earnings	Estimated Earnings per Pound	Number of Fishermen who Fished	Number of Permits Fished
1990	34	38	1,842,231	$1,977,006	$1.07	34	34
1991	28	32	835,522	$600,435	$0.72	30	30
1992	26	28	916,981	$1,001,293	$1.09	24	24
1993	24	26	1,167,810	$787,025	$0.67	27	27
1994	21	21	931,627	$913,261	$0.98	21	21
1995	21	21	1,070,966	$846,264	$0.79	20	20
1996	22	24	1,076,272	$862,352	$0.80	23	23
1997	21	23	66,638	$62,160	$0.93	21	20
1998	19	19	180,429	$213,639	$1.18	17	17
1999	20	20	501,056	$413,739	$0.83	21	21
2000	16	16	251,882	$167,319	$0.66	16	16
2001	16	16	328,115	$138,163	$0.42	15	15
2002	15	15	104,185	$49,905	$0.48	7	7
2003	15	16	195,068	$93,702	$0.48	7	7
2004	16	17	356,386	$179,887	$0.50	13	13
2005	15	16	476,327	$279,861	$0.59	12	12
2006	15	16	412,580	$222,088	$0.54	14	14
2007	16	17	(a)	(a)	—	13	13
2008	17	18	690,664	$511,348	$0.74	15	15
2009	19	19	588,725	$407,962	$0.69	15	15

Note:

a. When three or fewer permit-holders participate in all commercial fisheries combined, pounds landed and estimated gross earnings are not reported at all because of confidentiality requirements.

Source: CFEC, 2010a.

Fishing-vessel Crews. The number of crew-member licenses issued in Iliamna for fishing-vessel crews has generally decreased from 2000 to 2009 (Table 21-94). In 2000 42 crew-member licenses were issued to Iliamna residents. The number of licenses had dropped to 18 by 2006 and increased to 37 by 2008.

TABLE 21-94
Iliamna, Residents' Crew-member Licenses, 2000 through 2009

	2000	2001 [a]	2002	2003	2004	2005	2006	2007	2008	2009
Number of crew-member licenses	42	N/A	21	27	24	21	18	33	37	33

Note:

a. Crew-member data for 2001 are not available because of problems with the data.

Source: CFEC, 2010b.

Workforce Attributes. According to the 2000 census, 92 percent of the Iliamna population age 25 and older in 2000 had at least a high school education, with 29 percent holding a bachelor's degree or higher. Table 21-95 shows the educational attainment of Iliamna residents age 25 and older.

TABLE 21-95
Iliamna, Educational Attainment, 1990 and 2000

Educational Attainment	1990 [a]	2000
Population 25 and older	34	76
Less than high school	7	6
High school graduate (includes equivalency)	13	20
Some college, less than 1 year	2	1
Some college, 1 or more years, no degree	0	14
Associate degree	5	13
Bachelor's degree	5	17
Master's degree	0	5
Professional school degree	2	0
Male	N/A	41
Less than high school	N/A	2
High school graduate (includes equivalency)	N/A	13
Some college, less than 1 year	N/A	1
Some college, 1 or more years, no degree	N/A	5
Associate degree	N/A	5
Bachelor's degree	N/A	12
Master's degree	N/A	3
Professional school degree	N/A	0
Female	N/A	35
Less than high school	N/A	4
High school graduate (includes equivalency)	N/A	7
Some college, less than 1 year	N/A	0
Some college, 1 or more years, no degree	N/A	9
Associate degree	N/A	8
Bachelor's degree	N/A	5
Master's degree	N/A	2
Professional school degree	N/A	0

Note:

a. For the 1990 census, data on educational attainment by gender were not available.

Source: USCB, n.d.

Occupations for the Employed Civilian Population. Table 21-96 shows the number of Iliamna residents in various occupations in 2000.

TABLE 21-96
Iliamna, Occupations for the Employed Civilian Population Age 16 and Older, 2000

Occupations [a]	2000
Management, professional, and related	23
Service	16
Sales and office	10
Farming, fishing, and forestry	0
Construction, extraction, and maintenance	8
Production, transportation, and material moving	6
Total	**63**

Note:

a. Occupation data may under-represent seasonal occupations such as commercial fishing and construction because the survey asked respondents to report their occupation in reference to a stated week of the year. Respondents holding more than one job were asked to report the job at which they worked the most hours. Additionally, economic data may underestimate the summer season peaks in employment and population.

Source: USCB, n.d.

Household Income. The 2000 census reported 43 households in Iliamna; this was an increase of 23 households from the 1990 census (Table 21-97). In 2000, 39 household had earnings, with an annual median household income of $60,625, an increase from the 1990 median household income of $41,250. Iliamna households had an annual median income in 2000 that was 66 percent higher than the Lake and Peninsula Borough annual median of $36,442 and 18 percent above the annual statewide median of $51,571 (USCB, n.d.).

TABLE 21-97
Iliamna, Household Income, 1990 and 2000

Household Information	1990	2000
Total number of households [a]	20	43
With earnings	18	39
Without earnings	2	4
With wage or salary income	18	39
With self-employment income	6	7
With interest, dividends, or net rental income	20	39
With Social Security income	2	0
With Supplemental Security Income	(b)	2
With public assistance income	0	6
With retirement income	3	5
With other types of income	3	7
Median household income	$41,250	$60,625

Notes:

a. This data set in the census reports a different number of households than the data set for households and families discussed elsewhere in this section.

b. For the 1990 census, Supplemental Security Income data were not available.

Source: USCB, n.d.

Households and Individuals Receiving Public Assistance. No individuals in Iliamna received temporary assistance in 2009 (Table 21-98). Seven households and 14 individuals received food stamps that year, and two individuals received adult public assistance. Fifteen households and 30 Iliamna residents received Medicare/Medicaid in 2009.

TABLE 21-98
Iliamna, Numbers of Households and Individuals Receiving Public Assistance, 2005 through 2009

	Number of Households					Number of Individuals				
Program	**2005**	**2006**	**2007**	**2008**	**2009**	**2005**	**2006**	**2007**	**2008**	**2009**
Temporary assistance	0	0	0	0	0	0	0	0	0	0
Food stamps	10	10	7	4	7	27	27	19	13	14
Adult public assistance [a]	N/A	(b)	(b)	(b)	(b)	6	6	4	3	2
Medicare/Medicaid	20	21	16	18	15	29	35	27	36	30

Notes:

a. Households receiving adult public assistance were not tracked before 2006.

b. Data withheld to protect confidentiality.

Source: ADHSS, 2010b.

Public Assistance Payments. Public assistance payments to Iliamna households from all the sources listed in Table 21-98 totaled $104,418 in 2009, an increase from 2008 (Table 21-99).

TABLE 21-99
Iliamna, Amount of Public Assistance Payments, 2005 through 2009

Program	**2005**	**2006**	**2007**	**2008**	**2009**
Temporary assistance	$0	$0	$0	$0	$0
Food stamps	$4,685	$5,322	$2,945	$1,730	$3,475
Adult public assistance	$2,104	$1,942	$1,413	$1,311	$678
Medicare/Medicaid	$135,557	$86,862	$119,864	$140,493	$100,265
Total public assistance payments	**$142,346**	**$94,126**	**$124,222**	**$143,534**	**$104,418**

Source: ADHSS, 2010b.

Community Infrastructure

Utilities. *Water and Wastewater*—Iliamna residents use individual wells for water and septic systems for sewer. There are no community systems and no plans to create any (Anelon, pers. comm., 2006). Approximately 85 percent of Iliamna residences are fully plumbed. The village municipality provides septic-pumping services and deposits sewage in a sewage lagoon located next to the community landfill (Marcorelle, pers. comm., 2006). A well provides water to the community center that houses a small washeteria.

Solid Waste—refuse is transported by individuals to the municipal landfill, which contains two burn boxes. The landfill is active and located 2 miles from the Iliamna airport (ADEC, 2010).

According to the ADEC, Iliamna has 13 contaminated sites holding an "open" status. The sites in the Iliamna area include four different sites at Big Mountain Radio Relay Station (diesel fuel, lead-acid and nickel-cadmium batteries, asbestos, electrical equipment that contains polychlorinated biphenyls, arsenic, chromium, DRO, and PCB); Federal Aviation Administration (FAA) Iliamna Station Living Quarters (diesel and gasoline); FAA Iliamna Station NDB (diesel and gasoline); FAA Iliamna Station Flight Service Station (diesel and gasoline); Newhalen Bulk Fuel Storage (diesel fuel); USPS Iliamna Post Office (oil); Iliamna Air Force Base Drum Cache 1 (DRO, benzene, diesel range organics, methylene chloride, residual petroleum compounds, and residual petroleum); Crowley Jet A Fuel Tank 471 Newhalen Tank Farm (jet fuel); Crowley Tank Farm Iliamna Airport (aviation fuel, GRO, DRO, toluene); and Iliamna-Newhalen Nondalton Electric site (diesel) (ADEC, n.d.).

Communications—Iliamna's in-state phone service is provided by the Interior Telephone Company (a subsidiary of TelAlaska), while long-distance phone service is provided by AT&T Alascom, GCI, and the Interior Telephone Company. Radio stations heard in Nondalton include stations KGTL-AM and KBBI-AM out of Homer, and KDLG-AM out of Dillingham (ADCCED, n.d.[a]). Dial-up and wireless internet are available through GCI (RCA, 2006).

Locally transmitted television includes ARCS. (For details about ARCS see the *Communications* section under *Community and Infrastructure* for Nondalton [Section 21.7.2.1].) While there is no cable television provider in Iliamna, a large variety of stations is available via satellite.

Housing. In 2000 there were 58 housing units in Iliamna (Table 21-100), including 25 owner-occupied homes, 10 rental units, and 21 seasonal-use homes. Forty-seven units were single-family homes. Two of the housing units were in the U.S. Census category of "boat, van, RV etc." The average household size was 2.91.

Of the 35 occupied residences in 2000, all had complete plumbing facilities, kitchen facilities, and phone service. The median value of the specified owner-occupied residences was $121,900 (USCB, n.d.).

TABLE 21-100
Iliamna, Housing Characteristics, 1990 and 2000

Characteristic	1990 Count	Percentage	2000 Count	Percentage
Total housing units, by occupancy status	36	100	58	100
Occupied	30	83	35	60
Vacant	6	17	23	40
Vacant except for seasonal, recreational, or occasional use	1	17 [a]	21	91 [a]
Homes with heat, by heat type	18	100	41	100
Fuel oil, kerosene, etc.	18	100	41	100
Specified owner-occupied units [b], by value	14	100	19	100
Less than $50,000	0	0	0	0
$50,000 to $99,999	3	21	6	32
$100,000 to $149,999	7	50	4	21
$150,000 to $199,999	4	29	2	11

Characteristic	1990 Count	Percentage	2000 Count	Percentage
$200,000 to $299,999	0	0	5	26
$300,000 to $499,999	0	0	0	0
$500,000 or more	0	0	2	11
Median value	$125,000		$121,900	

Notes:

a. Percentage of total vacant units.

b. Specified owner-occupied units, a subgroup of owner-occupied homes, are either one-family homes that are detached from any other house or a one-family house attached to one or more houses on less than 10 acres with no business on the property.

Source: USCB, n.d.

Education Services and Facilities. There are no schools located in Iliamna. Students attend the Newhalen School, which contains all grades (ADEED, n.d.[a]).

Health-care Services and Facilities. The Nilavena subregional health clinic in Iliamna provides a full spectrum of primary health-care services for adults and children. It is operated by BBAHC and has a private owner, E&M Enterprises. The 9,000-square-foot clinic, which opened in 2003, is equipped with an emergency room with two fully loaded stations, four exam rooms, a laboratory, a pharmacy, a dental suite, and X-ray capabilities. Teleradiology, telemedicine, and telepharmacy capabilities are also available. The staff includes certified physician assistants, management, and support staff (CIRI Foundation, 2006). The clinic provides services to the surrounding villages of Nondalton, Newhalen, Kokhanok, Port Alsworth, Iliamna, Igiugig, and Pedro Bay (CIRI Foundation, 2006).

Public Safety. Iliamna has an Alaska State Trooper post that serves Iliamna, as well as other communities in the area. Iliamna has no VPSO. Iliamna has a volunteer fire department and a fire station equipped with a fire truck and ambulance. Rescue services are provided by the Iliamna/Newhalen Rescue Squad. Iliamna has five EMTs (Nilavena Health Clinic, 2010).

21.7.2.6 Levelock

Levelock is an unincorporated community located on the west bank of the Kvichak River near the Alagnak Wild and Scenic River corridor. Early Russian explorers reported the presence of Levelock, which they called "Kvichak," like the river. In the 1890 census, Kvichak was mentioned but the population was not measured, and a 1908 survey of Russian missions identified "Lovelock's Mission" at this site. The community is remote, with access by small plane and boat/barge. The community is a mixed Alutiiq and Yup'ik village.

Demographics

Population. The 2009 population of Levelock was 88 persons (Figure 21-18). From 1990 to 1999, there was an overall gain in population of 25 percent, with the population peaking in 1999 at 131; however, the community population declined by 33 percent between 1999 and 2009.

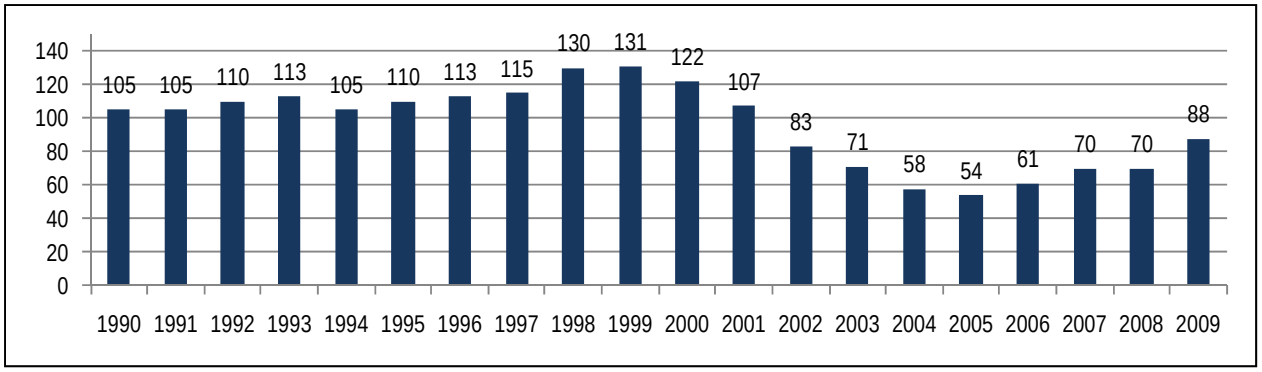

FIGURE 21-18
Levelock, Population, 1990 through 2009
Source: ADOLWD DRA, n.d.[a].

In 2000 Levelock's population consisted of 59 percent males and 41 percent females (Table 21-101). The difference between gender proportions in the population had thus increased from 1990, when 55 percent of the population was male and 45 percent was female.

TABLE 21-101
Levelock, Population by Gender, 1990 and 2000

	1990 Count	1990 Percentage	2000 Count	2000 Percentage
Male population	58	55	72	59
Female population	47	45	50	41
TOTAL	**105**		**122**	

Source: USCB, n.d.

Age. According to the 2000 census, the median age in Levelock was 27.5 years, an increase of 1.8 years from the 1990 census (Table 21-102). The median age of Levelock males increased by 2.2 years between the 1990 and 2000 censuses, while the median age of females remained nearly the same.

TABLE 21-102
Levelock, Median Age, 1990 and 2000

	1990	2000
Median age	25.7	27.5
Median male age	26.3	28.5
Median female age	25.3	25.5

Source: USCB, n.d.

In 2000 over one-third (36 percent) of Levelock residents were under the age of 15 (Table 21-103, Figure 21-19). This was a slight increase from 1990, when 32 percent of the population was under the age of 15.

TABLE 21-103
Levelock, Age by Count and Percentage, 1990 and 2000

	1990 Count	1990 Percentage	2000 Count	2000 Percentage
Under 5 years	14	13	11	9
5 to 9 years	4	4	19	16
10 to 14 years	16	15	14	11
15 to 17 years	4	4	5	4
18 and 19 years	2	2	4	3
20 to 24 years	7	7	6	5
25 to 29 years	12	11	6	5
30 to 34 years	6	6	6	5
35 to 39 years	10	10	10	8
40 to 44 years	6	6	5	4
45 to 49 years	3	3	7	6
50 to 54 years	3	3	8	7
55 to 59 years	2	2	8	7
60 and 61 years	5	5	0	0
62 to 64 years	2	2	4	3
65 to 69 years	4	4	1	1
70 to 74 years	1	1	3	2
75 to 79 years	3	3	3	2
80 to 84 years	0	0	1	1
85 years and older	1	1	1	1

Source: USCB, n.d.

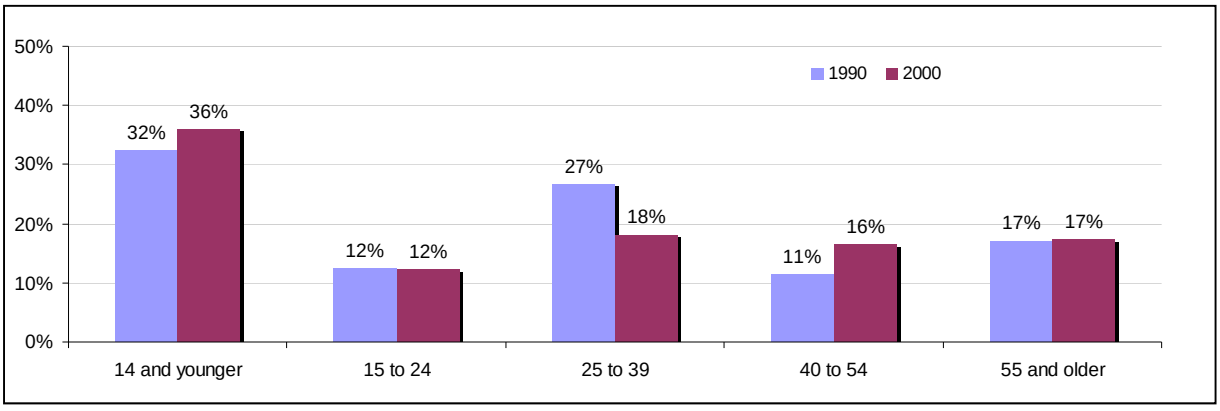

FIGURE 21-19
Levelock, Age by Percentage, 1990 and 2000
Note: Age groupings by the McDowell Group.
Source: USCB, n.d.

Race. The majority (95 percent) of the Levelock population in 2000 identified itself as American Indian or Alaska Native or part American Indian or Alaska Native (Table 21-104). Nearly half (49 percent) of the Alaska Native population in Levelock was Aleut and 39 percent was Eskimo (Table 21-105).

TABLE 21-104
Levelock, Race by Count and Percentage, 2000

	2000 Count	2000 Percentage
American Indian or Alaska Native alone or in combination with one or more other races	116	95
Population of one race	115	94
White alone	6	5
Alaska Native alone	109	89
Population of two or more races	7	6
Total population	**122**	

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d.

TABLE 21-105
Levelock, Specific Alaska Native Designation, 2000

	2000
Number of people who are Alaska Native alone	109
Athabascan	1%
Aleut	49%
Eskimo	39%
Tlingit-Haida	0%
Alaska Native—not specified	11%

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d.

Households and Families. The total number of households in Levelock increased from 39 in 1990 to 45 in 2000 (Table 21-106). The number of nonfamily households increased by one-third (from 15 to 20), while the number of family households remained fairly steady, increasing from 24 to 25.

TABLE 21-106
Levelock, Households and Families, 1990 and 2000

	1990	2000
Total households	39	45
Family households	24	25
Married-couple family, no children	8	6
Married-couple family with children	10	9
Other family household	6	10
Nonfamily households	15	20
1-person household	15	19
2-or-more person nonfamily households	0	1

	1990	2000
Average household size	2.69	2.71
Average family size	3.71	3.96
Total population in families	89	99
Total population	105	122

Source: USCB, n.d.

Language. In 2000, 15 percent of the Levelock population spoke a Native American language at home (Table 21-107). Of those, 3 percent (five residents) spoke Navajo. While there are no census data specifying the Alaska Native language spoken by the remaining 12 percent, nearly half (49 percent) of the single-race Alaska Native population in Levelock was Alutiiq and 39 percent was Eskimo, and the languages of those cultures would likely be the ones most commonly spoken in the home.

TABLE 21-107
Levelock, Language Spoken at Home by People Age Five and Older, 2000

	2000
Total population (number of people)	122
English only	83%
Native North American language	15%
Spanish	0%
Indo-European language	0%
Asian and Pacific Island language	0%

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d.

Migration. Nearly three-fourths (71 percent) of the Levelock population (age five and older) in 2000 did not change residences between 1995 and 2000 (Table 21-108). Eighteen percent of 2000 Levelock residents lived in Levelock in 1995 but moved to a different house by 2000. Ten percent of the residents migrated into Levelock between 1995 and 2000. These residents lived outside the Lake and Peninsula Borough but in Alaska in 1995.

TABLE 21-108
Levelock, 2000-census Population Age Five and Older, Residence Status in 1995

1995 Residence	Count	Percentage [a]
Same house as in 2000	70	71
In Levelock but different house than in 2000	18	18
In Lake and Peninsula Borough (not in Levelock)	0	0
In Alaska (not in Lake and Peninsula Borough)	10	10
In U.S. (not in Alaska)	0	0
Outside of U.S.	0	0
Total population in 2000 [b]	**98**	

Notes:

a. Percentages calculated by the McDowell Group.

b. Population figure here may differ from other population figures for this community because different data sets for the 2000 census provide slightly varying figures.

Source: USCB, n.d.

Economy

Levelock's economic foundation is commercial fishing, seasonal lodges, and subsistence living. Many residents travel to Naknek during the summer to fish or work in the canneries (ADCCED, n.d.[a]). In 2005 the annual mean household harvest of subsistence resources was 941 pounds, and the annual per capita harvest was 527 pounds (Fall et al., 2006).

The transportation infrastructure for Levelock includes a 3,281-foot gravel runway and a 110-foot dock and beach unloading area (ADCCED, n.d.[a]).

According to the U.S. Census Bureau, the annual per capita income in Levelock in 2000 was $12,199 (USCB, n.d.). Seventeen percent of families and 25 percent of individuals in the community lived below poverty level in 1999.

Employment/Unemployment. The Levelock population age 16 and over consisted of 73 persons according to the 2000 census (Table 21-109). This was a decrease of seven from 1990. More than half of this population was male (59 percent or 43 men), and 41 percent was female (30 women). Fifty-three percent (39 persons) of this population was considered not in the labor force; these individuals were neither working nor actively looking for employment.

Of the 32 employed workers in Levelock in 2000 (see Table 21-109, footnote b), five worked outside the community. There were no unemployed workers in the Levelock labor force in 2000.

TABLE 21-109
Levelock, Employment by Gender and Place of Work, 1990 and 2000

	1990	2000
Males in labor force	27	23
Employed	18	23
Unemployed	9	0
Males not in labor force	20	20
Females in labor force	16	11
Employed	16	11
Unemployed	0	0
Females not in labor force	17	19
Total population 16 and over	80	73
Place of work for workers 16 years and older: [a]		
Worked in Levelock	N/A	27
Worked outside Levelock	N/A	5
Total employed [b]	N/A	34

Notes:

a. For the 1990 census, place-of-work data were not available.

b. Total here does not equal the total employed males and females shown above because figures in the 2000 census for total employed differed among data sets.

Source: USCB, n.d.

Local Employment. There were three employers in Levelock in 2007 (ADOLWD DRA, 2007). The Levelock Village Council was the largest employer with a peak monthly employment of 14 and an annual average employment of 10 (Table 21-110).

TABLE 21-110
Levelock Employers, 2006

Employer	Peak Monthly Employment	Average Annual Employment
Levelock Village Council	13	10
Lake and Peninsula School District	10	7
Levelock Electric Cooperative	4	2
US Postal Service	1	1
Total	**28**	**20**

Source: ADOLWD DRA, 2007.

Capital Improvement Projects. Table 21-111 lists some of the capital improvement projects in Levelock between 2002 and 2009. These projects are often a critical part of the cash economy for rural communities such as Levelock.

TABLE 21-111
Funded Capital Improvement Projects in Levelock, Fiscal Years 2002 to 2009

Lead Agency	Fiscal Year	Project Description	Total Cost
HUD	2009	Indian Housing Block Grant NAHASDA	$84,695
HUD	2008	Indian Housing Block Grant NAHASDA	$94,594
HUD	2006	Indian Housing Block Grant NAHASDA	$97,294
HUD	2005	New Housing Construction	$500,000
HUD	2004	Indian Housing Block Grant NAHASDA administration, operating and construction funds	$112,527
BIA	2002	Upgrade Village Streets	$3,000,000

Source: ADCCED, n.d.[b]

Commercial Fishing Activity. Table 21-112 shows the fishing activity of resident Levelock fishermen from 1990 through 2009. Though commercial fishing activity among Levelock residents was low in later years, estimated gross earnings improved between 2002 and 2006. In 1990 estimated gross earnings for Levelock fishermen were at a high of $890,360. Because three or fewer permit-holders participated in all fisheries, harvest and earnings data for 2007 through 2008 are confidential. Participation has been stable in later years, with an average of seven fishermen fishing seven permits since 2002.

TABLE 21-112
Levelock, Residents' Commercial Fishing Activity, 1990 through 2009

Year	Number of Permit Holders	Number of Permits Issued	Total Pounds Landed	Estimated Gross Earnings	Estimated Earnings per Pound	Number of Fishermen who Fished	Number of Permits Fished
1990	16	20	873,455	$890,360	$1.02	15	16
1991	16	20	369,151	$227,558	$0.62	14	13
1992	15	17	538,673	$532,747	$0.99	13	14
1993	17	18	696,646	$467,205	$0.67	17	17
1994	17	18	721,260	$696,350	$0.97	14	14
1995	14	18	654,852	$510,067	$0.78	14	16
1996	14	19	596,357	$470,016	$0.79	14	17
1997	13	16	152,924	$104,721	$0.68	12	14
1998	13	18	195,770	$187,448	$0.96	11	12
1999	14	15	319,615	$256,401	$0.80	12	13
2000	15	16	246,452	$149,522	$0.61	10	11
2001	13	13	151,746	$63,904	$0.42	8	8
2002	11	11	35,416	$17,178	$0.49	6	6
2003	11	11	194,590	$96,047	$0.49	6	6
2004	7	7	218,234	$111,908	$0.51	5	5
2005	6	7	406,586	$249,962	$0.61	6	6
2006	5	5	406,655	$211,998	$0.52	6	6
2007	7	7	(a)	(a)	—	8	8
2008	7	7	(a)	(a)	—	7	7
2009	7	7	324,148	217,689	$0.67	5	5

Note:

a. When three or fewer permit-holders participate in all commercial fisheries combined, pounds landed and estimated gross earnings are not reported at all because of confidentiality requirements.

Source: CFEC, 2010a.

Fishing-vessel Crews. In 2000, 18 crew-member licenses for fishing-vessel crews were issued to Levelock residents (Table 21-113). After a dip in 2002, when only four licenses were issued, the number of licenses returned to near-2000 levels. In 2009, eight crew-member licenses were issued.

TABLE 21-113
Levelock, Residents' Crew-member Licenses, 2000 through 2009

	2000	2001 [a]	2002	2003	2004	2005	2006	2007	2008	2009
Number of crew-member licenses	18	N/A	4	16	14	15	16	15	18	8

Note:

a. Crew-member data for 2001 are not available because of problems with the data.

Source: CFEC, 2010b.

Workforce Attributes. According to the 2000 census, 66 percent of the Levelock population age 25 and older had at least a high school education in 2000, with 20 percent having some college education (but no degree), and 5 percent holding a bachelor's degree. This compares to the statewide average of 88 percent with high school diplomas and 25 percent with a bachelor's degree or higher (USCB, n.d.). Table 21-114 shows the educational attainment of Levelock residents age 25 and older.

TABLE 21-114
Levelock, Educational Attainment, 1990 and 2000

Educational Attainment	1990 [a]	2000
Population 25 years and older	66	61
Less than high school	25	21
High school graduate (includes equivalency)	30	25
Some college, less than 1 year	4	2
Some college, 1 or more years, no degree	0	10
Associate degree	1	0
Bachelor's degree	6	3
Master's degree	0	0
Professional school degree	0	0
Male	N/A	38
Less than high school	N/A	14
High school graduate (includes equivalency)	N/A	16
Some college, less than 1 year	N/A	2
Some college, 1 or more years, no degree	N/A	5
Associate degree	N/A	0
Bachelor's degree	N/A	1
Master's degree	N/A	0
Professional school degree	N/A	0
Female	N/A	23
Less than high school	N/A	7
High school graduate (includes equivalency)	N/A	9
Some college, less than 1 year	N/A	0
Some college, 1 or more years, no degree	N/A	5
Associate degree	N/A	0
Bachelor's degree	N/A	2
Master's degree	N/A	0
Professional school degree	N/A	0

Note:
a. For the 1990 census, data on educational attainment by gender were not available.
Source: USCB, n.d.

Occupations for the Employed Civilian Population. Table 21-115 shows the number of Levelock residents in various occupations in 2000.

TABLE 21-115
Levelock, Occupations for the Employed Civilian Population Age 16 and Older, 2000

Occupation [a]	2000
Management, professional, and related	9
Service	6
Sales and office	2
Farming, fishing, and forestry	2
Construction, extraction, and maintenance	8
Production, transportation, and material moving	7
Total	**34**

Note:

a. Occupation data may under-represent seasonal occupations such as commercial fishing and construction because the survey asked respondents to report their occupation in reference to a stated week of the year. Respondents holding more than one job were asked to report the job at which they worked the most hours. Additionally, economic data may underestimate the summer season peaks in employment and population.

Source: USCB, n.d.

Household Income. The 2000 census recorded 46 households in Levelock, an increase of three households from the 1990 census (Table 21-116). In 2000, 32 households had earnings, with a median household income of $18,750, an increase of 54 percent from the 1990 census, which recorded an annual median household income in Levelock of $12,159. Annual median household income in the community in 2000 was 49 percent below the Lake and Peninsula Borough annual median of $36,442 and 64 percent below the annual statewide median of $51,571 (USCB, n.d.).

TABLE 21-116
Levelock, Household Income, 1990 and 2000

Household Information	1990	2000
Total number of households [a]	43	46
With earnings	37	32
Without earnings	6	14
With wage or salary income	37	32
With self-employment income	9	2
With interest, dividends, or net rental income	36	44
With Social Security income	8	12
With Supplemental Security Income	(b)	4
With public assistance income	2	16
With retirement income	4	3
With other types of income	2	3
Median household income	$12,159	$18,750

Notes:

a. This data set in the census reports a different number of households than the data set for households and families discussed elsewhere in this section.

b. For the 1990 census, Supplemental Security Income data were not available.

Source: USCB, n.d.

Households and Individuals Receiving Public Assistance. Temporary assistance was received by one household and three individuals in Levelock in 2009 (Table 21-117). Exact counts of households and individuals who received food stamps and adult public assistance in 2006 are not available because of ADHSS confidentiality policies. Seventeen households and 25 residents received Medicare/Medicaid payments in 2006.

TABLE 21-117
Levelock, Numbers of Households and Individuals Receiving Public Assistance, 2005 through 2009

	Number of Households					Number of Individuals				
Program	**2005**	**2006**	**2007**	**2008**	**2009**	**2005**	**2006**	**2007**	**2008**	**2009**
Temporary assistance	0	0	0	0	1	0	0	0	0	3
Food stamps	(a)	5	4	5	8	(a)	12	12	22	31
Adult public assistance	(b)	4	4	5	5	(a)	(a)	4	5	5
Medicare/Medicaid	15	15	13	12	17	25	31	29	21	37

Notes:
a. Data withheld to protect confidentiality.
b. Households receiving adult public assistance were not tracked before 2006.
Source: ADHSS, 2010b.

Public Assistance Payments. Public assistance payments to Levelock households from all four sources listed in Table 21-117 totaled $164,651 in 2009 (Table 21-118).

TABLE 21-118
Levelock, Amount of Public Assistance Payments, 2005 through 2009

Program	**2005**	**2006**	**2007**	**2008**	**2009**
Temporary assistance	$0	$0	$0	$0	$0
Food stamps	(a)	$9,180	$2,051	$1,952	$7,844
Adult public assistance	(a)	$1,310	$1,302	$1,661	$1,632
Medicare/Medicaid	$108,966	$45,609	$126,457	$106,149	$155,175
Total public assistance payments	**$108,966**	**$56,099**	**$129,810**	**$109,762**	**$164,651**

Note:
a. Data withheld to protect confidentiality.
Source: ADHSS, 2010b.

Community Infrastructure

Utilities. *Water and Wastewater*—the houses in Levelock use individual water wells and septic systems. Majority of homes are are fully plumbed. According to ADCCED, most of the wells and septic systems were installed in 1981. The village council provides a septic-pumping service to local residents (ADCCED, n.d.[a]).

Solid Waste—a new landfill was built in Levelock in 2002; however, the old landfill, located near the Kvichak River, has not yet been closed. Riverbank erosion is a concern, and several structures have been lost to erosion in past years (Agnew Beck Consulting, 2006). The village council provides trash collection during the summer months (ADCCED, n.d.[a]).

Communications—in-state phone service for Levelock is provided by Bristol Bay Telephone Co-op Inc., while long-distance phone service is provided by AT&T Alascom, GCI, and Bristol Bay Telephone. Teleconferencing services are provided by the Alaska Teleconferencing Network (ADCCED, n.d.[a]). Dial-up and wireless internet are available through GCI.

Radio stations transmitted to Levelock include KDLG-AM out of Dillingham and KAKN-FM, a Christian radio station out of Naknek (Apokedak, pers. comm., 2007).

The only television station transmitted locally is ARCS. (For details about ARCS, see the *Communications* section under *Community Infrastructure* for Nondalton [Section 21.7.2.1].)

Housing. In 2000 there were 50 housing units in Levelock (Table 21-119), including 25 rental units, 21 owner-occupied homes, and four seasonal-use units. Thirty-nine of the housing units were single-family homes. The average number of people per household was 2.71.

Of the 45 occupied residences in 2000, 20 lacked complete plumbing facilities, 10 lacked complete kitchen facilities, and 12 had no phone services. The median value of the specified owner-occupied residences was $32,500 (USCB, n.d.).

TABLE 21-119
Levelock, Housing Characteristics, 1990 and 2000

Characteristic	1990 Count	Percentage	2000 Count	Percentage
Total housing units, by occupancy status	42	100	50	100
Occupied	36	86	45	90
Vacant	6	14	5	10
Vacant except for seasonal, recreational, or occasional use	0	0 [a]	4	8 [a]
Homes with heat, by heat type	36	100	44	100
Utility gas	0	0	0	0
Bottled, tank, or liquid propane gas	0	0	0	0
Fuel oil, kerosene, etc.	35	97	42	95
Wood	1	3	0	0
Other	0	0	2	5
Specified owner-occupied units [b], by value	13	100	22	100
Less than $50,000	7	54	14	64
$50,000 to $99,999	3	23	4	18
$100,000 to $149,999	2	15	2	9
$150,000 to $199,999	1	8	2	9
$200,000 or more	0	0	0	0
Median value	$22,500		$32,500	

Notes:

a. Percentage of total vacant units.

b. Specified owner-occupied units, a subgroup of owner-occupied homes, are either one-family homes that are detached from any other house or a one-family house attached to one or more houses on less than 10 acres with no business on the property.

Source: USCB, n.d.

According to the 2000 Levelock Strategic Plan, 21 of the housing units are U.S. Department of Housing and Urban Development (HUD) houses (Levelock Village Council, 2000). The non-HUD homes are "old and in various states of disrepair." In 2006 HUD gave a block grant of $500,000 to Levelock for the purpose of building six single-family homes. Those homes were scheduled to be completed in late 2007 (Apokedak, pers. comm., 2007).

Education Services and Facilities. The Levelock School, kindergarten through 12th grade, is the only school in the community, and its attendance in FY 2010 was 19 students, five students less than in FY 1997 (Figure 21-20). The school has two teachers (ADEED, n.d.) and was inherited from the Southwest Region School District in 1989 (Levelock Village Council, 2000). The building is described as a "somewhat modern facility" in need of renovations. Many of those renovations were scheduled to take place in summer 2007 (Apokedak, pers. comm., 2007).

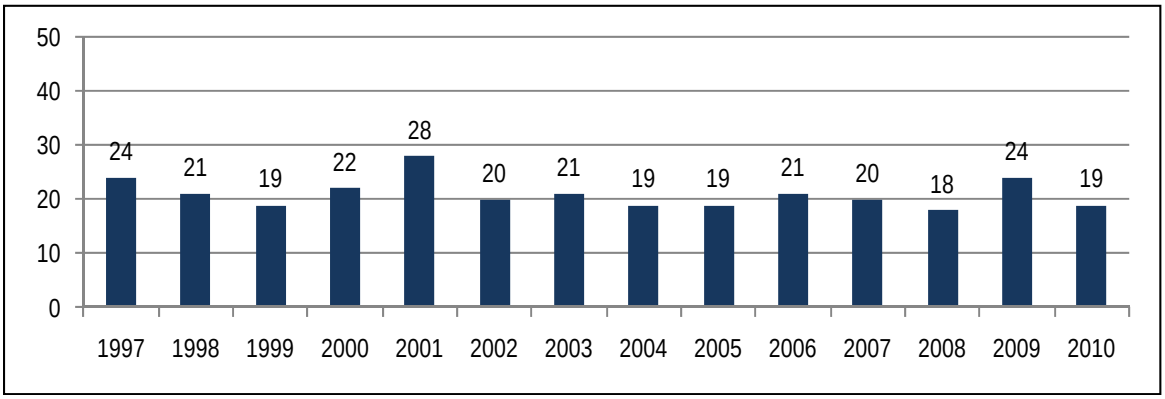

Figure 21-20
Levelock School Enrollment, FY1997 through FY2010
Sources: ADEED, n.d.; Atwater, pers. comm., 2006.

Health-care Services and Facilities. The local health clinic is owned by the village council and is operated by BBAHC. The clinic is located in the basement of the Levelock Village Council offices. A new clinic was planned and scheduled to open in June 2008; however, that project is still awaiting funding (Apokedak, pers. comm., 2007). Levelock has an interim health aide come in to the community (Levelock Health Clinic, pers. comm., 2010).

Public Safety. Levelock is served by a VPSO and by Alaska State Troopers in King Salmon and Dillingham (Akelkok, pers. comm., 2007). The VPSO position is vacant. Levelock has a volunteer fire department, a fire truck, and a fire hall; however, the fire truck needs to be replaced. The community uses a van rather than an ambulance. Rescue services are provided by the volunteer Levelock First Responders. Levelock has six emergency trauma technicians (ETTs). An older recreation hall is sometimes used as a "makeshift jail" (Levelock Village Council, 2000).

21.7.2.7 Pedro Bay

Pedro Bay is an unincorporated community located at the northeast end of Iliamna Lake at the head of Pedro Bay. The community is accessible by air and water. Evidence shows the community site was occupied in the mid-1700s, but was subsequently abandoned. Pedro Bay was named for a man known as "Old Pedro" who lived in this area in the early 1900s (ADCCED, n.d.[a]). By the mid-1930s, families from Old Iliamna, and later Pile Bay, began moving into the community, and occupation has been continuous since that time. It is a Dena'ina Athabascan community. Pedro Bay is accessible by boat and plane.

Demographics

Population. Pedro Bay had a 2009 population of 48 (Figure 21-21). The population of Pedro Bay increased 14 percent between 1990 and 2009.

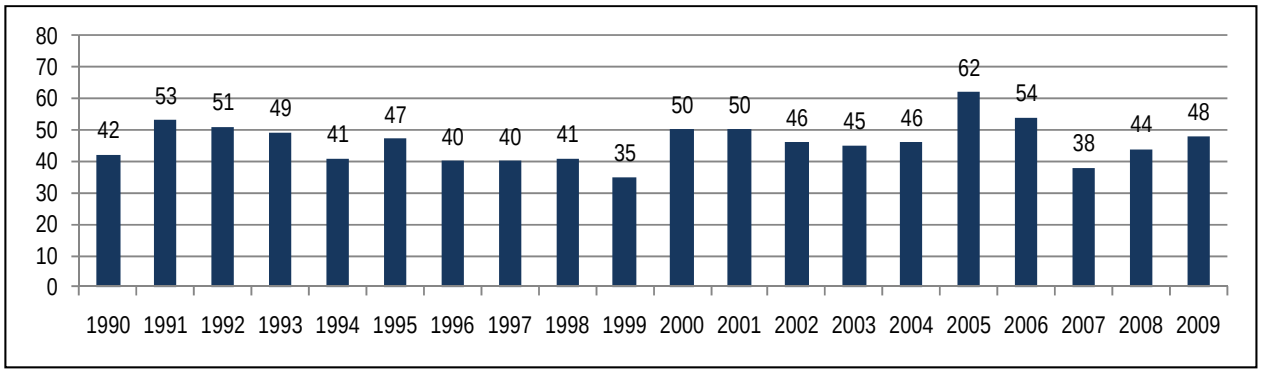

FIGURE 21-21
Pedro Bay Population, 1990 through 2009
Source: ADOLWD DRA, n.d.[a].

In 1990 the population of Pedro Bay was approximately two-thirds (62 percent) female and one-third (38 percent) male (Table 21-120). By 2000, the male proportion of the population had increased to 44 percent, and the female proportion had decreased to 56 percent.

TABLE 21-120
Pedro Bay, Population by Gender, 1990 and 2000

	1990 Count	1990 Percentage	2000 Count	2000 Percentage
Total male population	16	38	22	44
Total female population	26	62	28	56
TOTAL POPULATION	**42**		**50**	

Source: USCB, n.d.

Age. According to the U.S. Census Bureau, the median age in Pedro Bay was 35.0 in 2000 (Table 21-121). The median age for Pedro Bay males that year was 36.0, while the median age for females was nearly 10 years less, at 26.5.

TABLE 21-121
Pedro Bay, Median Age, 1990 and 2000

	1990	2000
Median age	34.5	35.0
Median male age	39.8	36.0
Median female age	30.5	26.5

Source: USCB, n.d.

In 2000, one-third of the Pedro Bay population was under the age of 15, with another third being between the ages of 15 and 39 (Table 21-122, Figure 21-22). The proportion of the population 40 years old and over decreased from 46 percent in 1990 to 36 percent in 2000.

TABLE 21-122
Pedro Bay, Age by Count and Percentage, 1990 and 2000

	1990 Count	1990 Percentage	2000 Count	2000 Percentage
Under 5 years	1	2	3	6
5 to 9 years	6	14	6	12
10 to 14 years	2	5	7	14
15 to 17 years	2	5	4	8
18 and 19 years	1	2	2	4
20 to 24 years	0	0	0	0
25 to 29 years	3	7	0	0
30 to 34 years	4	10	3	6
35 to 39 years	4	10	7	14
40 to 44 years	2	5	7	14
45 to 49 years	5	12	3	6
50 to 54 years	0	0	3	6
55 to 59 years	5	12	1	2
60 and 61 years	2	5	0	0
62 to 64 years	1	2	0	0
65 to 69 years	2	5	1	2
70 to 74 years	2	5	1	2
75 to 79 years	0	0	1	2
80 to 84 years	0	0	1	2
85 years and older	0	0	0	0

Source: USCB, n.d.

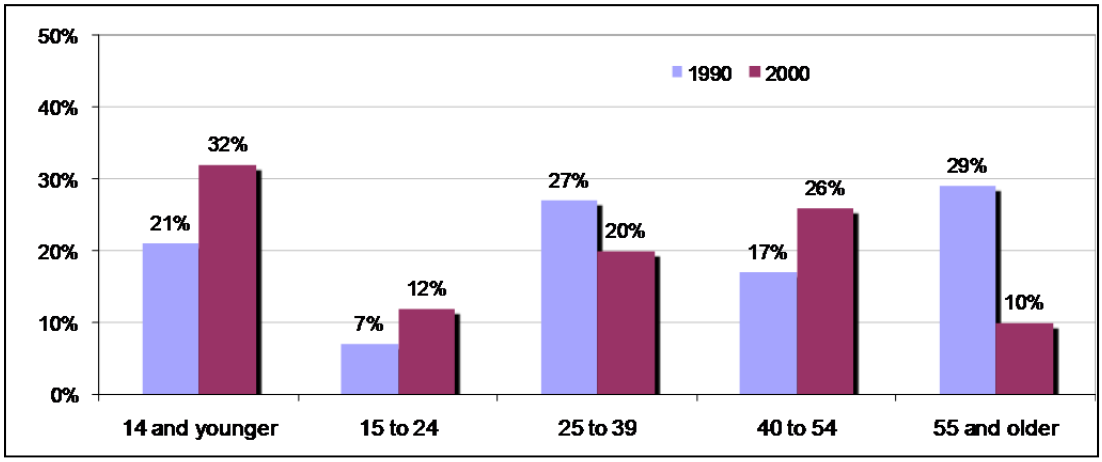

FIGURE 21-22
Pedro Bay, Age by Percentage, 1990 and 2000

Note: Age groupings by the McDowell Group.

Source: USCB, n.d.

Race. Pedro Bay is traditionally a Dena'ina Athabascan Indian village. According to the 2000 census, 40 percent of the population was Alaska Native (Table 21-123), either Athabascan, Aleut, or Eskimo (Table 21-124). Approximately one-third of the population was White, and approximately one-quarter was of more than one race.

TABLE 21-123
Pedro Bay, Race by Count and Percentage, 2000

	2000 Count	2000 Percentage
American Indian or Alaska Native alone or in combination with one or more other races	32	64
Population of one race	38	76
White alone	18	36
Alaska Native alone	20	40
Black or African American alone	0	0
Asian alone	0	0
Native Hawaiian or other Pacific Islander alone	0	0
Some other race alone	0	0
Population of two or more races	12	24
Total population	**50**	

Note: Percentages calculated by the McDowell Group.

Source: USCB, n.d.

TABLE 21-124
Pedro Bay, Specific Alaska Native Designation, 2000

	2000
Number of people who are Alaska Native alone	20
Athabascan	60%
Aleut	30%
Eskimo	10%
Tlingit-Haida	0%
Alaska Native—not specified	0%

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d.

Households and Families. While the number of households in Pedro Bay did not change between the 1990 and the 2000 censuses, the average household size increased by nearly one-half person to 2.94 (Table 21-125).

TABLE 21-125
Pedro Bay, Households and Families, 1990 and 2000

	1990	2000
Total households	17	17
Family households	11	13
Married-couple family, no children	5	2
Married-couple family with children	3	7
Other family household	3	4
Nonfamily households	6	4
1-person household	5	3
2-or-more person nonfamily households	1	1
Average household size	2.50	2.94
Average family size	3.18	3.31
Total population in families	35	43
Total population	42	50

Source: USCB, n.d.

Language. While nearly two-thirds of Pedro Bay residents identified themselves as part or full Alaska Native, only 4 percent of the population spoke a Native American language at home in 2000 (Table 21-126). Seven percent of residents spoke an Indo-European language in their homes.

TABLE 21-126
Pedro Bay, Language Spoken at Home by People Age Five and Older, 2000

	2000
Total population (number of people)	50
English only	89%
Native North American language	4%

	2000
Spanish	0%
Indo-European language	7%
Asian and Pacific Island language	0%

Note: Percentages calculated by the McDowell Group.

