

Koyuk (KOY-yuck)



People and Place

*Location*¹

Koyuk is located at the mouth of the Koyuk River, at the northeastern end of Norton Bay on the Seward Peninsula of the Bering Strait region, 90 air miles northeast of Nome. Koyuk is located in the Cape Nome Recording District and is not in an organized borough. The area encompasses 4.7 square miles of land and 0 square miles of water.

*Demographic Profile*²

In 2010, there were 332 residents, ranking Koyuk 152nd of 352 Alaskan communities with recorded populations that year. Overall, between 1990 and 2010, the population grew by 55%. Between 2000 and 2009, the population increased by 20.54% with an average annual growth rate of 1.57%, double the statewide average of 0.75%. Data from the 2010 Decennial Census indicate that the population declined slightly from 2009 Alaska Department of Labor (DOL) population estimates, a drop somewhat greater than that seen in 2007 or 2008. In every other year since 2000, however, the population has climbed steadily. Information regarding population trends can be found in Table 1.

Koyuk is a traditional Unalit and Malemiut Eskimo village.³ In the 2010 Decennial Census, a majority of Koyuk residents identified themselves as American Indian and Alaska Native (88.9%), along with 3.6% identifying themselves as White, 0.3% identifying themselves as Asian American, and 7.2% individuals identifying with two or more races. No Koyuk residents identified themselves as Hispanic in 2010. Those who identified themselves as White made up 1.1% less of the population in 2010 compared to 2000, and American Indian and Alaska Natives made up 3% less of the population, while the percentage of individuals identifying with two or more races increased between 2000 and 2010 by 4.5%. Information regarding race and ethnicity can be found in Figure 1.

In 2010, the average household size in Koyuk was 3.73, a slight increase from 3.7 in 1990 and 3.71 in 2000. Also in 2010, there were a total of 99 housing units, compared to 70 in 1990 and 95 in 2000. Of those households surveyed in 2010, 36.4% were owner-occupied, compared to 26.3% in 2000; 53.5% were renter-occupied, compared to 57.9% in 2000; 7.1% were vacant, compared to 17.8% in 2000; and 3% were occupied seasonally, compared to 1.1% in 2000. There were no residents living in group quarters in 2010 or 2000.

¹ Alaska Dept. of Comm. and Rural Affairs. (n.d.). *Community Database Online*. Retrieved October 17, 2011 from http://www.commerce.state.ak.us/dca/commdb/CF_BLOCK.htm.

² U.S. Census Bureau (n.d.). *Profile of selected social, economic and housing characteristics of all places within Alaska*. Datasets utilized include the 2000 (SF1 100% and SF3 sample data) and 2010 (Demographic Profile SF) Decennial Census and the 2010 American Community Survey 5-year estimates. Retrieved November 1, 2011 from <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>.

³ See footnote 1.

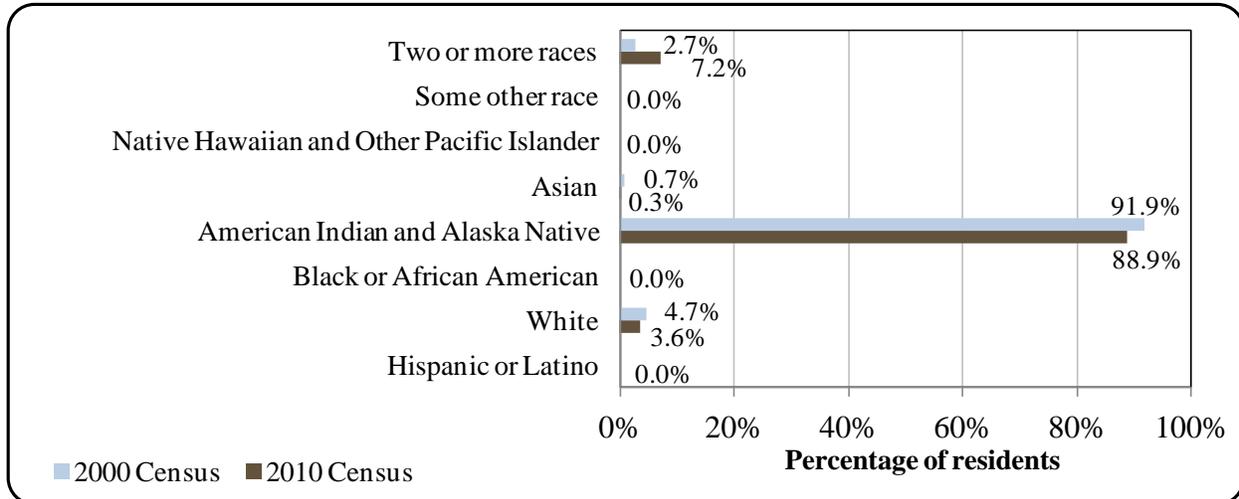
Table 1. Population in Koyuk from 1990 to 2010 by Source.

Year	U.S. Decennial Census ¹	Alaska Dept. of Labor Estimate of Permanent Residents ²
1990	231	-
2000	297	-
2001	-	326
2002	-	329
2003	-	340
2004	-	349
2005	-	349
2006	-	370
2007	-	346
2008	-	333
2009	-	358
2010	332	-

¹ (1) U.S. Census Bureau (1990). *CP-1: General Population Characteristics of all places within Alaska*. Retrieved November 1, 2011 from <http://www.census.gov/prod/www/abs/decennial/1990.html>. (2) U.S. Census Bureau (n.d.). *Profile of selected social, economic and housing characteristics of all places within Alaska*. Datasets utilized include the 2000 (SF1 100% and SF3 sample data) and 2010 (Demographic Profile SF) Decennial Census and the 2010 American Community Survey 5-year estimates. Retrieved November 1, 2011 from <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>.

² Alaska Department of Labor. (2011). *Current population estimates for Alaskan Communities*. Retrieved April 15, 2011, from <http://labor.alaska.gov/research/pop/popest.htm>.

Figure 1. Racial and Ethnic Composition, Koyuk: 2000-2010 (U.S. Census).