Source: USCB, n.d.

Migration. Sixty-two percent of the 2000 Pedro Bay population (age five and older) did not change residences between 1995 and 2000 (Table 21-127). Twenty percent of Pedro Bay residents lived in the community in 1995 but moved to a different house by 2000. Eighteen percent of the residents migrated into Pedro Bay between 1995 and 2000. These residents lived outside the Lake and Peninsula Borough but in Alaska in 1995.

TABLE 21-127
Pedro Bay, 2000-census Population Age Five and Older, Residence Status in 1995

1995 Residence	Count	Percentage [a]
Same house as in 2000	28	62
In Pedro Bay but in different house than in 2000	9	20
In Lake and Peninsula Borough (not in Pedro Bay)	0	0
In Alaska (not in Lake and Peninsula Borough)	8	18
In U.S. (not in Alaska)	0	0
Outside of U.S.	0	0
Total population in 2000 [b]	**45**	

Notes:

a. Percentages calculated by the McDowell Group.

b. Population figure here may differ from other population figures for this community because different data sets for the 2000 census provide slightly varying figures.

Source: USCB, n.d.

Economy

Tribal government, visitor services, commercial fishing, and subsistence form Pedro Bay's economic base. In 2004 the annual mean household harvest of subsistence resources was 1,001 pounds, and the annual per capita harvest was 306 pounds (Fall et al., 2006).

Access to the community is through a state-owned gravel airstrip. Barge access is available via the Kvichak River. There is also access by boat/barge from Homer to Iliamna Bay on Cook Inlet and then by a 14-mile road to Pile Bay (ADCCED, n.d.[a]).

The annual per capita income in Pedro Bay in 2000 was $18,419 (USCB, n.d.). Six percent of individuals in the community lived below poverty level in 1999, according to the 2000 census.

Employment/Unemployment. The Pedro Bay population age 16 and over totaled 34 persons in 2000, according to the census; an increase of 11 persons from 1990 (Table 21-128). Less than half of this

population was male (41 percent or 14 men), and 59 percent was female (20 women). Twenty-one percent of Pedro Bay residents 16 years of age and over (seven persons) were not in the labor force in 2000; these individuals were neither working nor actively looking for employment.

Of the 27 employed residents of Pedro Bay in 2000, three worked outside the community. There were no unemployed workers in Pedro Bay in 2000, according to the census.

TABLE 21-128
Pedro Bay, Employment by Gender and Place of Work, 1990 and 2000

	1990	2000
Males in labor force	5	12
Employed	5	12
Unemployed	0	0
Males not in labor force	4	2
Females in labor force	10	15
Employed	10	15
Unemployed	0	0
Females not in labor force	4	5
Total population 16 and over	23	34
Place of work for workers 16 and older: [a]		
Worked in Pedro Bay	N/A	24
Worked outside Pedro Bay	N/A	3
Total employed	N/A	27

Note:

a. For the 1990 census, place-of-work data were not available.

Source: USCB, n.d.

Local Employment. There were four employers in Pedro Bay in 2007 (ADOLWD DRA, 2007). The Pedro Bay Village Council was the largest employer in 2007, with a peak monthly employment of 19 and an average annual employment of 16 (Table 21-129).

TABLE 21-129
Pedro Bay, Employers, 2007

Employer	Peak Monthly Employment [a]	Average Annual Employment [a]
Pedro Bay Village Council	19	16
Lake and Peninsula School District	9	6
Rainbow Bay Resorts	4	1
Pedro Bay Corporation	2	1
TOTAL	**34**	**24**

Note:

a. Data are based on information provided by employers for their physical location. Other important employers may be excluded from this data.

Source: ADOLWD DRA, 2007.

According to an ADF&G subsistence survey, 10 percent of jobs held by Pedro Bay residents in 2004 were located outside the community (Table 21-130; Fall et al., 2006).

TABLE 21-130
Job Locations for Pedro Bay Residents, 2004

Location of Job	Number of Jobs [a]	Percentage
Iliamna	1	2
Pedro Bay	62	90
Anchorage	1	2
Balance of Bristol Bay Census Area	1	2
Prudhoe Bay	1	2
Tuklung	1	2
Other U.S.	1	2
TOTAL	**68**	

Note:

a. Many employed residents have more than one job during the year (either temporary jobs or part-time employment); thus the total number of jobs in this table is much higher than the total number of employed residents in Table 21-128.

Source: Fall et al., 2006.

Capital Improvement Projects. The capital improvement projects listed in Table 21-131 are a sampling of those funded in Pedro Bay between 2002 and 2009.

TABLE 21-131
Funded Capital Improvement Projects in Pedro Bay, Fiscal Years 2002 to 2009

Lead Agency	Fiscal Year	Project Description	Total Cost
ADEED	2008	Old School Demolition	$350,000
ADCRA	2007	Firefighting Equipment Upgrade	$35,000
HUD	2006	Indian Housing Block Grant NAHASDA	$25,000
HUD	2005	Indian Housing Block Grant	$25,000
AEA-RPSU	2004	Rural Power System Upgrade	$1,056,475
AEA-BF	2003	Bulk Fuel Facility, Phase II Final Design, Denali Commission	$150,000
ADCCED	2003	Lake and Peninsula Borough, Nilavena Community Building	$15,501
BIA	2002	Bridge Project	$32,500

Source: ADCCED, n.d.[b].

Commercial Fishing Activity. Data on commercial fishing activity of Pedro Bay resident fishermen from 1990 through 2009 are provided in Table 21-132. Commercial fishing activity decreased from a high of six active permit holders in 1996 to a low of one active permit holder in 2002. Since then, the number of active permit holders has increased, fluctuating between two and three in 2003 through 2009. Because

three or fewer people or permits participated in the fisheries, harvest data for 1999 to 2009 are confidential.

TABLE 21-132
PEDRO BAY, RESIDENTS' COMMERCIAL FISHING ACTIVITY, 1990 THROUGH 2009

Year	Number of Permit Holders	Number of Permits Issued	Total Pounds Landed	Estimated Gross Earnings	Estimated Earnings per Pound	Number of Fishermen who Fished	Number of Permits Fished
1990	6	6	106,671	$114,210	$1.07	4	4
1991	6	6	86,447	$63,699	$0.74	4	4
1992	6	6	267,390	$280,174	$1.05	5	5
1993	6	6	191,161	$126,234	$0.66	4	4
1994	6	6	131,538	$122,351	$0.93	4	4
1995	6	6	366,429	$286,813	$0.78	5	5
1996	5	5	282,718	$226,466	$0.80	6	6
1997	3	3	98,849	$92,008	$0.93	4	4
1998	3	3	91,258	$108,507	$1.19	4	4
1999	3	3	(a)	(a)	—	3	3
2000	3	3	(a)	(a)	—	2	2
2001	2	2	(a)	(a)	—	2	2
2002	2	2	(a)	(a)	—	1	1
2003	3	3	(a)	(a)	—	3	3
2004	3	3	(a)	(a)	—	3	3
2005	3	3	(a)	(a)	—	2	2
2006	3	3	(a)	(a)	—	3	3
2007	3	3	(a)	(a)	—	3	3
2008	3	3	(a)	(a)	—	3	3
2009	3	3	(a)	(a)	—	3	3

Note:

a. When three or fewer permit-holders participate in all commercial fisheries combined, pounds landed and estimated gross earnings are not reported at all because of confidentiality requirements.

Source: CFEC, 2010a.

Fishing-vessel Crews. The number of crew-member licenses for fishing-vessel crews issued to Pedro Bay residents declined from five in 2000 to one in 2007 through 2009 (Table 21-133). In 2006 no licenses were issued to Pedro Bay residents.

TABLE 21-133
Pedro Bay, Residents' Crew-member Licenses, 2000 through 2009

	2000	2001 [a]	2002	2003	2004	2005	2006	2007	2008	2009
Number of crew-member licenses	5	N/A	2	3	1	1	0	1	1	1

Note:

a. Crew-member data for 2001 are not available because of problems with the data.

Source: CFEC, 2010b.

Workforce Attributes. According to the 2000 census, 81 percent of the Pedro Bay population age 25 and older in 2000 had at least a high school education, with 19 percent holding a bachelor's degree or higher. Table 21-134 shows the educational attainment of Pedro Bay residents age 25 and older.

TABLE 21-134
Pedro Bay, Educational Attainment, 1990 and 2000

Educational Attainment	1990 [a]	2000
Population 25 years and older	19	31
Less than high school	8	6
High school graduate (includes equivalency)	9	11
Some college, less than 1 year	2	7
Some college, 1 or more years, no degree	0	1
Associate degree	0	0
Bachelor's degree	0	3
Master's degree	0	3
Professional school degree	0	0
Male	N/A	14
Less than high school	N/A	3
High school graduate (includes equivalency)	N/A	7
Some college, less than 1 year	N/A	4
Some college, 1 or more years, no degree	N/A	0
Associate degree	N/A	0
Bachelor's degree	N/A	0
Master's degree	N/A	0
Professional school degree	N/A	0
Female	N/A	17
Less than high school	N/A	3
High school graduate (includes equivalency)	N/A	4
Some college, less than 1 year	N/A	3
Some college, 1 or more years, no degree	N/A	1
Associate degree	N/A	0
Bachelor's degree	N/A	3
Master's degree	N/A	3

Educational Attainment	1990 [a]	2000
Professional school degree	N/A	0

Note:

a. For the 1990 census, data on educational attainment by gender were not available.

Source: USCB, n.d.

Occupations for the Employed Civilian Population. Table 21-135 shows the number of Pedro Bay residents age 16 and older in various occupations in 2000.

TABLE 21-135
Pedro Bay, Occupations for the Employed Civilian Population Age 16 and Older, 2000

Occupations [a]	2000
Management, professional, and related	9
Service	0
Sales and office	7
Farming, fishing, and forestry	0
Construction, extraction, and maintenance	8
Production, transportation, and material moving	3
Total	**27**

Note:

a. Occupation data may under-represent seasonal occupations such as commercial fishing and construction because the survey asked respondents to report their occupation in reference to a stated week of the year. Respondents holding more than one job were asked to report the job at which they worked the most hours. Additionally, economic data may underestimate the summer season peaks in employment and population.

Source: USCB, n.d.

Household Income. The 2000 census recorded 19 households in Pedro Bay, an increase of eight households from 1990 (Table 21-136). All of the households had earnings in 2000, with an annual median household income of $36,750, a decrease from 1990, when the annual median household income in Pedro Bay was $38,125. In 2000 Pedro Bay households had an annual median household income just above the Lake and Peninsula Borough annual median of $36,442 and 29 percent below the annual statewide median of $51,571 (USCB, n.d.).

TABLE 21-136
Pedro Bay, Household Income, 1990 and 2000

Household Information	1990	2000
Total number of households [a]	11	19
With earnings	11	19
Without earnings	0	0
With wage or salary income	11	19
With self-employment income	6	2
With interest, dividends, or net rental income	11	19
With Social Security income	2	3
With Supplemental Security Income	(b)	0

Household Information	1990	2000
With public assistance income	4	2
With retirement income	2	0
With other types of income	0	2
Median household income	$38,125	$36,750

Notes:

a. This data set in the census reports a different number of households than the data set for households and families discussed elsewhere in this section.

b. For the 1990 census, Supplemental Security Income data were not available.

Source: USCB, n.d.

Households and Individuals Receiving Public Assistance. In 2009 no individuals and households in Pedro Bay received temporary assistance and adult public assistance. Three households received food stamps in 2009. Four households and eight individuals received Medicare/Medicaid payments in 2009 (Table 21-137).

TABLE 21-137
Pedro Bay, Numbers of Households and Individuals Receiving Public Assistance, 2005 through 2009

	Number of Households					Number of Individuals				
Program	2005	2006	2007	2008	2009	2005	2006	2007	2008	2009
Temporary assistance	1	1	0	0	0	3	4	0	0	0
Food stamps	4	3	1	1	3	12	8	0	0	0
Adult public assistance	(a)	1	1	0	0	2	(b)	1	0	0
Medicare/Medicaid	9	7	5	3	4	16	19	8	6	8

Notes:

a. Households receiving adult public assistance were not tracked before 2006.

b. Data withheld to protect confidentiality.

Source: ADHSS, 2010b.

Public Assistance Payments. Public assistance payments to Pedro Bay households in 2009 from all four sources listed above totaled $19,257 (Table 21-138). Public assistance payments to households in the community decreased after 2008, when they totaled $6,074.

TABLE 21-138
Pedro Bay, Amount of Public Assistance Payments, 2005 through 2009

Program	2005	2006	2007	2008	2009
Temporary assistance	$656	$878	$0	$0	$0
Food stamps	$1,938	$9,288	$0	$0	$2,515
Adult public assistance	$724	$362	$362	$0	$0
Medicare/Medicaid	$31,937	$12,770	$28,890	$6,074	$16,742
Total public assistance payments	**$35,255**	**$23,298**	**$29,252**	**$6,074**	**$19,257**

Source: ADHSS, 2010b.

Community Infrastructure

Utilities. *Water and Wastewater*—most Pedro Bay residences have individual wells and septic systems and are fully plumbed. The remaining residents rely on honey buckets and haul water from Iliamna Lake. The village council provides septic-pumping services, and there is a community washeteria (J. Foss, pers. comm., 2006).

Solid Waste—the Pedro Bay landfill is currently an open-pit landfill located near the airport. The landfill has reached capacity. It is maintained by the village council. Work is underway on a new landfill, access road, and transfer facility. Construction of the access road is currently being slowed by right-of-way issues, which are delaying the opening the new landfill. In the summer of 2007, the community obtained a CA-150 incinerator. The transfer facility was expected to be in operation by November 2007, and then, all community garbage that can be burned will be burned at the transfer facility before transfer to the landfill (B. Foss, pers. comm., 2007).

Pedro Bay has two contaminated sites with an "open" status. These sites are the National Park Service Chinitna Bay aboveground storage tank (diesel-range organics) and the former Dena'ina School (diesel, benzene, diesel-range organics, and solid waste) (ADEC, n.d.).

Communications—in-state phone service for Pedro Bay is provided by ACS of the Northland, and long-distance phone service is provided by AT&T Alascom. Teleconferencing services are provided by the Alaska Teleconferencing Network and the Dillingham Legislative Information Office (ADCCED, n.d.[a]). Internet services, both dial-up and wireless, have recently been made available to the entire community through GCI; previously, internet connection was available only at the school (Gazaway and Manaois, pers. comm., 2006).

Radio stations received in Pedro Bay include KGTL-AM out of Homer and KDLG-AM out of Dillingham (J. Foss, pers. comm., 2006). Locally transmitted television is through ARCS. (For details about ARCS, see the *Communications* section under *Community and Infrastructure* for Nondalton [Section 21.7.2.1].) While there is no cable television provider for Pedro Bay, a large variety of stations is available via satellite.

Housing. In 2000 there were 43 housing units in Pedro Bay (Table 21-139), including 12 owner-occupied units, five rental units, and 26 units left vacant except for seasonal use. All housing units were single-family homes. The average household size was 2.94.

Of the 17 occupied residences, 24 percent (four residences) lacked complete plumbing facilities, and 12 percent (two residences) lacked complete kitchen facilities. Every home had phone service. The median value of the specified owner-occupied residences in 2000 was $156,300.

TABLE 21-139
Pedro Bay, Housing Characteristics, 1990 and 2000

Characteristic	1990 Count	Percentage	2000 Count	Percentage
Total housing units, by occupancy status	36	100	43	100
Occupied	17	47	17	40

Characteristic	1990 Count	Percentage	2000 Count	Percentage
Vacant	19	53	26	60
Vacant except for seasonal, recreational, or occasional use	2	11 [a]	26	100 [a]
Homes with heat, by heat type	19	100	18	100
Fuel oil, kerosene, etc.	5	26	14	78
Wood	14	74	4	22
Specified owner-occupied units [b], by value	9	100	9	100
Less than $50,000	4	44	2	22
$50,000 to $99,999	1	11	2	22
$100,000 to $149,999	1	11	0	0
$150,000 to $199,999	1	11	5	56
$200,000 or more	2	22	0	0
Median value	$87,500		$156,300	

Notes:

a. Percentage of total vacant units.

b. Specified owner-occupied units, a subgroup of owner-occupied homes, are either one-family homes that are detached from any other house or a one-family house attached to one or more houses on less than 10 acres with no business on the property.

Source: USCB, n.d.

Education Services and Facilities. Pedro Bay has one school, the Dena'ina School, which offers grades kindergarten through 12th grade. A new facility for this school was completed in 2002, and the building itself is in "very good" condition (Atwater, pers. comm., 2006). In FY 2010, enrollment at the school was 12 students (Figure 21-23). The school has two teachers and is part of the Lake and Peninsula School District (ADEED, n.d.).

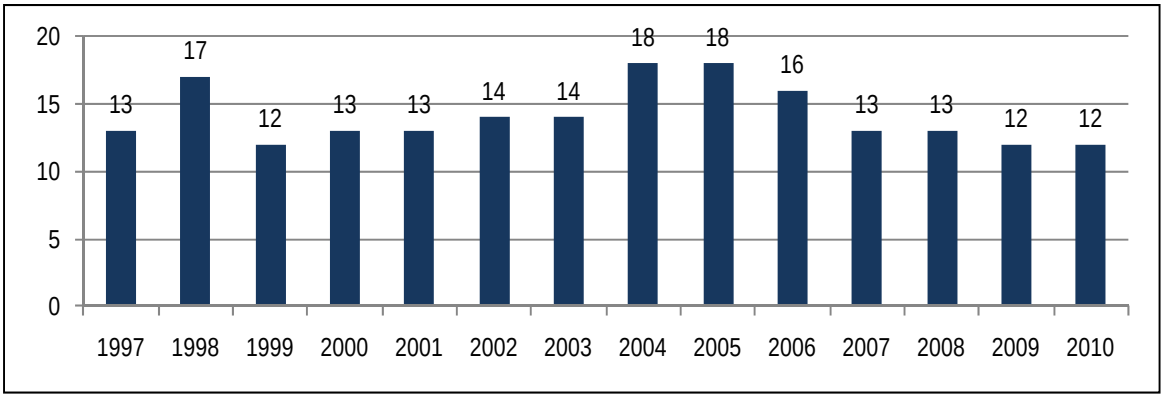

FIGURE 21-23
Pedro Bay School Enrollment, FY 1997 through FY 2010

Sources: ADEED, n.d.; Atwater, pers. comm., 2006.

Health-care Services and Facilities. The Pedro Bay Health Clinic is owned by the village council and is operated by BBAHC. The village council is in the concept phase of developing a new clinic. The council

has completed a business plan for the new clinic and is awaiting approval of that plan (Atwater, pers. comm., 2006). Auxiliary health care is provided by Pedro Bay First Responders. Additionally the Nilavena subregional health clinic in Iliamna provides a full spectrum of primary health-care services. (Clinic details are described in the *Health-care Services and Facilities* section under *Community Infrastructure* for Iliamna [Section 21.7.2.5].)

Public Safety. The VPSO position in Pedro Bay is currently vacant. State troopers from King Salmon and Iliamna serve the community, and rescue and fire services are provided by Pedro Bay First Responders and the Pedro Bay Volunteer Fire Department. The volunteer fire department has no fire truck or ambulance (J. Foss, pers. comm., 2006). Emergency medical service is provided by a health aide (ADCCED, n.d.[a]). Pedro Bay also has one EMT (Pedro Bay Health Clinic, pers. comm., 2010).

21.7.2.8 Igiugig

Igiugig is located at the southwestern end of Iliamna Lake where the Kvichak River exits the lake on its way to Bristol Bay. The community was established in the second decade of the 20th century, following the influenza epidemic of 1918 and 1919. The surviving residents of the village of Kaskanak, which was located on the Kvichak River, relocated to the present site of Igiugig, which had previously served as a fish camp. Many of the residents of the community relocate to Naknek (on Bristol Bay) in the summertime to participate in the commercial salmon fisheries as harvesters or processors (Alaska Geographic, 1986; ADCCED, n.d.[a]). The village's original residents were Yup'ik, but the demographic has shifted, and residents now are primarily Alutiiq. Igiugig is accessible by water and air.

Demographics

Population. Igiugig had a population of 48 residents in 2009 (Figure 21-24). The 2009 population is 45 percent higher than the population in 1990, but the population peaked in 1999 at 62.

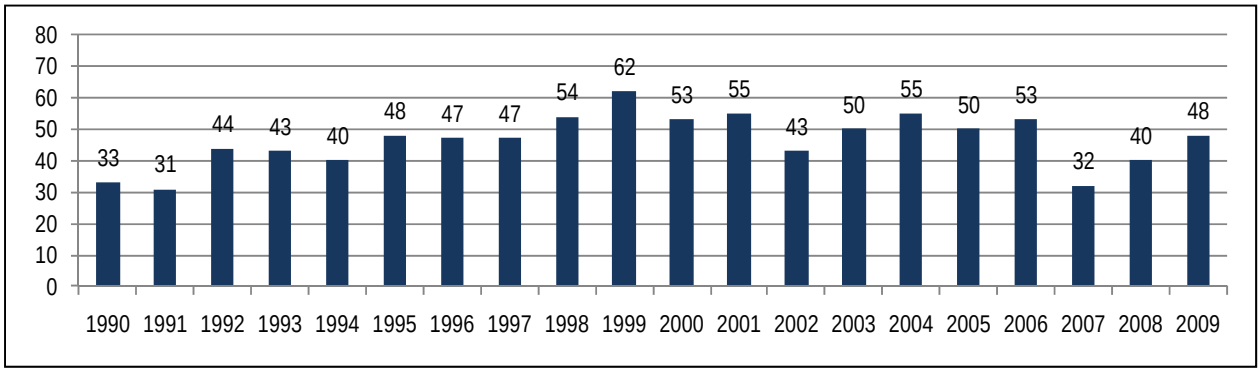

FIGURE 21-24
Igiugig Population, 1990 through 2009
Source: ADOLWD DRA, n.d.[a].

In 1990 the males represented 58 percent of the Igiugig population (Table 21-140). By 2000 male representation had dropped to 43 percent of the population.

TABLE 21-140
Igiugig, Population by Gender, 1990 and 2000

	1990 Count	1990 Percentage	2000 Count	2000 Percentage
Total male population	19	58	23	43
Total female population	14	42	30	57
Total population	**33**		**53**	

Source: USCB, n.d.

Age. Between the 1990 and 2000 censuses, the median age of Igiugig residents increased by 5 years, from 31 to more than 36 (Table 21-141).

TABLE 21-141
Igiugig, Median Age, 1990 and 2000

	1990	2000
Median age	31.0	36.3
Median male age	24.5	37.8
Median female age	32.0	24.5

Source: USCB, n.d.

In 2000, one-third of the Igiugig population (32 percent) was under the age of 15 (Table 21-142, Figure 21-25).

TABLE 21-142
Igiugig, Age by Count and Percentage, 1990 and 2000

	1990 Count	1990 Percentage	2000 Count	2000 Percentage
Under 5 years	6	18	4	8
5 to 9 years	2	6	6	11
10 to 14 years	1	3	7	13
15 to 17 years	1	3	6	11
18 and 19 years	2	6	1	2
20 to 24 years	1	3	0	0
25 to 29 years	2	6	0	0
30 to 34 years	5	15	2	4
35 to 39 years	2	6	9	17
40 to 44 years	1	3	6	11
45 to 49 years	3	9	3	6
50 to 54 years	2	6	3	6
55 to 59 years	4	12	2	4

	1990 Count	1990 Percentage	2000 Count	2000 Percentage
60 and 61 years	0	0	0	0
62 to 64 years	0	0	1	2
65 to 69 years	1	3	0	0
70 to 74 years	0	0	3	6
75 to 79 years	0	0	0	0
80 to 84 years	0	0	0	0
85 years and older	0	0	0	0

Source: USCB, n.d.

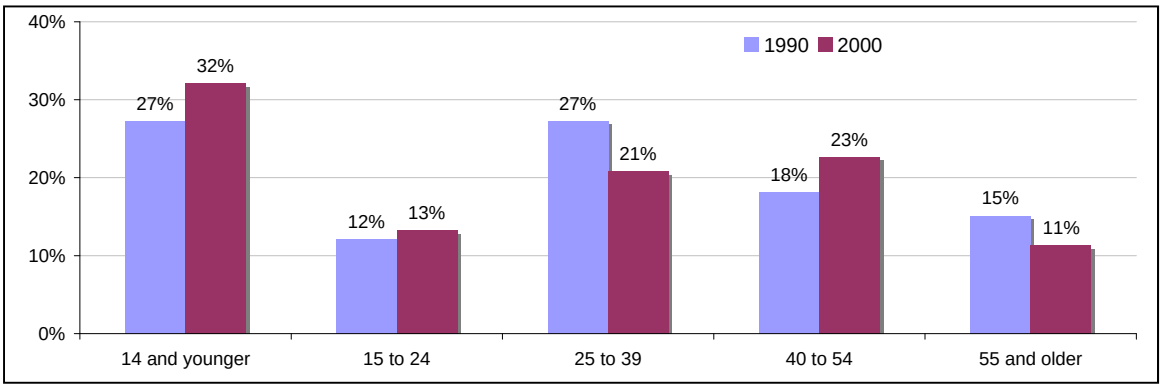

FIGURE 21-25
Igiugig, Age by Percentage, 1990 and 2000

Note: Age groupings by the McDowell Group.

Source: USCB, n.d.

Race. In 2000, 83 percent of the Igiugig population was of American Indian or Alaska Native descent (Table 21-143). Of the 38 Alaska Natives, most were Aleut with a smaller Eskimo population (Table 21-144). Seventeen percent of the population was White, and 11 percent was of more than one race.

TABLE 21-143
Igiugig, Race by Count and Percentage, 2000

	2000 Count	2000 Percentage
American Indian or Alaska Native alone or in combination with one or more other races	44	83
Population of one race	47	89
White alone	9	17
Alaska Native alone	38	72
Black or African American alone	0	0
Asian alone	0	0
Native Hawaiian or other Pacific Islander alone	0	0
Some other race alone	0	0

	2000 Count	2000 Percentage
Population of two or more races	6	11
Total population	**53**	

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d.

TABLE 21-144
Igiugig, Specific Alaska Native Designation, 2000

	2000
Number of people who are Alaska Native alone	38
Athabascan	0%
Aleut	87%
Eskimo	13%
Tlingit-Haida	0%
Alaska Native, not specified	0%

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d.

Households and Families. Between the 1990 and 2000 censuses, the number of family households in Igiugig nearly doubled, from seven to 13, while the number of nonfamily households decreased from six to three (Table 21-145). At the same time, the average household size in Igiugig increased from 2.53 to 3.31.

TABLE 21-145
Igiugig, Households and Families, 1990 and 2000

	1990	2000
Total households	13	16
Family households	7	13
Married-couple family, no children	1	3
Married-couple family with children	5	6
Other family household	1	4
Nonfamily households	6	3
1-person household	6	3
2-or-more person nonfamily households	0	0
Average household size	2.53	3.31
Average family size	3.86	3.77
Total population in families	27	49
Total population	33	53

Source: USCB, n.d.

Language. In 2000 nearly one-third (30 percent) of Igiugig residents over the age of five spoke a Native American language in their home (Table 21-146). While there are no census data specifying the Native American language spoken, 87 percent of the Alaska Native population in Igiugig in 2000 was Aleut, and the language of that culture would likely be spoken in the homes of some of that population.

TABLE 21-146
Igiugig, Language Spoken at Home by People Age Five and Older, 2000

	2000
Total population (number of people)	53
English only	70%
Native North American language	30%
Spanish	0%
Indo-European language	0%
Asian and Pacific Island language	0%

Note: Percentages calculated by the McDowell Group.

Source: USCB, n.d., 2000 census.

Migration. All but one resident of the Igiugig population (age five and older) in 2000 did not change residences between 1995 and 2000 (Table 21-147). One 2000 Igiugig resident (4 percent) migrated into Igiugig from elsewhere in Alaska (outside the Lake and Peninsula Borough) between 1995 and 2000.

TABLE 21-147
Igiugig, 2000-census Population Age Five and Older, Residence Status in 1995

1995 Residence	Count	Percentage [a]
Same house as in 2000	22	96
In Igiugig but different house than in 2000	0	0
In Lake and Peninsula Borough (not in Igiugig)	0	0
In Alaska (not in Lake and Peninsula Borough)	1	4
In U.S. (not in Alaska)	0	0
Outside of U.S.	0	0
Total population in 2000 [b]	**23**	

Notes:

a. Percentages calculated by the McDowell Group.

b. Population figure here may differ from other population figures for this community because different data sets for the 2000 census provide slightly varying figures.

Source: USCB, n.d.

Economy

Tribal government, commercial fishing, subsistence, and local government are Igiugig's economic base. The annual mean household harvest of subsistence resources in 2005 was 1,716 pounds, and the annual per capita harvest was 542 pounds (Fall et al., 2006).

Access to the community is via a state-owned gravel airstrip and by barges, which deliver bulk freight via the Kvichak River (ADCCED, n.d.[a]).

The annual per capita income in Igiugig in 2000 was $13,172. Seven percent of individuals in the community lived below poverty level in 1999, according to the 2000 census (USCB, n.d.).

Employment/Unemployment. According to the census, the Igiugig population age 16 and over totaled 20 persons in 2000, an increase of seven persons from 1990 (Table 21-148). More than half of this population was male (55 percent or 11 men) and 45 percent was female (nine women). Fifty-five percent (11 persons) of this population was not in the labor force; these individuals were neither working nor actively looking for employment.

None of the nine employed residents of Igiugig in 2000 worked outside the community.

TABLE 21-148
Igiugig, Employment by Gender and Place of Work, 1990 and 2000

	1990 [a]	2000
Males in labor force	4	2
Employed	4	2
Unemployed	0	0
Males not in labor force	2	9
Females in labor force	4	7
Employed	4	7
Unemployed	0	0
Females not in labor force	3	2
Total population 16 years and older	13	20
Place of work for workers 16 years and older		
Worked in Igiugig	N/A	9
Worked outside Igiugig	N/A	0
Total employed	N/A	9

Note:
a. For the 1990 census, place-of-work data were not available.
Source: USCB, n.d.

Local Employment. There were seven employers in Igiugig in 2007 (ADOLWD DRA, 2007). The Igiugig Village Council was the largest employer, with a peak monthly employment of 18 and an average annual employment of 16 (Table 21-149).

TABLE 21-149
Igiugig, Employers, 2007

Employer	Peak Monthly Employment	Average Annual Employment
Igiugig Village Council	18	16
Iliamna Lake Contractors LLC	12	7
Lake and Peninsula School District	7	5
Alaska Sportsman's Lodge	19	5
Igiugig Native Corporation	4	3
Royal Wolf Lodge	10	3
Total	**70**	**39**

Source: ADOLWD DRA, 2007.

Capital Improvement Projects. Capital improvement projects are an important part of Igiugig's economy. Table 21-150 shows a sampling of the capital improvement projects in Igiugig between 2002 and 2009.

TABLE 21-150
Capital Improvement Projects in Igiugig, Fiscal Years 2002 to 2009

Lead Agency	Fiscal Year	Project Description	Total Cost
AEA-AEEE	2010	Ocean and River Energy	$718,176
ANTHC	2007	Water Treatment Upgrades	$90,000
AEA-RPSU	2006	Rural Power System Upgrade	$95,000
HUD	2005	Indian Housing Block Grant NAHASDA	$29.537
ANTHC	2004	Upgrade to Water Treatment Plant to include arsenic removal system	$200,000
AEA-BF	2003	Bulk Fuel Facility Upgrade (Denali Commission)	$1,234,074
BIA	2002	Landfill Access Road Extension	$1,000,000
ADCCED	2002	Road/Landfill Project	$801,500

Source: ADCCED, n.d.[b].

Commercial Fishing Activity. Table 21-151 shows the commercial fishing activity of Igiugig residents from 1990 through 2009. Commercial fishing participation remained fairly steady from 1990 to 2000 and then declined to a low of one active permit holder from 2005 through 2009. Estimated gross earnings for Igiugig fishermen were at a high of $441,312 in 1990, but fell to $27,486 in 1997. Although the pounds landed and the estimated gross earnings data for 2002, 2003, and 2005 through 2009 are confidential, those earnings are certainly well below the 1990 peak.

TABLE 21-151
Igiugig, Residents' Commercial Fishing Activity, 1990 through 2009

Year	Number of Permit Holders	Number of Permits Issued	Total Pounds Landed	Estimated Gross Earnings	Estimated Earnings per Pound	Number of Fishermen who Fished	Number of Permits Fished
1990	6	9	419,304	$441,312	$1.05	4	4
1991	6	9	239,034	$162,366	$0.68	5	5
1992	6	7	291,823	$314,931	$1.08	6	5
1993	6	7	339,787	$229,103	$0.67	4	4
1994	5	5	328,917	$320,777	$0.98	4	4
1995	5	5	356,126	$280,729	$0.79	4	4
1996	4	5	328,966	$262,260	$0.80	4	4
1997	6	7	30,205	$27,486	$0.91	4	4
1998	6	6	80,429	$93,426	$1.16	4	4
1999	6	6	143,019	$117,709	$0.82	4	4
2000	5	7	154,762	$88,148	$0.57	4	5
2001	6	7	148,762	$62,622	$0.42	4	4
2002	6	7	(a)	(a)	—	3	3
2003	4	4	(a)	(a)	—	2	2
2004	5	5	161,272	$82,477	$0.51	4	4
2005	3	3	(a)	(a)	—	1	1
2006	2	2	(a)	(a)	—	1	1
2007	3	3	(a)	(a)	—	1	1
2008	4	4	(a)	(a)	—	1	1
2009	4	4	(a)	(a)	—	1	1

Note:

a. When three or fewer permit-holders participate in all commercial fisheries combined, pounds landed and estimated gross earnings are not reported at all because of confidentiality requirements.

Source: CFEC, 2010a.

Fishing-vessel Crews. In 2000, seven crew-member licenses for fishing-vessel crews were issued to Igiugig residents (Table 21-152). In 2003 only one crew-member license was issued, and in 2004 none were issued. From 2005 through 2009, two crew-member licenses were issued to Igiugig residents.

TABLE 21-152
Igiugig, Residents' Crew-member Licenses, 2000 through 2009

	2000	2001 [a]	2002	2003	2004	2005	2006	2007	2008	2009
Number of crew-member licenses	7	N/A	2	1	0	2	2	2	2	2

Note:

a. Crew-member data for 2001 are not available because of problems with the data.

Source: CFEC, 2010b.

Workforce Attributes. In 2000, 72 percent of the Igiugig population age 25 and older had at least a high school education. No local residents were reported as having a bachelor's degree or higher, according to the 2000 census. Table 21-153 shows the educational attainment of Igiugig residents age 25 and older.

TABLE 21-153
Igiugig, Educational Attainment, 1990 and 2000

Educational Attainment	1990 [a]	2000
Population 25 years and older	12	18
Less than high school	4	5
High school graduate (includes equivalency)	1	11
Some college, less than 1 year	0	0
Some college, 1 or more years, no degree	0	0
Associate degree	3	2
Bachelor's degree	4	0
Master's degree	0	0
Professional school degree	0	0
Male	N/A	9
Less than high school	N/A	3
High school graduate (includes equivalency)	N/A	6
Some college, less than 1 year	N/A	0
Some college, 1 or more years, no degree	N/A	0
Associate degree	N/A	0
Bachelor's degree	N/A	0
Master's degree	N/A	0
Professional school degree	N/A	0
Female	N/A	9
Less than high school	N/A	2
High school graduate (includes equivalency)	N/A	5
Some college, less than 1 year	N/A	0
Some college, 1 or more years, no degree	N/A	0
Associate degree	N/A	2
Bachelor's degree	N/A	0
Master's degree	N/A	0
Professional school degree	N/A	0

Note:

a. For the 1990 census, data on educational attainment by gender were not available.

Source: USCB, n.d.

Occupations for the Employed Civilian Population. Table 21-154 shows the number of Igiugig residents in various occupations in 2000.

TABLE 21-154
Igiugig, Occupations for the Employed Civilian Population Age 16 and Older, 2000

Occupation [a]	2000
Management, professional, and related	5
Service	0
Sales and office	2
Farming, fishing, and forestry	0
Construction, extraction, and maintenance	0
Production, transportation, and material moving	2
Total	**9**

Note:

a. Occupation data may under-represent seasonal occupations such as commercial fishing and construction because the survey asked respondents to report their occupation in reference to a stated week of the year. Respondents holding more than one job were asked to report the job at which they worked the most hours. Additionally, economic data may underestimate the summer season peaks in employment and population.

Source: USCB, n.d.

Household Income. The 2000 census reported 11 households in Igiugig, an increase of five households from 1990 (Table 21-155). Ten of those households had earnings, with an annual median household income of $21,750, a decrease from the 1990 census when the annual median was $41,250. In 2000 the annual median income of Igiugig households was 40 percent less than the Lake and Peninsula Borough annual median of $36,442 and 58 percent less than the annual statewide median of $51,571 (USCB, n.d.).

TABLE 21-155
Igiugig, Household Income, 1990 and 2000

Household Information	1990	2000
Total number of households [a]	6	11
With earnings	6	10
Without earnings	0	1
With wage or salary income	6	10
With self-employment income	2	2
With interest, dividends, or net rental income	6	8
With Social Security income	0	6
With Supplemental Security Income	(b)	2
With public assistance income	0	5
With retirement income	0	0
With other types of income	0	4
Median household income	$41,250	$21,750

Notes:

a. This data set in the census reports a different number of households than the data set for households and families discussed elsewhere in this section.

b. For the 1990 census, Supplemental Security Income data were not available.

Source: USCB, n.d.

Households and Individuals Receiving Public Assistance. None of the households in Igiugig received temporary assistance in 2009 (Table 21-156). Five households and nine individuals received food stamps in 2009. Two households and two individuals received adult public assistance, and eight households and 12 individuals received Medicare/Medicaid payments in 2009.

TABLE 21-156
Igiugig, Numbers of Households and Individuals Receiving Public Assistance, 2005 through 2009

	Number of Households					Number of Individuals				
Program	**2005**	**2006**	**2007**	**2008**	**2009**	**2005**	**2006**	**2007**	**2008**	**2009**
Temporary assistance	0	0	0	0	0	0	0	0	0	0
Food stamps	0	0	0	0	5	0	0	0	0	9
Adult public assistance	(a)	1	1	1	2	0	(b)	1	1	2
Medicare/Medicaid	8	6	5	5	8	12	11	8	10	12

Notes:
a. Households receiving adult public assistance were not tracked before 2006.
b. Data withheld to protect confidentiality.
Source: ADHSS, 2010b.

Public Assistance Payments. Public assistance payments to Igiugig households in 2009 from all four sources listed above totaled $20,133 (Table 21-157). This was a substantial drop from 2007 when payments totaled $73,163.

TABLE 21-157
Igiugig, Amount of Public Assistance Payments, 2005 through 2009

Program	**2005**	**2006**	**2007**	**2008**	**2009**
Temporary assistance	$0	$0	$0	$0	$0
Food stamps	$0	$0	$0	$0	$1,212
Adult public assistance	$0	$362	$362	$362	$608
Medicare/Medicaid	$25,612	$12,496	$72,801	$32,463	$18,313
Total public assistance payments	**$25,612**	**$12,858**	**$73,163**	**$32,825**	**$20,133**

Source: ADHSS, 2010b.

Community Infrastructure

Utilities. *Water and Wastewater*—Water for the village water system is derived from the Kvichak River. Residents not connected to the water system obtain water from a well casing located outside the local washeteria. Sewage in Igiugig is gravity-fed to a lift station and is then pumped to a sewage lagoon. The school operates its own water and sewer system (ADCCED, n.d.[a]).Sewage in Igiugig is gravity-fed to a lift station and is then pumped to a sewage lagoon. The school operates its own water and sewer system (ADCCED, n.d.[a]).

Solid Waste—in 2003 a new municipal landfill replaced the open-pit facility that had previously served the village (Iliamna Lake Contractors, 2003).

Communications—Igiugig in-state phone service is provided by the Bristol Bay Telephone Co-op, while long-distance phone service is provided by AT&T Alascom. Teleconferencing services are provided by the Alaska Teleconferencing Network and the Dillingham Legislative Information Office. The radio station received in Igiugig is KDLG-AM out of Dillingham (ADCCED, n.d.[a]). Internet service is available through GCI (Gazaway and Manaois, pers. comm., 2006).

Locally transmitted television is through ARCS. (For details about ARCS see *Communications* section under *Community and Infrastructure* for Nondalton [Section 21.7.2.1].) While there is no cable television provider in Igiugig, a large variety of stations is available via satellite.

Igiugig News and Notes is a monthly publication of the Igiugig Tribal Village Council and is available at http://igiugig.freeservers.com/Newsletter.htm.

Housing. In 2000 there were 20 housing units in Igiugig (Table 21-158), all single-family homes, including 13 owner-occupied homes, three renter-occupied units, and four units that were vacant except for seasonal use. According to the Southwest Alaska Municipal Conference (SWAMC), the community is experiencing a housing shortage (SWAMC, n.d.). The average household size in 2000 was 3.31 persons (USCB, n.d., 2000 census).

Of the 16 occupied residences, 19 percent (three residences) lacked complete plumbing facilities, 19 percent (three residences) lacked complete kitchen facilities, and 13 percent (two residences) had no phone service. The median value of the specified owner-occupied residences was $47,500 (USCB, n.d.).

TABLE 21-158
Igiugig, Housing Characteristics, 1990 and 2000

Characteristic	1990 Count	Percentage	2000 Count	Percentage
Total housing units, by occupancy status	16	100	20	100
Occupied	13	81	16	80
Vacant	3	19	4	20
Vacant except for seasonal, recreational, or occasional use	1	33 [a]	4	100 [a]
Homes with heat, by heat type	9	100	12	100
Fuel oil, kerosene, etc.	9	100	12	100
Specified owner-occupied units [b], by value	8	100	9	100
Less than $50,000	1	13	5	56
$50,000 to $99,999	4	50	2	22
$100,000 to $149,999	3	38	2	22
$150,000 or more	0	0	0	0
Median value	$75,000		$47,500	

Notes:

a. Percentage of total vacant units.

b. Specified owner-occupied units, a subgroup of owner-occupied homes, are either one-family homes that are detached from any other house or a one-family house attached to one or more houses on less than 10 acres with no business on the property.

Source: USCB, n.d.

Education Services and Facilities. The Igiugig School, containing kindergarten through 12th grade, is the community's only school. Enrollment for FY 2010 was 12 students (Figure 21-26). The school has two teachers (ADEED, n.d.). The school building is in good condition and was renovated in the early 1990s to increase the school size; however, the school facilities have slightly less space than is needed for the student population (Atwater, pers. comm., 2006).

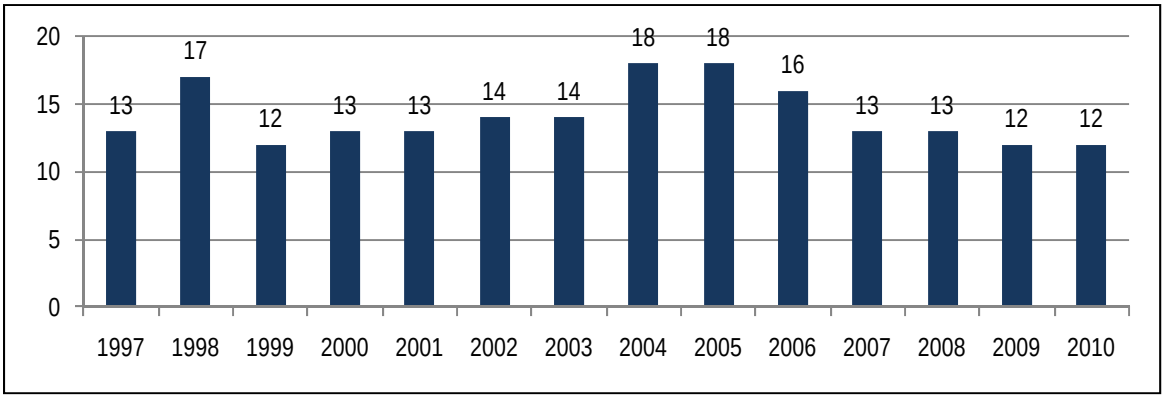

FIGURE 21-26
Igiugig School Enrollment, FY 1997 through FY 2010
Sources: ADEED, n.d.; Atwater, pers. comm., 2006.

Health-care Services and Facilities. The local health clinic, the Igiugig Health Clinic, is run by the BBAHC and is owned by the village council. The village council is in the design phase of planning a new health clinic to replace the existing clinic in 2008 (Johnson, pers. comm., 2006). Additionally the Nilavena subregional health clinic in Iliamna provides a full spectrum of primary health-care services. (Clinic details are described in the *Health-care Services and Facilities* section under *Community Infrastructure* for Iliamna [Section 21.7.2.5].)

Public Safety. Igiugig has one VPSO. Rescue services are provided by the Igiugig Village Response Team. Fire protection is supplied by the volunteer fire department. There is no fire truck or ambulance. Emergency medical services are provided by two health aides. Igiugig has two EMTs and six ETTs (Igiugig Health Clinic, pers. comm., 2010).

21.7.3 Regional Baseline Profiles—Nushagak/Bristol Bay Region

This regional study area consists of the Lake and Peninsula Borough, the Bristol Bay Borough, and the Dillingham Census Area. The demographics, economic conditions, infrastructure, and health and social status of each of these areas are described below.

21.7.3.1 Entire Lake and Peninsula Borough

Lake and Peninsula Borough is a home-rule borough located on the Alaska Peninsula southwest of Anchorage. Access to the borough is by air and water. According to ADOLWD data, Lake and Peninsula Borough had a 2009 population of 1,547 (ADOLWD DRA, n.d.[a]); and according to the 2000 census, nearly 80 percent of all residents considered themselves Alaska Natives (USCB, n.d.).

The borough functions as the official governing body for 18 communities. Eight of these communities are described in depth in Section 21.7.2; they are Nondalton, Kokhanok, Newhalen, Port Alsworth, Iliamna, Levelock, Pedro Bay, and Igiugig. The remaining 10 communities are described in Section 21.7.3.2; they are Chignik, Chignik Lagoon, Chignik Lake, Egegik, Ivanof Bay, Perryville, Pilot Point, Pope-Vanoy Landing, Port Heiden, and Ugashik. The information presented in this section applies to the Lake and Peninsula Borough as a whole, including the eight communities profiled in Section 21.7.2 and the 10 communities described in Section 21.7.3.2.

Demographics

Population. The population of the Lake and Peninsula Borough in 2009 was 1,547 persons (Figure 21-27). From 1990 to 2000, the population increased by 9 percent (155 persons); however, from 2000 to 2009 the borough's population decreased by 15 percent (276 persons; Table 21-159). The communities of Chignik, Egegik, Ivanof Bay, and Perryville were already experiencing population declines in the period from 1990 to 2000. By 2000, nine more of the borough's 18 communities joined the decline. According to SWAMC, the population decline can be blamed on the subregion's highly salmon-dependent economy, which has devalued substantially (SWAMC, n.d.).