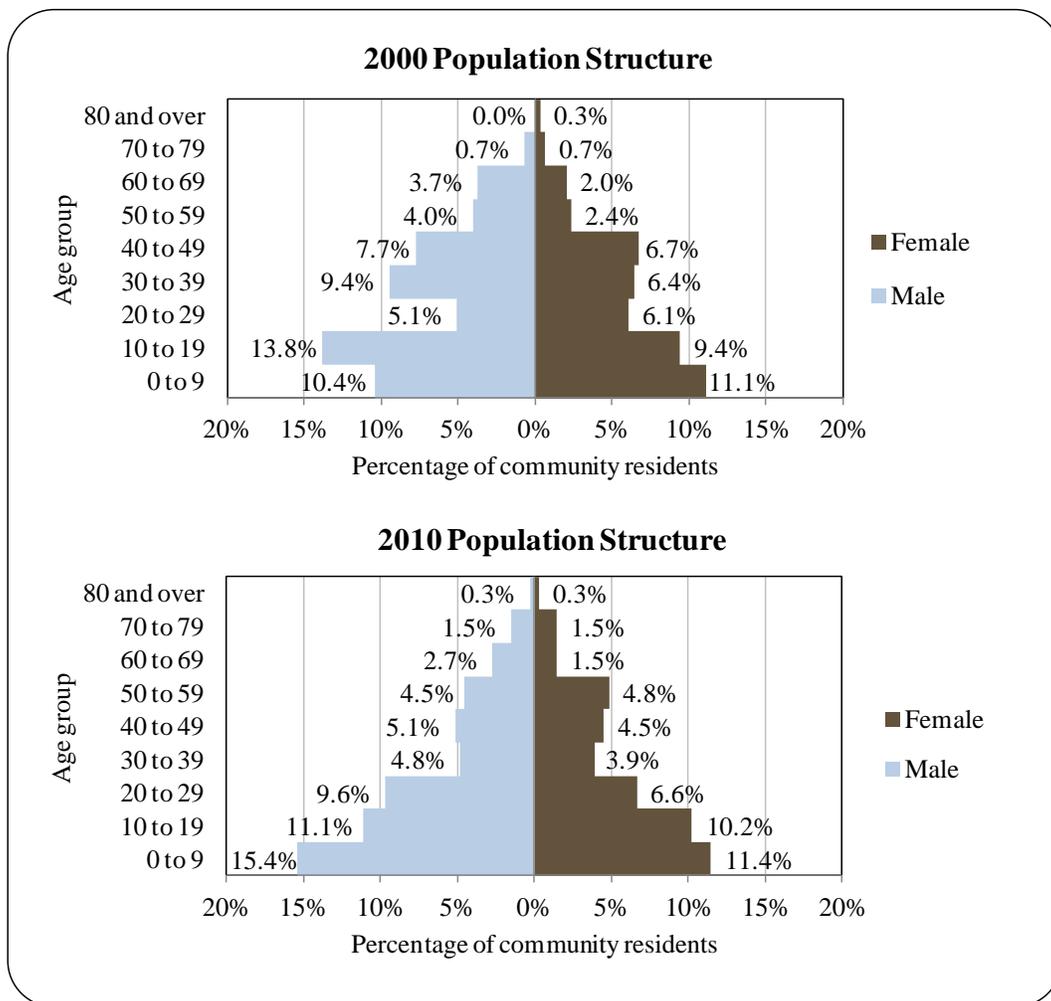
There were more males than females recorded in 2010 (55.1% male, compared to 44.9% female), outpacing the gender distribution statewide (52% male, 48% female), as well as Koyuk’s 2000 distribution (54.9% male, 45.1% female). The median age in 2010 was 22.1, which was much younger than the statewide median of 33.8 and the village’s median age in 2000 (24.7 years).

Compared with 2000, Koyuk’s population structure in 2010, and in particular the male cohort, was more expansive, a change indicative of a higher birth rate. In 2010, 48.2% of

residents were under the age of 20, compared to 44.8% in 2000. Also in 2010, 7.8% of residents were over the age of 59, compared to 7.4% in 2000. Possibly signifying a level of out-migration, only 27.7% of residents were between the ages of 30 and 59, compared to 36.7% in 2000. Nevertheless, the proportion of residents between the ages of 20 and 29 grew from 5.1% in 2000 to 9.6% in 2010, perhaps indicating greater youth retention in the community.

Gender distribution by age cohort was relatively even in both 2000 and 2010. In 2010, the greatest absolute gender difference occurred in the 60 to 69 range (2.7% male, 1.5% female), followed by the 20 to 29 range (9.6% male, 6.6% female) and 0 to 9 range (15.4% male, 11.4% female). Of those three, the greatest difference relative to cohort size occurred in the 0 to 9 range. In 2000, the greatest absolute gender difference also occurred in the 60 to 69 range (3.7% male, 2% female), followed by the 50 to 59 range (4% male, 2.4% female), the 30 to 39 range (9.4% male, 6.4% female), and the 10 to 19 range (13.8% male, 9.4% female). Of those four, the greatest difference relative to cohort size occurred in the 10 to 19 range. Information regarding population structure trends can be found in Figure 2.

Figure 2. Population Age Structure in Koyuk Based on the 2000 and 2010 U.S. Decennial Census.



According to the 2006-10 American Community Survey (ACS),⁴ in terms of educational attainment, the U.S. Census' 2006-2010 American Community Survey (ACS) estimated that 73.3% of residents aged 25 and over held a high school diploma or higher degree in 2010, compared to an estimated 90.7% of Alaskan residents overall. Also in that year, an estimated 17% of residents had less than a 9th grade education, compared to an estimated 3.5% of Alaskan residents overall; an estimated 9.8% had a 9th to 12th grade education but no diploma, compared to an estimated 5.8% of Alaskan residents overall; an estimated 10.5% had some college but no degree, compared to an estimated 28.3% of Alaskan residents overall; an estimated 2.6% held an Associate's degree, compared to an estimated 8% of Alaskan residents overall; an estimated 1.3% held a Bachelor's degree, compared to an estimated 17.4% of Alaskan residents overall; and an estimated 0.7% held a graduate or professional degree, compared to an estimated 9.6% of Alaskan residents overall.