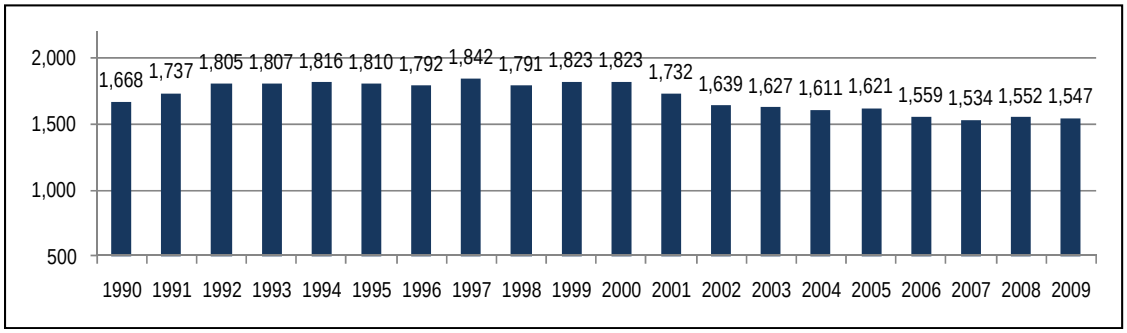

FIGURE 21-27
Lake and Peninsula Borough Population, 1990 through 2009
Source: ADOLWD DRA, n.d.[a].

TABLE 21-159
Lake and Peninsula Borough Population Change, 1990 through 2009

Change, 2008-2009 (number of people)	-5
Change, 2000-2009 (number of people)	-276
Change, 1990-2000 (number of people)	155
Average annual rate of change, 2008-2009	-0.3%
Average annual rate of change, 2000-2009	-1.8%
Average annual rate of change, 1990-2000	0.9%
Net change from births/deaths, 2008-2009 (number of people)	15
Net change from births/deaths, 2000-2009 (number of people)	106
Net migration (in-out), 2008-2009 (number of people)	-20
Net migration (in-out), 2000-2009 (number of people)	-382

Source: ADOLWD DRA, n.d.[a].

In 2009, 51 percent of Lake and Peninsula Borough's population was male and 49 percent was female (Table 21-160).

TABLE 21-160
LAKE AND PENINSULA BOROUGH, POPULATION BY GENDER, 1990, 2000, AND 2009

	1990 Count	1990 Percentage	2000 Count	2000 Percentage	2009 Count	2009 Percentage
Total male population	911	55	969	53	790	51
Total female population	757	45	854	47	757	49
Total population	**1,668**		**1,823**		**1,547**	

Sources: 1990 and 2000 from USCB, n.d.; 2009 from ADOLWD DRA, n.d.[a].

Age. The median age for Lake and Peninsula Borough residents increased from 27 in 1990 to 29.1 in 2009 (Table 21-161). The median age in 2009, by gender, was 28.0 years for females and 30.3 years for males.

TABLE 21-161
Lake and Peninsula Borough, Median Age, 1990, 2000, and 2009

	1990	2000	2009
Median age	27.0	29.2	29.1
Median male age	29.0	32.6	30.3
Median female age	25.1	26.2	28.0

Sources: 1990 and 2000 from USCB, n.d.; 2009 from ADOLWD DRA, n.d.[a].

One quarter of the Lake and Peninsula Borough population in 2009 was under the age of 15 (Table 21-162, Figure 21-28). From 1990 to 2009, the 25 to 39 age group declined from 29 percent of the population to 17 percent, while the 40 to 54 age group increased from 13 percent of the population to 21 percent.

TABLE 21-162
Lake and Peninsula Borough, Age by Count and Percentage, 1990, 2000, and 2009

	1990 Count	1990 Percentage	2000 Count	2000 Percentage	2009 Count	2009 Percentage
Under 5 years	213	13	145	8	141	9
5 to 9 years	205	12	200	11	131	8
10 to 14 years	155	9	217	12	147	10
15 to 19 years	92	6	190	10	149	10
20 to 24 years	104	6	92	5	118	8
25 to 29 years	161	10	77	4	106	7
30 to 34 years	186	11	98	5	93	6
35 to 39 years	138	8	157	9	67	4
40 to 44 years	85	5	179	10	95	6

	1990 Count	1990 Percentage	2000 Count	2000 Percentage	2009 Count	2009 Percentage
45 to 49 years	80	5	137	8	127	8
50 to 54 years	56	3	91	5	104	7
55 to 59 years	56	3	86	5	84	5
60 to 64 years	52	3	55	3	55	4
65 to 69 years	40	2	39	2	54	3
70 to 74 years	19	1	26	1	32	2
75 to 79 years	15	1	18	1	20	1
80 to 84 years	7	0	10	1	9	1
85 years and older	4	0	6	0	15	1

Sources: 1990 and 2000 from USCB, n.d.; 2009 from ADOLWD DRA, n.d.[a].

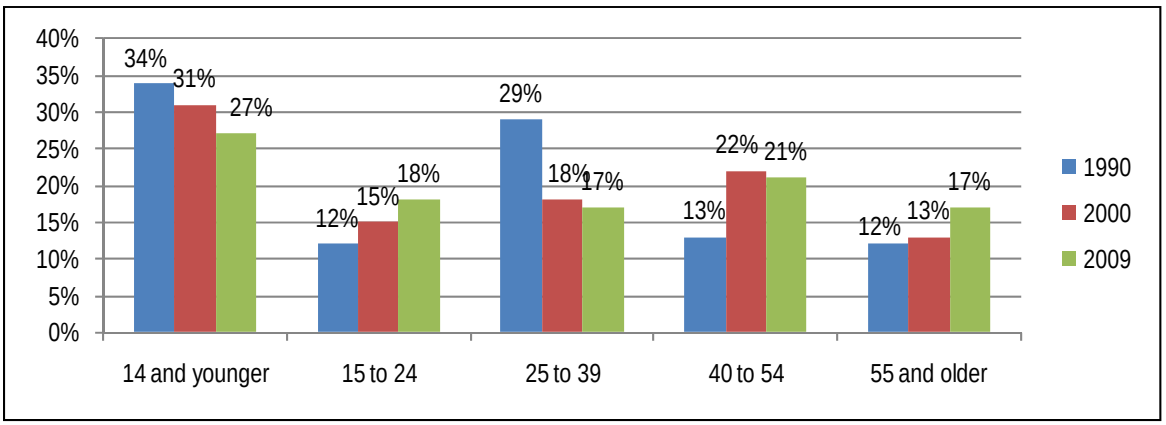

FIGURE 21-28
Lake and Peninsula Borough, Age by Percentage, 1990, 2000, and 2009

Note: Age groupings by the McDowell Group.

Sources: 1990 and 2000 from USCB, n.d.; 2009 from ADOLWD DRA, n.d.[a].

Race. In the 2000 census, 80 percent of Lake and Peninsula Borough residents identified themselves as American Indian or Alaska Native or as part American Indian or Alaska Native (Table 21-163). The remaining 20 percent of the population was almost entirely White. More than half of the single-race Alaska Natives in the borough were Aleut, and another one-third were Athabascan or Eskimo (Table 21-164).

TABLE 21-163
Lake and Peninsula Borough, Race by Count and Percentage, 2000

	2000 Count	2000 Percentage
American Indian or Alaska Native alone or in combination with one or more other races	1,453	80
Population of one race	1,696	93
White alone	342	19
Alaska Native alone	1,340	74
Black or African American alone	1	0
Asian alone	4	0
Native Hawaiian or other Pacific Islander alone	3	0
Some other race alone	6	0
Population of two or more races	127	7
Total population	**1,823**	

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d.

TABLE 21-164
Lake and Peninsula Borough, Specific Alaska Native Designation, 2000

	2000
Number of people who are Alaska Native alone	1,340
Athabascan	17%
Aleut	52%
Eskimo	17%
Tlingit-Haida	0%
Alaska Native, not specified	13%

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d.

Households and Families. In 2000 the average household size in the Lake and Peninsula Borough was 3.1, with the average family size being close to four (Table 21-165). Family households (418) substantially outnumbered nonfamily households (170).

TABLE 21-165
Lake and Peninsula Borough, Households and Families, 1990 and 2000

	1990	2000
Total households	509	588
Family households	382	418
Married-couple family no children	78	109
Married-couple family with children	201	176
Other family household	103	133

	1990	2000
Nonfamily households	127	170
1-person household	110	145
2-or-more person nonfamily households	17	25
Average household size	3.28	3.10
Average family size	3.83	3.74
Total population in families	1,463	1,563
Total population	**1,668**	**1,823**

Source: USCB, n.d.

Language. Approximately one in 10 Lake and Peninsula Borough residents spoke a Native American language in their home, as reported by the 2000 census (Table 21-166). Approximately 3 percent of the population spoke one of the following languages at home: Spanish, German, a Scandinavian language, Russian, Chinese, Japanese, another Asian language, a Pacific Island language, or Navajo.

TABLE 21-166
Lake and Peninsula Borough, Language Spoken at Home by People Age Five and Older, 2000

	2000
Total population (number of people)	1,823
English only	86%
Native North American language	11%
Spanish	1%
Indo-European language	1%
Asian and Pacific Island language	1%

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d.

Economy

Commercial fishing, fish processing, tourism, sport fishing, and subsistence provide the foundation of Lake and Peninsula Borough's economy. Access to the borough is by air and water. The annual per capita income in the borough in 2007 was $32,331 (BEA, 2007). Approximately 15 percent of families and 19 percent of individuals in the borough lived below poverty level in 1999, according to the 2000 census (USCB, n.d.).

Employment. Employment in the Lake and Peninsula Borough was highly seasonal in 2008, reaching a peak of 1,103 jobs in July from a low of 564 jobs in January (Figure 21-29).

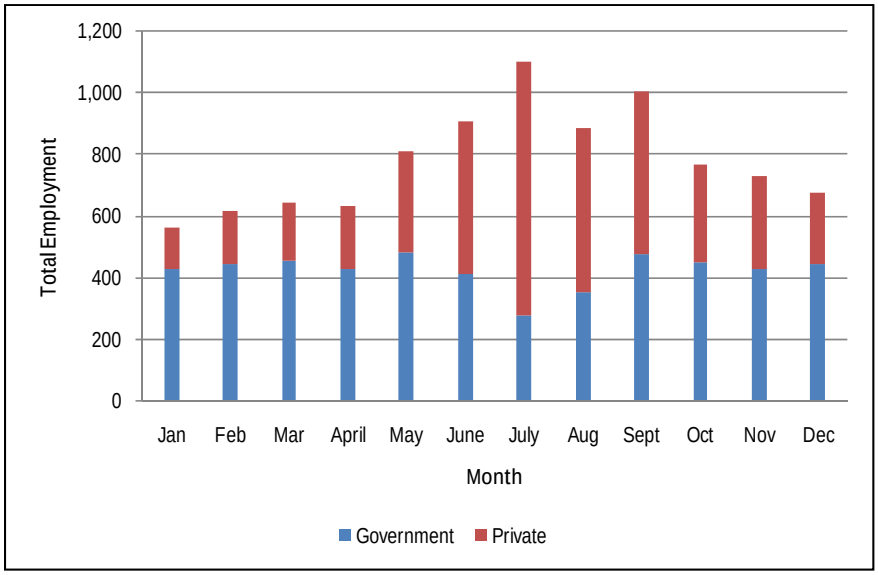

FIGURE 21-29
Lake and Peninsula Borough, Monthly Employment (Number of Jobs), 2008
Source: ADOLWD DRA, n.d.[c].

Table 21-167 shows employment by major industry in the Lake and Peninsula Borough in 1998 through 2006. (Data from the ADOLWD do not include self-employed individuals, such as commercial fishermen.) Government jobs comprised 54 percent of borough employment in 2008. This is a substantial increase from 1996, when government jobs made up 31 percent of employment.

TABLE 21-167
Lake and Peninsula Borough, Employment by Industry Category, 1996 through 2008

	Number of Jobs [a]										
Industry Category	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
Total government	189	166	180	312	329	320	288	424	413	429	424
Federal	48	27	24	29	29	30	28	27	33	41	42
State	8	7	9	8	9	10	8	8	8	8	9
Local	133	132	147	275	291	280	252	390	372	380	373
Private sector	473	491	528	350	299	316	328	286	339	387	354
Total	**662**	**657**	**708**	**662**	**627**	**636**	**616**	**710**	**752**	**816**	**778**

Note:
a. All values were calculated from monthly averages and then rounded; values were not added together to obtain totals.
Source: ADOLWD DRA, n.d.[c].

In 2008 local government employment, including tribal government, comprised around 88 percent of the wage and salary jobs in the Lake and Peninsula Borough (Tables 21-167 and 21-168).

TABLE 21-168
Lake and Peninsula Borough, Employment by Industry, 2006 through 2008

	Number of Jobs [a]		
Industry Category	**2006**	**2007**	**2008**
Government	413	429	424
Federal government	33	41	42
State government	8	8	9
Local government	372	380	373
Private sector	339	387	354
Goods-producing	106	127	—
Natural resources and mining	6	28	—
Construction	6	8	—
Manufacturing	95	91	56
Service-providing	233	261	—
Trade, transportation, and utilities	83	86	85
Information	0	0	—
Financial activities	13	13	12
Professional and business services	40	62	—
Leisure and hospitality	85	84	87
Other services	12	16	—
Total	**752**	**816**	**778**

Note:

a. All values were calculated from monthly averages and then rounded; values were not added together to obtain totals.

b. Numerous values for 2008 were not available.

Source: ADOLWD DRA, n.d.[c].

Capital Improvement Projects. Capital improvement projects are often a critical part of the cash economy for Alaska's smallest rural communities. Table 21-169 shows a sampling of the capital improvement projects in the Lake and Peninsula Borough since 2002.

TABLE 21-169
Funded Capital Improvement Projects in Lake and Peninsula Borough, Fiscal Years 2002 to 2009

Lead Agency	Fiscal Year	Project Description	Total Cost
Legislative	2008	Black Lake Research and Rehabilitation	$76,444
Legislative	2008	Iliamna Community Freezer/Laundromat	$75,000
Legislative	2007	Port Alsworth Community Road Maintenance	$35,000
Legislative	2007	Nondalton Community Road Upgrades	$30,000
Legislative	2007	Perryville Barge Landing Dock Design	$100,000
Legislative	2007	Newhalen Clinic Repairs	$32,000
Legislative	2007	Chignik Lake Fire Fighting Equipment	$45,000

Lead Agency	Fiscal Year	Project Description	Total Cost
Legislative	2006	Port Alsworth Local Road Improvements	$10,000
Legislative	2006	Port Alsworth Library Renovation	$419,051
Capital Matching	2003	Nilavena Community Building	$14,500

Source: ADCCED, n.d.[b].

Commercial Fishing Activity. Table 21-170 shows commercial fishing activity among Lake and Peninsula Borough residents from 1990 through 2009. Commercial fishing participation by Lake and Peninsula Borough residents decreased from a high of 253 active fishermen in 1990 to a low of 118 active fishermen in 2002. The number of active fishermen increased to between 2003 and 2005, and in 2009 the number of active fishermen was 120. In 1990 annual estimated gross earnings for commercial fishermen in the Lake and Peninsula Borough were nearly $22.5 million. By 2003 estimated gross earnings had fallen to $5.5 million. In 2005 estimated gross earnings increased to $8.6 million, and in 2009 estimate gross earnings had increased to $13.3 million.

TABLE 21-170
Lake and Peninsula Borough, Residents' Commercial Fishing Activity, 1990 through 2009

Year	Number of Permit Holders	Number of Permits Issued	Total Pounds Landed	Estimated Gross Earnings	Estimated Earnings per Pound	Number of Fishermen who Fished	Number of Permits Fished
1990	273	432	19,539,980	$22,465,225	$1.15	253	304
1991	261	412	17,903,763	$11,837,982	$0.66	249	298
1992	267	412	21,857,537	$17,730,659	$0.81	246	300
1993	255	378	21,006,092	$12,747,135	$0.61	245	287
1994	263	388	19,868,211	$15,423,411	$0.78	241	294
1995	242	343	22,232,272	$16,310,628	$0.73	226	263
1996	238	377	18,317,379	$13,272,315	$0.72	212	286
1997	244	405	12,629,645	$7,014,615	$0.56	216	292
1998	240	369	13,303,654	$8,760,204	$0.66	210	267
1999	229	364	23,591,061	$18,116,188	$0.77	193	245
2000	225	356	14,366,020	$9,670,697	$0.67	178	220
2001	205	298	14,962,341	$6,679,507	$0.45	158	198
2002	192	263	11,466,228	$5,674,043	$0.49	118	144
2003	179	240	12,101,061	$5,499,851	$0.45	125	150
2004	179	245	11,989,209	$6,761,294	$0.56	132	153
2005	172	263	14,119,912	$8,555,189	$0.60	145	182
2006	163	228	15,021,620 [a]	$7,231,524	$0.48	130	154
2007	157	203	18,875,402	$10,034,436	$0.53	121	143
2008	151	198	17,821,105	$11,337,449	$0.64	122	143
2009	151	192	18,028,705	$10,324,848	$0.57	120	132

Source: CFEC, 2010a.

Fishing-vessel Crews. In 2000 a total of 369 residents of the Lake and Peninsula Borough purchased crew-member licenses for fishing-vessel crews (Table 21-171). Since 2000 crew-member participation has varied, but there has been an overall decline in crew-member licenses sold. In 2002 a low of 214 resident crew-member licenses were sold. The number of licenses sold increased in 2003 to 274 but had declined by 2009 to 224 licenses.

TABLE 21-171
Lake and Peninsula Borough, Residents' Crew-member Licenses, 2000 through 2009

Community Name [a]	2000	2001 [b]	2002	2003	2004	2005	2006	2007	2008	2009
Chignik	31	N/A	9	25	18	16	27	19	20	18
Chignik Lagoon	50	N/A	48	46	28	33	35	36	36	2
Chignik Lake	36	N/A	25	20	9	30	16	12	25	24
Egegik	36	N/A	26	30	31	35	26	25	21	20
Igiugig	7	N/A	2	1	0	2	2	2	2	2
Iliamna	42	N/A	21	27	24	21	18	33	27	33
Kokhanok	32	N/A	17	24	16	22	13	15	18	15
Levelock	18	N/A	4	16	14	15	16	15	18	8
Newhalen	0	N/A	0	0	0	10	13	0	1	3
Nondalton	28	N/A	4	13	12	8	15	11	10	11
Pedro Bay	5	N/A	2	3	1	1	0	1	1	1
Perryville	27	N/A	17	26	27	29	17	20	19	14
Pilot Point	32	N/A	25	26	19	21	19	17	13	25
Port Alsworth	2	N/A	2	4	0	0	1	1	2	3
Port Heiden	20	N/A	11	12	14	20	19	11	14	17
Ugashik	3	N/A	1	1	6	9	5	4	6	4
Borough total	**369**	**N/A**	**214**	**274**	**219**	**272**	**242**	**222**	**233**	**200**

Notes:

a. Residency of crew members is based on the address they provided on their crew-member application.

b. Crew-member data for 2001 are not available because of problems with the data.

Source: CFEC, 2010b.

Unemployment. In 2009 the average annual unemployment rate in the borough was 8.4 percent (Table 21-172). This compares to the statewide unemployment rate of 8.0 percent in 2009. Both the labor force and the unemployment rate displayed high seasonal variability, with wintertime unemployment in the double digits and a summertime labor force that was around 50 percent higher than the wintertime totals.

TABLE 21-172
Lake and Peninsula Borough, Monthly Unemployment, 2009

Month	Total Labor Force	Unemployment Rate
January	867	11.0%
February	883	13.4%
March	923	12.4%

Month	Total Labor Force	Unemployment Rate
April	976	11.4%
May	1,139	8.3%
June	1,442	6.6%
July	1,489	5.2%
August	1,148	6.6%
September	1,273	6.2%
October	1,064	6.8%
November	1,042	7.7%
December	967	9.6%
Annual average	1,101	8.4%

Source: ADOLWD DRA, n.d.[b].

Income. Total payroll for Lake and Peninsula Borough employers in 2008 was $28.5 million (Table 21-173). Government workers received 40 percent of the payroll earnings in 2008.

TABLE 21-173
Lake and Peninsula Borough, Employer Payrolls, 1999 through 2008

Major Industry Category	Payroll (millions of dollars)									
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total government	3.1	3.8	5.7	6.2	6.0	5.1	9.0	9.8	10.8	11.5
Federal government	0.8	0.8	1.0	0.9	0.9	0.9	0.9	1.3	1.7	1.7
State government	0.3	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.5
Local government	1.9	2.6	4.4	4.8	4.7	3.8	7.7	8.1	8.7	9.3
Private sector	12.1	13.9	10.3	8.5	9.8	11.4	9.9	12.7	16.4	17.0
Total	**15.2**	**17.7**	**16.0**	**14.7**	**15.8**	**16.5**	**18.9**	**22.5**	**27.2**	**28.5**

Source: ADOLWD DRA, n.d.[c].

Annual per capita personal income in the Lake and Peninsula Borough was $26,027 in 2005 (the most recent year available), which was the seventh consecutive year of growth (Table 21-174). The average per capita income for the borough for 2005 was 27 percent below the statewide average of $35,564 (BEA, 2005).

TABLE 21-174
Lake and Peninsula Borough; Personal Income, Population, and Employment; 1999 through 2005

	1999	2000	2001	2002	2003	2004	2005
Personal income:							
Per capita personal income	$18,697	$21,099	$21,179	$21,783	$22,722	$23,052	$26,027
Total personal income (millions of dollars)	$34.5	$38.1	$35.6	$34.6	$36.1	$36.5	$41.1
Net earnings	$21.5	$23.8	$21.5	$20.2	$21.7	$22.5	$26.3

	1999	2000	2001	2002	2003	2004	2005
Transfer payments [a]	$8.5	$9.4	$9.4	$9.6	$9.3	$9.1	$9.4
Dividends, interest, rent	$4.5	$4.9	$4.7	$4.8	$5.1	$4.9	$5.4
Population	1,847	1,806	1,682	1,587	1,589	1,583	1,578
Employment:							
Total jobs	1,094	1,152	974	946	785	772	869
Wage and salary jobs	669	715	658	620	633	613	708
Number of proprietors	425	437	316	326	152	159	161

Note:

a. Transfer payments are any payment for which no services are provided.

Source: BEA, 2005.

The Lake and Peninsula Borough and its residents received $16.6 million in federal funds during federal fiscal year 2008 (Table 21-175). This was a decrease from fiscal year 2007 when the region received $19.0 million. The largest share ($5.9 million) of federal funds paid in the Lake and Peninsula Borough during fiscal year 2008 was for procurement contracts.

TABLE 21-175
Lake and Peninsula Borough, Federal Funds, FY 2005 through FY 2008

Program Name	FY 2005	FY 2006	FY 2007	FY 2008
Federal Employees Compensation	$24,784	$1,149	$8,921	$60,233
Pension for Non-service-connected Disability for Veterans	$0	$251	$483	$269
Veterans Compensation for Service-connected Disability	$133,828	$97,353	$134,207	$154,154
Veterans Dependency and Indemnity Compensation for Service-connected Death	$4,056	$4,097	$3,027	$1,777
Federal Retirement and Disability Payments, Military	$0	$31,000	$34,000	$34,000
Federal Retirement and Disability Payments, Civilian	$159,314	$168,173	$171,421	$246,540
Retirement and Disability Payments, Coast Guard/Uniformed Employees	$1,945	$1,725	$1,181	$1,210
Food Stamps	$836,232	$894,246	$895,294	$980,349
Indian Education Assistance to Schools	$5,455	$5,369	$0	$2,692
Indian Social Services/Welfare Assistance	$22,000	$10,000	$5,000	$0
All-volunteer-force Educational Assistance	$638	$0	$105	$1,677
Medicare, Hospital Insurance	$1,144,552	$1,164,957	$1,164,957	$1,347.087
Medicare, Supplementary Medical Insurance	$711,154	$757,627	$757,627	$861,389
Aid to Tribal Governments	$131,274	$90,943	$0	$11,052
Consolidated Tribal Government Program	$995,450	$793,103	$0	$10,359
Indian Self-determination Contract Support	$213,200	$154,179	$0	$6,597
Services to Indian Children, Elderly, and Families	$57,319	$66,256	$0	$38,000

Program Name	FY 2005	FY 2006	FY 2007	FY 2008
Road Maintenance, Indian Roads	$0	$0	$0	$26,914
Indian Rights Protection	$1,586	$0	$0	$0
Real Estate Programs, Indian Lands	$49,985	$44,986	$0	$0
Alaskan Indian Allotments and Subsistence Preference Lands Act	$138,314	$54,559	$80,661	$0
U.S. Postal Service, Other Expenditures (Non-Salary/Non-Procurement)	$5,208	$4,368	$210	$213
National School Lunch Program	$231,867	$252,898	$268,479	$270,259
Special Supplemental Food Program for Women, Infants, and Children	$140,258	$142,418	$144,016	$150,627
Indian Community Development Block Grant Program	$0	$0	$1,000,000	$1,599,853
Indian Housing Block Grants	$1,122,780	$1,313,784	$420,037	$336,988
Public Safety Partnership and Community Policing Grants	$0	$0	$1,972	$0
Highway Planning and Construction	$1,031,543	$4,318,916	$1,135,418	$0
Native American Library Services	$33,000	$29,000	$28,000	$18,000
Indian Environmental General Assistance Program	$1,430,750	$879,782	$880,000	$1,297,197
Title I Grants to Local Education Agencies	$133,264	$133,263	$115,892	$145,851
Temporary Assistance for Needy Families	$194,807	$175,218	$175,217	$175,217
Child Support Enforcement	$19,742	$36,823	$34,799	$35,869
Low Income Home Energy Assistance	$66,428	$93,173	$69,426	$90,949
Native American Program	$0	$0	$0	-$13,243
Assistance to Firefighters Grant	$0	$0	$0	$190,808
Procurement Contracts, Dept. of Defense	$2,931,009	$0	$6,656,021	$5,888,894
Procurement Contracts, U.S. Postal Service	$282,098	$280,297	$333,829	$338,774
Procurement Contracts, All Federal Government Agencies Other than Defense and Postal Service	$1,232,405	$1,526,972	$98,595	$93,181
Salaries and Wages, U.S. Postal Service	$1,060,071	$1,042,153	$1,354,925	$1,374,992
Salaries and Wages, All Federal Government Civilian Employees except Defense and Postal Service	$657,000	$769,000	$801,000	$942,000
Fisheries Finance Program	$200,000	$0	$0	$0
Total Federal Expenditures	**$15,403,316**	**$15,338,038**	**$16,774,720**	**$15,314,486**

Source: USCB, n.d., Consolidated Federal Funds Report. (Data in the report come from federal agencies and include expenditures or obligations for grants, salaries and wages, procurement contracts, direct payments for individuals, other direct payments, direct loans, guaranteed or insured loans, and insurance. The amounts reported represent either actual expenditures or obligations.)

Community Infrastructure

Utilities. *Water and Wastewater*—in five communities (Chignik, Chignik Lake, Chignik Lagoon, Nondalton, and Perryville) more than 75 percent of local residents are connected to a public water system.

Seven communities (Iliamna, Levelock, Pedro Bay, Pilot Point, Port Alsworth, Port Heiden, and Ugashik) have no public water system (ADCCED, n.d.[a]).

Ten communities have no public sewer system; they are Igiugig, Iliamna, Ivanof Bay, Kokhanok, Levelock, Pedro Bay, Perryville, Port Alsworth, Port Heiden, and Ugashik. In three communities—Chignik, Newhalen, and Nondalton—approximately four-fifths of local residents are connected to a public sewer system (L&PB, 2002). Communities or local residents without access to a public sewer system may often use personal septic systems.

Solid Waste—every community in the Lake and Peninsula Borough, except Port Alsworth, has a landfill (ADCCED, n.d.[a]).

Housing. In 2000 there were 1,557 housing units in the Lake and Peninsula Borough; however, only one-third (38 percent) of these homes were occupied (Table 21-176). Of the vacant structures, nearly all (93 percent) were considered seasonal- or recreational-use units.

Of the occupied residences, 14 percent (82 residences) lacked complete plumbing facilities, 10 percent (58 residences) lacked complete kitchen facilities, and 10 percent (58 residences) had no phone service. The median value of the specified owner-occupied residences was $87,400 (USCB, n.d.).

TABLE 21-176
Lake and Peninsula Borough, Housing Characteristics, 1990 and 2000

Characteristic	1990 Count	Percentage	2000 Count	Percentage
Total housing units, by occupancy status	991	100	1,557	100
Occupied	509	51	588	38
Vacant	482	49	969	62
Vacant except for seasonal, recreational, or occasional use	346	35 [a]	904	93 [a]
Homes with heat, by heat type	509	100	588	100
Utility gas	0	0	1	0
Bottled, tank, or liquid propane gas	1	0	5	1
Electricity	0	0	12	2
Fuel oil, kerosene, etc.	421	83	527	90
Wood	80	16	37	6
Solar energy	0	0	2	0
Other fuel	7	1	4	1
Specified owner-occupied units [b], by value	298	100	332	100
Less than $50,000	119	40	75	23
$50,000 to $99,999	97	33	125	38
$100,000 to $149,999	60	20	46	14
$150,000 to $199,999	13	4	54	16
$200,000 to $299,999	7	2	24	7
$300,000 or more	2	1	8	2
Median value	$67,100		$87,400	

Notes:

a. Percentage of total vacant units.

b. Specified owner-occupied units, a subgroup of owner-occupied homes, are either one-family homes that are detached from any other house or a one-family house attached to one or more houses on less than 10 acres with no business on the property.

Source: USCB, n.d.

Education Services and Facilities. There are 14 schools, including grades kindergarten through 12th grade, in the Lake and Peninsula Borough. The enrollment and condition of individual schools for each community are described elsewhere in this chapter (Section 21.7.2 or 21.7.3.2).

The FY 2010 enrollment for all schools in the Lake and Peninsula Borough was 344 (Figure 21-30). This represents a 36 percent decrease in enrollment from FY 1997 and a 7 percent decrease from FY 2009 (ADEED, n.d.).

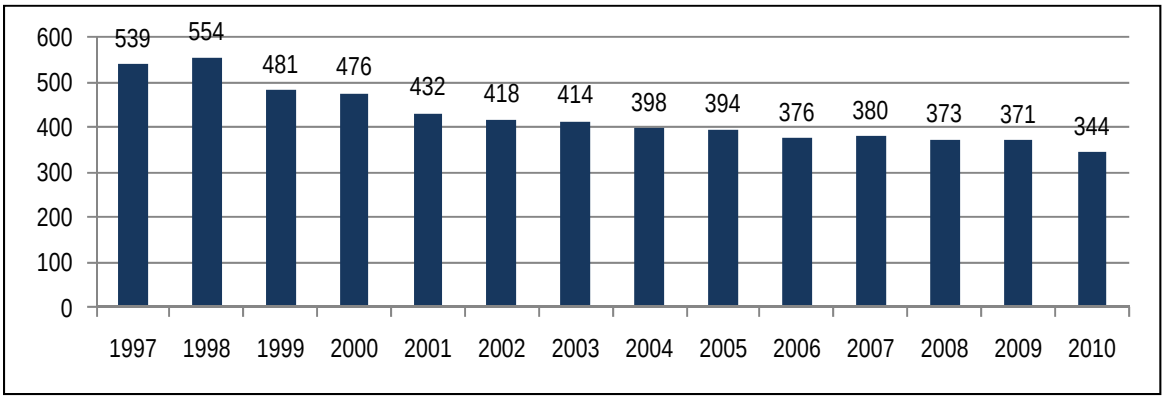

FIGURE 21-30
Lake and Peninsula Borough, School Enrollment, FY 1997 through FY 2010

Sources: ADEED, n.d.; Atwater, pers. comm., 2006.

Health-care Services and Facilities. Every Lake and Peninsula Borough community, except Port Alsworth and Ugashik, has a health clinic (L&PB, 2002). Additionally, the Nilavena subregional health clinic in Iliamna provides a full spectrum of primary health-care services to residents of Nondalton, Newhalen, Kokhanok, Port Alsworth, Iliamna, Igiugig, and Pedro Bay. (Clinic details are described in the *Health-care Services and Facilities* section under *Community Infrastructure* for Iliamna [Section 21.7.2.5].)

Public Safety. While none of the communities in the Lake and Peninsula Borough have local police departments, they are served by Alaska State Troopers stationed in Iliamna, King Salmon, and Dillingham. Some communities have a Village Public Safety Officer; however, unfilled VPSO positions sometimes remain vacant for years (Schroeder, pers. comm., 2006). Most communities have a volunteer fire department and a volunteer emergency-responders group with trained EMTs or ETTs. These groups usually have very little infrastructure support in terms of emergency service vehicles.

Health and Social Indicators

Birth and Death Statistics. In 2008 in the Lake and Peninsula Borough, the crude birth rate was 16.8 per year (Table 21-177). The 2008 fertility rate for the borough also was slightly higher than the statewide fertility rate. The teen birth rate for the borough was not available because rates based on fewer than 10 occurrences per year are not reported.

TABLE 21-177
Lake and Peninsula Borough, Birth Rates, 2008

	Total Births	Crude Birth Rate [a]	Fertility Rate [b]	Teen Birth Rate [c]
Alaska	11,437	16.8	81.7	42.3
Lake and Peninsula Borough	26	16.8	86.1	(d)

Notes:

a. Crude birth rate is the number of live births per 1,000 of the population.
b. Fertility rate is the number of live births per 1,000 females aged 15 to 44.
c. Teen birth rate is the number of live births per 1,000 females aged 15 to 19.
d. Rates based on fewer than 10 occurrences are not reported.

Source: ADHSS, n.d.

Table 21-178 shows the death rates, by cause of death, in Alaska and in the Lake and Peninsula Borough from 2006 through 2008, and Table 21-179 shows the leading causes of death. According to ADHSS data, there were no reported instances of infant mortality (statewide rate of 6.3 per 1,000 live births from 2006 through 2008) or suicide in the borough from 2006 through 2008 (statewide rate of 24.9 per 100,000 persons from 2006 through 2008). The age-adjusted death rate from cancer was 180.7 deaths per 100,000 persons. The age-adjusted rate for accidental deaths was 317.7 deaths per 100,000 persons.

TABLE 21-178
Alaska and Lake and Peninsula Borough, Death Rates by Cause of Death, 2006 through 2008

	Infant Mortality [a]	Cancer [b]	Heart Disease [b]	Suicide	Accidental Deaths [c]
Alaska	6.3	181.3	85.7	24.9	54.8
Lake and Peninsula Borough	0.0	180.7 [d]	(e)	0.0	317.7 [d]

Notes:

a. Infant mortality rate is deaths per 1,000 live births.
b. Age-adjusted rates are deaths per 100,000 persons adjusted based on the U.S. population's standard age proportions in 2000.
c. Accidental deaths include deaths resulting from injuries, motor vehicle accidents, etc.
d. Rate is based on fewer than 20 occurrences and therefore is statistically unreliable and should be used with caution.
e. Rates based on fewer than six occurrences are not reported.

Source: ADHSS, n.d.

TABLE 21-179
Alaska and Lake and Peninsula Borough, Leading Causes of Death, 2006 through 2008

ALASKA			LAKE AND PENINSULA BOROUGH		
Leading Causes	**Crude Rate [a]**	**Age-adjusted Rate [b]**	**Leading Causes**	**Crude Rate [a]**	**Age-adjusted Rate [b]**
1) Accidental deaths	49.4	54.8	1) Accidental deaths	345.0 [c]	317.7 [c]
2) Malignant neoplasms	122.3	181.3	2) Malignant neoplasms	129.4 [c]	180.7 [c]
3) Diseases of the heart	92.2	154.8	3) Diseases of the heart	(d)	(d)
4) Cerebrovascular diseases	24.7	45.3	4) Cerebrovascular diseases	(d)	(d)
5) Chronic lower respiratory diseases	24.4	42.5	5) Chronic lower respiratory diseases	(d)	(d)

Notes:

a. Crude rates are deaths per 100,000 people.

b. Age-adjusted rates are deaths per 100,000 persons adjusted based on the U.S. population's standard age proportions in 2000.

c. Rate is based on fewer than 20 occurrences and therefore is statistically unreliable and should be used with caution.

d. Rates based on fewer than six occurrences are not reported.

Source: ADHSS, n.d.

Hospitalizations. Table 21-180 shows causes for hospitalization in Alaska and in the Lake and Peninsula Borough. In both geographic areas, circulatory system problems, injury or poisoning, and digestive system problems were the leading causes for hospitalization in 2001 through 2005.

TABLE 21-180
Alaska and Lake and Peninsula Borough, Rates of Hospital Discharges by Diagnosis, 2001 through 2005

Diagnosis	Alaska (rate per 10,000 people)	Lake and Peninsula Borough (rate per 10,000 people)
Circulatory system	85.1	60.2
Injury or poisoning	71.3	83.5
Digestive system	70.6	63.9
Respiratory system	57.5	40.5
Musculoskeletal system	41.6	41.8
Neoplasm	36.1	29.5
Symptoms/signs	36.1	29.5
Genito-urinary system	36.0	24.6
Endocrine, nutritional, metabolic	24.9	16.0
Mental disorder	24.9	2.5
Skin and subcutaneous tissue	12.4	29.5
Infectious or parasitic disorder	11.5	12.3

Diagnosis	Alaska (rate per 10,000 people)	Lake and Peninsula Borough (rate per 10,000 people)
Nervous system	8.0	8.6
Perinatal conditions	6.5	6.1
Blood and blood-forming organs	5.4	4.9
Congenital anomalies	3.5	6.1

Note: Not all hospitals in Alaska participated in the discharge-report program during this period.
Source: ADHSS, 2010a.

Educational Attainment and Assessment. Table 21-181 provides data on number of schools, enrollment, and graduation and dropout rates for Alaska and for the Lake and Peninsula Borough. For the 2008 through 2009 school year, the Lake and Peninsula Borough had a graduation rate of 46 percent, lower than the statewide graduation rate for that year.

TABLE 21-181
Alaska and Lake and Peninsula Borough, School Counts and Enrollment, and Graduation and Dropout Rates, Various Years 2006-2009

	Alaska	Lake and Peninsula Borough
School count, 2008-2009	511	15
Accredited schools, 2008-2009	125	0
School enrollment (Grades K-12), 2008-2009	129,187	344
Graduation rate, 2007-2008 [a]	62%	46%
Dropout rates (Grades 7-12)		
2006-2007	5.5%	6.5%
2007-2008	5.2%	2.9%
2008-2009	5.2%	8.6%

Note:

a. For public reporting, Alaska currently uses state and No Child Left Behind accountability systems. The graduation rate is calculated by dividing the number of graduates by the total number of graduates, other completers, and documented dropouts. It does not measure graduation within 4 years, and it depends on dropout data that inflate the graduation rate.

Source: ADEED, n.d.

According to data for the 2008 through 2009 school year, rates of proficiency for the Lake and Peninsula Borough overall were lower in all areas of standardized assessments when compared to statewide figures (Table 21-182).

TABLE 21-182
Alaska and Lake and Peninsula Borough, Educational Assessments, 2008-2009 School Year

	Alaska	Lake and Peninsula Borough
Adequate yearly progress (2008-2009 school year)		
Proficient in language arts	78%	64%
Proficient in math	69%	58%
Passed language arts/math	Yes/Yes	Yes/Yes
Standard-based assessments (percent proficient)		
10th grade reading	83%	75%
10th grade writing	77%	57%
10th grade math	68%	39%
High school graduation qualifying examinations (percent proficient) [a]		
10th grade reading	90%	(b)
10th grade writing	79%	67%
10th grade math	80%	68%

Notes:

a. Data are preliminary.

b. Results cannot be published without releasing identifiable personal information.

Source: ADEED, n.d.

Crime Rates. Crimes in the Lake and Peninsula Borough were not reported by local authorities to the U.S. Census Bureau; therefore, no crime statistics for the region were available.

21.7.3.2 Balance of Lake and Peninsula Borough Communities

The communities included in the balance of the Lake and Peninsula Borough area are Chignik, Chignik Lagoon, Chignik Lake, Egegik, Ivanof Bay, Perryville, Pilot Point, Pope-Vanoy Landing, Port Heiden, and Ugashik. Access to these communities is by air and water. All data presented in this section are for the combined population of these communities only (a subset of the entire borough population), with the exception of some community infrastructure data that look at each community individually.

Demographics

Population. The communities that make up the balance of the Lake and Peninsula Borough saw a very slight population change from 1990 to 2000 (Figure 21-31). During that time, the population declined by 1 percent or eight residents; however, from 2000 to 2009, the population of these communities dropped by 25 percent or 206 persons.

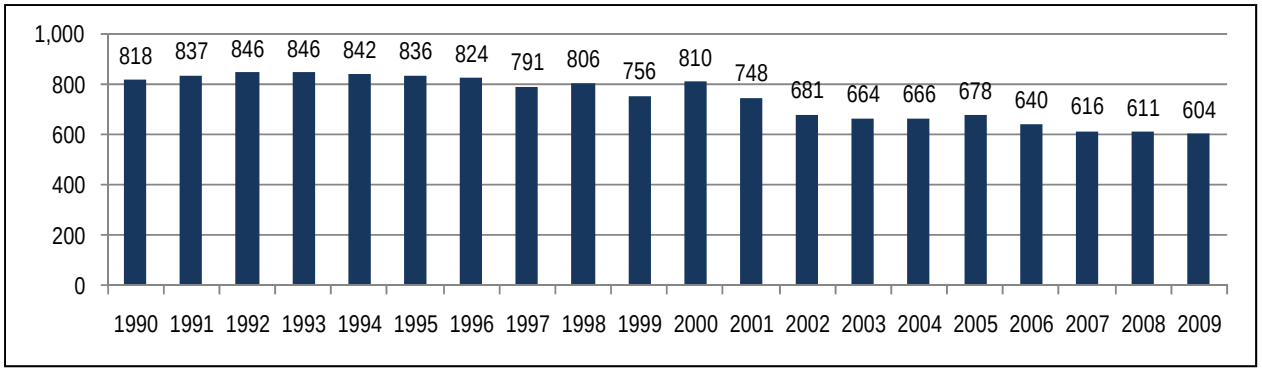

FIGURE 21-31
Balance of Lake and Peninsula Borough Population, 1990 through 2009
Source: ADOLWD DRA, n.d.[a].

In 2000 the population of the communities in the balance of the Lake and Peninsula Borough was composed of more males than females, with males making up 53 percent of the population in 2000 (Table 21-183).

TABLE 21-183
Balance of Lake and Peninsula Borough, Population by Gender, 1990 and 2000

	1990 Count [a]	1990 Percentage	2000 Count	2000 Percentage
Total male population	454	56	431	53
Total female population	357	44	379	47
Total population	**811**		**810**	

Note:

a. The U.S. Census did not include the community of Ugashik, population seven, in the 1990 census; therefore, the 1990 population of the balance of Lake and Peninsula Borough according to the U.S. census data (shown here) is seven fewer than the 1990 population based on ADOLWD data (shown in Figure 21-31).

Source: USCB, n.d.

Age. In 2000 the two largest age groups in the balance of the Lake and Peninsula Borough included those under the age of 15 (29 percent) and those 40 to 54 (25 percent; Table 21-184, Figure 21-32).

TABLE 21-184
Balance of Lake and Peninsula Borough, Age by Count and Percentage, 1990 and 2000

	1990 Count	1990 Percentage	2000 Count	2000 Percentage
Under 5 years	99	12	63	8
5 to 9 years	100	12	92	11
10 to 14 years	72	9	81	10
15 to 17 years	31	4	56	7
18 and 19 years	14	2	28	3
20 to 24 years	56	7	46	6

	1990 Count	1990 Percentage	2000 Count	2000 Percentage
25 to 29 years	80	10	36	4
30 to 34 years	101	12	42	5
35 to 39 years	67	8	67	8
40 to 44 years	51	6	89	11
45 to 49 years	37	5	70	9
50 to 54 years	25	3	44	5
55 to 59 years	22	3	37	5
60 and 61 years	5	1	12	1
62 to 64 years	14	2	10	1
65 to 69 years	20	2	12	1
70 to 74 years	9	1	13	2
75 to 79 years	5	1	4	0
80 to 84 years	2	0	6	1
85 years and older	1	0	2	0

Source: USCB, n.d.

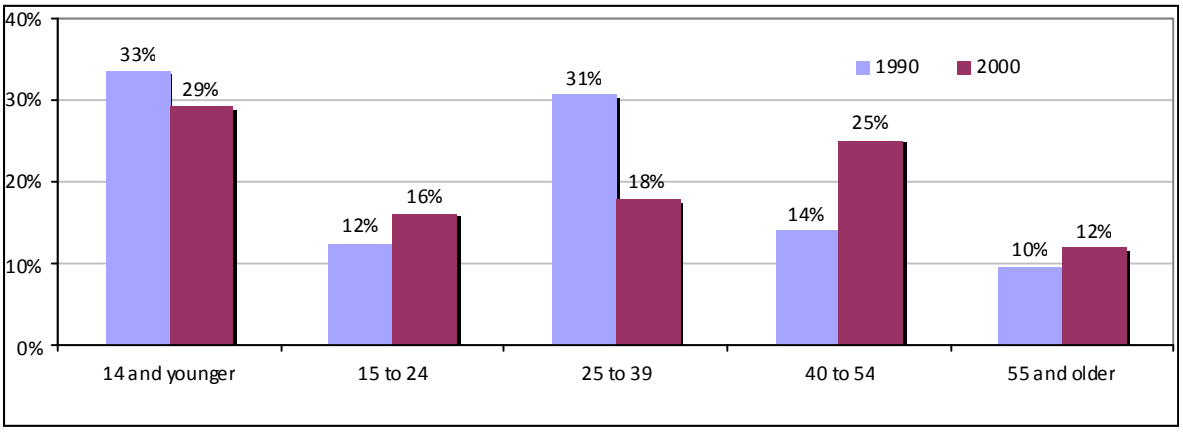

FIGURE 21-32
Balance of Lake and Peninsula Borough, Age by Percentage, 1990 and 2000

Note: Age groupings by the McDowell Group

Source: USCB, n.d.

Race. In 2000, five out of six residents (82 percent) in the balance of the Lake and Peninsula Borough were of Native American or Alaska Native descent (Table 21-185). Most of the remaining population was White. Ninety-four percent of Alaska Natives in the area in 2000 were Aleut, with an additional 4 percent identifying themselves as Eskimo (Table 21-186).

TABLE 21-185
Balance of Lake and Peninsula Borough, Race by Count and Percentage, 2000

	2000 Count	2000 Percentage
American Indian or Alaska Native alone or in combination with one or more other races	667	82
Population of one race	756	93
White alone	121	15
Alaska Native alone	624	77
Black or African American alone	1	0
Asian alone	4	0
Native Hawaiian or other Pacific Islander alone	2	0
Some other race alone	4	0
Population of two or more races	54	7
Total population	**810**	

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d.

TABLE 21-186
Balance of Lake and Peninsula Borough, Specific Alaska Native Designation, 2000

	2000
Number of people who are Alaska Native alone	624
Athabascan	1%
Aleut	94%
Eskimo	4%
Tlingit-Haida	0%
Alaska Native, not specified	2%

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d.

Households and Families. The average household size in the balance of the Lake and Peninsula Borough in 2000 was three (Table 21-187). Married couples with children and single-person households were the two largest household types.

TABLE 21-187
Balance of Lake and Peninsula Borough, Households and Families, 1990 and 2000

	1990	2000
Total households	244	270
Family households	182	180
Married-couple family, no children	30	48
Married-couple family with children	106	85
Other family household	46	47

	1990	2000
Nonfamily households	62	90
1-person household	51	75
2-or-more person nonfamily households	11	15
Average household size	3.32	3.00
Average family size	3.81	3.76
Total population in families	694	676
Total population	811	810

Source: USCB, n.d.

Language. Despite more than 80 percent of the population in the balance of the Lake and Peninsula Borough being Native American or Alaska Native, only 8 percent of residents spoke a Native American language in their homes according to the 2000 census (Table 21-188).

TABLE 21-188
Balance of Lake and Peninsula Borough, Language Spoken at Home by People Age Five and Older, 2000

	2000
Total population (number of people)	810
English only	89%
Native North American language	8%
Spanish	2%
Indo-European language	1%
Asian and Pacific Island language	0%

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d.

Economy

While there is diversity within the communities in the balance of the Lake and Peninsula Borough, commercial fishing, fish processing, and subsistence are the foundation of local economies. Access to these communities is by air and water.

Employment. According to the U.S. Census Bureau, in 2000, the population age 16 and older in the balance of the Lake and Peninsula Borough consisted of 545 persons, an increase of 14 persons from 1990 (Table 21-189). More than half of this population was male (55 percent or 300 persons), and 45 percent was female (245 persons). Forty-two percent (231 persons) of this population were not in the labor force; these individuals were neither working nor actively looking for employment.

Of the 251 employed workers in the balance of Lake and Peninsula Borough, 20 of them worked outside their community of residence in 2000. There were 46 unemployed persons in the balance of Lake and Peninsula Borough in 2000.

TABLE 21-189
Balance of Lake and Peninsula Borough, Employment by Gender and Place of Work, 1990 and 2000

	1990	2000
Males in labor force	158	156
Employed	135	123
Unemployed	23	33
Males not in labor force	172	144
Females in labor force	86	158
Employed	78	145
Unemployed	8	13
Females not in labor force	115	87
Total population 16 years and older	531	545
Place of work for workers 16 years and older: [a]		
Worked in community of residence	N/A	231
Worked outside community of residence	N/A	20
Total employed [b]	N/A	251

Notes:

a. For the 1990 census, place-of-work data were not available.

b. The number of employed persons does not equal the sum of employed males and employed females above because the census provides different data sets for employment by gender and by place of work.

Source: USCB, n.d.

Local Employment. Table 21-190 shows a list of the top 25 employers for 2007 (by average annual employment) in the balance of the Lake and Peninsula Borough.

TABLE 21-190
Balance of Lake and Peninsula, Top Employers, 2007

Employer	Location [a]	Peak Monthly Employment	Average Annual Employment
Norquest Seafoods Inc.	Chignik	213	73
Native Council of Port Heiden	Port Heiden	22	16
Lake and Peninsula School District	Chignik Lake	20	15
Village of Egegik	Egegik	25	14
Coffee Point Seafoods of WA, LLC	Egegik	105	13
Lake and Peninsula School District	Perryville	17	13
Native Village of Perryville	Perryville	16	12
Lake and Peninsula School District	Port Heiden	14	10
Chignik Lake Village Council	Chignik Lake	12	10
City of Chignik	Chignik	11	9
City of Port Heiden	Port Heiden	11	9
Lake and Peninsula School District	Chignik Lagoon	11	8
Chignik Lagoon Village Council	Chignik Lagoon	12	8

Employer	Location [a]	Peak Monthly Employment	Average Annual Employment
Lake and Peninsula School District	Chignik	11	7
Pilot Point Village Council	Pilot Point	13	7
City of Egegik	Egegik	8	6
Lake and Peninsula School District	Pilot Point	10	6
City of Pilot Point	Pilot Point	10	6
Chignik Tribal Council	Chignik	7	5
Far West Ventures Inc.	Chignik	6	5
Chignik Water and Sewer Project	Chignik	8	5
Kanaway Seafoods	Egegik	12	4
Lake and Peninsula School District	Egegik	6	4
Chignik Lake Water and Sewer	Chignik	8	4
Jack's New Meshik Mall	Port Heiden	4	4

Note:

a. Location refers to the employer's primary place of business. Some jobs may occur at other locations.

Source: ADOLWD DRA, 2007.

Capital Improvement Projects. As in other communities and regions described, capital improvement projects are often a critical part of the cash economy for Alaska's smallest rural communities including those in the balance of the Lake and Peninsula Borough. These projects can range from construction of water and sewer facilities, road maintenance, dock construction, and safety improvements.

Commercial Fishing Activity. Table 21-191 shows the commercial fishing activity for the balance of the Lake and Peninsula Borough residents from 1990 through 2009. In 1990 estimated gross earnings totaled almost $16.7 million. Commercial fishing activity decreased from a high of 163 active fishermen in 1992 to a low of 69 fishermen in 2007. In 2009 estimated gross earnings were $8.4 million, a decline of $0.9 million from 2008, although the harvest volume increased 0.3 million pounds between 2008 and 2009.

TABLE 21-191
Balance of Lake and Peninsula Borough, Residents' Commercial Fishing Activity, 1990 through 2009

Year	Number of Permit Holders	Number of Permits Issued	Total Pounds Landed	Estimated Gross Earnings	Estimated Earnings per Pound	Number of Fishermen who Fished	Number of Permits Fished
1990	175	321	14,166,358	$16,683,332	$1.19	158	210
1991	168	306	14,995,517	$9,889,906	$0.70	161	212
1992	175	312	17,901,806	$13,970,923	$0.90	163	219
1993	158	269	15,522,127	$9,463,638	$0.63	152	186
1994	169	285	14,760,262	$11,091,393	$0.77	160	213
1995	154	246	16,171,823	$11,713,761	$0.77	144	178
1996	156	281	12,348,509	$9,078,152	$0.75	139	206
1997	165	314	10,682,236	$6,029,972	$0.65	143	214
1998	160	276	10,423,477	$7,022,982	$0.88	142	195

Year	Number of Permit Holders	Number of Permits Issued	Total Pounds Landed	Estimated Gross Earnings	Estimated Earnings per Pound	Number of Fishermen who Fished	Number of Permits Fished
1999	154	280	19,312,623	$14,944,310	$0.84	127	176
2000	152	273	11,480,830	$8,092,813	$0.71	120	159
2001	135	220	11,668,040	$5,586,782	$0.48	110	149
2002	129	199	10,048,600	$5,133,178	$0.51	82	108
2003	118	178	10,042,350	$5,231,415	$0.52	83	108
2004	116	181	10,238,344	$5,753,287	$0.60	85	106
2005	111	198	11,516,580	$6,796,346	$0.64	99	134
2006	104	166	12,755,776	$5,995,071	$0.47	79	102
2007	94	139	11,363,946	$5,524,595	$0.48	69	91
2008	87	133	15,094,550	$9,326175	$0.62	70	91
2009	88	129	15,302,907	$8,441,980	$0.55	71	106

Source: CFEC, 2010a.

Fishing-vessel Crews. Participation on fishing-vessel crews has been variable in the balance of Lake and Peninsula Borough. In 2000, 235 crew-member licenses were issued to residents in the balance of Lake and Peninsula Borough (Table 21-192). By 2004 that number had fallen to 152. In 2005 the number of crew-member licenses increased to 193; however, in 2009 the number of licenses declined to 146.

TABLE 21-192
Balance of Lake and Peninsula Borough, Number of Residents' Crew-member Licenses, 2000 through 2009

Community Name [a]	2000	2001 [b]	2002	2003	2004	2005	2006	2007	2008	2009
Chignik	31	N/A	9	25	18	16	27	19	20	18
Chignik Lagoon	50	N/A	48	46	28	33	35	36	36	24
Chignik Lake	36	N/A	25	20	9	30	16	12	25	24
Egegik	36	N/A	26	30	31	35	16	25	21	20
Perryville	27	N/A	17	26	27	29	17	20	19	14
Pilot Point	32	N/A	25	26	19	21	19	17	13	25
Port Heiden	20	N/A	11	12	14	20	19	11	14	17
Ugashik	3	N/A	1	1	6	9	5	4	6	4
Total	**235**		**162**	**186**	**152**	**193**	**154**	**144**	**154**	**146**

Notes:

a. Residency of crew members is based on the address they provide on their crew-member application.

b. Crew-member data for 2001 are not available because of problems with the data.

Source: CFEC, 2010b.

Workforce Attributes. According to the 2000 census, 66 percent of the population age 25 and older in the balance of the Lake and Peninsula Borough were high school graduates and 7 percent had a bachelor's degree or higher (Table 21-193).

TABLE 21-193
Balance of Lake and Peninsula Borough, Educational Attainment for Population Age 25 and Older, 1990 and 2000

Educational Attainment	1990 [a]	2000
Population 25 and older	470	454
Less than high school	195	153
High school graduate (includes equivalency)	141	186
Some college, less than 1 year	43	47
Some college, 1 or more years, no degree	0	28
Associate degree	15	9
Bachelor's degree	56	15
Master's degree	0	14
Professional school degree	20	2
Male	N/A	257
Less than high school	N/A	99
High school graduate (includes equivalency)	N/A	104
Some college, less than 1 year	N/A	26
Some college, 1 or more years, no degree	N/A	12
Associate degree	N/A	3
Bachelor's degree	N/A	6
Master's degree	N/A	7
Professional school degree	N/A	0
Female	N/A	197
Less than high school	N/A	54
High school graduate (includes equivalency)	N/A	82
Some college, less than 1 year	N/A	21
Some college, 1 or more years, no degree	N/A	16
Associate degree	N/A	6
Bachelor's degree	N/A	9
Master's degree	N/A	7
Professional school degree	N/A	2

Note:

a. For the 1990 census, educational attainment data by gender were not available.

Source: USCB, n.d.

Table 21-194 shows the number of people age 16 and older living in the balance of Lake and Peninsula Borough area who were employed in key occupations in 2000.

TABLE 21-194
Balance of Lake and Peninsula Borough, Occupations for the Employed Civilian Population Age 16 and Older, 2000

Occupations [a]	2000
Management, professional, and related	80
Service	56
Sales and office	46
Farming, fishing, and forestry	4
Construction, extraction, and maintenance	48
Production, transportation, and material moving	37
Total	**271**

Note:

a. Occupation data may under-represent seasonal occupations such as commercial fishing and construction because the survey asked respondents to report their occupation in reference to a stated week of the year. Respondents holding more than one job were asked to report the job at which they worked the most hours. Additionally, economic data may underestimate the summer season peaks in employment and population.

Source: USCB, n.d.

Income. The 2000 census recorded 257 households in the balance of the Lake and Peninsula Borough, an increase of 10 households from 1990. Median household incomes for the communities in the balance of the Lake and Peninsula Borough for 1990 and 2000 are shown in Table 21-195.

TABLE 21-195
Balance of Lake and Peninsula Borough, Household Income, 1990 and 2000

	1990		2000	
Community	Number of Households [a]	Median Household Income	Number of Households [a]	Median Household Income
Chignik	45	$36,875	35	$34,250
Chignik Lagoon	22	$56,250	32	$92,297
Chignik Lake	42	$19,167	37	$41,458
Egegik	51	$20,625	38	$46,000
Ivanof Bay	12	$21,500	9	$91,977
Perryville	26	$25,000	29	$51,875
Pilot Point	17	$38,750	29	$41,250
Pope-Vanoy Landing	(b)	(b)	5	$4,583
Port Heiden	32	$35,000	37	$31,875
Ugashik	(b)	(b)	6	$28,750

Notes:

a. Number of households differs from total households by type (Table 21-187) because the data for household type and for household income come from different data sets within the census data.

b. U.S. census data were not collected for the communities of Pope-Vanoy and Ugashik in 1990.

Source: USCB, n.d.

Households and Individuals Receiving Public Assistance. Temporary assistance data were not detailed for the balance of the Lake and Peninsula Borough, though it can be concluded payments would be similar to the other communities detailed in this study.

Community Infrastructure

Utilities. *Water and Wastewater*—in the community of Chignik Lake, 100 percent of the houses are connected to a community water system. In three other communities—Chignik, Chignik Lagoon, and Perryville—more than 75 percent of local residences are connected to a public water system. Three communities—Pilot Point, Port Heiden, and Ugashik—have no public water system. The residents of these communities use wells, cisterns, septic tanks, and outhouses (L&PB, 2002).

Four communities—Ivanof Bay, Perryville, Port Heiden, and Ugashik—have no public sewer system. In Chignik, four-fifths of local residences are connected to a public sewer system. Chignik Lagoon and Chignik Lake have approximately half of their houses connected to a public sewer system. In Egegik approximately one-quarter of the homes are connected to sewer, and in Pilot Point, just 5 percent of local residences are connected. Those not using the public sewer system use personal septic tanks and outhouses (L&PB, 2002).

Solid Waste—every community in the balance of the Lake and Peninsula Borough has a landfill. The community of Ugashik only acquired a landfill in summer 2006 (Albecker, pers. comm., 2006).

Housing. In 2000 there were 708 housing units in the balance of the Lake and Peninsula Borough; however, only 37 percent of these homes were occupied (Table 21-196). Nearly all of the vacant structures (89 percent) were considered seasonal- or recreational-use units.

TABLE 21-196
Balance of Lake and Peninsula Borough, Housing Characteristics, 1990 and 2000

Characteristic	1990 Count	Percentage	2000 Count	Percentage
Total housing units, by occupancy status	687	100	708	100
Occupied	368	39	261	37
Vacant	419	61	447	63
Vacant except for seasonal, recreational, or occasional use	337	49 [a]	399	89 [a]
Homes with heat, by heat type	281	100	256	100
Bottled, tank, or liquid propane gas	0	0	3	1
Electricity	0	0	8	3
Fuel oil, kerosene, etc.	261	93	239	93
Wood	16	6	2	1
Solar energy	0	0	2	1
Other fuel	4	2	2	1
Specified owner-occupied units [b], by value	156	100	169	100
Less than $50,000	63	40	34	20
$50,000 to $99,999	56	36	75	44

Characteristic	1990 Count	Percentage	2000 Count	Percentage
$100,000 to $149,999	30	19	20	12
$150,000 to $199,999	3	2	25	15
$200,000 to $299,999	2	1	13	8
$300,000 or more	2	1	2	1

Notes:

a. Percentage of total vacant units.

b. Specified owner-occupied units, a subgroup of owner-occupied homes, are either one-family homes that are detached from any other house or a one-family house attached to one or more houses on less than 10 acres with no business on the property.

Source: USCB, n.d.

Education Services and Facilities. The balance of the Lake and Peninsula Borough has seven schools, containing grades kindergarten through 12th grade (Atwater, pers. comm., 2006) with a total FY 2007 enrollment of 136 (Figure 21-33). They are as follows:

- The Chignik Bay School—built in 1995, FY 2010 enrollment of 15.
- The Chignik Lagoon School—built in the 1980s, FY 2010 enrollment of 16.
- The Chignik Lake School—in poor condition structurally, FY 2010 enrollment of 17.
- The Egegik School—old BIA school in poor condition, FY 2010 enrollment of 12.
- The Pilot Point School—built in 1996, FY 2010 enrollment of 11.
- The Perryville School—older school in fair condition, FY 2010 enrollment of 21.
- The Meshik School—located in Port Heiden, FY 2010 enrollment of 24.

The schools in Egegik, Pilot Point, and Port Heiden have each experienced recent decreases in student populations that may endanger future operations of these facilities (Currier, pers. comm., 2006).

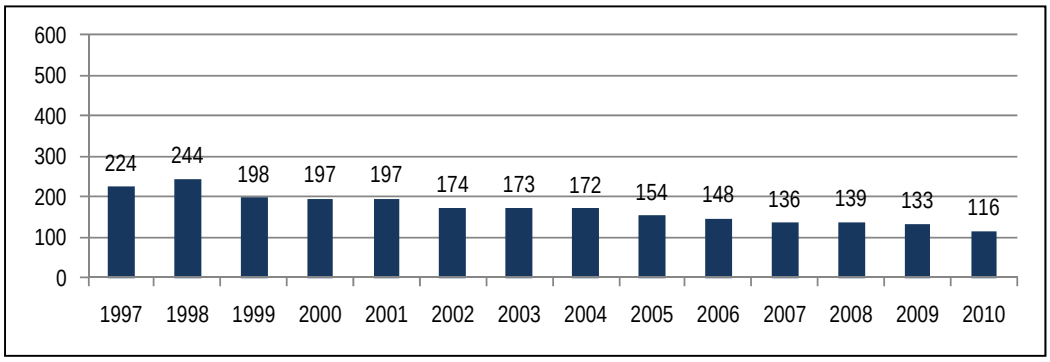

FIGURE 21-33
Balance of Lake and Peninsula Borough, School Enrollment, FY 1997 through FY 2010

Sources: ADEED, n.d.; Atwater, pers. comm., 2006.

Health-care Services and Facilities. Expect for Ugashik, **e**very community in the balance of the Lake and Peninsula Borough has a health clinic (L&PB, 2010; Albecker, pers. comm., 2006).

Public Safety. The communities in the balance of the Lake and Peninsula Borough are served by Alaska State Troopers located in King Salmon, Iliamna, and Dillingham (Currier, pers. comm., 2006). The communities of Chignik and Pilot Point have VPSOs, and Egegik and Port Heiden each have an unfilled VPSO position (Akelkok, pers. comm., 2007).

Most communities have a volunteer fire department and a volunteer emergency responders group with trained EMTs. These groups usually have very little infrastructure support in terms of emergency service vehicles with some communities possessing vehicles and others not. Although these organizations might consist of only one person, generally the entire community assists in case of emergency (Currier, pers. comm., 2006).

21.7.3.3 Bristol Bay Borough

The Bristol Bay Borough is located in southwestern Alaska at the head of Kvichak Bay, an arm of the larger Bristol Bay. Access to the communities is by water and air. It was incorporated as the state's first borough in 1962 and has since been designated a second-class borough. Based on ADOLWD data, the Bristol Bay Borough had a population of 967 in 2009, and according to the 2000 census, just under half of Bristol Bay Borough residents consider themselves Alaska Native. The borough functions as the official governing body for Naknek (population 516), South Naknek (population 68), and King Salmon (population 383), and provides a variety of important services. The borough offices are located in Naknek.

Demographics

Population. The Bristol Bay Borough population was 967 in 2009, which represents a decrease of 31 percent, or 443 residents, from the borough's 1990 population (Figure 21-34, Table 21-197).

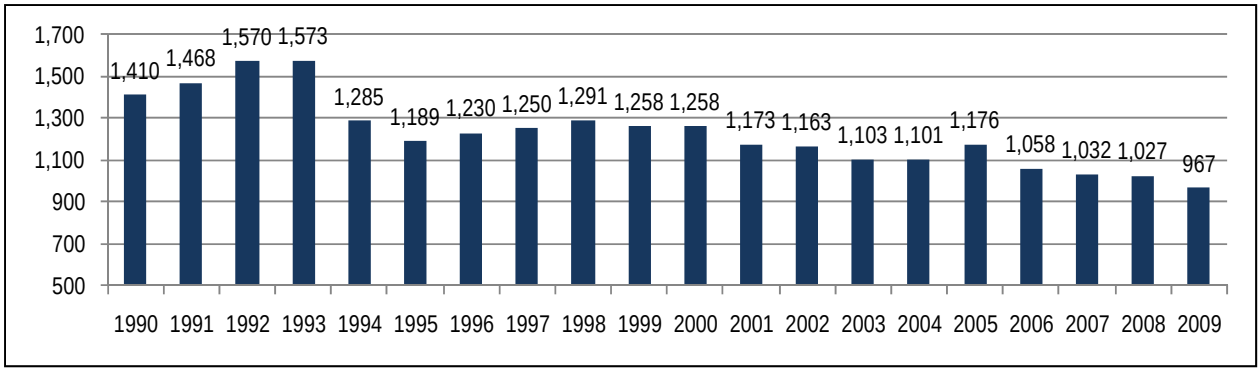

FIGURE 21-34
Bristol Bay Borough Population, 1990 through 2009
Source: ADOLWD DRA, n.d.[a].

TABLE 21-197
Bristol Bay Borough Population Change, 1990 through 2009

	Population Change
Change, 2008-2009 (number of people)	-60
Change, 2000-2009 (number of people)	-291
Change, 1990-2000 (number of people)	-152
Average annual rate of change, 2008-2009	-6.0%
Average annual rate of change, 2000-2009	-2.8%
Average annual rate of change, 1990-2000	-1.1%
Net change from births/deaths, 2008-2009 (number of people)	-2
Net change from births/deaths, 2000-2009 (number of people)	59
Net migration (in-out), 2008-2009 (number of people)	-58
Net migration (in-out), 2000-2009 (number of people)	-350

Source: ADOLWD DRA, n.d.[a].

In 2009, 55 percent of the population of the Bristol Bay Borough was male and 45 percent was female (Table 21-198). In 1990 the ratio was 60 percent male to 40 percent female.

TABLE 21-198
Bristol Bay Borough; Population by Gender; 1990, 2000, and 2009

	1990 Count	1990 Percentage	2000 Count	2000 Percentage	2009 Count	2009 Percentage
Total male population	845	60	685	54	529	55
Total female population	565	40	573	46	438	45
Total population	**1,410**		**1,258**		**967**	

Sources: 1990 and 2000 from USCB, n.d.; 2006 from ADOLWD DRA, n.d.[a].

Age. The median age of Bristol Bay Borough residents in 2009 was 42.0 years (Table 21-199), an increase of 6.0 years over the 2000 census and 12.5 years over the 1990 census.

TABLE 21-199
Bristol Bay Borough; Median Age; 1990, 2000, and 2009

	1990	2000	2009
Median age	29.5	36.0	42.0
Median male age	30.0	37.3	41.9
Median female age	28.4	34.6	42.2

Sources: 1990 and 2000 from USCB, n.d.; 2006 from ADOLWD DRA, n.d.[a].

In 1990, 39 percent of the borough population was 25 to 39 years old (Table 21-200, Figure 21-35). By 2009 this group represented only 15 percent of the Bristol Bay Borough population. During the same period, the 40 to 54 age group increased from 16 percent in 1990 to 29 percent in 2009.

TABLE 21-200
Bristol Bay Borough; Age by Count and Percentage; 1990, 2000, and 2009

	1990 Count	1990 Percentage	2000 Count	2000 Percentage	2009 Count	2009 Percentage
Under 5 years	123	9	89	7	54	6
5 to 9 years	108	8	107	9	60	6
10 to 14 years	104	7	129	10	76	8
15 to 19 years	69	5	99	8	63	7
20 to 24 years	126	9	44	3	59	6
25 to 29 years	195	14	64	5	39	4
30 to 34 years	198	14	79	6	48	5
35 to 39 years	155	11	135	11	60	6
40 to 44 years	99	7	160	13	61	6
45 to 49 years	69	5	122	10	102	11
50 to 54 years	58	4	93	7	119	12
55 to 59 years	41	3	49	4	91	9
60 and 64 years	23	2	40	3	50	5
65 to 69 years	18	1	22	2	31	3
70 to 74 years	13	1	13	1	24	2
75 to 79 years	6	0	7	1	16	2
80 to 84 years	3	0	4	0	8	1
85 years and older	2	0	2	0	6	0

Sources: 1990 and 2000 from USCB, n.d.; 2009 from ADOLWD DRA, n.d.[a].

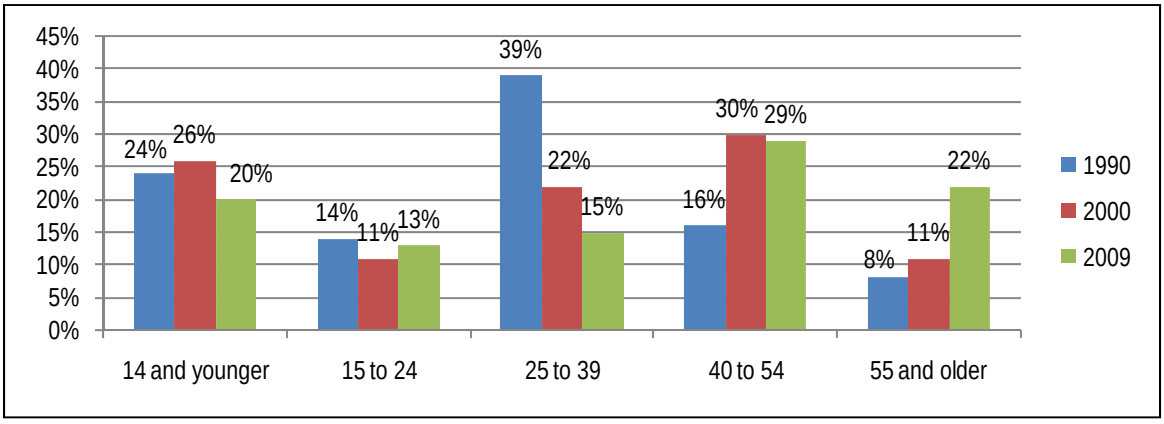

FIGURE 21-35
Bristol Bay Borough; Age by Percentage; 1990, 2000, and 2009

Note: Age groupings by the McDowell Group.

Sources: 1990 and 2000 from USCB, n.d.; 2009 from ADOLWD DRA, n.d.[a].

Race. In the 2000 census, less than half (45 percent) of the Bristol Bay Borough population identified itself as of American Indian or Alaska Native descent, with 53 percent of the population identifying itself as White (Table 21-201). Approximately half (49 percent) of the Alaska Native population in the Bristol Bay Borough identified itself as Aleut, with Eskimos representing another third (30 percent) of that group (Table 21-202).

TABLE 21-201
Bristol Bay Borough, Race by Count and Percentage, 2000

	2000 Count	2000 Percentage
American Indian or Alaska Native alone or in combination with one or more other races	567	45
Population of one race	1,228	98
White alone	661	53
Alaska Native alone	550	44
Black or African American alone	7	1
Asian alone	3	0
Native Hawaiian or other Pacific Islander alone	6	0
Some other race alone	1	0
Population of two or more races	30	2
Total population	**1,258**	

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d., 2000 census.

TABLE 21-202
Bristol Bay Borough, Specific Alaska Native Designation, 2000

	2000
Number of people who are Alaska Native alone	550
Athabascan	3%
Aleut	49%
Eskimo	30%
Tlingit-Haida	0%
Alaska Native, not specified	18%

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d., 2000 census.

Households and Families. In 2000 in the Bristol Bay Borough, family households (301) outnumbered nonfamily households (189) by nearly three to two. This trend is similar to that in 1990, when the ratio was about two to one. The average family size in Bristol Bay Borough in 2000 was 3.33 persons (Table 21-203).

TABLE 21-203
Bristol Bay Borough, Households and Families, 1990 and 2000

	1990	2000
Total households	407	490
Family households	272	301
Married-couple family, no children	76	99
Married-couple family with children	148	142
Other family household	48	60
Nonfamily households	135	189
1-person household	110	153
2-or-more person nonfamily households	25	36
Average household size	3.46	2.57
Average family size	3.46	3.33
Total population in families	941	1,003
Total population	1,410	1,258

Source: USCB, n.d.

Language. Even though nearly half the 2000 population in the Bristol Bay Borough was Alaska Native, only 2 percent of those over the age of five spoke a Native American language at home (Table 21-204). Another 2 percent of the population spoke a foreign language (Spanish, German, Laotian, or Tagalog) at home.

TABLE 21-204
Bristol Bay Borough, Language Spoken at Home by People Age Five and Older, 2000

	2000
Total population (number of people)	1,258
English only	96%
Native North American language	2%
Spanish	1%
Indo-European language	1%
Asian and Pacific Island language	0%

Note: Percentages calculated by the McDowell Group.
Source: USCB, n.d., 2000 census.

Economy

Bristol Bay Borough's economy is based on primarily commercial fishing and processing, government, transportation services, construction projects, and subsistence. Access to the borough is by air and water. Annual per capita income in the borough was $48,747 in 2007 (BEA, 2007). Approximately 7 percent of families and 10 percent of individuals in the borough lived below the poverty level in 1999, according to the census (USCB, n.d.).

Employment. Table 21-205 shows employment data for the Bristol Bay Borough as reported by ADOLWD. Government jobs comprised 18 percent of the employment in 2008, a slight decrease from 2005, when 21 percent of borough employment was in the government sector.

TABLE 21-205
Bristol Bay Borough, Employment by Industry Category, 1998 through 2008

	Number of Jobs										
Industry Category	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
Total government	372	370	368	417	414	398	411	257	253	241	238
Federal	46	45	41	77	80	73	76	71	63	58	57
State	29	26	26	30	30	30	31	31	33	32	30
Local	298	299	302	310	304	296	304	155	157	152	151
Private sector	698	640	763	475	584	805	907	970	1,054	1,130	1,049
Total	**1,071**	**1,010**	**1,131**	**892**	**997**	**1,203**	**1,318**	**1,227**	**1,308**	**1,371**	**1,287**

Note:

a. All values were calculated from monthly averages and then rounded; values were not added together to obtain totals.

Source: ADOLWD DRA, n.d.[c].

The Bristol Bay Borough population age 16 and older consisted of 908 persons in 2000, an increase of 110 persons from 1990 (Table 21-206). More than half of the 2000 population was male (56 percent or 511 persons), and 44 percent was female (397 persons). Twenty-nine percent (259 persons) was not in the labor force; these individuals were neither working nor actively looking for employment.

Of the 568 workers in the Bristol Bay Borough, 117 worked outside their community of residence in 2000. There were 68 unemployed persons in the Bristol Bay Borough in 2000, according to census data.

TABLE 21-206
Bristol Bay Borough, Employment by Gender and Place of Work, 1990 and 2000

	1990	**2000**
Males in labor force	328	375
Employed	299	328
Unemployed	29	47
Males not in labor force	105	136
Females in labor force	220	274
Employed	211	253
Unemployed	9	21
Females not in labor force	145	123
Total population 16 years and older	798	908
Place of work for workers 16 years and older: [a]		
Worked in community of residence	N/A	451
Worked outside community of residence	N/A	117
Total [b]	N/A	568

Notes:

a. For the 1990 census, place-of-work data were not available.

b. The number of employed persons does not equal the sum of employed males and employed females above because the census provides different data sets for employment by gender and by place of work.

Source: USCB, n.d.

Employment in the Bristol Bay Borough in 2008 was highly seasonal, with a peak of over 3,651 jobs in July and a low of 494 in February (Figure 21-36).

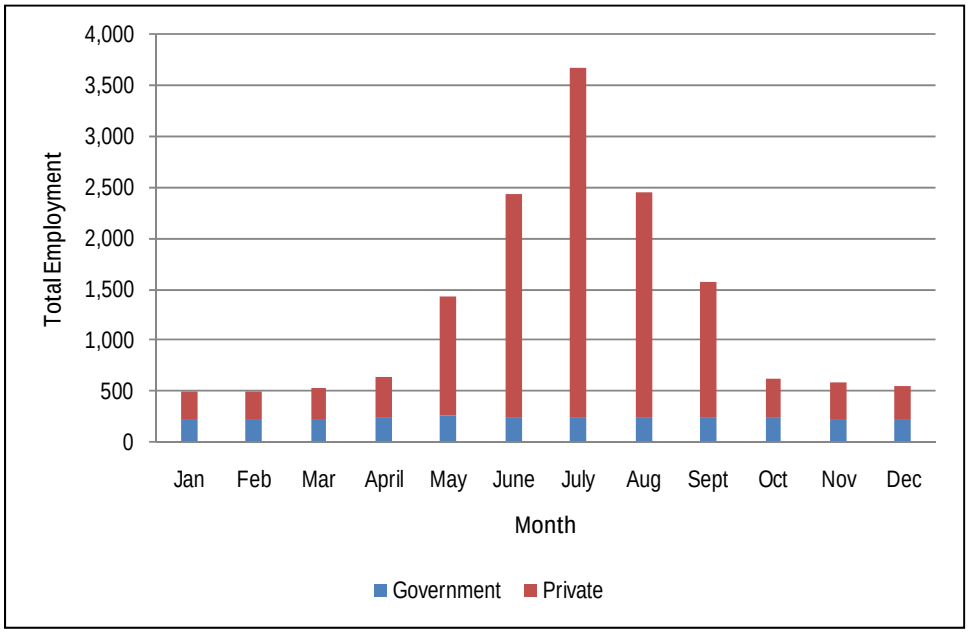

FIGURE 21-36
Bristol Bay Borough, Monthly Employment (Number of Jobs), 2008

Source: ADOLWD DRA, n.d.[c].

Local government employment, including tribal government, comprised 12 percent of the wage and salary jobs in Bristol Bay Borough in 2006. Manufacturing (primarily seafood processing), with 697 jobs; trade, transportation, and utilities (mostly air transportation), with 179 jobs; and leisure and hospitality (primarily lodges), with 85 jobs, were the top three private-sector categories in 2006 (Table 21-207).

TABLE 21-207
Bristol Bay Borough, Employment by Industry Sector, 2006 through 2008

	Number of Jobs [a]		
Industry Category	**2006**	**2007**	**2008**
Government	253	241	238
Federal government	63	58	57
State government	33	32	30

Industry Category	Number of Jobs [a] 2006	2007	2008
Local government	157	152	151
Private sector	1,054	1,130	1,049
Goods-producing	745	812	—
Natural resources and mining	0	—	—
Construction	48	40	—
Manufacturing	697	772	—
Service-providing	310	318	—
Trade, transportation, and utilities	179	192	191
Information	18	18	—
Financial activities	15	13	16
Professional and business services	5	6	—
Education and health services	5	6	—
Leisure and hospitality	85	78	76
Other services	4	4	—
Total	**1,308**	**1,371**	**1,287**

Note:

a. All values were calculated from monthly averages and then rounded; values were not added together to obtain totals.

b. Numerous values for 2008 were not available.

Source: ADOLWD DRA, n.d.[c].

Local Employment. Table 21-208 lists the top 25 employers in the Bristol Bay Borough in 2007, by average annual employment. These data are provided to ADOLWD by employers. As noted below, the location shown is for the employer's primary place of business; however, some of the jobs may occur in other locations. For example, the Lake and Peninsula School District has workers in virtually all of the communities in the region, but total employment is listed in the Bristol Bay Borough because the district headquarters is located in King Salmon.

TABLE 21-208
Bristol Bay Borough, Top Employers, 2007

Employer	Location [a]	Peak Monthly Employment	Average Annual Employment
Trident Seafoods Corporation	Naknek	1,267	471
Peninsula Airways Inc.	King Salmon	68	58
Kanaway Seafoods	Naknek	441	47
Bristol Bay Borough	Naknek	192	45
Snopac Products Inc.	Naknek	317	44
Leader Creek Fisheries LLC	Naknek	56	44
Bristol Bay Borough	Naknek	261	36
Ocean Beauty Seafoods	Naknek	190	32
North Pacific Seafoods	Naknek	40	28

Employer	Location [a]	Peak Monthly Employment	Average Annual Employment
Paug Vik Development Corp.	Naknek	35	26
U.S. Department of the Interior (National Park Service)	King Salmon	160	25
Yardarm Knot Fisheries	Naknek	29	24
Wards Cove Packing Company Inc.	Naknek	27	23
Lake and Peninsula School District	King Salmon	167	22
Baywatch Seafoods	Naknek	24	21
Naknek Electric Association	King Salmon	20	18
Bristol Bay Telephone Coop Inc.	Naknek	109	14
Bristol Bay Contractors Inc.	King Salmon	27	14
Bay Amusement	King Salmon	16	14
Alaska Commercial Company	King Salmon	16	13
U.S. Department of the Interior (National Park Service)	King Salmon	15	12
King Salmon Lodge	King Salmon	20	10
South Naknek Village Council	South Naknek	11	8
Alaska Department of Fish and Game	King Salmon	33	7
Arcadia Corporation	King Salmon	14	7

Note:

a. Location refers to employer's primary place of business. Some jobs may occur at other locations.

Source: ADOLWD DRA, 2007.

Capital Improvement Projects. Capital improvement projects are often a critical part of the cash economy for Alaska's smallest rural communities. Table 21-209 shows a sampling of the capital improvement projects in the Bristol Bay Borough since 2002.

TABLE 21-209
Funded Capital Improvement Projects in Bristol Bay Borough, Fiscal Years 2002 to 2009

Lead Agency	Fiscal Year	Project Description	Total Cost
Capital Matching	2007	Naknek Community Improvements	$30,000
Legislative	2007	Port of Bristol Bay Dock Expansion	$400,000
Legislative	2006	Port Dock Improvements	$500,000
Legislative	2004	Water, Sewer, Landfill Improvement Projects	$291,742
Legislative	2003	King Salmon Airport Tower	$270,100

Source: ADCCED, n.d.[b].

Commercial Fishing Activity. Table 21-210 shows the commercial fishing activity of Bristol Bay Borough residents from 1990 through 2009. Commercial fishing activity decreased overall between 1990 and 2002, hitting a low of 146 active permit holders in 2009. Estimated gross earnings for Bristol Bay Borough fishermen followed a similar trend, generally declining between 1990 and 2001, when earnings had fallen to $1.6 million. By 2005 earnings had increased to $5.5 million, and in 2009, earnings were estimated to be $5.8 million.

TABLE 21-210
Bristol Bay Borough, Residents' Commercial Fishing Activity, 1990 through 2009

Year	Number of Permit Holders	Number of Permits Issued	Total Pounds Landed	Estimated Gross Earnings	Estimated Earnings per Pound	Number of Fishermen who Fished	Number of Permits Fished
1990	226	331	11,490,660	$11,469,491	$1.00	210	252
1991	221	306	6,749,070	$4,485,574	$0.66	204	233
1992	221	315	9,265,245	$9,029,244	$0.97	217	229
1993	204	265	10,095,109	$6,330,472	$0.63	195	207
1994	211	275	10,274,130	$8,747,702	$0.85	205	220
1995	208	266	11,099,829	$8,358,331	$0.75	198	224
1996	216	298	9,843,049	$7,420,391	$0.75	204	248
1997	210	302	3,341,920	$2,362,923	$0.71	191	231
1998	210	290	3,984,762	$3,385,405	$0.85	198	225
1999	206	298	7,880,970	$5,817,248	$0.74	195	227
2000	191	257	6,653,278	$3,655,734	$0.55	176	212
2001	188	246	7,773,225	$2,769,074	$0.36	161	182
2002	190	231	3,845,750	$1,600,986	$0.42	160	169
2003	197	235	6,597,251	$2,937,665	$0.45	171	185
2004	187	223	7,017,736	$3,219,814	$0.46	166	180
2005	179	217	10,315,074	$5,515,861	$0.53	167	180
2006	176	207	8,518,314	$4,125,569	$0.48	173	180
2007	174	199	9,532,294	$5,849,931	$0.61	160	164
2008	173	188	7,744,584	$5,560,846	$0.71	151	152
2009	165	182	8,440,418	$5,838,572	$0.69	146	149

Source: CFEC, 2010a.

Fishing-vessel Crews. In 2000, 241 crew-member licenses for fishing-vessel crews were issued to Bristol Bay Borough residents (Table 21-211). The number of resident crew-member licenses then declined every year, except 2006. In 2009 the number of licenses was 149.

TABLE 21-211
Bristol Bay Borough, Residents' Crew-member Licenses, 2000 through 2009

Community [a]	2000	2001 [b]	2002	2003	2004	2005	2006	2007	2008	2009
King Salmon	63	N/A	45	45	44	51	42	38	34	26
Naknek	144	N/A	103	101	99	97	115	99	106	104
South Naknek	34	N/A	39	37	32	24	25	22	20	19
Total	**241**		**187**	**183**	**175**	**172**	**182**	**159**	**160**	**149**

Notes:

a. Residency of crew members is based on the address they provide on their crew-member application.

b. Crew-member data for 2001 are not available because of problems with the data.

Source: CFEC, 2010b.

Unemployment. According to ADOLWD, the average annual unemployment rate for Bristol Bay Borough in 2009 was 4.3 percent (Table 21-212), slightly lower than the statewide rate of 8.0 percent (ADOLWD DRA, n.d.[b]). The average annual unemployment rate for Bristol Bay Borough reached a peak in 2002 at 6.6 percent (ADOLWD DRA, n.d.[b]). Both the labor force and the unemployment rate displayed high seasonal variability, with wintertime unemployment percent rates in the double digits and a summertime labor force that was four times the size of the wintertime force.

TABLE 21-212
Bristol Bay Borough, Monthly Unemployment, 2009

	Labor Force	Unemployment Rate
January	441	14.3
February	424	15.1
March	435	12.6
April	516	9.5
May	1,044	3.9
June	1,932	2.2
July	3,151	1.0
August	1,865	1.7
September	1,148	3.0
October	484	6.4
November	455	8.1
December	439	11.2
Annual average	1,028	4.3

Source: ADOLWD DRA, n.d.[b].

Workforce Attributes. According to the 2000 census, 89 percent of the Bristol Bay Borough population age 25 and older was high school graduates, and 21 percent had a bachelor's degree or higher (Table 21-213).

TABLE 21-213
Bristol Bay Borough, Educational Attainment for Population Age 25 and Older, 1990 and 2000

Educational Attainment	1990 [a]	2000
Population 25 and older	889	782
Less than high school	91	87
High school graduate (includes equivalency)	228	266
Some college, less than 1 year	329	58
Some college, 1 or more years, no degree	0	162
Associate degree	73	44
Bachelor's degree	94	101
Master's degree	0	57
Professional school degree	74	7

Educational Attainment	1990 [a]	2000
Male	N/A	446
Less than high school	N/A	59
High school graduate (includes equivalency)	N/A	163
Some college, less than 1 year	N/A	34
Some college, 1 or more years, no degree	N/A	68
Associate degree	N/A	18
Bachelor's degree	N/A	64
Master's degree	N/A	33
Professional school degree	N/A	7
Female	N/A	336
Less than high school	N/A	28
High school graduate (includes equivalency)	N/A	103
Some college, less than 1 year	N/A	24
Some college, 1 or more years, no degree	N/A	94
Associate degree	N/A	26
Bachelor's degree	N/A	37
Master's degree	N/A	24
Professional school degree	N/A	0

Note:

a. For the 1990 census, educational attainment data by gender were not available.

Source: USCB, n.d.

Table 21-214 shows the number of people age 16 and older living in the Bristol Bay Borough area who were employed in key occupations in 2000.

TABLE 21-214
Bristol Bay Borough, Occupations for the Employed Civilian Population Age 16 Years and Older, 2000

Occupations [a]	2000
Management, professional, and related	198
Service	99
Sales and office	143
Farming, fishing, and forestry	4
Construction, extraction, and maintenance	88
Production, transportation, and material moving	49
Total	**581**

Note:

a. Occupation data may under-represent seasonal occupations such as commercial fishing and construction because the survey asked respondents to report their occupation in reference to a stated week of the year. Respondents holding more than one job were asked to report the job at which they worked the most hours. Additionally, economic data may underestimate the summer season peaks in employment and population.

Source: USCB, n.d., 2000 census.

Income. Total payroll for Bristol Bay Borough employers in 2008 was $52.9 million (Table 21-215). Twenty-two percent of the wages and salaries went to government workers.

TABLE 21-215
Bristol Bay Borough, Employer Payrolls, 1999 through 2008

	Payroll (millions of dollars)									
Industry Category	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
Total government	12.4	12.7	14.5	14.0	14.2	14.7	11.0	11.1	11.4	11.7
Federal government	2.0	1.9	3.5	3.3	3.4	4.0	3.9	3.7	3.7	3.8
State government	1.3	1.3	1.5	1.5	1.6	1.5	1.6	1.6	1.6	1.6
Local government	9.1	9.5	9.6	9.1	9.2	9.1	5.5	5.7	6.2	6.3
Private sector	19.7	22.6	19.4	20.3	28.9	31.0	36.4	38.4	42.3	41.2
Total	**32.1**	**35.3**	**33.9**	**34.3**	**43.1**	**45.7**	**47.4**	**49.5**	**53.7**	**52.9**

Source: ADOLWD DRA, n.d.[c].

Annual per capita personal income in the Bristol Bay Borough in 2007 (the most recent year available) was $43,966 (Table 21-216). This amount was 24 percent above the statewide per capita personal income of $35,564 (BEA, 2005).

TABLE 21-216
Bristol Bay Borough; Personal Income, Population, and Employment; 1999 through 2005

	1999	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Personal income							
Per capita personal income	$30,305	$34,596	$37,263	$39,474	$41,352	$43,720	$43,966
Total personal income (millions of dollars)	$39.8	$42.6	$43.9	$45.0	$45.9	$47.8	$48.5
Net earnings	$27.0	$29.0	$29.3	$29.9	$31.8	$33.0	$31.5
Transfer payments	$5.8	$6.2	$6.8	$7.6	$8.1	$8.8	$11.3
Dividends, interest, and rent	$7.0	$7.4	$7.7	$7.5	$6.0	$6.0	$5.6
Population	1,313	1,232	1,177	1,141	1,110	1,093	1,103
Employment							
Total jobs	1,336	1,583	1,355	1,473	1,685	1,806	1,769
Wage and salary jobs	926	1,154	886	993	1,206	1,322	1,233
Number of proprietors	410	429	469	480	479	484	536

Source: BEA, 2005.

The 2000 census recorded 492 households in the Bristol Bay Borough, an increase of 75 households from 1990 (Table 21-217).The annual median household income in 2000 was $52,167, up slightly from 1990 when the median household income was $51,112. The borough median for 2000 was just above the annual statewide median household income of $51,571 (USCB, n.d.).

TABLE 21-217
Bristol Bay Borough, Household Income, 1990 and 2000

Household Information	1990	2000
Number of households [a]	417	492
Median household income	$51,112	$52,167

Note:

a. Number of households differs from total households by type (Table 21-203) because the data for household type and for household income come from different data sets within the census data.

Source: USCB, n.d.

Community Infrastructure

Utilities. *Water and Wastewater*—the Bristol Bay Borough operates two main wastewater systems, one located in King Salmon and one in Naknek. South Naknek also has a wastewater system that is run by the village council. The rest of the region uses individual septic systems (Mitchell, pers. comm., 2006).

The borough has no central water system. The community of South Naknek has a water system that is operated by the village council. The King Salmon Air Force Base (closed and in caretaker status) has its own water system, as does the new 32-unit FAA housing facility. The rest of the borough is served by individual wells. The borough is in the preliminary planning stages of creating a central water system, but this is expected to be a long process with many phases. The planned water system would not serve South Naknek (Mitchell, pers. comm., 2006).

Solid Waste—the borough operates two landfills, one located in South Naknek and one located between Naknek and King Salmon, which is 5 miles east of Naknek off of the Alaska Peninsula Highway. The latter landfill uses a bailer to reduce waste volume. Garbage collection is contracted to a private firm. Used oil and lead-acid batteries are recycled (Bristol Bay Borough, n.d.).

Housing. In 2000 there were 979 housing units in the Bristol Bay Borough, half of which were occupied (Table 21-218). The 2000 numbers represent a 64 percent increase in total housing units from the 1990 census, but only a 20 percent increase in occupied units. Approximately three-quarters (78 percent) of the vacant units in 2000 were considered seasonal- or recreational-use facilities.

Of the 490 occupied residences in 2000, 2 percent (eight residences) lacked complete plumbing facilities, 6 percent (29 residences) lacked complete kitchen facilities, and 1 percent (seven residences) had no phone services. The median value of the specified owner-occupied residences was $139,000 (USCB, n.d.).