History, Traditional Knowledge, and Culture

Approximately 10 to 25 thousand years ago, during the Pleistocene Ice Age, the level of the ocean was up to 300 feet lower than present levels. At that time, the Seward Peninsula was connected to the Asian continent via the Bering Land Bridge, which formed a flat, grassy, treeless plain.⁵ The Land Bridge is thought to have been a primary route by which humans migrated to the North American continent from Asia. Archaeologists have identified evidence of human inhabitation in the Bering Land Bridge National Preserve dating to 12,000 years before the present.⁶ Well-adapted to their environment, Malemiut, Kauweramiut, and Unalikmiut Eskimos settled on the Seward Peninsula approximately 4,000 years ago.

The site of "Iyatayet" on Cape Denbigh to the south of Koyuk has traces of human habitation that are 6,000 to 8,000 years old. Villagers were historically nomadic. Lt. Zagoskin of the Russian Navy identified the village of "Kuynkhak-miut" there in 1842-44. A Western Union Telegraph expedition in 1865 found the village of "Konyukmute." Around 1900, the present townsite, where supplies could easily be lightered to shore, began to be populated. Two boomtowns grew up in the Koyuk region around 1914: Dime Landing and Haycock. The "Norton Bay Station," 40 miles upriver, was established to supply miners and residents in 1915. In addition to gold, coal was mined a mile upriver to supply steam ships and for export to Nome.⁷

Today, many Native residents of the Seward Peninsula, including those of Koyuk, trace their ancestry to these three distinct groups of Eskimo people, and most identify with Inupiat culture. The people of Koyuk also speak a dialect of Inupiat/Inupiaq Eskimo and maintain a

⁴ While American Community Survey (ACS) estimates can provide a good snapshot estimate for larger populations, smaller populations can be misrepresented by ACS estimates if demographic information is not collected from a representative sample of the population. This is especially problematic for Alaskan communities with small populations that have a low probability of being adequately sampled.

⁵ National Park Service (2010). *Shared Beringian Heritage Program*. Retrieved February 22, 2012 from <http://www.nps.gov/akso/beringia/>.

⁶ National Park Service (2009). *Bering Land Bridge National Preserve*. Retrieved February 17, 2012 from <http://www.nps.gov/bela/>.

⁷ Nome Planning Commission (2003). *City of Nome Hazard Mitigation Plan*. Retrieved February 17, 2012 from <http://www.nwcommission.org/images/Nome-HZM-Plan.pdf>.

subsistence lifestyle. The first school began in the church in 1915; the U.S. Government built a school in Koyuk in 1928. The sale and importation of alcohol was banned in the village in 1981.⁸

Natural Resources and Environment

Koyuk has a subarctic climate with a maritime influence. Average summer temperatures range from 46 to 62 °F; winter temperatures average -8 to 8 °F. Annual precipitation averages 19 inches, with 40 inches of snowfall. Extremes from -49 to 87 °F have been recorded. Norton Bay is usually ice-free from May to October.⁹ The village is located on a hillside, overlooking Norton Bay. Koyuk has a low potential for river flooding but has experienced coastal flooding. Factors that affect the level of coastal flooding include wind conditions, exposure of the site, and ice conditions. Due to climate change, some coastal areas of Alaska are freezing later in the season, and the coast is subject to an increased flooding due to fall storms and associated storm surges. Severe coastal flooding has destroyed several villages and even forced some to relocate. Coastlines are subject to storms, storm surges and flooding, and are more vulnerable during the ice free part of year because when the water is frozen, wave action is not present.¹⁰

Seward Peninsula vegetation is classified as tundra. The diversity of soil environments and microclimatic zones creates a mosaic of vegetation types ranging from high elevation alpine tundra to tidal-influenced marshlands. The landscape is not dominated by one or two vegetation communities, but by an assortment of communities made up by a multitude of graminoid, shrub, forb, and lichen species.¹¹

In the late 1800s, as whalers passed through the villages of the Peninsula, they would trade with the Natives, introducing liquor and repeating rifles, and hiring local men to hunt for them. As the whaling industry grew, hunting of local stocks of wildlife increased to supply the whalers with meat, fur, baleen, and walrus ivory. The marine and terrestrial animal populations eventually declined due to increased hunting pressure to supply the “White” commercial market. By the 1890s, muskoxen and caribou were virtually eliminated on the Seward Peninsula, and the marine mammal population declined significantly.¹²

By the 1890s, the Seward Peninsula was devoid of any large grazing herbivores, but there remained a vast tundra rangeland that could potentially be utilized in a managed grazing system. Thus, in 1891, reindeer were imported from Russia as a means for Alaska Natives to produce a predictable red meat supply and to provide economic development. By 1896, approximately 1,200 reindeer had been introduced and were grazing on the Seward Peninsula. The forage base encountered by the reindeer must have provided good nutrition because the reindeer population swiftly colonized the Seward Peninsula, and by 1924 had risen to 242,000 animals. The numbers

⁸ Alaska Department of Transportation & Public Facilities (2010). *The Economic Benefits and Socioeconomic Effects of the Yukon River Road Corridor*. Retrieved April 9, 2012 from http://dot.alaska.gov/nreg/westernaccess/documents/corridor_planning_report_appx_i.pdf.

⁹ Alaska Dept. of Comm. and Rural Affairs. (n.d.). *Community Database Online*. Retrieved October 17, 2011 from http://www.commerce.state.ak.us/dca/commdb/CF_BLOCK.htm.

¹⁰ National Oceanic and Atmospheric Administration (2011). *Bering Straits Coastal Resource Service Area Coastal Management Plan*. Retrieved April 18, 2012 from http://alaskacoast.state.ak.us/District/DistrictPlans_Final/BSCRSA/Table_of_Contents.pdf.

¹¹ Finstad, G. (2007). *Reindeer in Alaska: Under New Management*. Retrieved April 10, 2012 from http://www.uaf.edu/files/snras/MP_07_02.pdf.