TABLE 21-218
Bristol Bay Borough, Housing Characteristics, 1990 and 2000

Characteristic	1990 Count	Percentage	2000 Count	Percentage
Total housing units, by occupancy status	596	100	979	100
Occupied	407	68	490	50
Vacant	189	32	489	50

Characteristic	1990 Count	Percentage	2000 Count	Percentage
Vacant except for seasonal, recreational, or occasional use	142	24 [a]	380	78 [a]
Homes with heat, by heat type	407	100	490	100
Bottled, tank, or liquid propane gas	4	1	0	0
Electricity	3	1	4	1
Fuel oil, kerosene, etc.	388	95	463	94
Wood	7	2	4	1
Solar energy	0	0	0	0
Other fuel	5	1	2	0
No fuel used	0	0	17	3
Specified owner-occupied units [b], by value	161	100	203	100
Less than $50,000	26	16	25	12
$50,000 to $99,999	53	33	33	16
$100,000 to $149,999	35	22	58	29
$150,000 to $199,999	23	14	56	28
$200,000 to $299,999	20	12	26	13
$300,000 or more	4	2	5	3
Median value	$102,000		$139,000	

Notes:

a. Percentage of total vacant units.

b. Specified owner-occupied units, a subgroup of owner-occupied homes, are either one-family homes that are detached from any other house or a one-family house attached to one or more houses on less than 10 acres with no business on the property.

Source: USCB, n.d.

Education Services and Facilities. The Bristol Bay Borough has two schools that had a total enrollment of 158 in FY 2010 (Figure 21-37). The Naknek elementary school had 77 elementary students. The Bristol Bay middle/high school had 81 students in the seventh through twelfth grades (ADEED, n.d.).

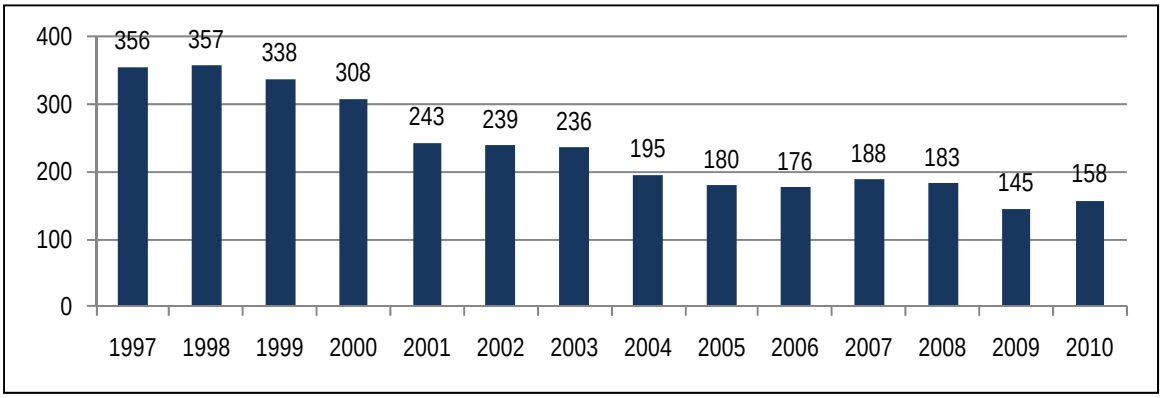

FIGURE 21-37
Bristol Bay Borough School Enrollment, FY 1997 through FY 2010

Source: ADEED, n.d.

In addition to the primary and secondary schools, the borough also has a University of Alaska Fairbanks (UAF) College of Rural Alaska campus outreach center. The UAF Bristol Bay campus is located in Dillingham and has outreach centers in King Salmon and Togiak (UAF, 2009). (For additional details, see *Education Services and Facilities* section under *Community Infrastructure* for the Dillingham Census Area [Section 21.7.3.4].)

Health-care Services and Facilities. Health clinics are located in each of the three Bristol Bay Borough communities. Patients from King Salmon and South Naknek may also use the borough's Camai Medical Center, located in Naknek, for more in-depth care (Bristol Bay Borough, n.d.).

Public Safety. The Bristol Bay Borough has a police department, a fire department, EMTs, Alaska State Troopers, and a prisoner-detention facility. The borough police department currently has nine employees, including the chief of police, three officers, four dispatchers, and a dispatch supervisor. The department is located on the Air Force Base in King Salmon. The police department conducts all search and rescue missions in the Bristol Bay Borough area (Bristol Bay Borough, n.d.).

The emergency medical services and the fire department are headed by a paid chief coordinator. King Salmon, South Naknek, and Naknek each have volunteer fire battalions with fire trucks. Three volunteer emergency medical squads staff three ambulances, one for each community. The ambulance squads also provide emergency medical support. There are approximately 20 year-round volunteers with emergency medical services training. During the summer months, a paid staff of six to eight certified EMTs are added (Bristol Bay Borough, n.d.).

Health and Social Indicators

Birth and Death Statistics. Birth rates for Bristol Bay Borough for 2008 were not reported due to fewer than six occurrences in each category (Table 21-219).

TABLE 21-219
Bristol Bay Borough, Birth Rates, 2008

	Total Births	Crude Birth Rate [a]	Fertility Rate [b]	Teen Birth Rate [c]
Alaska	11,437	16.8	81.7	42.3
Bristol Bay Borough	(d)	(d)	(d)	(d)

Notes:

a. Crude birth rate is the number of live births per 1,000 of the population.

b. Fertility rate is number of live births per 1,000 females aged 15 to 44.

c. Teen birth rate is number of live births per 1,000 females aged 15 to 19.

d. Rates based on fewer than 6 occurrences are not reported.

Source: ADHSS, n.d.

According to ADHSS data, there were no instances of infant mortality in the borough in 2008. Deaths resulting from chronic diseases such as cancer and heart disease were fewer than six in 2008 and thus not reported by ADHSS. The same is true for intentional and accidental deaths.

Hospitalizations. Causes for hospitalization in Alaska and in Bristol Bay Borough are listed in Table 21-220. In both regions circulatory system problems and injury or poisoning were the two leading causes for hospitalization in 2001 through 2005.

TABLE 21-220
Alaska and Bristol Bay Borough, Rates of Hospital Discharges by Diagnosis, 2001 through 2005

Diagnosis	Alaska (rate per 10,000 people)	Bristol Bay Borough (rate per 10,000 people)
Circulatory system	85.1	86.9
Injury or poisoning	71.3	81.4
Digestive system	70.6	52.5
Respiratory system	57.5	23.5
Musculoskeletal system	41.6	48.9
Neoplasm	36.1	39.8
Symptoms/signs	36.1	16.3
Genito-urinary system	36.0	23.5
Endocrine, nutritional, metabolic	24.9	14.5
Mental disorder	24.9	12.7
Skin and subcutaneous tissue	12.4	7.2
Infectious or parasitic disorder	11.5	3.6
Nervous system	8.0	5.4
Perinatal conditions	6.5	1.8
Blood and blood-forming organs	5.4	3.6
Congenital anomalies	3.5	1.8

Note: Not all hospitals in Alaska participated in the discharge-report program during this period.
Source: ADHSS, 2010a.

The leading causes of injuries requiring hospitalization in Alaska and in the Bristol Bay Borough in 2000 through 2004 are presented in Table 21-221. Falls were the number one cause of serious injuries both statewide and in the borough, followed by suicide attempts and motor vehicle accidents statewide, and motor vehicle accidents and suicide attempts for the Bristol Bay Borough.

TABLE 21-221
Alaska and Bristol Bay Borough, Leading Causes of Non-Fatal Injuries Requiring Hospitalization, 2000 through 2004

	ALASKA		BRISTOL BAY BOROUGH	
Rank	Cause	Number	Cause	Number
1	Fall	7,900	Fall	639
2	Suicide attempt	3,106	Motor vehicle accident, occupant	416
3	Motor vehicle accident, occupant	2,658	Suicide attempt	199
4	Assault	1,662	All-terrain vehicle accident	97
5	Snowmachine accident	763	Snowmachine accident	80

Rank	ALASKA		BRISTOL BAY BOROUGH	
	Cause	Number	Cause	Number
6	All-terrain vehicle accident	729	Assault	55
7	Cut	614	Cut	49
8	Bicycle accident	559	Bicycle accident	45
9	Sports injury	558	Machinery accident	44
10	Pedestrian accident	422	Sports injury	39
Rate per 100,000		728		646

Source: ADHSS, 2010a.

Educational Attainment and Assessment. Data on number of schools, enrollment, and graduation and dropout rates for Alaska and for Bristol Bay Borough are shown in Table 21-222. For the 2007 through 2008 school year, the Bristol Bay Borough had a graduation rate of 88 percent, over 25 percent higher than the statewide graduation rate. Additionally, in recent years dropout rates for the borough have been substantially lower than statewide rates.

TABLE 21-222
Alaska and Bristol Bay Borough, School Counts and Enrollment—and Graduation and Dropout Rates, Various Years 2006-2009

	Alaska	Bristol Bay Borough
School count, 2008-2009	511	2
Accredited schools, 2008-2009	125	0
School enrollment (Grades K-12), 2008-2009	129,187	158
Graduation rate, 2007-2008 [a]	62%	88%
Dropout rates (Grades 7-12)		
2006-2007	5.5%	1.2%
2007-2008	5.2%	1.2%
2008-2009	5.2%	2.7%

Note:

a. For public reporting, Alaska currently uses state and No Child Left Behind accountability systems. The graduation rate is calculated by dividing the number of graduates by the total number of graduates, other completers, and documented dropouts. It does not measure graduation within 4 years, and it depends on dropout data that inflate the graduation rate.

Source: ADEED, n.d.

According to ADHSS data, in the 2008 through 2009 school year, Bristol Bay students demonstrated higher rates of proficiency in language arts and math than did students statewide (Table 21-223). Most other educational assessment data for the borough were unavailable because published results would release identifiable personal information.

TABLE 21-223
Alaska and Bristol Bay Borough, Educational Assessments, 2008 through 2009 School Year

	Alaska	Bristol Bay Borough
Adequate yearly progress (2008-2009 school year)		
Proficient in language arts	78%	82%
Proficient in math	69%	70%
Passed language arts/math	Yes/Yes	Yes/Yes
Standard-based assessments (percent proficient)		
10th grade reading	83%	(a)
10th grade writing	77%	(a)
10th grade math	68%	(a)
High school graduation qualifying examinations (percent proficient) [b]		
10th grade reading	90%	(a)
10th grade writing	79%	(a)
10th grade math	80%	(a)

Notes:

a. Results cannot be published without releasing identifiable personal information.

b. Data are preliminary.

Source: ADEED, n.d.

Crime Rates. Table 21-224 shows reported crimes for Alaska and for the Bristol Bay Borough in 2000. Larceny (theft) was the most commonly reported type of crime in both geographic regions.

TABLE 21-224
Alaska and Bristol Bay Borough, Reported Crimes, 2000

	Alaska	Bristol Bay Borough
Murder	27	0
Rape	497	0
Robbery	490	0
Aggravated assault	2,540	16
Burglary	3,899	7
Larceny (theft)	16,838	40
Motor vehicle thefts	2,350	7
Total number of crimes reported	26,641	70
Coverage indicator [a]	N/A	100

Note:

a. The coverage indicator of 100 indicates that all law enforcement agencies in the borough reported for all 12 months in the year. The coverage indicator is used for the statistics available from www.fedstats.com. Because the crime statistics given here for Alaska were obtained from another source, there is no statewide coverage indicator.

Sources: State statistics from the Disaster Center, n.d.; borough statistics from FedStats, n.d. (based on 2000 U.S. census data).

21.7.3.4 Dillingham Census Area

Demographics

The Dillingham census area is located in the southwest corner of the state, north of the Bristol Bay Borough and west of the Lake and Peninsula Borough. The census area includes the communities of Dillingham (population 2,264), Togiak (population 820), New Stuyahok (population 519), Manokotak (population 438), Aleknagik (population 229), Koliganek (population 182), Ekwok (population 109), Twin Hills (population 74), Clark's Point City (population 61), and Portage Creek (population 7). Additionally, Ekuk is categorized as a community in the Dillingham Census Area, although its 2009 population was zero. (Ekuk is included because it has some level of community infrastructure [housing units, an airstrip, and a fuel tank], although there are no year-round residents. It is a community occupied only seasonally for the fishing season as it contains a cannery.) There are 26 additional residents of the Dillingham Census Area who are not attached to any community. Access to the communities is by water and air.

Population. The total 2009 population of the Dillingham Census Area was 4,729 (Figure 21-38). All communities in the census area experienced population increases between 1990 and 2000, and there was an overall area population increase of 23 percent or 910 persons (Table 21-225). Starting in 2001, however, several communities in the census area began experiencing population declines, resulting in a 4 percent (193 person) population decrease from 2000 to 2009.

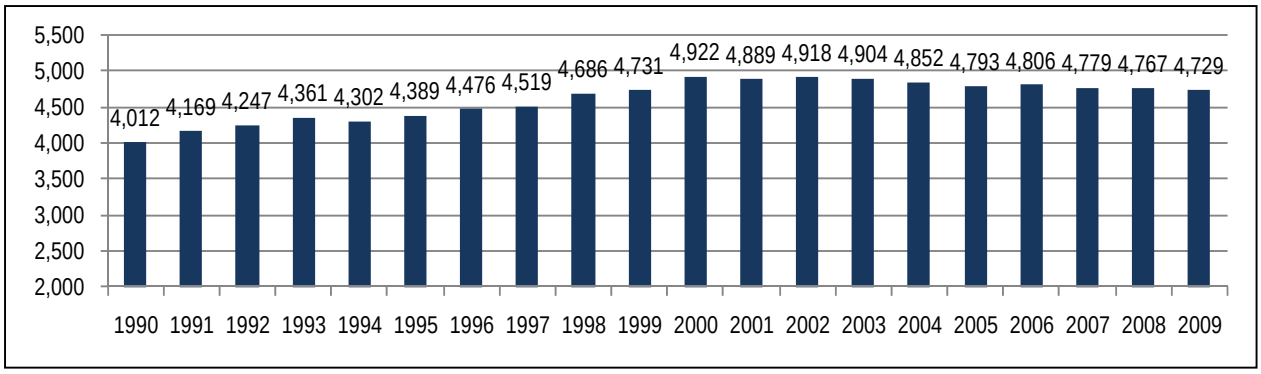

FIGURE 21-38
Dillingham Census Area, Population, 1990 through 2009
Source: ADOLWD DRA, n.d.[a].

TABLE 21-225
Dillingham Census Area, Population Change, 1990 through 2009

	Population Change
Change, 2008-2009 (number of people)	-38
Change, 2000-2009 (number of people)	-193
Change, 1990-2000 (number of people)	910
Average annual rate of change, 2008-2009	-0.8%

	Population Change
Average annual rate of change, 2000-2009	-0.4%
Average annual rate of change, 1990-2000	2.0%
Net change from births/deaths, 2008-2009 (number of people)	75
Net change from births/deaths, 2000-2009 (number of people)	597
Net migration (in-out), 2008-2009 (number of people)	-113
Net migration (in-out), 2000-2009 (number of people)	-790

Source: ADOLWD DRA, n.d.[a].

The proportion of males to females in the Dillingham Census Area was the same in both the 1990 and 2000 censuses (Table 21-226). The proportions changed slightly in 2009 at 51 percent male and 49 percent female.

TABLE 21-226
Dillingham Census Area; Population by Gender; 1990, 2000, and 2009

	1990 Count	1990 Percentage	2000 Count	2000 Percentage	2009 Count	2009 Percentage
Total male population	2,076	52	2,567	52	2,424	51
Total female population	1,936	48	2,355	48	2,305	49
Total population	**4,012**		**4,922**		**4,729**	

Sources: 1990 and 2000 from USCB, n.d.; 2009 from ADOLWD DRA, n.d.[a].

Age. The median age of the Dillingham population in 2009 was approximately 27 years, compared to the median age of 29 years in 2000 (Table 21-227).

TABLE 21-227
Dillingham Census Area; Median Age; 1990, 2000, and 2009

	1990	2000	2009
Median age	27.1	28.9	27.4
Median male age	27.2	28.7	27.3
Median female age	26.9	29.3	27.5

Sources: 1990 and 2000 from USCB, n.d.; 2009 from ADOLWD DRA, n.d.[a].

In 1990, 29 percent of the population of the census area was 25 to 39 years old (Table 21-228, Figure 21-39). By 2009 this age group represented 15 percent of the population. During the same time, those in the 40-to-54 age group increased from 14 percent of the population to 21 percent.

TABLE 21-228
Dillingham Census Area; Age by Count and Percentage; 1990, 2000, and 2009

	1990 Count	1990 Percentage	2000 Count	2000 Percentage	2009 Count	2009 Percentage
Under 5 years	560	14	476	10	470	10
5 to 9 years	449	11	521	11	449	9
10 to 14 years	339	8	603	12	470	10
15 to 19 years	248	6	402	8	501	11
20 to 24 years	255	6	255	5	347	7
25 to 29 years	375	9	249	5	264	6
30 to 34 years	391	10	345	7	236	5
35 to 39 years	401	10	436	9	219	5
40 to 44 years	222	6	392	8	290	6
45 to 49 years	209	5	375	8	349	7
50 to 54 years	130	3	252	5	351	7
55 to 59 years	131	3	206	4	272	6
60 to 64 years	97	2	128	3	159	3
65 to 69 years	85	2	95	2	136	3
70 to 74 years	43	1	88	2	85	2
75 to 79 years	32	1	48	1	55	1
80 to 84 years	29	1	28	1	42	1
85 years and older	16	0	23	0	34	0

Sources: 1990 and 2000 from USCB, n.d.; 2009 from ADOLWD DRA, n.d.[a].

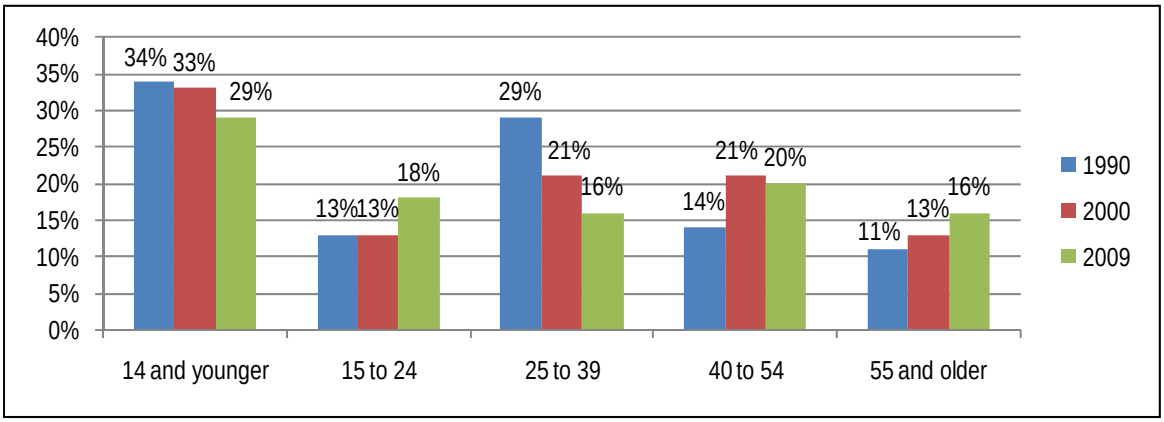

FIGURE 21-39
Dillingham Age by Percentage, 1990, 2000, and 2009

Note: Age groupings by the McDowell Group.

Sources: 1990 and 2000 from USCB, n.d.; 2009 from ADOLWD DRA, n.d.[a].

Race. In 2000 just over three-quarters (76 percent) of residents in the Dillingham Census Area were of American Indian or Alaska Native descent (Table 21-229). Most of the remaining population was White. Those of Eskimo heritage comprised at least three-fourths of the Alaska Native population, but nearly 20 percent of Alaska Natives did not specify their origins beyond Alaska Native (Table 21-230).

TABLE 21-229
Dillingham Census Area, Race by Count and Percentage, 2000

	2000 Count	2000 Percentage
American Indian or Alaska Native alone or in combination with one or more other races	3,753	76
Population of one race	4,593	93
White alone	1,065	22
Alaska Native alone	3,452	70
Black or African American alone	18	0
Asian alone	30	1
Native Hawaiian or other Pacific Islander alone	1	0
Some other race alone	27	1
Population of two or more races	329	7
Total population	**4,922**	

Note: Percentages calculated by the McDowell Group.

Source: USCB, n.d., 2000 census.

TABLE 21-230
Dillingham Census Area, Specific Alaska Native Designation, 2000

	2000
Number of people who are Alaska Native alone	3,452
Athabascan	1%
Aleut	5%
Eskimo	75%
Tlingit-Haida	0%
Alaska Native, not specified	19%

Note: Percentages calculated by the McDowell Group.

Source: USCB, n.d., 2000 census.

Households and Families. The average household size in the Dillingham Census Area was 3.2 persons in 2000 (Table 21-231). The largest category of households (481) was married-couple families with children. The second largest household type was the single-person household (357).

TABLE 21-231
Dillingham Census Area, Households and Families, 1990 and 2000

	1990	2000
Total households	1,215	1,529
Family households	922	1,106
Married-couple family, no children	191	300
Married-couple family with children	500	481
Other family household	231	325
Nonfamily households	293	423
1-person household	226	357
2-or-more person nonfamily households	67	66
Average household size	3.30	3.22
Average family size	3.85	3.84
Total population in families	3,553	4,246
Total population	4,012	4,922

Source: USCB, n.d.

Language. In 2000 more than one-third (34 percent) of residents in the Dillingham Census Area spoke a Native American language in their home (Table 21-232), most likely an Eskimo language—while there are no census data specifying the Native language spoken, at least 75 percent of the single-race Alaska Native population in the Dillingham Census Area in 2000 was Eskimo. Nearly two-thirds (64 percent) of the population spoke English at home. A combined 2 percent of the population spoke one of the following languages at home: Spanish, French, German, Russian, Persian, Chinese, Korean, Thai, Tagalog, or Navajo.

TABLE 21-232
Dillingham Census Area, Language Spoken at Home by People Age Five and Older, 2000

	2000
Total population (number of people)	4,922
English only	64%
Native North American language	34%
Spanish	1%
Indo-European language	1%
Asian and Pacific Island language	0%

Note: Percentage calculated by the McDowell Group.

Source: USCB, n.d., 2000 census.

Economy

Commercial fishing, fish processing, cold storage, other support activities for the fishing industry, subsistence, and government are the foundation of the Dillingham Census Area's economy. Access to the communities is by water and air. The annual per capita income in 2007 was $33,380 (BEA, 2007).

Approximately one in six (18 percent) families and 21 percent of individuals in the borough lived below the poverty level in 1999, according to the census (USCB, n.d.).

Employment. Table 21-233 shows employment in the Dillingham Census Area from 1998 through 2008, as reported by the ADOLWD. Government jobs comprised 30 percent of employment in the census area in 2008. This is an increase from 1998, when 26 percent of employment was in the government sector.

TABLE 21-233
Dillingham Census Area, Employment, 1998 through 2008

	Number of Jobs [a]										
Industry Category	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
Total government	606	604	592	891	914	904	964	973	766	753	763
Federal	51	50	53	48	47	46	49	62	62	54	55
State	76	84	80	81	82	90	91	89	93	95	102
Local	480	471	459	762	785	768	824	822	611	604	606
Private sector	1,701	1,697	1,808	1,463	1,436	1,427	1,506	1,516	1,811	1,768	1,770
Total	**2,308**	**2,301**	**2,400**	**2,355**	**2,350**	**2,332**	**2,470**	**2,488**	**2,577**	**2,522**	**2,533**

Note:

a. All values were calculated from monthly averages and then rounded; values were not added together to obtain totals.

Source: ADOLWD DRA, n.d.[c].

In 2000 the Dillingham Census Area population age 16 and older totaled 3,204 persons, an increase of 591 persons from 1990 (Table 21-234). More than half of the 2000 population was male (52 percent or 1,652 persons), and 48 percent was female (1,552 persons). Thirty-eight percent (1,209 persons) of the population was not in the labor force; these individuals were neither working nor actively looking for employment.

Of the 1,695 employed workers in the Dillingham Census Area in 2000, 228 worked outside their community of residence. There were 230 unemployed persons in the Dillingham Census Area in 2000.

TABLE 21-234
Dillingham Census Area, Employment by Gender and Place of Work, 1990 and 2000

	1990	**2000**
Males in labor force	733	1,044
Employed	634	879
Unemployed	99	165
Males not in labor force	607	608
Females in labor force	657	951
Employed	609	886
Unemployed	48	65
Females not in labor force	616	601
Total population 16 years and older	2,613	3,204

	1990	2000
Place of work for workers 16 years and older: [a]		
Worked in community of residence	N/A	1,467
Worked outside community of residence	N/A	228
Total [b]	**N/A**	**1,695**

Notes:

a. For the 1990 census, place-of-work data were not available.

b. The number of employed persons does not equal the sum of employed males and employed females above because the census provides different data sets for employment by gender and by place of work.

Source: USCB, n.d.

Jobs in the Dillingham Census Area vary seasonally less than those in the Bristol Bay and Lake and Peninsula boroughs, partly because of the high number of government and health services jobs found in the Dillingham Census Area. In 2008 employment in the census area reached a peak in July with 3,298 jobs, while the low was 2,067 jobs in December (Figure 21-40).

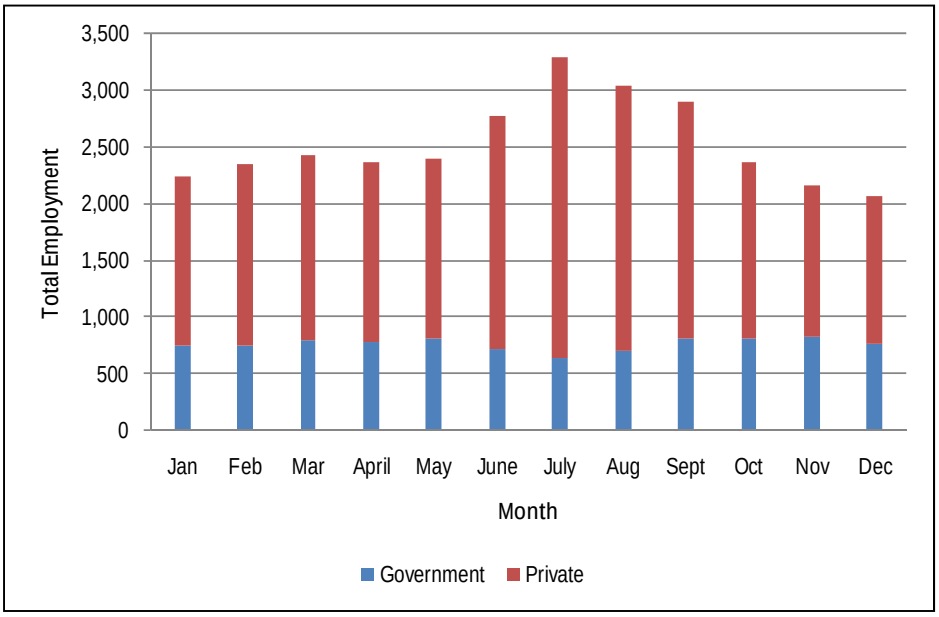

FIGURE 21-40
Dillingham Census Area, Monthly Employment (Number of Jobs), 2008
Source: ADOLWD DRA, n.d.[c].

The total number of wage and salary jobs in the Dillingham Census Area in 2008 was 2,533, an increase of 11 jobs from 2007 (Table 21-235). Government jobs comprised 30 percent of total employment. The top three categories of private-sector jobs were education and health services (605 jobs), trade and transportation (305 jobs), and financial activities (122 jobs).

TABLE 21-235
Dillingham Census Area, Employment by Industry, 2006 through 2008

	Number of Jobs		
Major Industry Category	**2006**	**2007**	**2008**
Government	766	753	763
Federal government	62	54	55
State government	93	95	102
Local government	611	604	606
Private sector	1,811	1,768	1,770
Goods-producing	562	537	—
Natural resources and mining	2	2	0
Construction	13	13	7
Manufacturing	547	522	—
Service-providing	1,250	1,232	—
Trade, transportation, and utilities	306	312	305
Information	39	39	—
Financial activities	133	129	122
Professional and business services	6	7	12
Educational and health services	625	610	605
Leisure and hospitality	100	94	88
Other services	41	42	40
Total	**2,577**	**2,522**	**2,533**

Note:

a. All values were calculated from monthly averages and then rounded; values were not added together to obtain totals.

b. Numerous values for 2008 were not available.

Source: ADOLWD DRA, n.d.[c].

Local Employment. Table 21-236 shows a list of the top 25 employers in the Dillingham Census Area in 2007 (by average annual employment).

TABLE 21-236
Dillingham Census Area, Top Employers, 2007

Company	**Location** [a]	**Average Annual Employment**	**Peak Monthly Employment**
Icicle Seafoods Inc.	Dillingham	418	1,019
Bristol Bay Area Health Corp.	Dillingham	374	381
Southwest Region Schools	Dillingham	214	258
Bristol Bay Native Association	Dillingham	179	206
Dillingham City School District	Dillingham	111	127
Peter Pan Seafoods Inc.	Dillingham	75	299
Bristol Bay Housing Authority	Dillingham	71	87
City of Dillingham	Dillingham	51	55

Company	Location [a]	Average Annual Employment	Peak Monthly Employment
Omni Enterprises Inc. (N&N Market)	Dillingham	43	49
SAFE Inc.	Dillingham	38	46
Peninsula Airways Inc.	Dillingham	37	41
Nushagak Electric and Telephone Coop Inc.	Dillingham	37	39
Alaska Commercial Company	Dillingham	35	40
University of Alaska	Dillingham	30	38
North Pacific Seafoods Inc.	Togiak	29	116
Bristol Bay Economic Development Corp.	Dillingham	25	42
City of Togiak	Togiak	20	24
Manokotak Natives Limited	Manokotak	20	33
Panarqukuk Ltd.	New Stuyahok	19	35
New Stuyahok Traditional Council	New Stuyahok	18	37
Manokotak Village Council	Manokotak	17	36
Alaska Department of Fish & Game	Dillingham	16	33
Manokotak Power Company	Manokotak	16	18
L&M Supplies Inc.	Dillingham	16	19
U.S. Department of Interior	Dillingham	14	19

Note:

a. Location refers to employer's primary place of business. Some jobs may occur at other locations.

Source: ADOLWD DRA, 2007.

Capital Improvement Projects. Capital improvement projects are often a critical part of the cash economy for Alaska's smallest rural communities. Table 21-237 shows a sampling of the capital improvement projects in the Dillingham Census Area since 2009.

TABLE 21-237
Funded Capital Improvement Projects in Dillingham Census Area, Fiscal Years 2002 to 2009

Lead Agency	Fiscal Year	Project Description	Total Cost
Legislative	2009	New Stuyahok Health Clinic	$850,000
Legislative	2009	Dillingham High School Fire Upgrades	$58,377
Legislative	2009	Dillingham Emergency Bank Stabilization	$1,500,000
Legislative	2009	Togiak Youth Multi-Purpose Facility	$500,000
Capital Matching	2005	Togiak Community Improvements	$26,158
Legislative	2005	Dillingham Middle School Roof Replacement	$1,560,000
Capital Matching	2003	New Stuyahok Water and Sewer Improvements	$25,000
CDBG	2003	Manokotak Health Clinic	$299,000
Multi-Use	2003	Togiak Family Resource Center	$835,000

Source: ADCCED, n.d.[b].

Commercial Fishing Activity. Table 21-238 shows the commercial fishing activity of Dillingham Census Area residents from 1990 through 2009. Commercial fishing in the area ranged from a high in 1990 of 760 active fishermen to a low of 378 active fishermen in 2009. The number of active permit holders in 2009 was 378. In 1990 estimated gross earnings for commercial fishermen in the Dillingham Census Area were more than $29.7 million. By 2002 gross earnings were down to $3.5 million, but by 2009, estimated gross earnings had increased to $12.7 million.

TABLE 21-238
Dillingham Census Area, Residents' Commercial Fishing Activity, 1990 through 2009

Year	Number of Permit Holders	Number of Permits Issued	Total Pounds Landed	Estimated Gross Earnings	Estimated Earnings per Pound	Number of Fishermen who Fished	Number of Permits Fished
1990	962	1,694	31,385,279	$29,736,116	$0.95	760	1,081
1991	928	1,566	31,978,399	$20,332,936	$0.64	722	1,013
1992	927	1,544	31,578,840	$27,809,187	$0.88	762	1,019
1993	817	1,285	42,591,811	$25,941,125	$0.61	686	816
1994	811	1,232	30,530,303	$23,711,552	$0.78	674	829
1995	801	1,218	39,230,207	$27,596,096	$0.70	663	860
1996	803	1,318	32,618,778	$22,375,886	$0.69	660	942
1997	777	1,257	12,892,895	$8,832,028	$0.69	570	686
1998	750	1,195	14,761,518	$11,715,911	$0.79	541	630
1999	746	1,201	25,528,393	$18,196,904	$0.71	593	768
2000	741	1,184	25,560,294	$14,794,631	$0.58	536	634
2001	722	1,112	19,145,556	$6,594,589	$0.34	490	555
2002	715	1,030	9,100,438	$3,529,440	$0.39	396	475
2003	697	992	19,886,965	$7,940,792	$0.40	434	496
2004	652	915	20,928,395	$9,055,753	$0.43	392	428
2005	646	873	21,273,445	$10,903,840	$0.51	401	435
2006	639	856	25,187,044	$11,206,666	$0.44	404	433
2007	634	827	23,040,981	$13,003,966	$0.56	395	420
2008	630	826	22,481,321	$13,325,774	$0.59	404	437
2009	625	801	19,850,366	$12,664,506	$0.64	378	397

Source: CFEC, 2010a.

Fishing-vessel Crews. In 2000, 858 crew-member licenses for fishing-vessel crews were issued to residents of the Dillingham Census Area (Table 21-239). By 2002 the number of crew-member licenses had declined to 524. After 2002 the number of resident crew-member licenses increased each year through 2005, when 643 licenses were issued. In 2009, 587 licenses were sold.

TABLE 21-239
Dillingham Census Area, Residents' Crew-member Licenses, 2000 through 2009

Community [a]	2000	2001 [b]	2002	2003	2004	2005	2006	2007	2008	2009
Aleknagik	42	N/A	16	27	24	28	24	31	32	34
Clark's Point	29	N/A	20	16	12	17	14	18	15	17
Dillingham	436	N/A	240	293	296	310	265	288	294	259
Ekwok	11	N/A	1	2	6	3	7	4	2	1
Koliganek	34	N/A	26	27	32	32	30	24	17	25
Manokotak	86	N/A	78	64	68	67	66	73	75	93
New Stuyahok	87	N/A	39	37	50	58	51	37	35	39
Portage Creek	2	N/A	2	3	6	4	3	2	0	0
Togiak	120	N/A	95	118	111	116	116	123	113	117
Twin Hills	11	N/A	7	9	3	8	4	4	4	2
Total	**858**		**524**	**596**	**608**	**643**	**580**	**604**	**587**	**587**

Notes:

a. Residency of crew members is based on the address they provide on their crew-member application.

b. Crew-member data for 2001 are not available because of problems with the data.

Source: CFEC, 2010b.

Unemployment. The average unemployment rate for 2009 in the Dillingham Census Area was 10.3 percent (Table 21-240), well above the statewide average of 8.0 percent. Unemployment peaked in December at 11.9 percent (ADOLWD DRA, n.d.[b]).

TABLE 21-240
Dillingham Census Area, Monthly Unemployment, 2009

	Labor Force	Unemployment Rate
January	2,024	10.5%
February	2,088	11.6%
March	2,129	11.2%
April	2,109	10.9%
May	1,961	12.0%
June	2,285	11.3%
July	2,856	7.6%
August	2,658	7.8%
September	2,307	9.3%
October	1,926	10.4%
November	1,803	10.7%
December	1,731	11.9%
Annual average	2,156	10.3%

Source: ADOLWD DRA, n.d.[b].

Workforce Attributes. In 2000, 77 percent of the Dillingham Census Area population age 25 and older was high school graduates, and 16 percent had bachelor's degrees or higher (Table 21-241).

TABLE 21-241
Dillingham Census Area, Educational Attainment for Population Age 25 and Older, 1990 and 2000

Educational Attainment	1990 [a]	2000
Population 25 years and older	2,159	2,655
Less than high school	653	620
High school graduate (includes equivalency)	687	900
Some college, less than 1 year	387	207
Some college, 1 or more years, no degree	0	370
Associate degree	102	122
Bachelor's degree	219	275
Master's degree	0	121
Professional school degree	111	40
Male	N/A	1,358
Less than high school	N/A	316
High school graduate (includes equivalency)	N/A	552
Some college, less than 1 year	N/A	81
Some college, 1 or more years, no degree	N/A	174
Associate degree	N/A	47
Bachelor's degree	N/A	116
Master's degree	N/A	55
Professional school degree	N/A	17
Female	N/A	1,297
Less than high school	N/A	304
High school graduate (includes equivalency)	N/A	348
Some college, less than 1 year	N/A	126
Some college, 1 or more years, no degree	N/A	196
Associate degree	N/A	75
Bachelor's degree	N/A	159
Master's degree	N/A	66
Professional school degree	N/A	23

Note:

a. For the 1990 census, educational attainment data by gender were not available.

Source: USCB, n.d.

Table 21-242 shows the number of people age 16 and older living in the Dillingham Census Area who were employed in key occupations in 2000.

TABLE 21-242
Dillingham Census Area, Occupations for the Employed Civilian Population Age 16 Years and Older, 2000

Occupations [a]	2000
Management, professional, and related	684
Service	290
Sales and office	384
Farming, fishing, and forestry	67
Construction, extraction, and maintenance	185
Production, transportation, and material moving	155
Total	**1,765**

Note:

a. Occupation data may under-represent occupations such as commercial fishing and construction because the survey asked respondents to report their occupation in reference to a stated week of the year. Respondents holding more than one job were asked to report the job at which they worked the most hours. Additionally, economic data may underestimate the he summer season peaks in employment and population.

Source: USCB, n.d., 2000 census.

Income. Annual wage and salary income for the Dillingham Census Area reached a high of $85.2 million in 2008 (Table 21-243). Government payrolls comprised 28 percent of this total.

TABLE 21-243
Dillingham Census Area, Employer Payrolls, 1998 through 2008

	Payroll (millions of dollars)										
Industry Category	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
Total government	18.1	17.7	17.3	24.7	25.8	27.0	28.0	28.2	22.6	24.0	24.8
Federal government	1.7	1.6	1.8	1.8	1.7	1.8	2.0	2.5	2.7	2.6	2.7
State government	3.3	3.4	3.5	3.6	3.8	4.1	4.4	4.4	4.7	5.0	5.4
Local government	13.2	12.7	12.0	19.4	20.3	21.2	21.6	21.3	15.2	16.4	16.7
Private sector	44.2	47.6	52.1	44.6	44.8	46.7	48.8	49.3	59.2	59.9	60.4
Total	**62.3**	**65.3**	**69.4**	**69.3**	**70.6**	**73.7**	**76.8**	**77.5**	**81.8**	**83.9**	**85.2**

Source: ADOLWD DRA, n.d.[c].

Community Infrastructure

Utilities. *Water and Wastewater*—all but four of the 11 communities in the Dillingham Census Area have piped water and sewer systems that serve at least three-quarters of the local residences. While Aleknagik and Ekwok do not have community-wide systems, most of the homes in those towns have individual piped well and septic tank systems. Homes in Ekuk and Portage Creek, for the most part, do not have piped water and sewer (ADCCED, n.d.[a]). According to the Bristol Bay Regional Economic Opportunity Plan, the water systems in several of the communities are 25 to 30 years old and need replacement or repair (Stadium Group, 2004).

Solid Waste—except for Portage Creek, every community in the Dillingham Census Area has a landfill.

Housing. In 2000 there were 2,332 housing units in the Dillingham Census Area (Table 21-244). This represented a 38 percent increase (641 units) in total housing units from the 1990 census, with two-thirds (400 units) of this increase attributable to an increase in seasonal- and recreational-use facilities.

Of the 1,529 occupied residences in 2000, 19 percent (285 residences) lacked complete plumbing facilities, 14 percent (214 residences) lacked complete kitchen facilities, and 6 percent (88 residences) had no phone service. The median value of the specified owner-occupied residences in 2000 was $105,300 (USCB, n.d.).

TABLE 21-244
Dillingham Census Area, Housing Characteristics, 1990 and 2000

Characteristic	1990 Count	Percentage	2000 Count	Percentage
Total housing units, by occupancy status	1,691	100	2,332	100
Occupied	1,215	72	1,529	66
Vacant	476	28	803	34
Vacant except for seasonal, recreational, or occasional use	220	13 [a]	620	77 [a]
Homes with heat, by heat type	1,215	100	1,529	100
Utility gas	3	0	3	0
Bottled, tank, or liquid propane gas	2	0	4	0
Electricity	27	2	38	2
Fuel oil, kerosene, etc.	1,081	89	1,422	93
Coal or coke	0	0	4	0
Wood	96	8	41	3
Solar energy	4	0	0	0
Other fuel	2	0	10	1
No fuel used	0	0	7	0
Specified owner-occupied units, [b] by value	650	100	782	100
Less than $50,000	273	42	143	18
$50,000 to $99,999	168	26	217	28
$100,000 to $149,999	104	16	236	30
$150,000 to $199,999	62	10	111	14
$200,000 to $299,999	30	5	65	8
$300,000 or more	13	2	10	1
Median value	$63,300		$105,300	

Notes:

a. Percentage of total vacant units.

b. Specified owner-occupied units, a subgroup of owner-occupied homes, are either one-family homes that are detached from any other house or a one-family house attached to one or more houses on less than 10 acres with no business on the property.

Source: USCB, n.d.

Education Services and Facilities. The Dillingham Census Area encompasses two school districts, the Dillingham School District and the Southwest School District, which together house 10 schools with a total enrollment in 2010 of 1,127 students (Figure 21-41). The City of Dillingham's schools are the Dillingham Elementary School, which had 209 elementary students as well as three preschool students in FY 2010, and the Dillingham Middle/High School, which had 266 students in the sixth through twelfth grades in FY 2010. Schools in the Southwest School District all include grades kindergarten through twelfth grade, and are the Aleknagik School (33 students in FY 2010); Chief Ivan Blunka School (158 students); Clark's Point School (11 students); Koliganek School (57 students); Manokotak School (134 students); Togiak School (229 students); Twin Hills School (14 students); and William "Sonny" Nelson School (13 students) (ADEED, n.d.).

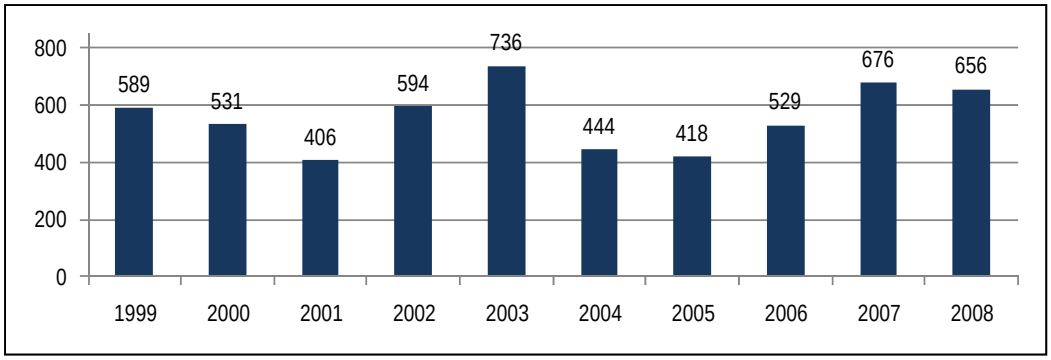

FIGURE 21-41
Dillingham School Enrollment, FY 1997 through FY 2010
Source: ADEED, n.d.

In addition to primary and secondary schools, the census area also has a College of Rural Alaska campus run by UAF. The UAF Bristol Bay Campus is located in Dillingham, and in 2008, it had an enrollment of 656 (Figure 21-42). The campus offers certificate programs as well as associate's and bachelor's degree programs (UAF, 2010).

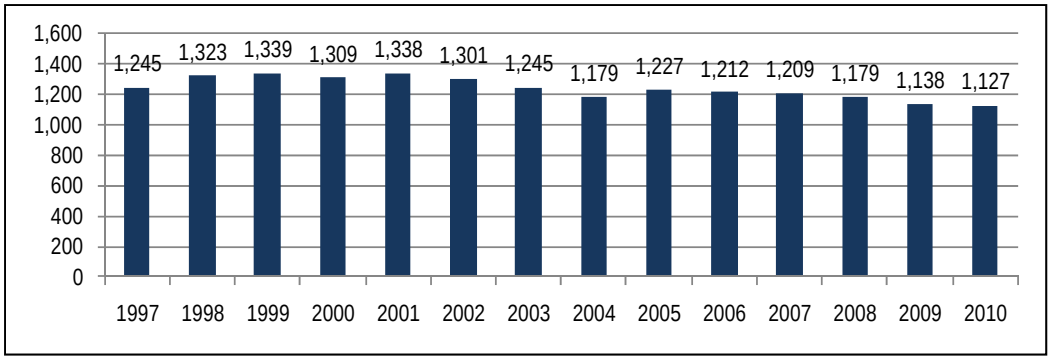

FIGURE 21-42
University of Alaska, Bristol Bay Campus, Dillingham Enrollment, FY 2000 through FY 2009
Source: University of Alaska, 2010.

Health-care Services and Facilities. The BBAHC provides health care in the Dillingham Census Area. Community health aides provide primary health care and emergency medical services in the villages. Health clinics are located in every community in the Dillingham Census Area except Portage Creek and Ekuk (which had a 2009 population of zero; ADCCED, n.d.[a]). Regional services are provided by the Togiak subregional health clinic and Kanakanak Hospital, a 16-bed facility located in Dillingham (BBNA, n.d.[b]).

Public Safety. Dillingham and Togiak are the only communities in the census area with police forces. Dillingham also has an Alaska State Troopers post. Aleknagik, Ekwok, Koliganek, Manokotak, and New Stuyahok have VPSOs. Clark's Point and Twin Hills have vacant VPSO positions. Clark's Point has been looking for a VPSO for several years (Akelkok, pers. comm., 2007).

The Dillingham Police Department's patrol staff is composed of a patrol sergeant and six full-time police officers. The Dillingham Department of Public Safety operates a State of Alaska Division of Motor Vehicles office in the Public Safety building.

The Dillingham Correctional Center is a fully staffed community short-term correctional center funded by the State of Alaska Department of Corrections and maintained by the Dillingham Department of Public Safety. The corrections center has eight beds in four cells: three cells for misdemeanor cases and one felony cell. The Dillingham Correctional Center processes approximately 600 adult criminal custodies per year and averages about 2,300 man-days of jail time each year. The correctional center has a staff of five full-time correctional officers (City of Dillingham, n.d.).

The Dillingham volunteer fire department and rescue squad have 35 members. The department maintains three ambulances, four pumpers, two tank trucks, and a utility truck. Rescue squad members are trained as ambulance drivers, emergency trauma technicians, or emergency medical technicians (City of Dillingham, n.d.).

The Togiak Police Department has three municipal police officers and planned to add a fourth in December 2007. They also have a village police officer. The Public Safety Department in Togiak can hold up to three persons in custody and has a separate holding area for juveniles. The police in Togiak also respond to fire calls along with 11 volunteer firefighters. The department maintains a fire truck, an ambulance, and a code-red unit (Parker, pers. comm., 2007).

Health and Social Indicators

Birth and Death Statistics. The crude birth rate for the Dillingham Census Area in 2008 was 21.4 live births per 1,000 females, which is higher than the statewide crude birth rate (Table 21-245). The 2008 fertility rate of 109.7 live births per 1,000 females and the teen birth rate of 52.6 live births per 1,000 females for the census area also were higher than the statewide rates.