¹² Ibid.

and distribution of reindeer has varied dramatically since the 1920s; however, they have continued to be the dominant grazer and a major influence on the Seward Peninsula ecosystem. The variety of reindeer brought from Russia was bred by the Chukchi people in Chukotka of Siberia to have a strong herding instinct and weak migratory behavior. Chukotkan reindeer exhibit a high degree of site fidelity even if local areas become overgrazed. This breed was further developed in Russia through selective breeding at state farms in Chukotka, Yakutia, and on the Kamchatka Peninsula to produce carcasses noted for their very fine muscle fibers and a high ratio of muscle tissue to bone.¹³

Koyuk is located approximately 134 miles from the Bering Land Bridge National Preserve.¹⁴ The National Preserve was established with the passage of the Alaska National Interest Lands Conservation Act of 1980 (ANILCA) with the purpose of habitat protection and archaeological and paleontological study of the process of plant and animal migration, including man, between North America and the Asian Continent. Populations of wildlife residing within the Preserve include marine mammals, brown bears, moose, wolves, and muskoxen.¹⁵ Muskoxen were reintroduced to the Seward Peninsula as part of an Alaska-wide recovery effort. In 1934, 34 muskoxen were captured in East Greenland and transported to Nunivak Island. By 1968, the Nunivak Island herd numbered 750, and was used as a seed population to reintroduce muskoxen to areas around northern Alaska. By 2000, the population of muskoxen on the Seward Peninsula numbered 1,800.¹⁶ The Bering Strait region also provides essential habitat for rare migratory birds, including ducks, geese, swan, crane, eiders, murre, and auklets.¹⁷

The Norton Basin, located in the Norton Sound, south of the Seward Peninsula, does not hold significant oil reserves; although, it is estimated to contain valuable natural gas reserves. According to a 2005 report prepared by the Department of the Interior (DOI), the Norton Basin contains 2,707.80 billion cubic feet of potential undiscovered natural gas. Of this amount, at least 29.44 billion cubic feet is producible over 30 years and is located within 30 miles of Nome. To date, no company has drilled for natural gas in the Norton Basin,¹⁸ and the area is rated as high to moderate in environmental sensitivity. No leases have been scheduled for the 2007-2012 or 2012-2017 Outer Continental Shelf Oil and Gas Leasing Programs.^{19,20} The Native Village of Koyuk, along with the Klawock Cooperative Association, the Kongiganak Traditional Council, the Nulato Tribal Council, the Native Village of Kipnuk, and the Native Village of Hooper Bay, is opposed to further leasing of the Outer Continental Shelf for the purpose of oil and gas extraction, citing the threat to their subsistence lifestyle and commercial fishing, as well as their concern over global warming. Of the DOI, local officials representing these communities have

¹³ Ibid.

¹⁴ Calculated using the Google Maps Distance Calculator. Retrieved April 17, 2012 from <http://www.daftlogic.com/projects-google-maps-distance-calculator.htm>.

¹⁵ National Park Service (2009). *Bering Land Bridge National Preserve*. Retrieved February 17, 2012 from <http://www.nps.gov/bela/>.

¹⁶ Alaska Dept. of Fish and Game (2008). *Muskox – Wildlife Notebook Series*. Retrieved December 15, 2011 from <http://www.adfg.alaska.gov/static/education/wns/muskox.pdf>.

¹⁷ See footnote 7.

¹⁸ Minerals Management Service (2005). *Engineering and Economic Analysis of Natural Gas Production in the Norton Basin*. Retrieved April 24, 2012 from http://www.alaska.boemre.gov/re/Natural_gas_Norton.pdf.

¹⁹ Minerals Management Service (2010). *Preliminary Revised Program Outer Continental Shelf Oil & Gas Leasing Program 2007-2012*. Retrieved January 6, 2012 from <http://www.boemre.gov/>.

²⁰ Minerals Management Service (2011). *Proposed Outer Continental Shelf Oil & Gas Leasing Program 2012-2017*. Retrieved February 16, 2012 from <http://www.boemre.gov/>.

requested a halt to all future lease sales in Cook Inlet and Chukchi, Beaufort, and Bering Seas; and cancellation of leases in Chukchi Sea Sale 193. They have also requested no oil and gas or seismic activity in the Arctic Ocean until a comprehensive study is done; and request that the DOI not approve Shell's 2010 exploration plan. Finally, they have requested permanent protection of the Arctic Ocean, Bering Sea, North Aleutian Basin, and Cook Inlet.²¹ In addition to these nearby reserves, trace amounts of scheelite have been found 2.5 miles south-southeast of Koyuk,²² and the area is thought to have high mineral potential due to the Koyuk River watershed. Furthermore, gold mining activity has occurred in portions of the Koyuk River Drainage Area.²³

The Alaska Department of Environmental Conservation (DEC) had at least one significant environmental cleanup operation underway as of March 2012 and also reported several smaller cleanup projects in and around Koyuk, most of which involved limited petroleum contamination of soils and groundwater. The significant cleanup site is named Granite Mountain AFS OT001 and is closed under the Comprehensive Environmental Response, Compensation, and Liability Act (the federal government's program to clean up the nation's uncontrolled hazardous waste sites²⁴) and state regulations. It is a closed inert waste monofill that contains inert waste, asbestos-containing material and polychlorinated biphenyl-contaminated soil. PCBs, or polychlorinated biphenyls are chemicals that were banned in the U.S. in 1979 amid suggestions they could have unintended impacts on human and environmental health.²⁵ The area was previously used seasonally by hunters and caribou, but studies indicated that contaminants were at the ground surface. A 2010 report prepared on behalf of the U.S. Air Force “found the monofill to be in good condition, with a hard packed rock cap and no evidence of settling, erosion, or water accumulation.”²⁶

Current Economy²⁷

The Koyuk economy is based on subsistence, supplemented by limited part-time jobs. The main sources of meat are fish, reindeer, seal, beluga whale, and moose.²⁸ Furthermore, the herding of reindeer has been a source of income (though not a majority source²⁹) for some residents of Koyuk and the Seward Peninsula since the animals were introduced in 1891, as mentioned in the previous section. In 1944, when the Bureau of Indian Affairs took over

²¹ Minerals Management Service (2011). *Proposed Outer Continental Shelf Oil & Gas Leasing Program: 2012-2017*. Retrieved April 12, 2012 from

http://www.boem.gov/uploadedFiles/Proposed_OCS_Oil_Gas_Lease_Program_2012-2017.pdf.

²² mindat.org. Retrieved April 17, 2012 from <http://www.mindat.org/loc-201477.html>.

²³ See footnote 8.

²⁴ U.S. Environmental Protection Agency (n.d.). *Superfund quickfinder*. Retrieved April 24, 2012 from <http://www.epa.gov/superfund/>.

²⁵ National Oceanic and Atmospheric Administration (n.d.). *PCBs, or polychlorinated biphenyls, are industrial products or chemicals*. Retrieved April 24, 2012 from <http://oceanservice.noaa.gov/facts/pcbs.html>.