TABLE 21-245
Dillingham Census Area, Birth Rates, 2008

	Total Births	Crude Birth Rate [a]	Fertility Rate [b]	Teen Birth Rate [c]
Alaska	11,437	16.8	81.7	42.3
Dillingham Census Area	102	21.4	109.1	52.6

Notes:

a. Crude birth rate is the number of live births per 1,000 of the population.

b. Fertility rate is number of live births per 1,000 females aged 15 to 44.

c. Teen birth rate is number of live births per 1,000 females aged 15 to 19.

Source: ADHSS, n.d.

The Dillingham Census Area's death rates from 2006 through 2008, based on cause of death, are presented Table 21-246. According to ADHSS data, there were fewer than six occurrences of infant mortality or of suicide-related deaths in the census area in 2008. For this reason, these rates are not published. Deaths resulting from cancer and heart disease each had age-adjusted rates of approximately 164.3 and 147.6 respectively. The age-adjusted rate of accidental deaths (injuries, motor-vehicle accidents, etc.) in the Dillingham Census Area was 104.7 per 100,000 deaths, which is nearly twice the state rate of accidental deaths.

TABLE 21-246
Dillingham Census Area, Death Rates by Cause, 2006 through 2008

	Infant Mortality Rate [a]	Cancer [b]	Heart Disease [b]	Suicide	Accidental Deaths [c]
Alaska	6.3	181.3	85.7	24.9	54.8
Dillingham Census Area	(d)	164.3 [e]	147.6 [e]	(d)	104.7 [e]

Notes:

a. Infant mortality rate is deaths per 1,000 live births.

b. Age-adjusted rates are deaths per 100,000 persons adjusted based on the U.S. population's standard age proportions in 2000.

c. Accidental deaths include deaths resulting from injuries, motor vehicle accidents, etc.

d. Rates based on fewer than six occurrences are not reported.

e. Rates based on fewer than 20 occurrences are statistically unreliable and should be used with caution.

Source: ADHSS, n.d.

Table 21-247 lists the leading causes of death in Alaska and in the Dillingham Census Area from 2006 through 2008.

TABLE 21-247
Alaska and Dillingham Census Area, Leading Causes of Death, 2006 through 2008

Alaska			Dillingham Census Area		
Leading Causes	Crude Rate [a]	Age-adjusted Rate [b]	Leading Causes	Crude Rate [a]	Age-adjusted Rate [b]
1) Malignant neoplasms	122.3	181.3	1) Malignant neoplasms	111.6 [c]	164.3 [c]
2) Diseases of the heart	92.2	154.8	2) Diseases of the heart	97.7 [c]	147.6 [c]
3) Accidental deaths	49.4	54.8	3) Accidental deaths	83.7 [c]	104.7 [c]
4) Cerebrovascular diseases	24.7	45.3	4) Cerebrovascular diseases	(d)	(d)
5) Alzheimer's disease	10.7	24.2	5) Alzheimer's disease	(d)	(d)

Notes:

a. Crude rates are deaths per 100,000 of the population.

b. Age-adjusted rates are deaths per 100,000 persons adjusted based on the U.S. population's standard age proportions in 2000.

c. Rates based on fewer than 20 occurrences are statistically unreliable and should be used with caution.

d. Rates based on fewer than six occurrences are not reported.

Source: ADHSS, n.d.

Hospitalizations. Causes for hospitalization in Alaska and in the Dillingham Census Area are listed in Table 21-248. In both geographic areas, circulatory system problems, injury or poisoning, and digestive system problems were the leading causes for hospitalization from 2001 through 2005. It should be noted though that the Dillingham Census Area is served by a tribally managed hospital that, as of this writing, was not reporting to the Alaska Hospital Discharge System, which is the system responsible for publishing the data presented below.

TABLE 21-248
Alaska and Dillingham Census Area, Rates of Hospital Discharges by Diagnosis, 2001 through 2005

Diagnosis	Alaska (rate per 10,000 people)	Dillingham Census Area (rate per 10,000 people)
Circulatory system	85.1	37.9
Injury or poisoning	71.3	78.2
Digestive system	70.6	50.1
Respiratory system	57.5	23.2
Musculoskeletal system	41.6	31.4
Neoplasm	36.1	29.3
Symptoms/signs	36.1	19.5
Genito-urinary system	36.0	19.1
Endocrine, nutrition, metabolic	24.9	5.7
Mental disorder	24.9	7.3
Skin and subcutaneous tissue	12.4	8.1
Infectious or parasitic disorder	11.5	8.1
Nervous system	8.0	4.1

Diagnosis	Alaska (rate per 10,000 people)	Dillingham Census Area (rate per 10,000 people)
Perinatal conditions	6.5	7.3
Blood and blood-forming organs	5.4	1.2
Congenital anomalies	3.5	4.1

Note: Not all hospitals in Alaska participated in the discharge-report program during this period.
Source: ADHSS, 2010a.

Educational Attainment and Assessment. Data on number of schools, enrollment, and graduation and dropout rates for Alaska and for the Dillingham Census Area are listed in Table 21-249. For the 2007 through 2008 school year, the Dillingham Census Area had a graduation rate of 50 percent, 12 percent lower than the statewide average rate. Additionally, dropout rates for the census area in recent years have been considerably higher than statewide rates; however, the rate for the census area improved substantially from the 2006 through 2007 school year (11.7 percent) to the 2008 through 2009 school year (7.6 percent).

TABLE 21-249
Alaska and Dillingham Census Area—School Counts and Enrollment, and Graduation and Dropout Rates, Various Years 2006-2009

	Alaska	Dillingham Census Area
School count, 2008-2009	511	2
Accredited schools, 2008- 2009	125	1
School enrollment (Grades K-12), 2008-2009	129,187	475
Graduation rate, 2007-2008 [a]	62%	50%
Dropout rates (Grades 7-12)		
2006-2007	5.5%	11.7%
2007-2008	5.2%	7.9%
2008-2009	5.2%	7.6%

Notes:
a. For public reporting, Alaska currently uses state and No Child Left Behind accountability systems. The graduation rate is calculated by dividing the number of graduates by the total number of graduates, other completers, and documented dropouts. It does not measure graduation within 4 years, and it depends on dropout data that inflate the graduation rate.

Source: ADEED, n.d.

According to ADHSS data for the 2008 through 2009 school year, Dillingham Census Area students overall demonstrated lower rates of proficiency in all areas of standardized assessments when compared to statewide figures (Table 21-250).

TABLE 21-250
Alaska and Dillingham Census Area, Educational Assessments, 2008 through 2009 School Year

	Alaska	Dillingham Census Area
Adequate yearly progress (2008-2009 school year)		
Proficient in language arts	78%	62%
Proficient in math	69%	52%
Passed language arts/math	Yes/Yes	Yes/No
Standard based assessments (percent proficient)		
10th grade reading	83%	55%
10th grade writing	77%	50%
10th grade math	68%	40%
High school graduation qualifying examinations (percent proficient) [a]		
10th grade reading	90%	76%
10th grade writing	79%	61%
10th grade math	80%	45%

Note:

a. Data are preliminary.

Source: ADEED, n.d.

Crime Rates. Table 21-251 shows reported crimes for Alaska and for the Dillingham Census Area in 2000. While larceny (theft) was the most commonly reported type of crime statewide, aggravated assault was the most common in the Dillingham Census Area.

TABLE 21-251
Alaska and Dillingham Census Area, Reported Crimes, 2000

	Alaska	Dillingham Census Area
Murder	27	0
Rape	497	0
Robbery	490	1
Aggravated assault	2,540	101
Burglary	3,899	8
Larceny (theft)	16,838	35
Motor vehicle thefts	2,350	16
Total number of crimes reported	**26,641**	**161**
Coverage indicator [a]	N/A	92

Note:

a. The coverage indicator (used by www.fedstats.gov) ranges from 100, indicating that all law enforcement agencies in the census area reported for 12 months in the year, to 0, indicating that all data for the census area are based on estimates, not reported data. The coverage indicator is used for the statistics available from www.fedstats.com. Because the crime statistics given here for Alaska were obtained from another source, there is no statewide coverage indicator.

Sources: State statistics from the Disaster Center, n.d.; census area statistics from FedStats, n.d. (based on 2000 U.S. census data).

21.7.4 Regional Basic Industry Overview

There are three industries that drive the economy in the study area: commercial fishing/seafood processing, the visitor industry, and government. This section provides an overview of these key components of the cash economy. Though the mining industry does not currently play a major role in the region's economy, this section also includes a brief overview of mining-industry activity in the region, other than that related to the Pebble Project. (Many residents of the region maintain a subsistence-dependent lifestyle. Subsistence is addressed in Chapter 23.)

21.7.4.1 Commercial Fishing

Overview of Present Bristol Bay Commercial Fishing and Seafood Processing

The economy of the study area is highly dependent on commercial salmon fishing. There has been limited and sporadic involvement in herring and groundfish fisheries by study-area residents. However, groundfish fisheries in the Bering Sea do contribute to the study-area economies through the Community Development Quota (CDQ) program, whereby six CDQ groups are allocated yearly quota in the region's offshore Pollock, Crab, and Halibut fisheries. Proceeds from the quota are used by local nonprofit corporations for economic and community development projects. Communities associated with the Bristol Bay Economic Development Corporation (Bristol Bay's CDQ group) cover an area from Port Heiden to Ekwok to Togiak.

Nearly all the commercial fishing permits held by study-area residents are Bristol Bay salmon permits. Since there is little participation (outside of the CDQ program) in the offshore pollock, crab, and halibut fisheries by study-area residents, this section will focus mainly on the salmon fisheries in Bristol Bay.

The purpose of this section is to establish an economic baseline for the salmon resource in the Bristol Bay area, including data on participation, harvest volume, and harvest value. Data are presented for the whole Bristol Bay area, followed by district-specific information for the Naknek-Kvichak district and the Nushagak district, as well as for the Kvichak and Nushagak-Mulchatna river, which are ADF&G commercial fishing districts and specific drainages within those districts. Finally, the section provides detailed information on harvest values for the various river systems in the study area.

During the latter half of the 1990s and first few years of the 2000s, the Bristol Bay fisheries experienced economic decline. A decline in market value of Bristol Bay salmon has been driven by global forces beyond the control of local participants; however, those global forces have profound local effects resulting from decreased fishing earnings and a corollary out-migration of limited-entry permits from Southwest Alaska communities. The out-migration was driven by a combination of permit-holders moving out of regional communities and residents selling their permits to fishermen outside the region.

The outmigration of permit-holders and the sale of salmon permits were influenced by a variety of factors. These include willing permit buyers from the lower-48 states and fluctuations in run strength and management responses to those fluctuations. Two additional important factors are global competition from farmed salmon and the resulting depression in ex-vessel prices paid to Bristol Bay salmon harvesters starting in the late 1990s and accelerating through the 1990s and to the present day (see discussion near the end of Section 21.7.1.4). Indeed, the United States changed from being a net exporter of salmon products (positive annual trade value of more than $400 million) prior to 1997 to a net importer of these

same products (negative annual trade value of more than $400 million) since that year. The Bristol Bay sockeye salmon harvest has been a major component of domestic (United States) salmon production throughout the last several decades (Knapp, et al., 2007) and continues to maintain this status.

The sockeye salmon fishery in Bristol Bay is the largest in Alaska and the world. From the mid-1990s and through the early 2000s, an average of 20 million sockeye was harvested each year as the fish returned to the river drainages in Bristol Bay. The fishing occurs at a feverish pace, with the majority of fish typically harvested in a 3-week period. This rapid pace makes competing with farmed salmon more difficult. Specifically, improved product-quality standards have been difficult to achieve in the bay. The pace of the fishery has prevented the implementation of additional on-board measures to ensure salmon quality, such as chilling and bleeding of fish. The competitive buying that typified the late 1980s and early 1990s is also a thing of the past. The number of companies purchasing salmon in the Bristol Bay area has declined, from 15 major firms to eight to 10, along with a handful of smaller operators. Ex-vessel price (the price paid to harvesters for their catch) also has plummeted. In 1998 harvesters were paid $1.22 per pound for their sockeye salmon. By 2001 the average price had fallen to $0.42 per pound. The price then rebounded slightly, to $0.55 per pound.

The Bristol Bay salmon fishery is managed in districts. There are five designated districts: Ugashik, Egegik, Naknek-Kvichak, Nushagak, and Togiak. This profile focuses first on the Bristol Bay area as a whole, and then focuses specifically on the Naknek-Kvichak district, the Nushagak district, and the rivers in those districts most relevant to the study area.

Bristol Bay Regional Salmon Industry Profile

Since the mid-1980s, the value of the Bristol Bay salmon harvest has varied as market conditions and harvest volumes have fluctuated. Salmon values peaked in late 1980s and early 1990s, and then declined throughout most of the 1990s before bottoming out in 2002. After 2002, market conditions improved and harvest volumes once again increased, resulting in a steady increase in the total value of the salmon resource since 2002.

In 2009, 2,287 Bristol Bay gillnet permits were fished (driftnet and setnet permits combined; Table 21-252). That participation level continued an upward trend from the low of 1,864 permits fished in 2002. The total harvest in 2009 of 192 million pounds worth $130 million was the highest, in terms of volume and value, since 1996, but still lower than the 251 million pounds in 1995. Not only has harvest volume increased in recent years, but ex-vessel prices have trended up since the early-to-mid 2000s as well.

TABLE 21-252
Total Bristol Bay Salmon Gillnet Harvest (Driftnet and Setnet Combined), 1990 through 2009

Year	Permits Fished	Total pounds (thousands)	Total Earnings (thousands)
1990	2,840	202,557	$214,179
1991	2,823	159,192	$115,540
1992	2,847	193,143	$208,656
1993	2,840	250,768	$167,124
1994	2,804	205,960	$197,559
1995	2,849	251,472	$195,973
1996	2,825	194,134	$151,986
1997	2,796	76,216	$69,003
1998	2,759	63,430	$71,316
1999	2,772	139,953	$114,417
2000	2,744	129,296	$84,392
2001	2,400	101,437	$40,906
2002	1,864	68,074	$32,029
2003	2,185	99,638	$48,416
2004	2,206	155,215	$77,333
2005	2,276	165,582	$97,880
2006	2,319	180,905	$93,393
2007	2,303	185,816	$118,015
2008	2,319	169,244	$121,096
2009 [a]	2,287	192,141	$129,782

Note:

a. Data shown for 2009 are preliminary.

Source: CFEC, 2010a.

According to preliminary ADF&G data, roughly 32 million salmon were harvested in the Bristol Bay region in 2009. Sockeye accounted for 31 million of the fish harvest. The total value of Bristol Bay regional fisheries was $129 million, of which sockeye values accounted for 99 percent ($128 million).

Harvest Volume and Value. Harvest volumes and values vary from year to year based on run size and world salmon market conditions. Salmon volumes in the Bristol Bay region, as in all wild salmon-producing regions, vary based on many factors. The development of the world salmon-farming industry, beginning in the 1980s and accelerating in the 1990s, brought substantial additional volumes to the world market. As world salmon supplies expanded, particularly supplies of farmed salmon, the value of the Bristol Bay salmon resource declined. Recent promotional and consumer awareness efforts have helped improve market conditions for wild salmon. This, coupled with strong salmon returns in Bristol Bay in recent years, has helped the value of the Bristol Bay salmon harvest recover from the market bottom in 2002.

In 2009 the total Bristol Bay harvest was 32 million fish (Table 21-253). More than 95 percent (31 million) were sockeye salmon. In terms of number of fish, the 2009 harvest was the largest harvest since 1995, when 45 million fish were taken.

TABLE 21-253
Harvest by Number of Fish, 1990 through 2009

Year	Sockeye (thousands)	Other (thousands)	Total (thousands)
1990	33,523	1,692	35,215
1991	25,821	1,438	27,259
1992	31,880	1,680	33,560
1993	40,462	997	41,460
1994	35,224	1,301	36,525
1995	44,266	1,129	45,395
1996	29,588	1,093	30,682
1997	12,159	438	12,597
1998	10,036	667	10,703
1999	25,658	731	26,389
2000	20,458	611	21,068
2001	14,179	874	15,052
2002	10,676	521	11,198
2003	14,761	1,023	15,784
2004	26,262	967	27,229
2005	24,503	1,454	25,956
2006	28,658	1,457	31,048
2007	29,766	2,055	31,821
2008	27,701	1,722	29,423
2009 [a]	30,899	1,457	32,356

Note:

a. Data shown for 2009 are preliminary.

Source: ADF&G CFD, 2009.

Table 21-254 presents total ex-vessel values of Bristol Bay salmon harvests from 1990 through 2009, and Table 21-255 shows average ex-vessel prices per pound. The total ex-vessel value for the 2009 salmon season was $128 million, with an average ex-vessel price per pound of $0.70 for sockeye. Prices for Bristol Bay sockeye have rebounded steadily since bottoming out in 2001 at $0.42 per pound. Although ex-vessel values of sockeye have increased four-fold since 2002, the 2009 harvest is still lower than the average harvest seen during the 1990s.

TABLE 21-254
Bristol Bay Estimated Ex-vessel Value, 1990 through 2009

Year	Sockeye Value (thousands) [a]	Value of Other Salmon (thousands) [a]	Total Value (thousands) [a]
1990	$210,057	$3,381	$213,439
1991	$112,114	$2,566	$114,680
1992	$204,604	$3,642	$208,245
1993	$163,089	$2,590	$165,679
1994	$188,918	$3,877	$192,796
1995	$187,863	$2,699	$190,562
1996	$150,968	$1,703	$152,671
1997	$65,743	$1,033	$66,777
1998	$70,529	$2,158	$72,688
1999	$114,504	$711	$115,215
2000	$83,940	$816	$84,756
2001	$40,395	$851	$41,246
2002	$31,899	$581	$32,479
2003	$47,993	$808	$48,801
2004	$77,897	$1,222	$79,119
2005	$96,650	$1,854	$98,503
2006	$90,233	$2,877	$93,109
2007	$119,196	$2,245	$121,441
2008	$109,904	$2,015	$111,919
2009	$127,615	$1,853	$129,468

Note:

a. Value paid to fishermen is derived from price per pound multiplied by the pounds of commercial catch.

Source: ADF&G CFD, 2009.

TABLE 21-255
Average Ex-vessel Price per Pound, 1990 through 2009

	Price per Pound ($)				
Year	Sockeye	Chinook	Chum	Pink	Coho
1990	1.09	0.91	0.27	0.29	0.73
1991	0.75	0.67	0.22	0.15	0.60
1992	1.12	0.93	0.26	0.14	0.59
1993	0.67	0.76	0.22	0.25	0.52
1994	0.97	0.64	0.22	0.12	0.71
1995	0.77	0.66	0.20	0.14	0.43
1996	0.81	0.51	0.11	0.05	0.31
1997	0.90	0.52	0.10	0.07	0.50

	Price per Pound ($)				
Year	Sockeye	Chinook	Chum	Pink	Coho
1998	1.22	0.62	0.10	0.08	0.48
1999	0.84	0.53	0.10	0.09	0.72
2000	0.67	0.46	0.09	0.08	0.41
2001	0.42	0.31	0.11	0.09	0.33
2002	0.49	0.33	0.09	0.06	0.32
2003	0.51	0.32	0.08	0.07	0.27
2004	0.51	0.37	0.09	0.09	0.31
2005	0.62	0.58	0.11	0.02	0.29
2006	0.55	0.74	0.11	0.03	0.35
2007	0.64	0.67	0.13	0.03	0.41
2008	0.69	0.78	0.15	0.16	0.39
2009	0.70	0.75	0.15	0.20	0.41

Source: ADF&G CFD, 2009.

In 2009 (inflation-adjusted) dollars, sockeye prices have ranged from $0.51 to $1.79 during the 20 years considered in this baseline study (Table 21-256).

TABLE 21-256
Average Ex-vessel Price per Pound in 2009 Dollars, 1990 through 2009

	Price per Pound ($)				
Year	Sockeye	Chinook	Chum	Pink	Coho
1990	1.79	1.49	0.44	0.48	1.20
1991	1.18	1.06	0.35	0.24	0.95
1992	1.71	1.42	0.40	0.21	0.90
1993	0.99	1.13	0.33	0.37	0.77
1994	1.40	0.93	0.32	0.17	1.03
1995	1.08	0.93	0.28	0.20	0.61
1996	1.11	0.70	0.15	0.07	0.42
1997	1.20	0.70	0.13	0.09	0.67
1998	1.61	0.82	0.13	0.11	0.63
1999	1.08	0.68	0.13	0.12	0.93
2000	0.83	0.57	0.11	0.10	0.51
2001	0.51	0.38	0.13	0.11	0.40
2002	0.58	0.39	0.11	0.07	0.38
2003	0.59	0.37	0.09	0.08	0.31
2004	0.58	0.42	0.10	0.10	0.35
2005	0.68	0.64	0.12	0.02	0.32
2006	0.59	0.79	0.12	0.03	0.37
2007	0.66	0.69	0.13	0.03	0.42

	Price per Pound ($)				
Year	Sockeye	Chinook	Chum	Pink	Coho
2008	0.69	0.78	0.15	0.16	0.39
2009	0.70	0.75	0.15	0.20	0.40

Source: ADF&G CFD, 2009.

Participation. Within the drift gillnet salmon fishery in Bristol Bay, overall participation has decreased since the early 1980s. Fourteen hundred forty-four permits were fished in 2009, a decrease of 25 permits from 2008. Peak participation was in 1996 with 1,884 permits fished.

Alaska resident participation in the Bristol Bay drift gillnet fishery also began a decline around 1990, reaching a low of 587 permits fished in 2002 (Table 21-257). After 2002 the number of permits fished by Alaska residents started to increase. During the 2009 season, Alaska resident permit holders accounted for 46 percent of the total permits fished. This is a decrease from 1990 when Alaska residents accounted for 55 percent of the drift gillnet permits fished.

In 2009, 665 drift gillnet permits were fished by Alaska residents, who harvested more than 59 million pounds of salmon with an ex-vessel value of $40 million. These 665 permits represent 76 percent of all the drift gillnet permits issued to Alaska residents in 2009 (24 percent of the permits issued to residents in 2009 were not fished).

TABLE 21-257
Bristol Bay Drift Gillnet Harvest by Alaska Resident Permit Holders, 1990 through 2009

Year	Permits Fished	Total Pounds (thousands)	Total Earnings (thousands)	Average Gross Earnings [a]
1990	1,030	82,311	$85,695	$83,199
1991	1,019	67,230	$48,049	$47,153
1992	1,002	78,496	$83,336	$83,170
1993	975	103,711	$68,438	$70,193
1994	963	80,658	$76,097	$79,021
1995	966	96,921	$74,515	$77,138
1996	956	75,866	$58,297	$60,980
1997	943	29,172	$25,938	$27,506
1998	933	24,794	$26,825	$28,751
1999	907	52,023	$42,292	$46,629
2000	896	47,755	$30,805	$34,380
2001	791	34,952	$13,673	$17,286
2002	587	21,222	$9,722	$16,563
2003	697	34,749	$16,614	$23,836
2004	678	53,694	$26,402	$38,941
2005	700	55,226	$32,220	$46,028
2006	709	63,961	$39,329	$55,472
2007	693	61,729	$38,774	$55,952

Year	Permits Fished	Total Pounds (thousands)	Total Earnings (thousands)	Average Gross Earnings [a]
2008	706	55,455	$39,015	$55,262
2009	665	59,767	$39,699	$59,697

Note:

a. Average gross earnings are the average amount paid to permit holders by processors; thus the amount shown is a permit holder's average earnings before expenses and crew shares.

Source: CFEC, 2010a.

Non-Alaska resident participation in the drift gillnet fishery in Bristol Bay increased from 1990 to 1996, when it reached a peak of 940 non-resident permits (Table 21-258). Participation fluctuated in subsequent years as market conditions deteriorated and then began to improve. In 2009 non-resident permit holders accounted for 54 percent of the total drift gillnet permits fished in the Bristol Bay salmon fishery.

In 2009, 779 drift gillnet permits were fished by non-resident permit holders, who harvested 97 million pounds of salmon with an ex-vessel value of $66 million. The 779 permits fished represented 78 percent of all the drift gillnet permits issued to non-resident permit holders in 2009 (22 percent of the permits issued to non-residents in 2009 were not fished).

TABLE 21-258
Bristol Bay Drift Gillnet Harvest by Non-resident Permit Holders, 1990 through 2009

Year	Permits Fished	Total Pounds (thousands)	Total Earnings (thousands)	Average Gross Earnings
1990	839	93,506	$100,390	$119,655
1991	854	69,548	$51,182	$59,932
1992	877	89,415	$98,881	$112,749
1993	900	114,430	$76,938	$85,487
1994	902	100,583	$98,473	$109,172
1995	916	121,081	$95,514	$104,273
1996	928	90,756	$72,315	$77,926
1997	932	33,415	$30,753	$32,997
1998	925	26,174	$30,378	$32,841
1999	940	61,530	$50,604	$53,834
2000	927	56,900	$37,608	$40,569
2001	775	45,682	$18,742	$24,183
2002	597	32,942	$15,710	$26,315
2003	727	43,712	$21,386	$29,416
2004	733	77,526	$39,267	$53,571
2005	747	80,348	$48,339	$64,711
2006	766	89,556	$56,735	$74,066
2007	775	92,156	$59,340	$76,568

Year	Permits Fished	Total Pounds (thousands)	Total Earnings (thousands)	Average Gross Earnings
2008	763	83,661	$61,125	$80,111
2009	779	96,760	$65,827	$84,502

Source: CFEC, 2010a.

Set gillnet harvesting uses the same fishing gear used by driftnet fishermen, but the net is attached to the beach. Unlike the driftnet fishery, Alaska residents are the majority of set gillnet permit holders (Tables 21-257 and 21-258). As in the driftnet fishery, not all permits are fished every year.

Alaska resident setnet participation declined from 1992 to 2002, when only 477 permits were fished (Table 21-259). After 2002 participation by Alaska residents increased, and in 2009, 567 permits were fished. Those 567 resident permits represented 67 percent of all setnet permits fished that year and 84 percent of the total setnet permits (used and unused) issued to Alaska residents that year.

Trends in total and average earnings parallel those in participation and pounds landed. The resident setnet salmon harvest in Bristol Bay in 2009 totaled 23 million pounds and had an ex-vessel value of $15 million. Average earnings, which bottomed out in 2002 at $9,000, have increased steadily, reaching $27,000 in 2009.

TABLE 21-259
Bristol Bay Set Gillnet Harvest by Alaska Resident Permit Holders, 1990 through 2009

Year	Permits Fished	Total Pounds (thousands)	Total Earnings (thousands)	Average Gross Earnings
1990	736	19,144	$20,037	$27,224
1991	715	16,532	$11,972	$16,744
1992	727	17,868	$18,567	$25,539
1993	722	22,895	$15,234	$21,100
1994	700	17,902	$16,494	$23,563
1995	728	24,344	$18,773	$25,787
1996	708	20,365	$15,694	$22,166
1997	685	9,160	$8,219	$11,998
1998	660	8,734	$9,734	$14,749
1999	684	18,644	$15,124	$22,112
2000	670	17,657	$11,385	$16,992
2001	596	15,684	$6,373	$10,693
2002	477	9,197	$4,330	$9,077
2003	531	15,097	$7,419	$13,971
2004	541	14,979	$7,233	$13,370
2005	571	20,073	$11,533	$20,197
2006	579	18,794	$10,826	$18,698
2007	566	21,112	$13,083	$23,115

Year	Permits Fished	Total Pounds (thousands)	Total Earnings (thousands)	Average Gross Earnings
2008	575	20,103	$13,859	$24,102
2009	567	22,613	$15,327	$27,031

Source: CFEC, 2010a.

Non-Alaska resident participation in the set gillnet fishery has slowly increased over the past decade from 26 percent in 1990 to 33 percent in 2009 as resident permit holders have exited the fishery. Non-residents accounted for 276 of the 843 permits fished in the 2009 set gillnet fishery (Table 21-260), the highest number of non-resident permits fished on record. About 89 percent of the permits issued to non-residents in 2009 were fished.

As with resident permit holders, trends in total and average earnings for non-resident permit holders paralleled those in participation and pounds landed. The non-resident setnet salmon harvest in Bristol Bay in 2009 totaled 13 million pounds and had an ex-vessel value of $9 million. Average earnings, which bottomed out in 2001 at $9,000, have increased steadily reaching $32,000 in 2009.

TABLE 21-260
Bristol Bay Set Gillnet Harvest, Non-Resident Permit Holders, 1990 through 2009

Year	Permits Fished	Total Pounds (thousands)	Total Earnings (thousands)	Average Gross Earnings
1990	235	7,596	$8,056	$34,281
1991	235	5,882	$4,335	$18,457
1992	241	7,364	$7,872	$32,663
1993	243	9,732	$6,514	$26,806
1994	239	6,818	$6,495	$27,176
1995	239	9,126	$7,170	$30,001
1996	233	7,147	$5,680	$24,376
1997	236	4,470	$4,094	$17,346
1998	241	3,729	$4,378	$18,168
1999	241	7,756	$6,397	$26,543
2000	251	6,984	$4,596	$18,309
2001	238	5,118	$2,118	$8,898
2002	203	4,713	$2,267	$11,167
2003	230	6,079	$2,998	$13,034
2004	254	9,017	$4,431	$17,443
2005	258	9,960	$5,866	$22,736
2006	265	8,595	$5,145	$19,415
2007	269	10,818	$6,816	$25,340
2008	275	10,024	$7,097	$25,808
2009	276	13,001	$8,939	$32,389

Source: CFEC, 2010a.

Participation shifts are evident also among local Bristol Bay residents. Three census areas are located in the Bristol Bay region: the Bristol Bay Borough, the Dillingham Census Area, and the Lake and Peninsula Borough.

Bristol Bay Borough residents in 2009 fished 94 setnet permits, harvesting 3.5 million pounds of salmon with an ex-vessel value of $2.4 million and average gross earnings per permit of $25,576 (Table 21-261). Forty-eight driftnet permits were fished, with a harvest of 4.2 million pounds, a total ex-vessel value of $2.9 million, and average permit earnings of $59,906. Setnet permits accounted for 51 percent of the gillnet permits fished and 46 percent of the volume harvested. Conversely, drift net permits accounted for 49 percent of the permits fished and 54 percent of the volume.

Dillingham Census Area residents fished 168 setnet permits in 2009, harvesting 6.6 million pounds of salmon with an ex-vessel value of $4.4 million and average gross earnings of $26,035 (Table 21-2561. Residents fished 200 driftnet permits, harvesting 13.2 million pounds of salmon with an ex-vessel value of $8.3 million and average earnings of $41,453. Setnet permits accounted for 46 percent of all gillnet permits fished by Dillingham Census Area fishermen and 33 percent of the volume harvested. Conversely, driftnet permits accounted for 54 percent of the permits fished and 67 percent of the total volume harvested.

Lake and Peninsula Borough residents fished 37 setnet permits in 2009, harvesting over 1.2 million pounds of salmon with an approximate ex-vessel value of $850,000 and average gross earnings of $23,143 (Table 21-261). Borough fishermen fished 41 driftnet permits, harvesting 3.7 million pounds of salmon with an ex-vessel value of $2.5 million and average earnings of $61,637. Setnet permits accounted for 47 percent of the gillnet permits fished and 25 percent of the volume harvested, while driftnet permits made up 53 percent of the permits fished and 75 percent of the harvest.

TABLE 21-261
Bristol Bay Permit Holder Harvest Data by Census Area, 2009

	Bristol Bay Borough		Dillingham Census Area		Lake & Peninsula Borough	
Census Area	**Setnet**	**Driftnet**	**Setnet**	**Driftnet**	**Setnet**	**Driftnet**
Number of Permits Fished	94	48	168	200	37	41
Total Pounds Harvested	3,537,700	4,195,637	6,609,658	13,240,708	1,242,768	3,671,071
Average Pounds Harvested	25,576	87,409	39,343	66,204	33,588	89,538
Ex-Vessel Harvest Value	$2,404,158	$2,875,474	$4,373,944	$8,290,562	$856,283	$2,527,125
Average Gross Earnings	$25,576	$59,906	$26,035	$41,453	$23,143	$61,637

Source: CFEC, 2010b.

Permit Price and Earnings. Average gross earnings and permit prices were high in Bristol Bay in 1990 because of strong world salmon markets and strong runs. As noted previously, when the world supply of salmon started to increase, the value of the Bristol Bay salmon fishery decreased. Average gross earnings per permit also decreased, as did the price of a permit. From 1990 to 2001, average gross driftnet earnings

per permit decreased from $99,564 to $20,699 (Table 21-262). Average permit price decreased from $216,033 in 1990 to a low of $19,700 in 2002. Setnet permits followed the same trend, with permit earnings falling from $28,932 in 1990 to $9,701 in 2002 and permit prices declining from $65,179 in 1990 to $11,900 in 2002. After 2002 earnings and permit prices for both types of permits increased.

In 2009 the average gross earnings for a Bristol Bay driftnet permit were $73,079 and the average permit price was $78,000. Setnet permits averaged gross earnings of $28,785 in 2009, with an average permit price of $28,200. These values are an improvement over the low values in 2001 and 2002, but are still well below historical highs.

TABLE 21-262
Average Gross Earnings and Permit Prices, 1990 through 2009

	Drift Gillnet		Set Gillnet	
Year	Average Gross Earnings	Average Permit Price	Average Gross Earnings	Average Permit Price
1990	$99,564	$216,033	$28,932	$65,179
1991	$52,979	$207,800	$17,168	$59,500
1992	$96,976	$193,500	$27,313	$49,800
1993	$77,535	$199,600	$22,537	$49,100
1994	$93,603	$165,700	$24,483	$37,800
1995	$90,345	$195,000	$26,829	$42,200
1996	$69,327	$171,800	$22,714	$41,100
1997	$30,235	$153,800	$13,368	$39,000
1998	$30,787	$99,500	$15,663	$30,400
1999	$50,296	$89,700	$23,266	$31,300
2000	$37,527	$80,500	$17,351	$32,400
2001	$20,699	$34,700	$10,181	$25,300
2002	$21,480	$19,700	$9,701	$11,900
2003	$56,685	$29,300	$13,688	$12,600
2004	$46,541	$37,000	$14,671	$14,700
2005	$55,673	$51,200	$20,988	$15,100
2006	$65,128	$75,000	$18,923	$22,400
2007	$66,836	$79,400	$23,832	$24,000
2008	$68,169	$89,800	$24,654	$27,400
2009	$73,079	$78,300	$28,785	$28,200

Source: CFEC, 2010b.

Seafood Processing. Salmon processing in Bristol Bay is handled by both shore-based and floating facilities during the harvest season. Processing activity has important local economic effects. Each summer thousands of people are employed in the Bristol Bay seafood-processing industry. Materials such as fuel, gear, food, metals for canning, and machinery are shipped into the area for use during the salmon harvest. Processing of seafood in the area also brings tax revenue to the state and to the municipalities where the seafood is processed.

Production Volume and Value. In 2008 sockeye salmon processors in Bristol Bay produced just over 99 million pounds of finished product (Table 21-263) with a total first wholesale value (amount received by primary processors for the sale of their product to the first buyer outside their affiliate network) of $268 million (Table 21-264). Salmon from Bristol Bay typically are processed into cans, fillets, or headed and gutted (H&G) products. Fillets and H&G salmon are shipped either fresh or frozen depending on the target market. The first wholesale value of Bristol Bay sockeye has increased steadily since 2002, and the 2008 harvest was the most valuable in 12 years. Over the past 3 years, fewer sockeye were canned, fewer were sold fresh, and more were being shipped out frozen. The price processors receive for frozen and canned product increased 30 percent and 12 percent, respectively, from 2006 to 2008.

TABLE 21-263
Volume of Bristol Bay Sockeye Salmon Production by Product Type, 1990 through 2009

Year	Canned (pounds in thousands)	Fresh (pounds in thousands)	Frozen (pounds in thousands)	Other (pounds in thousands)	Total (pounds in thousands)
1990	17,646	1,368	96,568	—	115,582
1991	20,476	2,532	80,365	—	103,374
1992	20,795	473	103,665	—	124,933
1993	27,664	1,066	141,983	—	170,712
1994	20,533	652	105,498	—	126,683
1995	31,888	3,253	124,896	—	160,037
1996	29,461	735	97,529	3,203	130,928
1997	9,623	4,636	35,129	539	49,926
1998	11,198	209	27,184	707	39,298
1999	21,303	82	60,445	—	81,831
2000	29,497	764	48,844	299	79,404
2001	19,324	—	41,328	—	60,651
2002	22,098	213	22,687	—	44,997
2003	21,936	1,129	34,296	1,575	58,937
2004	31,081	6,404	54,471	1,451	93,408
2005	31,639	6,106	64,196	1,236	103,177
2006	36,150	8,864	64,612	1,269	110,895
2007	36,534	4,262	65,365	877	107,039
2008	26,503	2,720	66,776	3,152	99,150

Source: ADF&G CFD, 2009.

TABLE 21-264
Value of Bristol Bay Sockeye Salmon Production by Product Type, 1990 through 2009

Year	Canned (thousands)	Fresh (thousands)	Frozen (thousands)	Other (thousands)	Total (thousands)
1990	$59,708	$2,481	$213,009	—	$275,198
1991	$58,029	$5,492	$137,619	—	$201,139
1992	$79,243	$862	$250,347	—	$330,453
1993	$64,391	$1,383,	$230,239	—	$296,014
1994	$63,142	$1,261	$257,318	—	$321,721
1995	$93,581	$6,490	$211,042	—	$311,113
1996	$92,602	$1,031	$203,285	$9,023	$305,941
1997	$32,496	$9,487	$80,778	$1,425	$124,186
1998	$44,106	$459	$80,586	$2,388	$127,538
1999	$67,124	$191	$128,393	—	$195,709
2000	$81,510	$1,591	$81,234	$665	$165,000
2001	$44,670	—	$61,158	—	$105,828
2002	$55,276	$327	$39,698	—	$94,974
2003	$51,489	$1,532	$55,824	$7,086	$115,930
2004	$68,611	$8,055	$95,680	$4,817	$177,163
2005	$74,455	$9,280	$131,327	$5,289	$220,350
2006	$94,933	$12,115	$126,393	$4,631	$238,072
2007	$98,789	$8,765	$136,670	$4,663	$248,886
2008	$77,977	$7,987	$169,601	$12,125	$267,690

Source: ADF&G CFD, 2009.

Employment. Workers from around the world come to Bristol Bay processing facilities to meet the labor demand created by the large salmon harvest. Salmon-processing plants operate in the Bristol Bay Borough, in Dillingham, and in the Lake and Peninsula Borough. Typically, between 70 and 90 percent of regional seafood-processing employment is filled by non-residents.

Employment varies annually depending on expected harvest volumes. Seafood-processing employment data are collected by ADOLWD. The most recent available data are from 2008. The ADOLWD data indicate there was a decrease in the level of seafood-processing employment from 2000 to 2002 (Table 21-265). Since 2002 processing employment in the Bristol Bay region has increased to handle larger salmon runs. Processing employment in 2008 was nearly double the employment seen in the 2002 season. Most of the increase in employment has come from processors hiring additional non-resident workers.

TABLE 21-265
Bristol Bay Regional Seafood-processing Employment, Total Annual Count, 2000 through 2008 [a]

Year	Resident	Non-residents	Total	Percent Non-resident
2000	705	3,160	3,865	82%
2001	696	2,020	2,716	74%
2002	516	1,667	2,183	76%
2003	629	1,769	2,398	74%
2004	630	2,785	3,415	82%
2005	609	2,663	3,272	81%
2006	470	2,543	3,013	84%
2007	555	2,957	3,512	84%
2008	651	3,316	3,967	84%

Note:

a. Bristol Bay regional figures include processing employment associated with fish harvested outside the Bristol Bay fishery but processed in communities within the immediate region.

Source: ADOLWD, 2009.

Seafood-processing employment in the Bristol Bay Borough in 2008, with 2,943 employees, accounted for 74 percent of the total processing employment for the Bristol Bay region. Employment in Bristol Bay Borough processing jobs increased 43 percent between 2006 and 2008 (Table 21-266).

TABLE 21-266
Bristol Bay Borough Seafood-processing Employment, Total Annual Count, 2000 through 2008

Year	Resident	Non-residents	Total	Percent Non-resident
2000	482	2,015	2,497	81%
2001	566	1,286	1,852	69%
2002	444	1,224	1,668	73%
2003	522	1,305	1,827	71%
2004	514	2,071	2,585	80%
2005	506	2,022	2,528	80%
2006	373	1,684	2,057	82%
2007	440	2,111	2,551	83%
2008	524	2,419	2,943	82%

Source: ADOLWD, 2009.

Seafood-processing in the Dillingham Census Area employed 459 employees in 2008, with 85 percent of those employees being non-residents (Table 21-267).

TABLE 21-267
Dillingham Census Area Seafood-processing Employment, Total Annual Count, 2000 THROUGH 2008

Year	Resident	Non-residents	Total	Percent Non-resident
2000	144	795	939	85%
2001	100	393	493	80%
2002	49	183	232	79%
2003	72	206	278	74%
2004	72	415	487	85%
2005	55	341	396	86%
2006	66	441	507	87%
2007	82	441	523	84%
2008	68	391	459	85%

Source: ADOLWD, 2009.

Lake and Peninsula Borough had a total of 565 processing employees in 2005 and, of the three census areas, had the highest percentage of non-resident employees at 89 percent (Table 21-268). Note that the data for the Lake and Peninsula Borough include Chignik, a port outside of the Bristol Bay fishery. It is not possible to separate the Chignik employment data because of data confidentiality practices.

TABLE 21-268
Lake and Peninsula Borough Seafood-processing Employment, Total Annual Count, 2000 through 2008

Year	Resident	Non-residents	Total	Percent Non-resident
2000	79	350	429	82%
2001	30	341	371	92%
2002	23	260	283	92%
2003	35	258	293	88%
2004	44	299	343	87%
2005	43	317	360	88%
2006	34	408	442	92%
2007	38	428	466	92%
2008	60	505	565	89%

Source: ADOLWD, 2009.

District and River Profiles

In this section, harvest data from individual districts and rivers have been analyzed to illustrate their relationship to the Bristol Bay region as a whole. Harvest, run, and value data similar to those presented above for the Bristol Bay region overall are presented below for districts and rivers in the study area.

Naknek-Kvichak District. The Naknek-Kvichak District includes the Kvichak, Alagnak (Branch), and Naknek rivers. During the 2009 salmon season, 8.5 million sockeye salmon with an estimated ex-vessel value of $35.2 million were harvested from the Naknek-Kvichak District (Table 21-269). The total run size (total catch plus total escapement) was 12.9 million sockeye with escapement of 4.4 million fish. Preliminary data suggest the 2009 harvest was lower than the two prior years, and the total run ranks as the second-lowest of the past 6 years. Despite the decline, the total run was 7 percent above the forecast and the escapement goal of 4.0 million fish was met. Total run sizes have been variable since 1990: after 1990, the largest run was 32 million fish in 1995, while the smallest run was three million fish in 1997.

TABLE 21-269
Naknek-Kvichak District Sockeye, Number of Fish and Value of Harvest, 1990 through 2009

Year	Catch (thousands)	Value [a] (thousands)	Escapement (thousands)	Total Run (thousands)
1990	14,127	$107,542	9,231	26,358
1991	10,558	$44,763	8,079	18,637
1992	9,330	$60,031	6,557	15,887
1993	8,867	$35,794	5,909	14,776
1994	16,263	$86,767	9,571	25,834
1995	10,415	$86,041	11,366	31,781
1996	8,188	$42,004	2,835	11,023
1997	604	$3,197	2,748	3,351
1998	2,553	$18,088	3,751	6,303
1999	9,484	$42,254	8,304	17,788
2000	4,727	$19,264	3,655	8,382
2001	5,245	$14,943	3,195	8,439
2002	1,408	$4,250	2,304	3,711
2003	3,348	$10,841	7,194	10,543
2004	4,727	$13,971	12,836	17,563
2005	6,701	$26,446	9,284	15,985
2006	7,154	$22,347	6,795	13,949
2007	9,023	$33,492	8,222	17,244
2008	10,392	$41,589	7,411	17,803
2009	8,519	$35,184	4,406	12,925

Note:

a. Value estimates calculated by McDowell Group.

Source: ADF&G CFD, 2009.

The Kvichak River drains Iliamna Lake, and while both the Naknek and Kvichak rivers are located in the district, only the Kvichak River is located in the study area; therefore, it is the only river in the district that is individually profiled here.

Each year ADF&G personnel collect data on run size to use in evaluating the health of salmon runs. Using the collected data and area management plans, fishery managers set fishing periods and develop

other management strategies. The Kvichak River is of particular concern for fishery managers. From 2000 to 2003, the Kvichak River did not meet the minimum escapement goals set by ADF&G. Since 2002 escapement improved and ADF&G escapement goals were met; however, limits have been set on harvests of fish bound for the Kvichak River in recent years. Special harvest areas for the Naknek, Egegik, and Ugashik rivers were created to limit the interception of fish bound for the Kvichak River (ADF&G CFD, 2009). When escapement for the Kvichak River is reached, other areas in the Naknek-Kvichak district are opened for harvesting.

Data on individual rivers in the Naknek-Kvichak district are available for 1990 through 2008. During the 2008 season, fishermen from the Kvichak River harvested 2.9 million sockeye with an estimated ex-vessel value of $11.5 million (Table 21-270). The total run in the Kvichak in 2006 was 5.6 million fish. In 2002 no fish were commercially harvested because of management actions implemented to meet escapement goals on the Kvichak River. Over the years, the run size has varied: a peak run of 27 million fish occurred in 1995, and a low of 704,000 fish returned in 2002. After 2002 the total run size in the Kvichak River increased. Notably, recent years' returns to the Alagnak River, which shares headwaters with the Kvichak, have been strong.

TABLE 21-270
Kvichak River Sockeye, Number of Fish and Value of Harvest,
1990 through 2008

Year	Catch (thousands)	Value [a] (thousands)	Escapement (thousands)	Total Run (thousands)
1990	10,469	$65,181	6,970	17,439
1991	3,838	$16,400	4,223	8,061
1992	5,679	$36,280	4,726	10,404
1993	5,240	$21,054	4,025	9,265
1994	13,841	$73,549	8,338	22,178
1995	17,510	$74,290	10,039	27,549
1996	2,007	$10,266	1,451	3,458
1997	183	$990	1,504	1,686
1998	1,073	$7,476	2,296	3,369
1999	6,781	$30,312	6,197	12,978
2000	1,034	$4,213	1,828	2,862
2001	325	$920	1,095	1,420
2002	0	$0	704	704
2003	36	$116	1,687	1,723
2004	1,832	$5,428	5,500	7,332
2005	557	$2,199	2,320	2,878
2006	2,736	$8,548	3,068	5,804
2007	1,421	$5,275	2,810	4,231
2008	2,880	$11,526	2,758	5,637

Note:

a. Value estimates calculated by McDowell Group.

Source: ADF&G CFD, 2009.

Subsistence harvests from the Kvichak River drainage are important to residents of the communities along the Kvichak River and Iliamna Lake. Subsistence harvests fell in the early 2000s when sockeye runs declined, but harvests have increased in recent years. In 2008 the total number of sockeye harvested for subsistence use was 48,797 (Table 21-271).