²⁶ Alaska Department of Environmental Conservation. *List of Contaminated Sites*. Retrieved April 6, 2012 from <http://dec.alaska.gov/spar/csp/list.htm>.

²⁷ Unless otherwise noted, all monetary data are reported in nominal values.

²⁸ See footnote 9.

²⁹ Bader, H. R. & Finstad, G. (2001). *Conflicts between Livestock and Wildlife: An Analysis of Legal Liabilities Arising from Reindeer and Caribou Competition on the Seward Peninsula of Western Alaska*. Retrieved April 19, 2012 from http://nationalaglawcenter.org/assets/bibarticles/baderfinstad_conflicts.pdf.

administration of the Alaska reindeer operation, the state and federal public lands of the Seward Peninsula were segregated into 13 discrete allotments where individuals were given exclusive reindeer grazing permits in an effort to privatize and improve reindeer management in the area.³⁰ By federal law, Alaskan Natives enjoy preferential treatment in the reindeer industry (free grazing privileges on federal lands, grants from the BIA, and restrictions upon sales of live reindeer to non-Native herders) in order to protect Native herders from highly capitalized non-Native competitors.³¹

Koyuk is located within the Olanna reindeer herder grazing allotment. The Olanna range consists of wet tundra merging with dry tundra on lower slopes of hills and mountains while upper slopes are bald limestone and lava beds. Local weather is influenced by onshore winds with cold persistent winds in winter with cool wet, foggy summers. In 1971, the reindeer producers organized into the Reindeer Herders Association (RHA) and initiated a plan to standardize and improve range management practices. Since the 1970s, the RHA has been particularly aggressive in its goal to modernize the Seward Peninsula reindeer industry and be on the “cutting edge” of developing new strategies, techniques, products, and technological advances.³² However, in recent years, reindeer herds in Koyuk have become threatened by competition and intermingling with indigenous caribou whose population has recently expanded in part due to federal and state management.³³ For this reason, in 2005, Koyuk herders and members of the Reindeer Research Program at the University of Alaska Fairbanks constructed an enclosure outside of the village where reindeer herds could be kept whenever caribou migrate into the area.³⁴

Koyuk’s top employers in 2010 included the Bering Strait School District; Koyuk Native Corporation; Kawerak Inc.; Koyuk Utilities Department; Norton Sound Economic Development Corporation; the Native Village of the Koyuk; the City of Koyuk; Norton Sound Health Corporation; the Koyuk Native Store; and Pinetree Bingo.³⁵ In 2010, the per capita income in Koyuk was estimated at \$8,212, and the median household income was estimated at \$25,714, compared to \$8,736 and \$30,417 in 2000, respectively.³⁶ After accounting for inflation by converting 2000 values to 2010 dollars,³⁷ the real per capita income (\$11,297) and real median household income (\$39,335) indicate a fall in both individual and household earnings.³⁸ In 2010, Koyuk ranked 292nd of 305 communities from which per capita income was estimated, and 259th

³⁰ Finstad, G. (2007). *Reindeer in Alaska: Under New Management*. Retrieved April 10, 2012 from http://www.uaf.edu/files/snras/MP_07_02.pdf.

³¹ See footnote 29.

³² Finstad, G. & Kielland, K. (2011). *Landscape Variation in the Diet and Productivity of Reindeer in Alaska Based on Stable Isotope Analysis*. Retrieved April 19, 2012 from http://www.lter.uaf.edu/pdf/1576_Finstad_Kielland_2011.pdf.

³³ See footnote 29.

³⁴ See footnote 30.

³⁵ Alaska Department of Labor (n.d.). *Alaska Local and Regional Information Network*. Retrieved April 7, 2012 from: <http://live.laborstats.alaska.gov/alari/>.

³⁶ U.S. Census and American Community Survey 2006-2010 estimates.

³⁷ Inflation was calculated using the Anchorage Consumer Price Index for 2010 (retrieved January 5, 2012 from the Alaska Department of Labor, <http://labor.alaska.gov/research/cpi/inflationcalc.htm>).

³⁸ While ACS estimates can provide a good snapshot estimate for larger populations, smaller populations can be misrepresented by ACS estimates if demographic information is not collected from a representative sample of the population. This is especially problematic for Alaskan communities with small populations that have a low probability of being adequately sampled.

of 299 communities from which median household income was estimated. Although Koyuk's small population size may have prevented the American Community Survey from accurately portraying economic conditions, this decrease in per capita income is confirmed by economic data compiled by the Alaska Local and Regional Information (ALARI) database maintained by the Alaska Department of Labor and Workforce Development (DOLWD). According to the ALARI database, the per capita income in Koyuk in 2010 was \$7,528, which also indicates an overall decrease compared to the real per capita income values reported by the U.S. Census in 2000.³⁹ This is supported by the fact that the community was recognized as "distressed" by the Denali Commission indicating that over 70% of residents aged 16 and older earned less than \$16,120 in 2010. However, it should be noted that American Community Survey and DOLWD data are based on wage earnings and do not take into account the value of subsistence within the local economy.

According to the ALARI database, the vast majority of residents are employed by the local government (64.5%), followed by educational and health services (14.8%) and trade, transportation and utilities (10.3%).⁴⁰ In contrast, according to 2006-10 ACS estimates,⁴¹ 67% of residents aged 16 and over were part of the civilian labor force in 2010. Unemployment was estimated at 33%, compared to an estimated 5.9% statewide; and 57.6% of residents were estimated to be living below the poverty line, compared to an estimated 9.5% of Alaskan residents overall. In the 2006-10 time period, of those employed, an estimated 58% worked in the private sector, an estimated 33.3% worked in the public sector, and an estimated 40.6% were unpaid family workers.

By industry, Koyuk's economy was relatively limited in 2010. In that year, most residents were estimated to be working in education services, health care, and social assistance sectors (36.2%), followed by public administration sectors (26.1%) and transportation, warehousing, and utilities sectors (23.2%). An estimated 8.7% of employed residents worked in the retail trade sector; and 5.8% worked in other services, except public administration. By occupation type, most (37.7%) employed residents were estimated to hold service positions in 2010, followed by management/professional positions and production/transportation/material moving positions (each 21.7%); natural resources/construction/maintenance positions (10.1%); and sales/office positions (8.7%). There were significant changes in employment by industry between 2000 and 2010, possibly due to the new Alaska Pipeline Project which aims to construct a pipeline to expand the market for Alaska's North Slope natural gas resources.⁴² There was a marked drop in the agriculture, forestry, fishing, hunting, mining, and construction sectors in that time from 5.7% in 2000, to 0% in 2010. However, the number of individuals employed in farming, fishing, and forestry industries may be underestimated in census statistics as fishermen may hold another job and characterize their employment accordingly. Lastly, there were also significant changes in occupation types in 2010. Information regarding employment trends can be found in Figures 3 and 4.

³⁹ See footnote 35.

⁴⁰ Ibid.

⁴¹ Alaska Dept. of Comm. and Rural Affairs. (n.d.). *Community Database Online*. Retrieved October 17, 2011 from http://www.commerce.state.ak.us/dca/commdb/CF_BLOCK.htm.

⁴² Alaska Pipeline Project (n.d.). *Homepage*. Retrieved April 9, 2012 from <http://thealaskapipelineproject.com/home>.

Figure 3. Local Employment by Industry in 2000-2010, Koyuk (U.S. Census).

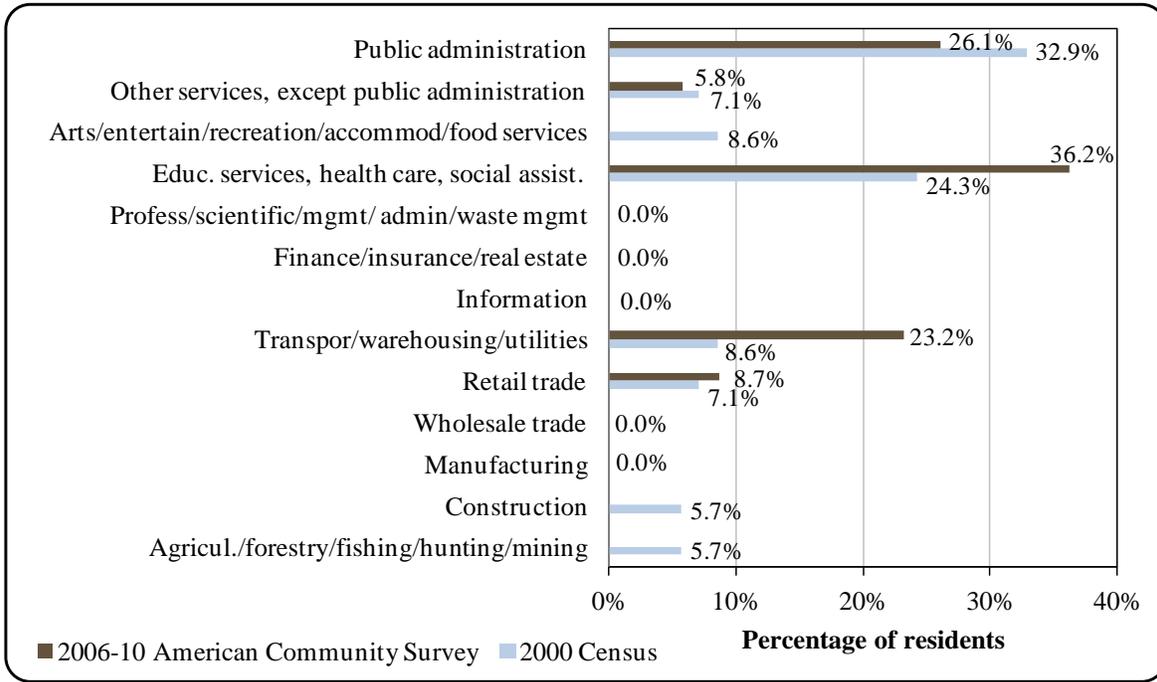
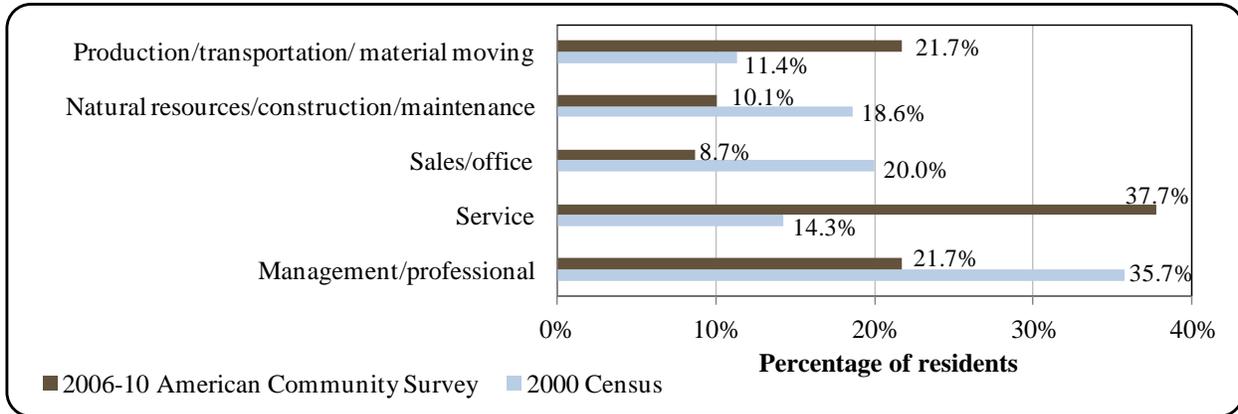


Figure 4. Local Employment by Occupation in 2000-2010, Koyuk (U.S. Census).



Governance

Koyuk was incorporated as a Second-class city in 1970 and is not part of an organized borough. Koyuk has a mayoral form of government with a 7-member city council including the mayor, an 11-member school board, and several municipal employees. In addition, a federally-recognized Tribe is present in the community. The Native Village of Koyuk is represented by a seven-member Indian Reorganization Act (IRA) Council whose members are elected to serve on open seats at each Annual Tribal Members meeting. The meetings are held on the second

Saturday of December. Elections for the Tribal Council members are held in accordance with the procedures outlined within the Tribe's Constitution and By-Laws.⁴³

In 2010, Koyuk administered a 2% sales tax and collected no property tax. When adjusted for inflation,⁴⁴ total municipal revenues increased by 19.9% between 2000 and 2010 from \$694,889 to \$1.08 million. In 2010, most (83.5%) locally generated revenues were collected from utility rents and other enterprise revenues, followed by contracted services (5.5%) and sales tax revenues (4.6%). Most (44.6%) outside revenues were collected from state revenue sharing. Overall, sales taxes accounted for 3.4% of total municipal revenues for that year, compared to 3.7% in 2000. In addition, state allocated Community Revenue Sharing accounted for 23.7% of total revenues, compared to 4.1% from State Revenue Sharing in 2000.