TABLE 21-271
Kvichak River Drainage, Subsistence Sockeye Harvest by Community, 1990 through 2008

	Number of Fish								
Year	Levelock	Igiugig	Pedro Bay	Kokhanok	Iliamna-Newhalen	Nondalton	Port Alsworth	Other	TOTAL
1990	4,700	2,200	6,600	12,400	18,800	27,300	3,200	1,400	**76,600**
1991	1,029	1,712	9,739	17,184	29,094	4,163	2,755	1,110	**66,786**
1992	4,374	1,056	6,932	11,477	29,633	13,163	2,954	2,559	**72,148**
1993	4,699	1,397	6,226	18,810	19,067	17,890	3,254	2,780	**74,123**
1994	1,467	1,201	8,747	15,771	15,553	15,246	3,074	3,284	**64,343**
1995	3,756	497	5,359	14,412	20,134	4,188	2,892	3,441	**54,679**
1996	1,120	2,309	5,219	14,011	14,787	11,856	3,263	2,307	**54,872**
1997	1,062	2,067	5,501	8,722	19,513	17,194	2,348	3,101	**59,508**
1998	2,454	1,659	3,511	10,418	16,165	13,136	2,678	3,635	**53,656**
1999	1,276	1,608	5,005	10,725	14,129	17,864	4,282	2,834	**57,723**
2000	1,467	1,981	1,815	7,175	6,679	11,953	3,200	2,720	**36,990**
2001	908	779	2,118	9,447	8,132	7,566	1,958	1,901	**32,809**
2002	625	2,138	2,687	9,847	9,417	5,508	1,201	1,578	**33,001**
2003	737	1,081	2,135	9,771	13,824	8,016	1,370	1,591	**38,525**
2004	1,000	1,026	4,803	11,869	21,652	8,789	2,455	1,631	**53,225**
2005	914	1,017	4,162	16,801	12,010	8,824	2,457	2,078	**48,263**
2006	0	1,252	4,319	19,028	11,487	8,885	2,418	2,461	**49,850**
2007	102	1,803	4,537	15,105	19,972	6,897	3,211	2,525	**54,152**
2008 [a]	551	1,236	3,991	14,515	15,789	8,282	2,382	2,057	**48,803**
1997-2007 Avg.	948	1,434	3,509	12,019	13,347	9,744	2,523	2,295	**45,819**

Note:

a. 2008 estimates are based on an average of the previous 5 years.

Source: ADF&G CFD, 2009.

In summary, the Naknek-Kvichak District is one of five districts in the Bristol Bay region and one of two districts with rivers located in the study area. The Kvichak River is the only river in the Naknek-Kvichak District that is located in the study area. In 2008 the sockeye harvest of 8.5 million fish for the Naknek-Kvichak District was 28 percent of the total Bristol Bay harvest. The Kvichak River accounted for 34 percent of the total district harvest and 9 percent of the total Bristol Bay harvest.

In comparison, in 1995, a harvest from the Kvichak River of 17 million fish (the largest harvest from the Kvichak River during the study period) accounted for 40 percent of the total Bristol Bay harvest. It is important to note that the Alagnak River, which shares the same headwaters as the Kvichak, has seen improved runs since 2004.

Nushagak District. The Nushagak District is located northwest of the Naknek-Kvichak District. Dillingham, the largest community in Bristol Bay, is located at the mouth of the Nushagak River. Fish from the Nushagak District spawn in the Nushagak/Mulchatna, Igushik, and Snake river systems. The Nushagak/Mulchatna River system is the only Nushagak District river system located in the study area.

The Nushagak District has produced relatively consistent runs with bi-year variation. In 2008 Nushagak district fishermen harvested 9 million fish with an estimated ex-vessel value of $28 million (Table 21-272). The total district sockeye run in 2008 was 10 million fish. Total sockeye runs in the Nushagak District in 1990 through 2005 ranged from six million to 10 million fish, with an average of six million. Total sockeye runs have exceeded 10 million fish in each of the past three study years.

TABLE 21-272
Nushagak District Sockeye, Number of Fish and Value of Harvest, 1990 through 2008

Year	Catch (thousands)	Value [a] (thousands)	Escapement (thousands)	Total Run (thousands)
1990	3,569	$21,995	2,139	5,708
1991	5,273	$21,596	2,422	7,695
1992	2,901	$17,824	2,286	5,187
1993	5,327	$21,042	2,297	7,624
1994	3,433	$18,031	2,447	5,880
1995	4,450	$18,863	2,254	6,705
1996	5,750	$29,122	2,554	8,304
1997	2,618	$13,600	2,013	4,631
1998	2,961	$20,842	2,431	5,392
1999	6,264	$27,604	2,270	8,534
2000	6,367	$25,948	2,117	8,484
2001	4,610	$13,399	2,679	7,289
2002	2,816	$8,506	1,723	4,538
2003	6,666	$21,581	2,234	8,900
2004	6,088	$18,086	2,145	8,233
2005	7,132	$28,150	2,959	10,091
2006	11,062	$34,557	4,862	15,923
2007	8,404	$31,196	2,462	10,866
2008	6,888	$27,566	3,272	10,160

Note:

a. Value estimates calculated by McDowell Group.

Source: ADF&G CFD, 2009.

The Nushagak/Mulchatna River system is one of four river systems feeding into the Nushagak District and is the only district river system located in the study area. In 2008 fishermen harvested 1.1 million sockeye with an estimated ex-vessel value of $4.6 million from the Nushagak/Mulchatna river drainage (Table 21-273). The total run size in 2008 was 1.6 million fish. The 2008 run was the weakest since 2002 when 600,000 fish went up the Nushagak/Mulchatna river system.

TABLE 21-273
Nushagak/Mulchatna River System Sockeye, Number of Fish and Value of Harvest, 1990 through 2008

Year	Catch (thousands)	Value [a] (thousands)	Escapement (thousands)	Total Run (thousands)
1990	1,090	$6,789	675	1,765
1991	1,288	$5,504	495	1,783
1992	1,152	$7,363	695	1,848
1993	1,548	$6,219	715	2,263
1994	1,052	$5,590	508	1,560
1995	475	$2,017	281	757
1996	1,268	$6,484	504	1,771
1997	485	$2,633	373	858
1998	410	$2,860	459	869
1999	671	$3,000	312	983
2000	1,054	$4,297	404	1,458
2001	1,259	$3,563	811	2,070
2002	322	$964	316	638
2003	1,683	$5,449	581	2,264
2004	1,801	$5,337	492	2,293
2005	2,346	$9,259	1,096	3,442
2006	2,123	$6,633	548	2,671
2007	2,002	$7,430	518	2,520
2008	1,144	$4,578	493	1,636

Note:

a. Value estimates calculated by McDowell Group.

Source: ADF&G CFD, 2009.

Subsistence harvests from the Nushagak River appear stable since declining in the early-to-mid 1990s. In 1990 a total of 61,260 sockeye were harvested for subsistence use (Table 21-274). In 2008 an estimated 46,171 sockeye were harvested. These data suggest the fishery continues to be an important source of food for local residents.

TABLE 21-274
Nushagak River, Subsistence Salmon Harvest by Community, 1990 through 2008

	Number of Fish							
Year	Dillingham	Manokotak	Aleknagik	Ekwok	New Stuyahok	Koliganek	Other	TOTAL
1990	28,860	6,600	2,300	4,900	9,900	8,000	700	**61,260**
1991	34,399	5,873	3,043	4,532	8,326	5,438	2,163	**63,774**
1992	31,702	4,317	2,184	5,971	11,325	3,708	2,635	**61,842**
1993	25,315	3,048	2,593	2,936	12,169	4,180	2,538	**52,779**
1994	30,145	3,491	2,289	4,343	8,056	4,513	2,322	**55,159**
1995	24,998	2,453	1,468	2,046	6,911	2,983	2,406	**43,265**
1996	27,161	3,883	1,733	2,866	8,892	3,319	2,113	**49,967**
1997	23,255	3,988	1,989	1,797	6,427	4,179	4,598	**46,233**
1998	24,072	4,069	1,112	3,555	5,419	3,166	4,958	**46,351**
1999	26,502	3,413	1,532	1,805	4,556	2,772	5,389	**45,969**
2000	27,931	3,173	1,111	3,946	3,715	2,792	2,362	**45,030**
2001	26,435	3,700	2,129	2,218	7,294	2,209	4,096	**48,081**
2002	25,004	3,254	1,517	2,735	6,043	3,098	3,247	**44,898**
2003	26,955	4,214	2,044	2,291	10,817	5,721	3,034	**55,076**
2004	23,308	2,052	2,206	1,891	6,714	3,619	3,364	**43,154**
2005	21,898	1,576	1,795	1,388	9,763	8,422	3,088	**47,930**
2006	22,184	1,655	2,048	1,499	6,160	3,886	2,941	**40,373**
2007	25,237	2,442	1,382	1,267	8,284	3,054	3,278	**44,944**
2008 [a]	23,916	2,388	1,895	1,667	8,330	4,940	3,141	**46,277**
1998-2008 Avg.	24,953	2,955	1,687	2,259	6,868	3,874	3,576	**46,172**

Note:

a. 2008 estimates are based on an average of the previous 5 years.

Source: ADF&G CFD, 2009.

In summary, the Nushagak District is one of five districts located in the Bristol Bay region. Like the Naknek-Kvichak District, the Nushagak District has multiple river drainages. The Nushagak/Mulchatna River is the only one of these river systems located in the study area.

In 2008 the Nushagak district harvest of 6.9 million sockeye accounted for 25 percent of the total Bristol Bay sockeye harvest. The Nushagak/Mulchatna River accounted for 17 percent of the Nushagak District total harvest and 4 percent of the total Bristol Bay sockeye harvest. In comparison the 1990 Nushagak/Mulchatna River harvest accounted for 11 percent of the total Bristol Bay sockeye harvest. In 1997 the Nushagak/Mulchatna River harvest accounted for 22 percent of the total harvest. The peak harvest on the Nushagak/Mulchatna River was in 2005.

River System Harvest Values

Table 21-275 shows the sockeye harvest value for each river system in the Bristol Bay area as a percentage of the total sockeye harvest value for Bristol Bay. In 2008 the Egegik river accounted for 27 percent of the total Bristol Bay sockeye harvest value, followed by the Naknek River system at 14 percent, and the Alagnak and Wood rivers at 10 percent each.

Several factors beyond the biological productivity of individual river systems represented in table 21-275 affect the volume of sockeye (and subsequent value share) harvested from each system. For instance, harvest from the Kvichak River was abnormally low in later years as a combined result of low productivity and resulting management actions associated with that river's status as a stock of special concern.

Fish processing capacity, as well as the relative value share of individual river systems, also plays a major role in the volume of sockeye harvested throughout Bristol Bay. In several years, including each of the 2004 through 2007 seasons, the harvestable surplus of salmon in Bristol Bay has exceeded the processing capacity in the region. In that situation, processors respond by limiting the poundage purchased from each vessel, and in some cases, outright buying stoppages, sometimes for longer than 24 hours. Considering the highly compressed time frame of Bristol Bay salmon returns, this can have a major effect on the total volume and value of the Bristol Bay salmon harvest.

It is difficult to determine theproportional value of individual river systems due to this large "pulses" of fish traversing fishing districts on the way upriver. The tendency of processors to respond to these pulses with buying limits and/or stoppages can and does result in substantial over-escapement to the most productive river systems. Were the processing sector capable of handling the full harvestable surplus in Bristol Bay, the statistical result would be a higher percentage of total Bristol Bay value being harvested from the most productive river systems, such as the Wood, Naknek, and Eggegik.

This processing-capacity issue also has a substantial effect on harvest and value from individual river systems. For instance, ADF&G implemented a Special Harvest Area (SHA) for the Branch/Alagnak River. The department opened that SHA in 2005 and in 2006, but the harvest effort was minimal because processors were already at or near capacity with harvest from the other fishing districts and did not provide tender service to that SHA.

TABLE 21-275
Estimated Sockeye Harvest Value by River System, as Percentage of Bristol Bay Total Harvest Value, 1990 through 2008

Year	Kvichak (%)	Branch/ Alagnak (%)	Naknek (%)	Wood (%)	Igushik (%)	Nushagak/ Mulchatna (%)	Togiak Lake (%)	Egegik (%)	Ugashik (%)	Others (%)
1990	32	1	19	5	3	3	1	30	6	>1
1991	15	1	24	9	7	5	2	26	12	>1
1992	18	1	11	4	2	4	2	49	10	>1
1993	13	1	8	6	3	4	1	53	10	>2
1994	28	1	4	31	2	2	1	22	9	>1
1995	39	1	6	6	3	1	1	33	10	>1
1996	7	1	20	11	4	4	1	37	15	>1
1997	1	0	3	16	1	4	1	61	11	>3
1998	11	1	13	22	4	4	1	36	7	>2
1999	26	2	8	17	5	3	1	29	9	>1
2000	5	1	17	19	7	5	4	34	8	>1
2001	2	1	34	17	6	9	6	20	3	>3
2002	0	0	13	23	1	3	2	43	15	>1
2003	0	0	22	28	6	11	0	15	12	>1
2004	7	5	7	16	2	7	0	41	13	>3
2005	2	4	21	13	6	10	0	33	9	>2
2006	10	4	12	26	5	7	0	26	8	2
2007	5	6	19	16	4	7	3	22	17	>1
2008	10	13	14	13	8	4	0	27	8	>1

Source: Estimated by McDowell Group based on data obtained from ADF&G CFD, 2009.

Other Bristol Bay Fisheries-related Economic Effects

Tax Revenue. Commercial fishing in the Bristol Bay region provides tax revenue to local and state governments. Taxes are collected based on fish landed and property value. Large processing plants, along with boats, gear, and equipment, are taxed.

The State of Alaska levies taxes on fishing operations throughout the state. Two state-imposed taxes and one fishermen self-imposed tax are collected from operators in the Bristol Bay region. (Information on taxes comes from the ADOR, n.d.)

- Fishery Business Tax: A tax of 3 percent is levied on the value paid to commercial fishermen or the fair market value. The tax is collected from processors and people who export fish from Alaska. If an entity is licensed as anything other than a sole proprietor and is processing fish onboard, it pays a 5 percent tax.

  The fishery business tax is a shared tax, of which half the collections go to the state and half go to the municipality in which the resource was landed. If a tax was collected within an organized borough but not within an incorporated city, the shared tax is shared with the borough. In FY 2009 the Bristol Bay Borough received $1,542,615 in shared fisheries business taxes; Lake and Peninsula Borough received $151,743; and Dillingham received $187,259. Other local-level tax data are not available.
- Seafood Marketing Assessment: A tax of 5 percent is levied on the value of seafood products produced or first landed in Alaska. This tax is also levied on unprocessed fish exported from Alaska. The tax is generally collected from processors. This helps fund seafood marketing efforts by the state.
- Regional Seafood Development Tax: A tax of 1 percent is collected from buyers based on the price paid for the salmon, for driftnet fishermen only. This tax was imposed by driftnet fishermen to form a regional marketing group whose purpose is to increase the value of Bristol Bay salmon. In FY 2009, Bristol Bay regional development tax receipts totaled $1,066,270.

Boroughs also can impose taxes on operators within their boundaries. The Bristol Bay Borough and the Lake and Peninsula Borough impose special raw fish taxes. The raw fish tax is collected by the borough in which fish are bought. One hundred percent of these taxes stay in the borough in which they are collected. A property tax also is levied on all property located within these two boroughs. Fishermen and processors pay a tax based on the assessed value of property located in the borough.

In the Bristol Bay Borough in FY 2009, $1,441,628 was collected from the 3 percent raw fish tax. A property tax of 13 mills (0.013 cents per dollar of property value) is levied on all property in the borough. Data are not available on the amount of property taxes paid by fishermen and processors specifically.

The Lake and Peninsula Borough in FY 2009 collected $1,260,995 from a 2 percent raw fish tax. It must be noted that a portion of that came from areas within the borough that are not located on Bristol Bay, including Chignik. The Lake and Peninsula Borough does not have a property tax.

The city of Dillingham, which is located in the Nushagak District, levies a property tax of 13 mills. Data are not available on the amount of tax paid by processors.

21.7.4.2 Visitor Industry

Tourism in the Bristol Bay region primarily involves sportfishing, hunting, and bear viewing. Secondary activities include hiking, camping, boating, and rafting. The region contains a number of attractions, including two world-famous bear-viewing destinations (Brooks Falls and the McNeil River State Game Sanctuary), the Walrus Islands State Game Sanctuary, three national parks and preserves, portions of four national wildlife refuges, the Wood-Tikchik State Park which is the largest in the nation, and numerous wild and scenic rivers and state critical habitat areas. The Lake and Peninsula Borough *Comprehensive Economic Development Strategies* (CEDS; L&PB, 2002) identified tourism as the third largest industry in the borough, after commercial fishing and government services.

Employment in the visitor industry is difficult to track because jobs are spread throughout the transportation, retail, and service sectors. In addition, National Park Service employees are recorded under federal government, although they are associated with the visitor industry. According to the Lake and Peninsula Borough, as of November 2007 there were approximately 180 businesses providing sportfishing-related services in the borough. These include accommodations, air taxi services, and guiding companies. There are over 40 fishing lodges and another 10 hunting lodges in the borough. The 2002 CEDS document references 90 business/professional guide permits issued by the borough in 2001.

Sportfishing

Sportfishing is the core of the socioeconomic study area's visitor industry; however, relatively little information is available regarding the economic effect of this sector of the visitor industry in the study area. A 1999 study conducted by the University of Alaska's Institute of Social and Economic Research (ISER; Haley et al., 1999) found that in 1993 sportfishing in southwest Alaska generated the average annual equivalent of 475 jobs, with 123 jobs attributable to Alaska resident sportfishing and 352 attributable to non-residents. These jobs were the result of $41.2 million in total sportfishing-related expenditures in the southwest region in 1993, equivalent to approximately $55 million in 2006 dollars. After 1993, however, sportfishing in southwest Alaska declined. A count of the anglers in the Bristol Bay region indicates a decline of 6 percent between 1998 and 2008 (Table 21-276). Over the same period, the number of days fished increased by 5 percent (Table 21-277). If it is assumed that spending, as measured by the ISER study, declined in proportion to the number of trips, total spending as of 2006 would have been approximately $36 million (in 2006 dollars).

TABLE 21-276
Number of Anglers in the Bristol Bay Area, 1993 through 2008

	Naknek River Drainage-Alaska Peninsula	Kvichak River Drainage	Nushagak	TOTAL
1993	9,160	10,075	6,097	**25,332**
1994	8,355	8,635	8,160	**25,150**
1995	10,934	10,472	7,925	**29,331**
1996	7,861	8,051	8,411	**24,323**
1997	8,943	8,106	6,954	**24,003**
1998	8,974	8,061	8,270	**25,305**
1999	8,329	7,194	7,918	**23,441**

	Naknek River Drainage-Alaska Peninsula	Kvichak River Drainage	Nushagak	TOTAL
2000	8,316	6,908	8,093	**23,317**
2001	7,421	5,817	8,132	**21,370**
2002	8,220	4,879	6,133	**19,232**
2003	7,628	5,284	7,275	**20,187**
2004	7,436	6,081	7,539	**21,056**
2005	7,204	6,096	7,800	**21,100**
2006	8,250	6,761	7,488	**22,499**
2007	8,076	6,556	8,576	**23,208**
2008	8,428	7,393	7,915	**23,736**
Change, 2007-2008	4%	13%	-8%	**-2%**
Change, 2001-2008	14%	27%	-3%	**11%**
Change, 1998-2008	-6%	-8%	-4%	**-6%**

Source: ADF&G SFD, 2009.

TABLE 21-277
Number of Sportfishing Day Trips in the Bristol Bay Area, 1996 through 2008

	Naknek River Drainage-Alaska Peninsula	Kvichak River Drainage	Nushagak	TOTAL
1996	34,216	26,578	37,221	**98,015**
1997	40,551	32,205	30,203	**102,959**
1998	34,748	28,042	36,064	**98,854**
1999	51,291	35,259	36,632	**123,182**
2000	55,510	31,381	43,512	**130,403**
2001	36,889	30,013	43,519	**110,421**
2002	43,618	26,562	32,618	**102,798**
2003	34,371	24,203	40,987	**99,561**
2004	52,842	26,278	46,011	**125,131**
2005	34,882	26,452	49,078	**110,412**
2006	38,354	32,209	44,259	**114,822**
2007	48,135	33,684	43,550	**125,369**
2008	39,738	29,474	34,648	**103,860**
Change, 2007-2008	-17%	-12%	-20%	**-17%**
Change, 2001-2008	8%	-2%	-20%	**-6%**
Change, 1998-2008	14%	5%	-4%	**5%**

Source: ADF&G SFD, 2009.

An ISER report published in 2007 (Duffield et al., 2007) estimates that the sportfishing industry in the entire Bristol Bay watershed supported the equivalent of 846 full-time jobs in 2005. Local residents of the region held 288 of these jobs, Alaska residents living outside of the region (mostly in Anchorage) held

435 jobs, and non-residents accounted for 123 jobs. The study also estimates that, in 2005, spending associated with the Bristol Bay sportfishing industry was $61 million. Of that, $7 million was spent by regional residents, $6 million was spent by Alaska residents who do not live in the region, and $48 million was spent by people who do not live in the state.

While the visitor industry is an important part of the region's economy, it is driven by non-local ownership and employment. For both Iliamna and Newhalen, the CEDS document comments that "cultural barriers and mixed signals from residents to potential visitors limit the community's assimilation in to [sic] the mainstream business environment" (L&PB, 2002). SWAMC is working to increase local benefits from the tourism industry through support for increased local ownership and local hire (SWAMC, n.d.).

Table 21-278 shows both peak monthly and average annual employment from 2005 through 2007 at area lodges and air taxi services. This is not a complete list, as some properties operate under a name that differs from their official business name or for some other reason are not reflected in ADOLWD employment statistics for the area.

TABLE 21-278
Visitor Industry Employment, 2005 through 2007

		Peak Monthly Employment			Average Annual Employment		
Employer	**Location**	**2005**	**2006**	**2007**	**2005**	**2006**	**2007**
Alaska's Valhalla Lodge Inc.	Nondalton	9	8	6	2	2	1
Newhalen Lodge Inc.	Nondalton	16	16	17	8	7	7
Alaska Lodges Inc.	Port Alsworth	15	12	11	6	5	5
Alaska's Lake Clark Inn and Air	Port Alsworth	6	6	—	2	2	—
Alaska's Wilderness Lodge	Port Alsworth	12	13	5	5	5	1
Farm Lodges Inc.	Port Alsworth	14	12	—	5	5	—
Lake Clark Air Inc.	Port Alsworth	28	19	17	18	14	12
Osprey Island Lodge	Port Alsworth [a]	4	2	5	1	0	1
Alaska Fishing Limited	Iliamna	—	8	0	—	2	0
Bristol Bay Sportfishing Inc.	Iliamna	10	0	0	3	0	0
Copper River Fly Fishing Lodge	Iliamna	6	6	5	2	2	2
Iliamna Air Guides Inc.	Iliamna	4	5	3	2	2	1
Iliamna Air Taxi Inc.	Iliamna	17	18	20	13	15	17
Iliaska Lodge Inc.	Iliamna	1	1	0	0	0	0
Rainbow King Lodge	Iliamna	21	19	24	7	6	6
Rainbow River Lodge	Iliamna	9	11	12	3	3	4
Alaska Sportsman's Lodge	Igiugig	15	16	19	6	6	5
Kvichak Lodge	Igiugig [a]	4	4	6	1	1	1
No See 'Um Lodge	Igiugig [a]	5	5	8	0	1	3
Royal Wolf Lodge	Igiugig	17	18	10	14	6	3
Rainbow Bay Resorts	Pedro Bay	5	5	4	2	1	1

Employer	Location	Peak Monthly Employment			Average Annual Employment		
		2005	2006	2007	2005	2006	2007
Redoubt Mountain Lodge	Lake Clark	3	7	6	1	2	1
Windsong Alaska Properties	Lake Clark	16	19	23	9	11	14

Note:

a. Lodge is located near the community, but in the ADOLWD data is not considered to be in the community.

Source: ADOLWD DRA, 2007.

While the sportfishing business generates a substantial number of jobs in the region, relatively few of these jobs are held by local residents. An analysis conducted by ISER indicated that only about 9 percent of the jobs directly related to sportfishing activity are held by local residents, while approximately 30 percent of all jobs (direct and indirect) are held by locals. ISER's analysis also indicates that about 9 percent of direct payroll was earned by locals and 27 percent of total payroll related to sportfishing activity was earned by local residents (Duffield et al., 2007).

Visitor-related Statistics

The Lake and Peninsula Borough charges a 6 percent bed tax. Table 21-279 shows revenues from this tax for 2000 through 2009. Tax revenues declined in the early part of this decade, but appear to have recovered after 2003. It is important to note that revenues are a function of the total room inventory, room rate, and occupancy and may not necessarily reflect overall numbers of visitors.

TABLE 21-279
Bed Tax Revenues, Lake and Peninsula Borough,
2000 through 2009

Year	Revenues
2000	$137,462
2001	$131,838
2002	$124,006
2003	$117,639
2004	$134,509
2005	$136,844
2006	$165,883
2007	$144,939
2008	$142,149
2009	$140,862

Source: ADCCED, 2010b.

Table 21-280 shows the number of visitors to national parks in the Lake and Peninsula Borough in 2002 through 2009. (Although the borders of Katmai National Park and Lake Clark National Park extend beyond the borough's borders, the primary visitor destinations in those parks lie within the borough.) Katmai National Park clearly attracts the largest number of visitors, reaching over 80,000 in 2006. The

vast majority of these visitors are attributable to the Brooks Falls bear-viewing destination, although there are several other destinations within the park.

TABLE 21-280
Recreational Visitors to National Parks in the Lake and Peninsula Borough, 2002 through 2009

	2002	2003	2004	2005	2006	2007	2008	2009
Katmai National Park	59,025	51,589	56,787	54,274	68,630	82,634	7,970	43,035
Lake Clark National Park	4,325	4,505	4,906	5,408	5,320	5,549	6,802	9,711
Aniakchak National Monument and Preserve	241	154	285	285	60	26	10	14

Source: NPS, n.d.

Out-of-state Visitor Profile

A 2005 visitor research project, conducted by the McDowell Group for the ADCCED, provides further insight into the region's tourism (McDowell Group, 2006). The report, *A Profile of Visitors to Rural Alaska and the Western Alaska Region*, presents data gathered from 128 out-of-state visitors to western Alaska between May and September 2005 (Table 21-281). While the boundaries of the region extend beyond the Lake and Peninsula Borough, the borough contains some of the more popular visitor attractions in the region.

TABLE 21-281
Profile of Out-of-State Visitors to Western Alaska, Summer 2005

Top five reasons for visiting Western Alaska:	
Fishing	59%
Wildlife	22%
Visit friends/family	21%
Bear viewing	18%
Outdoors/scenic beauty	17%
Been to Alaska before	63%
Very likely to return to Alaska	82%
Average per person spending in Western Alaska	$2,272
Average length of stay in Western Alaska	6.8 nights
Average party size	2.8 people
Average age	48 years
Male	80%
Female	20%
Average household income	$109,000

Note: The sample size for the research project was 128 people.
Source: McDowell Group, 2006.

Outlook

Approximately 1.58 million people visited Alaska in the summer 2008 and fall/winter (October 2008 to September 2009) (McDowell Group, 2010). This was a 7 percent decline from the previous 12-month period. The global recession resulted in reduced independent visitation to Alaska, and reduced spending by those visitors that did travel to Alaska. Most of the decline in the number of visitors traveling to Alaska was in the independent market (cruise ship passenger volumes in 2009 were approximately the same as in 2008). Though no published data are available, anecdotal information indicates remote, high-end sport fishing lodges (an important part of the Southwest Alaska visitor industry) were among the businesses hardest-hit by the decline in visitor travel and spending.

The Lake and Peninsula Borough currently hosts very few visitors in comparison to most other regions of Alaska. Its remoteness and lack of visitor infrastructure have historically limited the potential for large-scale tourism to the area. The borough as a whole has identified in its CEDS document economic development strategies that focus on tourism. In addition, nearly every borough community has identified tourism as a key area for economic development in past CEDS reports.

Regional tourism planning and development efforts are focusing on niche marketing and building on the region's diverse natural, cultural, and historical resources (SWAMC, 2003). For example, the Harvey Samuelsen Community Center in Dillingham will serve as a cultural and natural history museum. The project has been listed on the City of Dillingham's priority list for capital improvement projects (City of Dillingham, n.d.). Those types of developments will provide needed visitor-related infrastructure. Still growth in the region's visitor industry will be constrained by limited transportation infrastructure and high transportation costs.

21.7.4.3 Mining

Mineral resources in the area around the Pebble Deposit include metallic base, precious, platinum-group, rare earth, and industrial rocks and minerals (ADNR, 2005). The area, in general, has large quantities of sand, gravel, and quarry materials. There has been little need for sand and gravel materials except near communities that require them for airport or road construction or upgrades (ADNR, 2005). Almost all state land within the region is open to mining with the exception of the Wood-Tikchik State Park and the anadromous rivers and tributaries closed by ADNR under Mineral Closing Order 393.

Historical Mineral Exploration (1911-2000)

For decades, prospectors have explored the area around the Pebble Deposit. Below are descriptions of prospects dating back as far as 1911, but which have no recorded activity since 2000. Information about these prospects was obtained from the USGS Alaska resource data files (USGS, 2006).

Kasna Creek. The Kasna Creek prospect, about 1.5 miles upstream from the mouth of Kasna Creek on the southern edge of Kontrashibuna Lake, consists of two mineralized bodies: Gilt Edge to the north and Barnes to the south. Numerous trenches were dug in both bodies and were sampled by the U.S. Bureau of Mines for assay analysis. Mineralized bodies average 0.95 percent copper, 27.5 percent iron, and 30.1 percent silica.

Crevice Creek. The Crevice Creek prospect is at an elevation of about 1,250 feet on the northwest valley wall of Crevice Creek about 0.7 miles above the junction with the Paint River. The prospect was located by C.H. McNeil in 1911 and prospected by him until 1924. The principal deposit was covered by four lode claims: McNeil and McNeil Nos. 1-3 and, subsequently, McNeil Nos. 4-6 and Joker. The earlier McNeil claims were restaked as Reward and Reward Nos. 1-3. At least two test shipments were made. One ton of ore shipped before 1925 graded $6.08 in gold (at $20.67 per ounce), 10.93 ounces of silver per ton, and 18.19 percent copper. Ten and one-half tons shipped in 1914 through 1916 from scattered workings assayed $2.50 in gold, 15 ounces of silver per ton, and 17.55 percent copper. McNeil abandoned the claims around 1926, in part because of differences with his associates on the value of the claims. The claims were relocated by E. Sargent and Associates in 1953. The claims were examined for the Territory of Alaska in 1956 and for the State of Alaska in 1965.

Recent Exploration

Pebble. In 1986 Cominco Alaska Exploration (Cominco) began to explore Pebble Copper, a copper, gold, and molybdenum prospect, consisting of 1,440 acres of land located roughly 17 miles north of Iliamna. Early exploration was based on color anomalies observed by local pilots. Drilling started in the 1988 season and continued through 1992, when 12 holes were drilled to further delineate the higher grade porphyry zone found in drilling programs between 1988 and 1992. Other work included a limited survey, environmental monitoring, and bench-scale metallurgical testing. Cominco proceeded with exploration until 1997. In 2001, Cominco entered into an agreement with Canada-based Northern Dynasty Minerals, Ltd., an affiliated company of the Hunter-Dickinson Group. In that agreement, Northern Dynasty Minerals could earn 80 percent of the Pebble Copper leased mineral rights by investing in additional exploration on the property and meeting other contractual obligations.In 2002 explorationwas resumed by Northern Dynasty Minerals. The Northern Dynasty work began by expanding Cominco's Induced Polarization (IP) survey. This work identified an open-ended, 90-square-kilometer area (about 34.8 square miles) with anomalous IP chargeability response. This area includes the Pebble deposit. In 2002 Northern Dynasty drilled about 11,000 meters (about 36,100 feet), partly at Pebble, but mostly elsewhere in the geophysically anomalous area. After three years Northern Dynasty earned its 80 percent interest from Teck Cominco (formerly Cominco) and a year later exercised its contractual right for the remaining 20 percent held by Hunter Dickinson Group to gain control of the entire property.

Northern Dynasty completed more than 100,000 feet (126 holes) of drilling during the remainder of 2002 and throughout 2003. Drill programs continued, and in 2005, mine planning was initiated. An eastward expansion in exploration during 2005 resulted in a substantial new discovery of higher grade copper-gold-molybdenum mineralization that came to be known as Pebble East. Much of the recent exploration has focused on defining the resource at Pebble East.

In 2007 Anglo American PLC became a 50 percent partner with the Northern Dynasty Partnership in a limited partnership with equal rights in the Pebble Project. Anglo’s staged investment included a committed expenditure of $125 million to complete a pre-feasibility study. After the completion of the pre-feasibility study and in order to retain its 50 percent interest, Anglo must commit to a further $325 million for a feasibility study. Upon the decision to develop the mine, Anglo must elect to commit to the next $975 million of expenditures to retain its 50 percent interest.

After analyzing results from the 2008 and 2009 drilling program, based on 509 drill holes, including 37 new holes drilled since mid-2008, the mineral resource estimate for the Pebble deposit comprises: 5.94

billion tonnes of measured and indicated mineral resources grading 0.78 percent copper equivalent, containing 55 billion pounds of copper, 67 million ounces of gold, and 3.3 billion pounds of molybdenum; and 4.84 billion tonnes of inferred mineral resources grading 0.53 percent copper equivalent, containing 25.6 billion pounds of copper, 40.4 million ounces of gold, and 2.3 billion pounds of molybdenum (as of February 1, 2010). There are also commercially significant amounts of silver, rhenium, and palladium.

Based on reporting by Pebble contractors, approximately 1,150 individuals worked on the project in 2009; equating to about 190 full time equivalents positions. Approximately 16 percent of these positions reside in Alaska in the Bristol Bay region with an additional 46 percent located elsewhere in Alaska.

In addition to the economic activity associated with exploration, the Pebble Partnership established a $5 million Pebble Fund to support sustainable community development in the Bristol Bay region. As of May 2010, the Fund has supported 65 projects throughout Southwest Alaska via grants totaling more than $2.4 million. In addition Pebble Fund grants have helped to leverage nearly $12 million in matching funds from other organizations.

In 2010 the Pebble Partnership expects to invest up to $72.9 million in Alaska to support an engineering program to advance the Prefeasibility Study (PFS), to continue an environmental study program to continue baseline data collection in key areas, and to complete an Environmental Baseline Document. Exploration drilling will also be conducted. As of June 2010, more than $400 million has been invested in Pebble in work programs, research, and comparative studies.

There has been additional exploration of mining prospects in the vicinity of the Pebble deposit. Many of the prospects were the result of a surge of claim-staking that started in December 2003 and continued into early 2004. From 2006 to 2008, renewed interest in old claims emerged, driven by a cycle of high metal prices. By 2009 much of the exploration activity (except at Pebble Project) waned. A summary of recent exploration activity is provided below.

Big Chunk Super Project. Mining exploration rights for the Big Chunk Super Project are 100 percent owned by Big Chunk Corporation, a subsidiary of Liberty Star Uranium and Metals Corporation. The metals sought include copper, gold, molybdenum, silver, and zinc. The prospect was originally staked by Alaska Earth Sciences, Avalon Development Corporation, and On-Line Exploration in 2003. It is the largest single staking program (1,718 state mining claims) recorded in Alaska to date (Szumigala, 2006/2007). The property is 177 square miles and forms a large donut shape, which adjoins the Pebble claims that surround the Pebble Deposit on the north and on the southeast.

For the 2004 exploration program, approximately $1.7 million were spent (St. George, 2006). The drilling indicated copper mineralization, molybdenite, and low-grade gold; however, at the time this information was released, the boundaries of the detected mineralization had not been fully determined, and only the western limits had been defined (Liberty Star, n.d.).

In 2005 Liberty Star spent an additional $5.0 million on its drilling program and conducted additional geophysics surveying. The exploration camp (set up from June through September) included a helicopter with pilot and mechanic, three 2-man crews of experienced brush cutters, three geochemical samplers, a supervising geologist, a cook, and an office assistant.

In 2005 Liberty Star acquired additional mining claims covering approximately 184 square miles; however, the drilling program found no potential ore-grade mineralization in the new claims. No additional exploration has been conducted since 2005. In 2006 Liberty Star reduced its block claim by 50 percent.

Bonanza Hills. Bonanza Hills is along an unnamed north-northwest flowing tributary of the Mulchatna River, about 3.5 miles north of the juncture of Glacier Creek with Bonanza Creek. The project is located approximately 65 miles from the village of Iliamna and about 40 miles northeast of the Big Chunk Super Project area.

In 1978 prospectors reported pan concentrates that yielded anomalous gold (70 parts per million [ppm]), tin (1,000 ppm), and tungsten (2,000 ppm). Channel samples had average values of 3 ounces per ton silver and 0.5 percent combined copper and lead. Analyses also yielded gold up to 2.24 ppm.

In 2005 Liberty Star Gold Company identified the gold target, with 94 quarter-section mining claims covering 23.5 square miles. A stream sediment-sampling campaign was conducted in 2005. In 2006, 69 additional claims covering approximately 17.25 square miles were staked (Liberty Star, 2006). All of the 163 claims are owned 100 percent by Liberty Star, with a small royalty owed to the State of Alaska.

In September 2007 Liberty Star Uranium and Metals Corporation entered into a letter of intent with Millrock Resources Inc. Millrock will have an option to earn up to 60 percent interest by spending $3.5 million on exploration work on the claims over 4 years (Liberty Star, 2007) and issuing 1 million shares of Millrock stock to Liberty Star Uranium and Metals Corporation.

Liberty Star is considering more detailed sampling to define where geophysical surveys and/or drilling should be conducted. However, no additional exploration work has been conducted since 2005.

Iliamna Project. Initial exploration on the Iliamna Project was conducted in 2000 by Rio Algom Exploration, Inc., which was subsequently taken over by Billiton and then by BHP (now BHP Billiton) (GRI, n.d.). The exploration target for the Iliamna Project is a gold-enriched porphyry deposit located 50 miles east-northeast of Dillingham. The project holds 31,340 acres (GRI, 2004).

In 2000 several geotechnical surveys were conducted. The project lay dormant in 2001. In 2002 through 2005, a variety of agreements regarding interest in the claims were signed among TNR Gold Corporation, BHP Minerals International Exploration Inc., and Geocom Resources Inc. The agreements specified dollar amounts that must be spent on the project by the parties seeking to earn interest in the claims.

In 2003 and 2004, a drilling program was implemented and additional geophysical surveys were conducted.

In 2005 TNR Gold Corporation and Geocom Resources Inc. initiated the process to establish a formal joint venture to govern the continued exploration of one claim block and to amend the option agreement regarding exploration on another block. The 2005 exploration program included more geophysical surveys, and two holes were drilled by Connors Drilling, a Colorado firm.

In March 2006 the state-selected lands of the Iliamna Project were transferred from the Bureau of Land Management to the State of Alaska (managed by the Alaska Department of Natural Resources). Drilling

was conducted by Major/NANA Drilling Corporation (ADGGS, 2006), and Furio Resources Inc. completed more surveys. The results of the surveys were inconclusive.

The exploration camps for the Iliamna Project have been based out of Igiugig.

There have been no additional drilling programs since 2006. BHP transferred its ownership in the Iliamna project to TNR Gold Corporation in September 2008. TNR Gold Corporation granted an option and Geocom Resources Inc. earned a 51 percent interest in the project. Together they own 100 percent of the Iliamna Project's D claims block and 75 percent interest in the H claim block that together comprise the Project.

Kamishak Prospect. The Kamishak Prospect, located 50 miles south of the Pebble Deposit, was discovered by the American Copper and Nickel Company. The company drilled 18 holes in 1990 and 1991 for a total of 5,300 feet (USGS, 2006). The prospect was staked by Alaska Earth Sciences in 2003. Currently, the Kamishak Prospect is 40 percent owned by Full Metal Minerals, and 60 percent by Andover Ventures. Andover Ventures is earning its 60 percent interest from Full Metal Minerals by incurring exploration expenditures of $2 million over 4 years (starting in 2004), including $300,000 spent during 2006 (McLeod, pers. comm., 2006).

Full Metal Minerals completed mapping and surface geophysical sampling of the property in 2005. In 2006 the $400,000 exploration program included drilling and additional surface exploration. The results of the drilling included 241 feet averaging 0.3 percent copper and 0.28 grams per ton gold and 167 feet averaging 0.48 percent copper and 0.46 grams per ton gold. Andover Ventures performed a geophysical survey in 2007.

The field crew has been based out of Kokhanok, with camp services provided by local Kokhanok residents and Alaska Earth Sciences employees.

In January 2008 Full Metal Minerals optioned its interest in Kamishak to Alix Resources Corporation, and then Andover optioned a 20 percent interest in the property.

Pebble South. Pebble South mining exploration rights are owned 100 percent by Full Metal Minerals. The property is situated on areas east, south, and west of Pebble Partnership's claims. The land package is in two contiguous blocks totaling about 141 square miles in area.

Between 2004 and 2006, approximately $1 million was spent on geological and geophysical surveying and mapping. No drilling has occurred on the prospect. In 2005 Full Metal identified 11 substantial geophysical targets (McLeod, pers. comm., 2006). In 2007 Full Metal Minerals maintained their claims but did not conduct extensive drilling.

Support for Pebble South has been based out of Iliamna or a camp by Ralph Lake (a small lake in the South Pebble claim block; McLeod, pers. comm., 2006).

In 2008 Full Metal Minerals, with financing from joint venture partner Freeport-McMoRan Exploration drilled seven core holes totaling approximately 5,440 feet. No results were announced.

Other Claim Activity. Since 2003 Alaska Earth Sciences, an Alaskan company, has been staking other claims for companies such as Furio Resources/Red Sky (about 50 claims located southwest of the Pebble Deposit), Greg Ellis (many claims over 150 square miles located northeast and southwest of Pebble Project), and Full Metal Minerals (Ellis, pers. comm., 2006).

Exploration Agreement between Andover Ventures and BBNC

In 2007 Andover Ventures entered into an agreement with BBNC with the option to earn 50 percent interest in Andover's Bristol Bay Native Corporation land package in the Bristol Bay region. The BBNC land package included seven properties, KUY, Fog Lake, Kemuk, Chilikat East and Chilikat West, Koksetna, Kolossus, and Samuelson. The properties, a combination of private lands owned by BBNC and claims staked on state-owned lands, are in the general vicinity of and a geological setting similar to the Pebble Deposit.

During the latter half of 2008, Andover decided to no longer pursue the Bristol Bay option agreement, and the capitalized costs of $1.5 million were written off accordingly.

Chilikat East and Chilikat West Properties. In 2006 Andover Ventures conducted geologic and geochemical examination of Chilikat. No anomalous gold values were detected in preliminary geochemical sampling. Work at the Chilikat West and Chilikat East prospects found geology permissive of porphyry copper-gold mineralization. Scattered gold anomalies were detected. Additional samples were collected in 2007 (Andover Ventures, 2007b).

Kolossus Property. In the spring of 2008, Andover located eight 160-acre claims on the Kolossus prospect, a mineralized zone discovered by The Anaconda Company in the early 1980s. The Kolossus prospect adjoins the Chilikat West prospect. An IP survey was conducted in 2008, identifying chargeability and conductivity targets.

Fog Lake. The Fog Lake gold-silver-copper deposit was discovered in 1967 by the USGS. The prospect represents an approximately 4,000-foot-long mineralized area along locally named Fog Creek, a northwest-flowing tributary of Fog Lake. The USGS collected samples that contained anomalous copper and silver, and as much as 37.7 ppm gold. The prospect was subsequently staked by St. Eugene Mining Company and later was explored by Resource Associates of Alaska. Soil sampling, mapping, and surveys have been done, but the property had not been drilled.

Andover Ventures did not do any exploratory work in 2006 and 2007 (Andover Ventures, 2007b). In 2008 Andover's work program included one IP/resistivity line of 1.4 kilometers and two diamond drill holes of 151 and 155 meters. Both holes encountered altered and pyritized felsic volcanic-containing zones of quartz, quartz-sulfide, and sulfide veins.

Kemuk. The Kemuk deposit is located 16 miles west of Koliganek and 12 miles east-northeast of the summit of Kemuk Mountain. The Kemuk prospect was first discovered in 1959 by Humble Oil and Refining Company, who subsequently drilled 16 exploration holes.

This prospect is a magnetic segregation deposit of iron and titanium hosted in a pyrozenite; an inferred resource of 2.4 billion tons is present. It is believed to contain 2.4 billion long tons averaging 15 to 17 percent total iron. The average grade is 10.5 to 12 percent magnetic iron. A testing indicates the feasibility

of producing a concentrate containing 65 percent iron, 2 to 3 percent silica, 0.005 to 0.016 percent phosphorus, and 2 to 3 percent titanium dioxide. The platinum-group metal potential of this prospect was evaluated in the late 1990s.

In 2007 Andover Ventures relogged and analyzed the drill core. While additional platinum-group metal anomalies were found, no significant zones mineralized with platinum-group metal were detected (Andover Ventures, 2007b).

Koksetna. This prospect is located southeast of Chilikat East. Andover Ventures staked the property in 2006 on an alteration zone discovered by The Anaconda Company in the 1980s. An IP survey was conducted in 2008, giving negligible results as the IP crew was unable to establish good conductivity to the ground.

KUY. KUY is an epithermal gold-silver-copper target, located 14 miles southwest of Kokhanok, about 50 miles southeast of Pebble Project, and 15 miles northeast of tidewater at Kamishak Bay. Gold-silver telluride mineralization has been discovered at the site.

The majority of exploration work at KUY was conducted in the 1970s and early 1980s by Resource Associates of Alaska. Geotechnical surveying located mineralization alternation zones and fault zones. Grab samples collected during the 1980s were reported to contain up to 56 ounces per ton of gold and 163 ounces per ton of silver, along with anomalous copper, lead, and zinc.

In 2006 Alaska Earth Sciences collected and ALS Chemex Labs analyzed grab samples that showed some high gold results (Andover Ventures, 2006b).

In 2007 a five-hole drill program produced evidence of mineralization (zones of propylitic and quartz-sericite-pyrite alteration) (Andover Ventures, 2007b).

In 2008 the work program included additional geologic mapping and sampling, IP/resistivity surveying, and 428 meters of diamond drilling in two holes. No significant copper or gold mineralization was found.

Samuelson Property. In 2006 Andover Ventures conducted first-pass geologic and geochemical examinations of the property. No anomalous gold values were detected. Additional samples were collected in 2007 (Andover Ventures, 2007b).

21.7.4.4 Government

Government is by far the largest source of year-round employment in the region. In 2008, within the Lake and Peninsula Borough, federal, state, and local government (including tribal government) accounted for an annual average of 424 jobs and nearly $11.5 million in annual payroll, an increase of $1.2 million from 2007 (ADOLWD DRA, n.d.[c]). Government accounts for 54 percent of all wage and salary employment in the borough and 40 percent of all payroll.

Local government accounted for 373 jobs in the borough in 2008, with federal government accounting for 42 jobs and state government providing nine jobs (ADOLWD DRA, n.d.[c]). Though no specific data are available, it is estimated that approximately half of the employment in the local government sector is with tribal organizations.

Government is a stabilizing influence in the borough's otherwise highly seasonal economy. Private-sector employment in 2008 ranged from a low of 135 jobs in January to a high of 827 in July. In the same year, government employment ranged from a low of 276 jobs in July to a high of 483 in May (ADOLWD DRA, n.d.[c]).

Recent data indicate an increase in government employment in the Lake and Peninsula Borough because of an increase in local government employment. For 2007 and 2008, ADOLWD reported 380 and 373 local government workers, respectively, in the borough, up from 252 local government workers in 2004 (ADOLWD DRA, n.d.[a]). This increase may be the result of including tribal government employment in the total local government count starting in 2005.

No substantial change is expected in the level of government-sector employment in the Lake and Peninsula Borough. Employment in the sector depends on two factors: the demand for government and tribal services (which is a function of population growth or decline), and funding from state and federal sources. As reported in the Consolidated Federal Funds Report, total federal funds flowing into the borough are variable from year to year and totaled $16.6 million in FY 2008, down from $19.0 million in FY 2007 (USCB, 2009). State funding for municipal governments has been declining steadily since the mid-1980s. A revenue-sharing program was replaced in 2004 with the Temporary Fiscal Relief Program, which provided "special one-time federal funds" starting at $40,000 for smaller communities around the state (the Lake and Peninsula Borough was given $50,000). There is no reason to expect that any increase in state government support for local government operations will be forthcoming in the foreseeable future, so economic growth driven by government expansion is not expected.

21.7.4.5 Regional Economic Outlook

Since 2000 the Lake and Peninsula Borough has lost approximately 15 percent of its population. The 2009 estimate of 1,547 residents is 276 below the 2000 estimate and 121 residents below the 1990 population count of 1,668. Similarly the Bristol Bay Borough's population has declined by 23 percent since 2000 (dropping from 1,258 to 967 in 2009). The Bristol Bay Borough's population has declined 31 percent since 1990, when the area's population totaled 1,410. The Dillingham Census Area has fared relatively better, with only a 4 percent decline in population since 2000 (slipping from 4,922 to 4,729 in 2009). The census area's 2009 population was approximately 18 percent above the 1990 level of 4,012 (ADOLWD DRA, n.d.[a]).

Many of Alaska's rural areas, including the Lake and Peninsula Borough, have experienced a population decline in recent years. A number of factors have contributed to this decline.

While the Lake and Peninsula Borough overall has lost population since 1990, with continuing losses through 2009, study-area communities have been somewhat more stable. In fact, as of 2009, six of the eight communities in the Iliamna Lake/Lake Clark area were above their 1990 population levels. Newhalen, Port Alsworth, and Kokhanok have grown slightly since 2000 (ADOLWD DRA, n.d.[a]).

A broad range of forces affect population trends in the region in general and in the Iliamna Lake/Lake Clark communities in particular. State-government funding for local governments will likely continue to stress the ability of local governments to provide services and maintain current employment levels. Smaller communities have a very limited ability to generate their own revenue. While no major changes

in federal funding for tribal programs are expected in the near-term, growing federal budget deficits are likely to constrain any increase in funding for tribal organizations in Alaska.

While mineral exploration activity is continuing, the mining industry does not appear to offer any substantial economic development opportunity for the region in the foreseeable future, other than that related to the Pebble Project.

While the salmon industry has recovered from its lows of the early 2000s (reflected in the recent increase in the value of Bristol Bay permits), significant increase in the local economic benefit from commercial fishing is not expected. Tourism, and especially sportfishing-related travel, is not expected to grow measurably.

Pebble Project Regional Employment

The Pebble Project has provided a growing amount of employment to Bristol Bay area residents since 2004. Seven of the eight Iliamna Lake/Lake Clark communities (Nondalton, Newhalen, Kokhanok, Iliamna, Pedro Bay, Levelock, and Igiugig) had residents employed by the project in 2005, 2006, and 2007. Other communities receiving direct project employment during these years include Dillingham, King Salmon, Naknek, New Stuyahok, Togiak, and Twin Hills, among others.

The percentage of all Pebble Project employment going to residents of the Bristol Bay region grew from 29 percent in 2005, to 41 percent in 2006, to 37 percent in 2007 (Table 21-282). Project expenditures in the Bristol Bay area accounted for 13 percent of total project expenditures in 2005 and 14 percent in 2006. Combined pay for employees and contractors living in the Bristol Bay region was $1,164,139 in 2006 and $2,495,205 in 2007. Pay figures were not tracked in 2005. Combined pay for employees and contractors living in the Iliamna Lake/Lake Clark communities was $881,336 in 2006 and $1,900,250 in 2007.

TABLE 21-282
Pebble Project Employment Data, Bristol Bay Region, 2005 through 2007

	2005	2006	2007
Bristol Bay region employment as percentage of total project employment	29%	41%	37%
Expenditures in Bristol Bay region as percentage of total project expenditures	13%	14%	(a)
Total expenditures in Bristol Bay region	$3,291,493	$3,866,256	(a)
Man-days [b] worked by residents of Bristol Bay region	3,546	6,294	13,183
Total pay for residents of Bristol Bay region	(c)	$1,164,139	$2,495,205
Man-days [b] worked by residents of Iliamna Lake/Lake Clark communities	3,301	5,259	10,196
Total pay for residents of Iliamna Lake/Lake Clark communities	(c)	$881,336	$1,900,250

Notes:

a. Expenditures for 2007 were not yet available.

b. A man-day is a measure of time—one workday for one worker—and does not reflect the number of workers.

c. Pay was not tracked in 2005.

Source: Pebble Partnership, 2007.

21.7.5 Governance

21.7.5.1 Introduction

This description of the present and prospective capability of the study area's governance institutions to deliver public services requires an explanation of the framework and history of local governmental development in the region. This introduction briefly describes the general framework for local governance in Alaska. It also highlights some distinctive features of the study area that have shaped its governance institutions.

The Alaska constitution vests all local government powers, including the power to tax, in two types of municipal government—boroughs, which are Alaska's form of regional government, and cities, that is, individual community governments. Before statehood in 1959, Alaska had cities but no regional governments.

The Alaska constitution mandated that the entire state should be divided into boroughs, which may be organized or unorganized. Organized boroughs are incorporated under state law and have municipal governments with defined jurisdictions and powers. The residual unincorporated territory with no borough government of its own is the unorganized borough, which is nominally governed by the state legislature. Seventeen boroughs have incorporated since statehood. Most Alaskans (88 percent) now live in organized boroughs; however, much of rural Alaska, including part of the study area, remains in the unincorporated, unorganized borough.

The study area includes two organized boroughs with governments (Lake and Peninsula Borough and Bristol Bay Borough), plus the unorganized Dillingham Census Area. The study area also includes 13 city governments and 17 communities that are not incorporated as cities (Table 21-283).

TABLE 21-283
Study Area Communities, Local Government Status and Institutions

Location	Incorporated Cities	Unincorporated Communities	Communities with Tribal Councils
Lake and Peninsula Borough	Chignik, Egegik, Newhalen, Nondalton, Pilot Point, Port Heiden	Chignik Lagoon, Chignik Lake, Igiugig, Iliamna, Ivanof Bay, Kokhanok, Levelock, Pedro Bay, Perryville, Port Alsworth, Ugashik	Chignik, Chignik Lagoon, Chignik Lake, Egegik, Igiugig, Iliamna, Ivanof Bay, Kokhanok, Levelock, Newhalen, Nondalton, Pedro Bay, Perryville, Pilot Point, Port Heiden, Ugashik
Bristol Bay Borough	None	King Salmon, Naknek, South Naknek	King Salmon, Naknek, South Naknek
Dillingham Census Area	Aleknagik, Clark's Point, Dillingham, Ekwok, Manokotak, New Stuyahok, Togiak	Koliganek, Portage Creek, Twin Hills	Aleknagik, Clark's Point, Dillingham, Ekwok, Koliganek, Manokotak, New Stuyahok, Portage Creek, Togiak, Twin Hills

Source: ADCCED, 2010a.

Table 21-284 summarizes the status and activities of many local governments in the study area.

TABLE 21-284
Study Area Local Governments, Status and Services and Facilities

Government	Status	Municipal Services and Facilities
Lake and Peninsula Borough	Home-rule borough	Schools, planning, coastal management, community development, fisheries advisory committee
Chignik	2nd class city	Piped water, piped sewer, electricity, landfill, port, fuel oil and gasoline, public safety, cable TV, community hall, gravel, equipment rental, duplex rental
Egegik	2nd class city	Freshwater and wastewater utility, solid waste, batch oxidation system facility/sewer systems, landfill, police, volunteer fire squad, dock, heating fuel, airport maintenance
Newhalen	2nd class city	Piped water, piped sewer, septic plumbing, landfill, health clinic, volunteer fire squad/ambulance, public safety office, community hall, teen center, gravel sales, roads, state-funded public safety officer
Nondalton	2nd class city	Piped water, piped sewer, landfill, health clinic, volunteer fire squad, airport (state contract), roads, apartment rentals
Pilot Point	2nd class city	Septic plumbing, electricity, landfill, volunteer fire department, dock, fuel sales, airport maintenance
Port Heiden	2nd class city	Septic system, refuse collection, landfill, electricity, health clinic, volunteer fire and rescue squad, fuel oil and gasoline, roads
Bristol Bay Borough	Home-rule borough	Sewer systems, port, medical clinic, landfill, pool, schools, police, fire response, ambulance, library
City of Dillingham	1st class city	Water/sewer systems, landfill, harbor/port, police, volunteer fire/EMS/rescue squad, search and rescue, library, roads, schools, airport maintenance, harbor and dock

Source: ADCCED, 2010a.

The study area is large in area and small in population. The Lake and Peninsula Borough, Bristol Bay Borough, and Dillingham Census Area together encompass over 52,700 square miles; 21 U.S. states are smaller in area. This area's population in 2009 was 7,847 or about one person per 7 square miles. Only one of the region's 30 settlements—Dillingham, with 2,264 residents—had more than 800 residents; the other settlements averaged 150 residents each.

Though most study-area settlements are predominately Alaska Native, the region is culturally diverse. At the time of the 2000 census, 72 percent of its residents were Alaska Natives, but from several different Alaska Native ethnic groups, each with distinct linguistic and cultural traditions. Bristol Bay Borough's population, however, was 55 percent non-Native.

The study area's economic resources also are unevenly distributed. Several Bristol Bay coastal communities have large seafood-processing plants and substantial local tax potential; these communities have different economic and political interests than the poorer inland and upriver communities. Within the region, the financial capability to support local government varies widely. Likewise, with such small population bases, the available pool of people who might lead and staff local government is small. Access

to the communities of the Lake and Peninsula Borough is so difficult that the Borough's headquarters are located outside the borough in King Salmon in the Bristol Bay Borough.

This intraregional diversity, coupled with the region's internal transportation and communications challenges, has inhibited political unity and the emergence of an all-inclusive regional government. This is reflected in the contentious history of the development of borough governments in the region, as chronicled in Table 21-285.

TABLE 21-285
Historic Milestones in Borough Government Development, Bristol Bay Study Area

1959	Alaska Statehood
1962	Bristol Bay Borough incorporates
1975	State sets boundaries for Lake and Peninsula Rural Educational Attendance Area (REAA) and Southwest Region (Dillingham Census Area) REAA
1976	Bristol Bay Borough petitions for, then drops, a proposal to annex most of Lake and Peninsula REAA
1987	Aleutians East Borough incorporates and annexes southern territory of Lake and Peninsula REAA
1988, 1989	Two studies by the ADCRA find that a borough for Southwest Region REAA is fiscally viable
1989	Kodiak Island Borough annexes the Shelikof Straits coast of Lake and Peninsula REAA
1989	Lake and Peninsula Borough incorporates
1989	Nushagak villages litigate to detach Upper Nushagak-Mulchatna drainages from Lake and Peninsula Borough
1991	Levelock Village Council proposes that Bristol Bay and Lake and Peninsula boroughs exchange jurisdiction of Kvichak Fishing District and Katmai National Monument
1992	ADCRA adopts model-borough boundaries for Dillingham Census Area
1993	Bristol Bay Coastal Resource Service Area study finds a "Southwest Region REAA" borough is fiscally feasible
1994	As part of Nushagak villages litigation, Alaska Supreme Court orders Alaska Local Boundary Commission [a] to reconsider Lake and Peninsula Borough incorporation boundaries
1995	Alaska Local Boundary Commission re-affirms original Lake and Peninsula Borough boundaries
1997	City of Dillingham petitions to annex City of Dillingham and Southwest Region REAA to Lake and Peninsula Borough; later suspends petition
2000	ADCRA report finds City of Dillingham annexation proposal financially feasible

Note:

a. The Alaska Local Boundary Commission has authority to approve or reject any local governmental boundary change.

Source: ADCED, 2000.

Bristol Bay Borough incorporated as the state's first borough in 1962. For several decades, it was the state's smallest and least populous borough. Thanks to its thriving commercial fishing and fish-processing industry, however, it was the state's most prosperous borough until formation of the oil-rich North Slope Borough in 1972. Bristol Bay Borough's modest boundaries captured a large share of the region's economic and tax assets for the benefit of its small population. (Municipal jurisdictions are eligible for often substantial local and state-shared revenues from seafood harvest, landing, and processing taxes.) There have been several unsuccessful proposals to enlarge the borough's boundaries and population or to absorb it into a larger borough. Today, it is still one of the least populous and most prosperous boroughs.

Meanwhile, the unorganized portions of the region faced loss of territory and potential tax revenues to neighboring boroughs, especially after 1975 when the State defined boundaries for the newly created Rural Educational Attendance Areas to administer educational services in the unorganized borough.[1] For example, in 1976, the Bristol Bay Borough proposed, but did not pursue, annexation of most of what later became the Lake and Peninsula Borough. When the Aleutians East Borough incorporated in 1987, it took part of the unpopulated southern coast of the Lake and Peninsula REAA, along with its share of fish tax revenues. In 1989 Kodiak Island Borough similarly annexed the unpopulated Shelikof Straits coastline of the Lake and Peninsula REAA.

Spurred partly by these territorial losses, Lake and Peninsula residents formed their own borough in 1989. Its boundary matched the Lake and Peninsula REAA boundary. Then a group of communities located west of the new borough and known as the Nushagak villages (Ekwok, New Stuyahok, Clark's Point, Koliganek, Aleknagik, and Manokotak) sued to exclude the unpopulated Upper Nushagak and Mulchatna drainages from the new borough, claiming subsistence and historic ties to that territory. Ultimately, the borough boundary was sustained.

In 1991 Levelock Village Council proposed to redraw two borough boundaries to move the Kvichak Fishing District (and related fish tax revenues) from Bristol Bay Borough into Lake and Peninsula Borough and to move the part of Katmai National Monument that was in the Lake and Peninsula Borough into the Bristol Bay Borough. That proposal was not pursued.

In 1988 and 1989, the state did two borough feasibility studies to examine the fiscal viability of a borough that would include the Southwest Regional REAA and, perhaps, the City of Dillingham as well (ADCRA, 1988). (As a first-class city, Dillingham is required by state law to operate its own city school district, and it was not part of the Southwest District REAA). These studies concluded that a borough was fiscally viable. Subsequently, in 1992, the Alaska Local Boundary Commission adopted model-borough boundaries, partly to provide territorial guidelines for future boroughs and for annexations of unorganized territory to existing boroughs (ADCRA, 1992). The boundaries adopted for a future Dillingham-Nushagak-Togiak model borough were identical to the boundaries of the Southwest Region REAA plus the City of Dillingham.

In 1997 before the revival of interest in the Pebble claims, the cities of Dillingham and Aleknagik petitioned to annex the entire Dillingham Census Area to the Lake and Peninsula Borough (City of Aleknagik and City of Dillingham, 1997). Their petition stated the following:

> Despite a certain rivalry which has historically divided the eastern and western parts of Bristol Bay, the social, cultural, and economic life of Bristol Bay residents remains remarkably cohesive and homogeneous throughout the region. Current borough boundaries promote these rivalries which in turn limits [sic] the overall development potential of the region and reduces [sic] the effectiveness of Bristol Bay advocates before the Legislature and regulatory agencies.

[1] The statutory standards for defining boundaries for the new REAAs were similar to but not identical to the constitutional standards for borough boundaries. REAA boundaries were generally viewed as templates for future boroughs.

The annexation proposal left Bristol Bay Borough as a "donut hole" surrounded by the proposed borough. The Alaska Department of Community and Regional Affairs[2] found this proposal fiscally feasible, but discouraged the approach for two reasons: the "donut hole" would be inconsistent with state geographic standards for borough incorporation, and the Lake and Peninsula Borough strongly opposed the proposal, reportedly characterizing the proposal as a "hostile takeover." ADCRA encouraged proponents of the annexation to work with the other interests in the region to reach agreement on a comprehensive approach. At present, both the Lake and Peninsula Borough and the Bristol Bay Borough oppose the annexation proposal.

With the above history in mind, it is worth recalling that large-scale resource developments in rural Alaska have often unsettled the governmental status quo as residents sought ways to enhance local control over new development, to take advantage of economic opportunities, and to gain tax assets for local benefit. Below are some examples:

- The North Kenai-Nikiski area, where most of the Kenai Peninsula Borough's petroleum industrial facilities are located, once petitioned to secede from the Kenai Peninsula Borough and establish its own borough.
- The North Slope Borough was incorporated to achieve local governance and taxing authority over North Slope petroleum development.
- Fairbanks North Star Borough and the City of Valdez both sought to annex parts of the trans-Alaska pipeline corridor that are in the unorganized borough; other unincorporated regions have considered incorporation of parts of the pipeline corridor.
- The Northwest Arctic Borough's incorporation and the Red Dog Mine development both depended on detachment of the mine property from the North Slope Borough into the new borough's jurisdiction.
- The City and Borough of Juneau annexed the Greens Creek Mine, partly in response to the announced intent of the cities of Angoon and Hoonah to pursue incorporation of a new borough that included the mine property.
- The Pogo Mine project in the unorganized borough between Delta Junction and the Fairbanks North Star Borough stimulated a failed borough-incorporation petition and other interest in annexation of the mine area.
- The Donlin Creek Mine prospect has stirred local interest in borough formation in the mid-Kuskokwim region.

These two convergent dynamics—the ongoing intraregional competition for jurisdiction over the study area's economic, subsistence, and tax resources and the tendency of major resource development projects to disrupt established jurisdictions—are part of the backdrop for local governance in the study area. In this regard, it is noteworthy that the Pebble Deposit is in the tax and regulatory jurisdiction of the Lake and Peninsula Borough (part of a possible transportation corridor and port on Cook Inlet could fall in the Kenai Peninsula Borough). However, many of the study-area communities that have expressed strong

[2] The ADCRA was later renamed the Alaska Department of Community and Economic Development, which later became the Alaska Department of Commerce, Community, and Economic Development.

concerns about the project's possible effects on their community life, water quality, commercial fisheries, subsistence resources, and recreational and other natural assets are outside the Lake and Peninsula Borough. Despite their concerns, these communities have no direct tax or regulatory jurisdiction over the Pebble deposit.

At present, study-area communities lack any overarching, general-purpose regional government. Instead, in tandem with federal and state governments, they have evolved a loose, diffuse mix of governance institutions that is typical in rural Alaska. This system uses the services and financial capabilities of municipal, state, and federal governments; tribal and traditional governing councils; and public and quasi-public regional service agencies to provide public services and facilities to study-area residents. The result is a remarkably prolific but uneven assortment of governing institutions for a region of less than 8,000 residents.

In rural Alaska, federal and state governments each play unusually active roles in the provision of local public services and facilities. The federal government has a special responsibility to provide for the health and social welfare of Alaska Natives beyond its routine responsibilities to all citizens. The State of Alaska, as a matter of public policy and practical necessity in a still-developing state, directly provides or funds several vital community services and facilities such as airports, public safety, and higher education.

All of the present-day settlements in the study area, with the exception of Port Alsworth, were traditionally occupied by Alaska Natives who, as Native Americans, have a special relationship with the federal government. Alaska Native groups that are recognized as tribes by the federal government may form tribal governments with limited powers under federal law. All of the settlements, except Port Alsworth, have federally recognized traditional tribes and tribal councils.

Alaska Natives have forged a partnership with federal and state governments creating an array of quasi-public, nonprofit regional and subregional service agencies to provide housing, health care, economic development, and other community facilities and services. The reasons for this partnership include the growing reluctance of federal and state agencies to continue administering local services, the tribal self-determination movement, the lack of traditional regional (i.e., county) governments, and the model of the ANCSA regional corporations. These agencies provided a model for analogous state-funded agencies to provide coastal management, local education, economic development, and other services.

Another feature of governance is the resurgence of tribal governments stemming from the historic relationship of Alaska Native tribal groups with the federal government and such federal entities as the Bureau of Indian Affairs and the Indian Health Service. Tribal governments have assumed responsibilities on behalf of the tribes' members that are usually borne by municipal governments.

Finally, almost all the study area is within the region whose Alaska Native residents are represented by the Bristol Bay Native Corporation, which was entitled to select land under ANCSA. (Port Alsworth and some unoccupied territory at the northern and southeastern perimeters of the study area are within Cook Inlet Region Inc.'s region.) There is also a village corporation or Alaska Native group with surface-selection rights under ANCSA in the vicinity of every study-area settlement except King Salmon. In addition to land-selection rights, each regional and village corporation was entitled to financial compensation under ANCSA in exchange for its surrendered land claims. The pertinent point for the present topic is that the regional and village ANCSA corporations are private, for-profit corporate entities,

not governments. While ANCSA corporations often support community programs, they have no authority or obligation to perform governmental functions.

In the Alaska legislature, representation for the study area is divided between two house districts and two senate districts. The Iliamna Lake/Lake Clark communities are in House District 36 along with the Kodiak Island Borough; this house district, plus the Kenai Peninsula Borough, comprises Senate District R. The other Lake and Peninsula Borough communities, the Bristol Bay Borough, and the Dillingham Census Area are in House District 37 along with the Aleutians East Borough, the Aleutians West Census Area, and the Pribilof Islands. This house district, together with the Bethel Census Area, comprises Senate District S.

In summary, the study area has a complex and fragmented superstructure of numerous local governing institutions; however, the study area lacks an elected local governmental body with authority to represent or plan for and deliver governmental services for the region as a whole.

21.7.5.2 Lake and Peninsula Borough

Organization, Structure, and Powers

The Lake and Peninsula Borough is Alaska's third largest borough in area (30,907 square miles—about as big as West Virginia). With a density of about one person per 18 square miles, it is the most sparsely settled county, parish, or borough in the nation (USCB, n.d.).

The Lake and Peninsula Borough was incorporated as a home-rule borough in 1989. It has a seven-member assembly. Six members are elected from districts; the seventh member is elected at large and also serves as mayor. The borough is governed according to a home-rule charter supplemented by a code of ordinances adopted by the assembly. It has adopted the manager form of government, with the borough manager being the chief administrative officer. The borough has six full-time employees and engages other personnel as needed.

The Lake and Peninsula Borough exercises the three area-wide powers mandated under Alaska law for home-rule boroughs: education, assessment and collection of taxes, and land-use regulation. The borough education system is administered by the Lake and Peninsula School District. The borough administers the planning and assessment functions. As a home-rule borough, the borough also has broad authority to adopt other functions either area-wide or within select areas in the borough. For example, in addition to its mandatory functions, the borough supports health clinics and road maintenance in select areas in the borough.

Revenues and Expenditures

The borough raises most of its general-fund revenues locally, with the balance from state and federal governments. According to its FY 2010 financial statement (L&PB, 2009), local revenues accounted for 60 percent of the total general-fund revenues of $2,951,000, supplemented by state (32 percent) and federal (8 percent) funds (Table 21-286).

TABLE 21-286
Lake and Peninsula Borough; General Fund Revenues, Expenditures, Transfers, and Balances; FY 2009 and FY 2010

	FY 2009	FY 2010
Revenues, by Source		
Local sources		
Shared fisheries taxes	$1,000,000	$860,000
Bed taxes	$160,000	$135,000
Permit fees	$43,000	$29,350
Rents	$321,342	$343,650
Interest	$175,500	$90,000
Other	$1,000	$1,500
Pebble Development Fee	$310,000	$310,000
Subtotal	$2,010,482	$1,769,500
State of Alaska		
Fisheries taxes	$100,000	$160,000
Electric and Telephone Cooperative tax	$1,000	$0
Other State revenue	$1,034,182	$790,500
Subtotal	$1,135,182	$950,500
Federal		
Payments in lieu of taxes	$152,000	$231,000
TOTAL REVENUES	$3,145,664	$2,951,000
Expenditures		
Assembly	$185,200	$187,400
Nonvoting representatives	$5,000	$1,600
Planning commission	$46,800	$38,300
Administration	$698,800	$779,500
Elections	$11,000	$9,500
Community development	$207,000	$15,900
Fisheries advisory committee	$67,000	$58,000
Resource management	$50,000	$0
Other	$1,307,502	$1,860,800
TOTAL EXPENDITURES	$2,574,302	$2,951,000
General Fund Balance		
Beginning balance	$3,171,915	
Revenues and transfers in	$3,298,024	
Expenditures and transfers out	-$3,169,302	
Ending balance	$3,300,637	

Source: L&PB, 2009.

The borough has three main sources of local tax revenue. In 2009 the 2 percent severance tax on the harvest of fish generated half ($1,260,995) of the borough's revenues, and the 6 percent bed tax generated

$140,862. Under its home-rule charter and by code, the borough also levies severance taxes on extraction of metal ores and coal at the rate of 1.5 percent times the gross production value per ton, on timber at the rate of one quarter of 1 percent of sales price, and on gravel at the rate of 10 cents per cubic yard (L&PB, 2008). In addition to these taxes, the borough also collects a variety of permit fees, as well as rents from housing provided to school district employees. In addition, the general fund generates substantial interest income. The borough does not levy local property or sales taxes (Tables 21-287 and 21-288), the two taxes most commonly levied by local governments in Alaska. It does, however, maintain substantial reserve funds from which it can draw to supplement operating revenues.

TABLE 21-287
Lake and Peninsula Borough, Local Taxes Levied, 2009

	Property Tax	Sales Tax	Other
Lake and Peninsula Borough	No	No	2% raw fish tax, guide permit fees, 6% bed tax
Chignik	NR	NR	NR
Egegik	No	No	3% raw fish tax
Newhalen	No	No	No
Nondalton	NR	NR	NR
Pilot Point	No	No	3% raw fish tax
Port Heiden	No	NR	NR

NR = not reported.
Source: ADCCED, 2010b.

TABLE 21-288
Lake and Peninsula Borough, Local Tax Revenues by Source, 2009

	Property Tax	Sales Tax	Other Taxes	TOTAL	Per Capita Revenue
Lake and Peninsula Borough	None	None	$1,401,857	$1,401,857	$903
Chignik	None	None	NR	NR	NR
Egegik	None	None	$1,045,587	$1,045,587	$16,864
Newhalen	None	None	None	None	NR
Nondalton	None	NR	None	None	NR
Pilot Point	None	None	$518,349	$518,349	$7,199
Statewide average					$1,682

NR = not reported.
Source: ADCCED, 2010b.

Although the borough does not levy a property tax, the state assessor's office does establish a full value determination for taxable real property in all boroughs and local school districts. This determination is used to calculate payments to local school districts from the state education foundation. The state assessor put the Lake and Peninsula Borough's real property valuation for 2009 at $73.3 million (Table 21-289). The borough's per capita valuation of $47,245 was the lowest of the state's 17 boroughs and was less than one-third the statewide average of $144,457 for all boroughs. (It should be noted that, by federal law, many Alaska Native allotments and home sites are exempt from local property taxes, as are the undeveloped ANCSA landholdings of regional and village corporations.)

TABLE 21-289
Lake and Peninsula Borough, Full Value Determination, January 1, 2010

	Full Value	Per Capita Full Value
Lake and Peninsula Borough	$73,323,700	$47,245
Chignik	$9,084,700	$153,978
Egegik	$7,413,300	$119,569
Newhalen	$4,344,000	$26,815
Nondalton	$4,779,100	$23,659
Pilot Point	$2,654,000	$36,861
Port Heiden	$2,561,600	$28,462
Other cities	$42,487,000	$46,947
Statewide borough average	N/A	$144,547
Statewide average for cities outside boroughs [a]	N/A	$140,292

Notes:

a. Excludes second-class cities under 750 in population in the unorganized borough.

N/A = not applicable.

Source: ADCCED, 2010b.

Lake and Peninsula School District

The Lake and Peninsula School District is headquartered in King Salmon and administers the borough education system. The school district is governed by a seven-member, elected school board. The board sets district educational policy and adopts the school budget subject to approval by the borough assembly. The school district administers a system of local elementary and high schools, with 14 active schools serving 15 communities. (Iliamna and Newhalen share the Newhalen School, the Ivanof Bay School is closed, and Ugashik does not have a school.)

According to the district's FY 2009 budget (Lake and Peninsula School District, 2008), total school district expenditures in FY 2009 were approximately $13.3 million (Table 21-290). Thus, the school district budget dwarfs all other borough operations. The State of Alaska, through its school foundation funding program, funds most of the cost of local education according to a weighted formula that considers enrollment, local educational costs, and real property assessed valuation. State law requires the borough to fund a share of local educational operating costs. The federal government also provides funds to support school-related programs. In FY 2007 the state provided 71 percent of school district operating revenues, with the balance about evenly split between the borough and the federal government.

TABLE 21-290
Lake and Peninsula School District; School Operating Fund Budget, FY 2009

	School Operating Fund
Revenues	
Local	$2,225,085
State	$9,481,408
Federal	$1,605,730
TOTAL REVENUES	$13,312,223
Expenditures	
Education operations	$10,172,649
Construction and facilities operation	$3,139,574
TOTAL EXPENDITURES	$13,312,223
Other Financing Sources and Expenditures	
Transfers in	$0
Transfers out	$680,000
Transfer to School Endowment Fund	$0
TOTAL OTHER	$680,000
Fund Balances	
Beginning balance	$255,106
Revenues and transfers in	$13,312,223
Expenditures and transfers out	$13,312,223
Ending balance	$255,106

Source: The Lake and Peninsula School District, 2008.

Iliamna Lake/Lake Clark Communities

Cities of Newhalen and Nondalton. Only two of the Iliamna Lake/Lake Clark communities (Newhalen and Nondalton) have city governments.

Newhalen was incorporated as a second-class city in 1971. The city has a seven-member city council, including the mayor. According to the City of Newhalen's financial statement for the fiscal year 2010 (City of Newhalen, 2009), the city had total revenues of $204,221 and expenditures of $200,992. Because the city does not levy any taxes, it raised no local tax revenues. All its revenues accrued from service charges, and borough and state transfers. The city government had four part-time employees. The city was able to fund limited services, mainly water/sewer system maintenance, support of the local clinic, and general government.

Newhalen's 2009 assessed real property valuation of $26,815 per capita was far below the statewide average of $177,026 for cities in the unorganized borough. Thus, a property tax would not produce much revenue. Moreover, since much of the property in Newhalen would be exempt from property tax (e.g.,

Native allotments, undeveloped Native corporation landholdings), adoption of a local property tax would likely raise issues of equity.

Nondalton also was incorporated as a second-class city in 1971. It has a seven-member city council, including the mayor. According to its financial statement for the fiscal year 2010 (City of Nondalton, 2009), the City had total revenues of $519,510. Most local revenues stemmed from service charges and fees for two enterprise funds (water/sewer and fuel sales), and those same functions accounted for most of the city's expenditures. The city government had a mostly part-time staff of eight. Nondalton's 2009 assessed real property valuation was $23,659 per capita. As with Newhalen, a real property tax is not a practical revenue option for Nondalton.

None of the remaining Iliamna Lake/Lake Clark communities has an incorporated city government. They have no authority to levy or collect any taxes, but community organizations may receive intergovernmental revenues and/or collect fees or user or service charges for services provided.

Iliamna Lake/Lake Clark Tribal Governments. All of the Iliamna Lake/Lake Clark communities except Port Alsworth have federally recognized tribal governments. The tribal governments qualify for various federal funding programs that support community services for tribe members. Also, they may, in collaboration with tribal-oriented regional service organizations such as BBAHC, Bristol Bay Economic Development Corporation (BBEDC), Bristol Bay Housing Authority, and Bristol Bay Native Association (BBNA), obtain grant and contract funds to help provide local health care, housing improvement, social services, sanitation, and other community services. In practice, the tribal governments generally have access to more funds and are able to provide more services than the city governments.

Other Lake and Peninsula Borough Communities

Of the remaining communities in the Lake and Peninsula Borough, four (Chignik, Egegik, Pilot Point, and Port Heiden) are incorporated as second-class cities. The municipal facilities and services these cities provide are summarized in Table 21-284 (in Section 21.7.5.6). None of the cities levy property or sales taxes. Egegik and Pilot Point levy one tax on the commercial fishing and seafood-processing industries. These two communities are relatively well endowed with potential revenue sources compared to the Iliamna Lake/Lake Clark communities. Chignik has a relatively high (for the region) assessed real property valuation at $153,978 per capita in 2009. All three cities have substantial fish-related revenue potential. In 2009 Egegik and Pilot Point collected per capita tax revenues of $16,864 and $7,199 respectively, well above the statewide average of $1,682 for all municipalities.

Five communities in the borough (Chignik Lagoon, Chignik Lake, Ivanof Bay, Perryville, and Ugashik) have no city government. Instead, they rely on their tribal governments for such local services as they are able to provide.

21.7.5.3 Bristol Bay Borough

The Bristol Bay Borough provides the municipal government for Naknek, South Naknek, and King Salmon. Borough headquarters are in Naknek. The borough is a second-class borough with a five-member assembly, an elected mayor, and a manager form of government. The borough manager is responsible for administration of borough affairs. The borough provides a range of facilities and services that is unusually broad for rural Alaska: public safety, road maintenance, culture and recreation, planning and zoning, port,

health and social services, sanitation, sewer and other public improvements, and general government administration.

The borough's finances enable it to support these services and maintain substantial fund reserves. Its 2009 assessed real property valuation ($231,417 per capita) exceeded all boroughs but the North Slope Borough ($2,235,026) and was well above the statewide borough average ($144,457). According to its financial statement for the fiscal year 2010, the borough had total governmental revenues of $6,543,365 and expenditures of $6,502,511 (BBEDC, n.d.). Property and fish taxes, user fees, and investment income are the biggest local revenue sources. These revenues are supplemented by substantial state revenues and lesser federal revenues.

Local education in the borough is provided by the Bristol Bay School District. The borough has an active planning commission, which also serves as the platting board. The Community Development Department develops and administers the borough zoning and subdivision ordinances and other development ordinances, as well as the comprehensive plan and coastal management plan.

21.7.5.4 City of Dillingham

The City of Dillingham incorporated in 1963 and is now a first-class city. The elected city council consists of six council members and the mayor. The city has a manager form of government, and the city manager is the chief administrative officer. The city provides an unusually broad range of services for a city in the unorganized borough: water, sewer, dock and port facilities, landfill, police and fire protection, road maintenance, and services for senior citizens. Additionally, as a first-class city, the City of Dillingham is required to help fund and provide local education services. The Dillingham City School District administers the city's elementary and secondary school system.

According to its financial statement for the fiscal year 2010, the City of Dillingham had total governmental revenues of $10,130,963 and total expenditures, including capital projects, of $10,202,424 (City of Dillingham, n.d.)

The city levies a 13-mill real and personal property tax, 6 percent sales tax, a 10 percent bed and liquor tax, and a 6 percent gaming tax. The City does not levy a fish landing or processing tax. The City's real property tax base is relatively modest. In 2009 its per capita assessed valuation was $75,417, well below the average of $177,026 for cities in the unorganized borough. Dillingham's role as a regional center and commercial fishing fish-processing center pumps up sales and sales tax revenues. In 2008 the sales tax generated $2,132,402, or 48 percent of the local tax revenues of $4,410,739, followed by property taxes ($1,941,751 or 44 percent of total), with the balance from a variety of other taxes (ADCCED, 2010b). Local tax revenues are supplemented by state revenue transfers and contract revenues, city service charges, and very minor federal transfers.

21.7.5.5 Regional Nonprofit Organizations

Bristol Bay Area Health Corporation

BBAHC is the single most important regional nonprofit service organization in the study area. In 1980 BBAHC became the nation's first tribal organization to assume responsibility for operation of a federal Indian Health Service hospital pursuant to the Indian Self Determination Act (USDHHS, n.d.[a]). Today,

BBAHC operates the regional Kanakanak Hospital in Dillingham, subregional clinics in Chignik and Togiak, and 27 village clinics in the Bristol Bay region (BBAHC, 2010).

In addition to hospital and medical services, BBAHC also provides extensive health-related programs in Dillingham for its service area. The programs include mental health and substance abuse programs, health education and prevention programs, health-care staff training, domestic violence prevention and shelter for victims of domestic violence, and environmental health. BBAHC also operates residential treatment facilities for severely emotionally disturbed adults and adult substance abusers.

Because the Iliamna Lake/Lake Clark communities have better transportation service to Anchorage than Dillingham, the residents of those communities receive hospital care and other medical services at the Alaska Native Medical Center in Anchorage (USDHHS, n.d.[b]). Additionally, the Anchorage-based Southcentral Foundation operates their village clinics.

Bristol Bay Coastal Resource Service Area

The Bristol Bay Coastal Resource Service Area is a special regional service area established under the Alaska Coastal Management Program. Its purpose is to administer the district coastal management program for the Dillingham Census Area. Its jurisdiction encompasses the coastal zone of the Dillingham Census Area. The district coastal management program, amended to comply with recent changes in state law, has been approved by the state and awaits final approval by the federal National Oceanic and Atmospheric Administration.

Bristol Bay Economic Development Corporation

The mission of the Dillingham-based BBEDC is "to promote economic growth and opportunities for residents of its member communities through sustainable use of the Bering Sea resources" (BBEDC, n.d.). BBEDC funds fisheries-related infrastructure projects and assists local entrepreneurs to develop seafood businesses. Its member villages are located on or near the Bristol Bay coast; only one Iliamna Lake/Lake Clark community—Levelock—is a member.

Bristol Bay Housing Authority

The Bristol Bay Housing Authority's mission is "to eliminate substandard housing conditions through the development of local capacities that will provide safe, decent, and affordable housing opportunities for the Alaska Native population of Bristol Bay" (BBHA, n.d.). Formerly the housing authority developed and administered housing projects in its member communities. It now primarily assists in the administration of a variety of housing development and improvement programs in cooperation with tribal governments throughout the region.

Bristol Bay Native Association

BBNA either directly administers or administers in collaboration with tribal village councils a broad range of service programs that benefit residents of its member villages. Its programs include those for Headstart and early learning, elders' services, social services, income assistance, workforce development, village public safety officers, tribal government services, land management and realty services, higher

education and adult vocational training, vocational rehabilitation, and economic development. Some programs are active only in Dillingham or other select communities (BBNA, n.d.[a]).

Southwest Alaska Municipal Conference

SWAMC is a regional nonprofit economic development organization that serves southwest Alaska. It is a state-chartered Alaska Regional Development Organization and a federal Economic Development District, and as such, receives both state and federal funds. Its broad-based membership includes 54 boroughs, cities, and tribal governments in a region that includes four boroughs (Aleutians East, Bristol Bay, Kodiak Island, and Lake and Peninsula) and two census areas (Dillingham and Aleutians West), as well as many businesses. In 2003 SWAMC published comprehensive economic development strategies (SWAMC, 2003), which are updated annually (2005, 2006, and 2007). It also publishes research on economic conditions and development infrastructure in the region. SWAMC actively advocates with state and federal governments and elected representatives for its members' economic interests and development priorities.

21.8 SUMMARY

The Bristol Bay drainages study area includes a broad spectrum of socioeconomic conditions. Among the eight Iliamna Lake/Lake Clark communities, the largest community, Nondalton, had 186 residents in 2009. The smallest community, Igiugig, had a population of 48. The Lake and Peninsula Borough had a total population of 1,547 in 2009, Bristol Bay Borough had a population of 967, and the Dillingham Census Area had a population of 4,729. Some areas are cash-poor with high levels of subsistence dependence. Other areas have relatively high levels of cash income and less dependence on subsistence. Some communities are predominantly Alaska Native, while others are predominantly non-Native.

The regional economy includes a high degree of non-resident labor and ownership. Key private-sector industries are highly seasonal. The most important basic industries in the study area are commercial fishing, tourism, and government. Unemployment is high for year-round residents in most communities during the winter. Most communities have very little service and supply-sector development, and most have limited access to public services and utilities. Health-care services generally include only small local clinics operated by regional providers. Access to the region and most of its communities is limited to small aircraft and boat.

Table 21-291 shows a demographic and economic overview of the eight communities in the Iliamna Lake/Lake Clark study area. Port Alsworth had the greatest population change between 1991 and 2009 (119 percent increase) and the highest per capita income in 2000, at $21,716. The community also had the lowest percentage of Alaska Native or American Indian residents (22 percent). Nondalton, Iliamna, and Levelock were the only communities with population decreases between 1991 and 2009. According to 2000 figures, Nondalton had the lowest per capita income, at $8,411. Newhalen, Kokhanok, and Iliamna had the highest numbers of commercial fishing permits fished in 2009, and Newhalen and Kokhanok had the most pounds of subsistence resources harvested per capita in 2004 and 2005, respectively. Subsistence is a critical aspect of life for many residents of the study area. A detailed analysis of subsistence in the Bristol Bay drainages is provided in Chapter 23.

TABLE 21-291
Demographic and Economic Overview of the Iliamna Lake/Lake Clark Communities

	Nondalton	Kokhanok	Newhalen	Port Alsworth	Iliamna	Levelock	Pedro Bay	Igiugig
Population, 2009	186	184	162	118	91	88	48	48
Population change, 2001-2009	-11%	7%	4%	12%	-4%	-18%	-4%	-13%
Population change, 1991-2009	-13%	21%	1%	119%	-4%	-16%	-9%	55%
Alaska Native or American Indian (alone or in conjunction with another race), 2000	90%	91%	91%	22%	58%	95%	64%	83%
Per capita income, 2000	$8,411	$7,732	$9,447	$21,716	$19,741	$12,199	$18,419	$13,172
Commercial fishing permits fished, 2009	2	9	8	2	15	5	3	1
Subsistence resources harvested (pounds per capita) [a]	358	680	692	133	469	527	306	542

Note:

a. Figures for Nondalton, Newhalen, Port Alsworth, Iliamna, and Pedro Bay are for 2004. Figures for Kokhanok, Levelock, and Igiugig are for 2005.

Sources: population from ADOLWD DRA, n.d.[a]; Alaska Native population and per capita income from USCB, n.d., 2000 census; fishing permit count from CFEC, 2010a; subsistence harvest from Fall et al., 2006.

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21.10 GLOSSARY

Age—generally derived from date of birth and reflects the age of the person in complete years.

Average—mean, which is derived by dividing the sum of all quantities by the total number of quantities.

Average annual employment—the mean number of jobs provided in a given year.

Average family size—derived by dividing the number of members of families by the total number of families.

Average household size—derived by dividing the number of people in households by the total number of households.

Borough—in Alaska, the equivalent of a county.

Capital improvement project—construction or equipment purchase that increases the value of an entity's infrastructure.

Census area—the statistical equivalent of a county in Alaska. Census areas are delineated cooperatively by the State of Alaska and the U.S. Census Bureau for statistical purposes in the portion of Alaska that is not within an organized borough.

Earnings—the amount of earned income (wage or salary income, income from self-employment, etc.) received, before deductions for personal income taxes, Social Security, union dues, etc.

Educational attainment—the highest diploma or degree, or level of work towards a diploma or degree, an individual has completed.

Employed persons—persons 16 years and older in the civilian non-institutional population who, during the reference week, (a) did at least 1 hour of work as paid employees; worked in their own business, profession, or on their own farm; or worked 15 hours or more as unpaid workers in an enterprise operated by a member of the family or (b) were not working but who had jobs or businesses from which they were temporarily absent because of vacation, bad weather, labor-management dispute, job training, or family or personal reasons, whether or not they were paid for the time off or were seeking other jobs. Each employed person is counted only once, even if he or she holds more than one job.

Employer—a person or business employing one or more persons for wages or salary; the legal entity responsible for paying unemployment insurance taxes or costs.

Ex-vessel value—amount paid to commercial fishermen for their catch.

Family household—includes a householder and one or more people living in the same household who are related to the householder by birth, marriage, or adoption. All people in a household who are related to the householder are regarded as members of his or her family. A family household may contain people not related to the householder, but those people are not included as part of the householder's family in census tabulations.

Full-time workers—persons who work 35 hours or more per week.

Household—a household includes all the people who occupy a housing unit as their usual place of residence. A household can contain only one family for purposes of census tabulations; however, not all households contain families since a household may comprise a group of unrelated people or one person living alone.

Housing unit—a house, an apartment, a mobile home, a group of rooms, or a single room occupied as separate living quarters or, if vacant, intended for occupancy as separate living quarters. Separate living quarters are those in which the occupants live separately from any other individuals in the building and which have direct access from outside the building or through a common hall.

Income—wages, salary, commissions, bonuses, or tips; self-employment income from one’s own business, including proprietorships and partnerships; interest, dividends, net rental income, royalty income, or income from estates and trusts; Social Security or railroad retirement income; Supplemental Security Income; public assistance or welfare payments from the state or local welfare office; retirement, survivor, or disability pensions; and any other income that is received regularly, such as veterans' benefits, unemployment compensation, child support, or alimony.

Industry category—the North American Industry Classification System (NAICS) groups establishments that provide similar goods or services into industry categories. NAICS is replacing the former Standard Industrial Classification (SIC) system.

Labor force—all persons classified as employed or unemployed under the definitions contained in this glossary.

Median—the middle value (if the total number of values is odd) or the average of the two middle values (if the total number of values is even) in an ordered list of values. Half of the values are less than the median and half are greater than the median.

Not in the labor force—persons aged 16 and older in the civilian non-institutional population who are neither employed nor unemployed under the definitions contained in this glossary.

Occupation—a set of activities or tasks that workers are paid to perform. Various workers who perform similar tasks are in the same occupation, although they may not work in the same industry category (e.g., someone with the occupation of bookkeeper might work for government, the fishing industry, the tourism industry, or a wide variety of other industry categories).

Owner-occupied housing unit—a housing unit in which the owner or co-owner lives, even if the unit is not fully paid for.

Part-time worker—a person who work less than 35 hours per week.

Peak monthly employment—the highest number of jobs provided by an employer in a single month in a given year.

Per capita income—amount obtained by dividing a population's aggregate income by the total number of people in the population.

Population—all people, male and female, child and adult, living in a given geographic area.

Professional school degree—degree that prepares an individual for a specific professional field.

Race—as used by the U.S. Census Bureau, data on race reflect self-identification by census respondents according to the race or races with which respondents most closely identify; the categories should not be interpreted as being scientific or anthropological in nature. Since 2003, respondents are allowed to choose more than one race; previously, people of mixed race were required to select a single primary race.

Self-employed persons—those persons who work for profit or fees in their own business. (Incorporated businesses are excluded from the self-employed category.)

Specified owner-occupied units—a subgroup of owner-occupied homes: either one-family homes that are detached from any other house or a one-family house attached to one or more houses on less than 10 acres with no business on the property.

Unemployed persons—persons aged 16 and older who had no employment during the reference week and who had applied and were eligible for unemployment insurance benefits.

Unemployment rate—the number of unemployed persons (as defined above) as a percent of the labor force.

Wage and salary jobs—jobs for which workers receive wages, salaries, commissions, tips, payment in kind, or piece rates. The group includes employees in both the private and public sectors.

Washeteria—a community facility that provides showers, laundry facilities, and other amenities to enhance sanitation, found particularly in communities with a high proportion of unplumbed homes.