Fisheries-related state or federal grants awarded to Koyuk between 2000 and 2010 included \$88,670 from The Denali Commission for fuel tank farm upgrades. In addition, Koyuk received \$100,000 as a Community Benefits Share from its Community Development Quota entity, Norton Sound Economic Development Corporation (NSEDC), in 2010. Also from the NSEDC, the village received \$9,558 for the construction of a fisherman's floating dock; \$38,161 for the construction of a solar powered repeater station; \$9,631 for the construction of a burn box; \$2,650 for completion of the Koyuk IRA building; \$11,984 for a fisherman's channel marker; \$8,000 for the Koyuk-Malemute School; and \$1,000 toward a basketball tournament.⁴⁵ Information regarding municipal finances can be found in Table 2.

The Native Village of Koyuk was included under the Alaska Native Claims Settlement Act (ANCSA). The ANCSA-chartered Native village corporation is Koyuk Native Corporation, and the regional Native Corporation is Bering Strait Native Corporation.⁴⁶ The Native Village of Koyuk is also a member of Kawerak Inc., a tribal non-profit organization with a mission to "assist, promote and provide programs and services to improve the social, economic, educational, cultural and governmental self-sufficiency for the betterment of the Native people within the region, and to preserve the traditional culture, languages and values."⁴⁷ Kawerak, Inc. is one of the 12 regional Alaska Native 501(c)(3) nonprofit organizations that were identified under ANCSA and charged with naming incorporators to create regional for-profit corporations. Today, these regional Native Associations receive federal funding to administer a broad range of services to villages in their regions.⁴⁸ Kawerak, Inc. offers children and family services, community services, and education, employment and training opportunities for residents of the 18 member villages located in the Bering Straits region. The non-profit also includes a Natural Resources Division, which incorporates the Eskimo Walrus Commission, Land Management Services, Reindeer Herders Association, and Subsistence Resources Division.⁴⁹

⁴³ The Native Village of Koyuk (n.d.). *Homepage*. Retrieved April 9, 2012 from <http://www.kawerak.org/tribalHomePages/koyuk/index.html>.

⁴⁴ Inflation calculated using Anchorage CPI from Alaska DOL: <http://labor.alaska.gov/research/cpi/cpi.htm>.

⁴⁵ Norton Sound Economic Development Corporation website. 2003. Retrieved April 13, 2012 from <http://www.nsedc.com/>.

⁴⁶ See footnote 43.

⁴⁷ Kawerak, Inc. website. 2006. Retrieved February 17, 2012 from <http://www.kawerak.org/>.

⁴⁸ U.S. Government Accountability Office. 2005. *Alaska Native Villages: Report to Congressional Addressees and the Alaska Federation of Natives*. Retrieved February 7, 2012 from <http://www.gao.gov/new.items/d05719.pdf>.

⁴⁹ See footnote 43.

Table 2. Selected Municipal, State, or Federal Revenue Streams for the Community of Koyuk from 2000 to 2010.

Year	Total Municipal Revenue ¹	Sales Tax Revenue ²	State and Community Revenue Sharing ^{3,4}	Fisheries-Related Grants (State and Federal) ⁵
2000	\$694,889	\$25,439	\$28,474	\$19,265
2001	\$698,631	\$28,118	\$28,473	n/a
2002	\$839,124	\$28,947	\$32,020	\$19,265
2003	\$749,651	\$33,432	\$27,590	\$19,265
2004	\$942,468	\$31,098	-	\$10,598
2005	\$796,895	\$23,656	-	\$10,597
2006	\$881,850	\$32,771	-	\$9,691
2007	\$879,857	\$33,296	-	n/a
2008	\$1,081,538	\$33,355	-	n/a
2009	\$942,037	\$37,581	\$257,562	n/a
2010	\$1,077,727	\$36,515	\$255,470	n/a

¹ Alaska Dept. of Comm. and Rural Affairs. (n.d.). *Financial Documents Delivery System*.

Retrieved April 15, 2011 from http://www.commerce.state.ak.us/dcra/commfin/CF_FinRec.cfm.

² Alaska Dept. of Comm. and Econ. Dev. (n.d.). *Alaska Taxable (2000-2010)*. Retrieved April 15, 2011 from http://www.commerce.state.ak.us/dca/osa/osa_summary.cfm.

³ Alaska Dept. of Rev. (n.d.). *(2000-2009) Taxes and Fees Annual Report*. Retrieved April 15, 2011 from <https://www.tax.state.ak.us>.

⁴ The State Revenue Sharing program ceased in 2003 and was replaced by the Community Revenue Sharing program starting in 2009.

⁵ Alaska Dept. of Comm. and Rural Affairs. (n.d.). *Community Funding Database*. Retrieved April 15, 2011 from http://www.commerce.state.ak.us/dca/commdb/CF_Grants.htm.

The closest offices of the Alaska Department of Fish and Game (ADF&G) and the Alaska Department of Commerce, Community and Economic Development are located in Nome. The closest Offices of the Alaska Department of Natural Resources, National Marine Fisheries Service (NMFS) and U.S. Bureau of Citizenship and Immigration Services are located in Anchorage.

Infrastructure

Connectivity and Transportation

There are no roads connecting Koyuk with other villages. The lack of an extensive road system increases the importance of the winter trail system. The most well-known trail is the 1,151 mile Iditarod trail from Anchorage to Nome. This trail connects the villages of Unalakleet, Shaktoolik, Koyuk, White Mountain, Koyuk, and Elim. There is also a trail connecting Koyuk to Buckland, and a coastal route between Stebbins and St. Michael, Unalakleet, Shaktoolik, Koyuk, Elim, Golovin, White Mountain and Solomon.⁵⁰ Construction has also begun on an 18-mile road segment connecting Koyuk to Six Mile Point. Availability of snowmobiles in winter and ATVs in summer give community residents important access to subsistence resources not limited to the

⁵⁰ National Oceanic and Atmospheric Administration (2011). *Bering Straits Coastal Resource Service Area Coastal Management Plan*. Retrieved April 18, 2012 from

trail system.⁵¹ Nevertheless, regular access is primarily limited to air and sea. Supplies arrive in Nome and are lightered to shore.

There is no dock in the village, but the city has received \$9,558 in funding from NSEDC for a fisherman's floating dock through the organization's Shoreside Infrastructure Improvements Program.⁵² Locations being considered for the port are Nanitchitiq and near Coal Creek, and there are also discussions in the community about adding a retractable boat harbor.⁵³ The village has also received three boats from NSEDC.

There is a state-owned airport (Koyuk Alfred Adams Airport⁵⁴) with a gravel runway that measures 3,000 feet long by 60 feet wide; improvements are needed to bring the runway up to the standard minimum length of 4,000 feet. Daily flights are accommodated between Nome and Unalakleet. Airline services are provided by Bering Air, Cape Smythe Air, Olson Air, Hageland Aviation, Arctic Transportation Service, Servant Airlines, Era Aviation and Tanana Air.⁵⁵ The price of round-trip airfare between Anchorage and Koyuk in June 2012 was \$789.⁵⁶

*Facilities*⁵⁷

A piped water and sewer system on the west side of town serves 51 households. A washeteria and central watering point also exist. Electricity is provided by Alaska Village Electric Cooperative (AVEC). Water and sewer systems, as well as the washeteria, are operated by the City of Koyuk. The school was recently connected to the new sewer system, since its septic effluent is posing a health hazard.⁵⁸ The DEC has approved the landfill for use, although it is not permitted.

Visitor accommodations include the Hannon's Cabin, Henry's House, and Grace Morris' Bed and Breakfast,⁵⁹ the City Library, Koyuk Native Corporation, and Koyuk-Malemute School.⁶⁰ Public safety services are provided by the City of Koyuk Village Public Safety Officers (VPSO) and state troopers in Nome. Fire and rescue services are provided by the Koyuk Volunteer Fire Department and the State VPSO.^{61,62} Fisheries-related businesses and services available in Koyuk include a private hunting and trapping business. Public services available in Koyuk include medical services, a church, a youth center and pool hall, public and school

⁵¹ Ibid.

⁵² Alaska Dept. of Comm. and Rural Affairs. (n.d.). *Community Database Online*. Retrieved October 17, 2011 from http://www.commerce.state.ak.us/dca/commdb/CF_BLOCK.htm.

⁵³ Kawerak, Inc. (2004). *Local Economic Development Plan: Koyuk, 2005-2010*. Retrieved April 9, 2012 from <http://www.kawerak.org/ledps/koyuk.pdf>.

⁵⁴ AirNav, LLC (n.d.). *Homepage*. Retrieved April 6, 2012 from: <http://www.airnav.com/airport/PAKK>.

⁵⁵ Alaska Department of Transportation & Public Facilities (2010). *The Economic Benefits and Socioeconomic Effects of the Yukon River Road Corridor*. Retrieved April 9, 2012 from http://dot.alaska.gov/nreg/westernaccess/documents/corridor_planning_report_appx_i.pdf.

⁵⁶ Airfare was calculated using lowest fare from www.travelocity.com. Retrieved April 9, 2012.

⁵⁷ See footnote 52.

⁵⁸ Ibid.

⁵⁹ See footnote 53.

⁶⁰ See footnote 52.

⁶¹ Ibid.

⁶² See footnote 47.

libraries, and a community hall and bingo parlor. Communications services include cable television and internet, radio, local television, and local and long distance telephone.⁶³

*Medical Services*⁶⁴

One health clinic, Ruth Qumiiggan Henry Memorial Clinic, is located in the community. The nearest hospital (Norton Sound Health Corporation) is located in Nome.⁶⁵ Emergency services have coastal and air access. Emergency service is provided by a health aide.⁶⁶

Educational Opportunities

The Koyuk-Malemute School, part of the Bering Strait School District, accommodates grades kindergarten through 12th grade and is the only school in the community.⁶⁷ It was built in 2003⁶⁸ and had approximately 110 students and ten teachers as of FY 2012.

Involvement in North Pacific Fisheries

History and Evolution of Fisheries

The Inupiaq are historically hunting and gathering societies. They continue to subsist on the land and sea of north and northwest Alaska. Their lives revolve around the whale, walrus, seal, polar bear, caribou, reindeer, and fish. The north and northwest region of Alaska is vast. The land and sea are host to unique groups of people. To the people of the north, the extreme climate is not a barrier, but a natural realm for a variety of mammals, birds and fish, gathered by the people for survival.⁶⁹

The Koyuk Native Corporation is a major surface land owner of the Koyuk River Drainage area. This important use area (designated as such for its highly productive wildlife habitat and ability to sustain a large part of villages' subsistence needs) includes the Koyuk River and the coastal waters extending one mile from the ordinary high water of the Koyuk River at its confluence with Norton Bay and then Norton Sound. The drainage provides habitat for one of the region's largest moose populations. ADF&G estimates that about 30,000 caribou winter east of the Koyuk River to within 10 miles of the coast. This is by far the largest gathering of caribou in the Bering Straits Coastal Resource Service Area,⁷⁰ a special form of local government used by village in the unorganized borough to manage coastal resources which includes the area adjacent to Norton Sound and the Seward Peninsula as well as St. Lawrence Island, King Island, and

⁶³ Ibid.

⁶⁴ See footnote 52.

⁶⁵ Alaska Department of Health and Social Services (n.d.). *Emergency Medical Services Directory*. Retrieved April 11, 2012 from http://hss.state.ak.us/dph/emergency/ems/assets/EMS_Directory3_Norton_Sound.pdf.

⁶⁶ See footnote 52.

⁶⁷ Alaska Department of Education and Early Development. (2012). *Statistics and Reports*. Retrieved April 24, 2012 from <http://eed.alaska.gov/stats/>.

⁶⁸ Koyuk School (n.d.). *Koyuk School Blog*. Retrieved April 9, 2012 from <http://koyuk.bssd.org/>.

⁶⁹ Alaska Native Heritage Center (n.d.). *Yup'ik & Cup'ik - Who We Are website*. Retrieved April 13, 2012 from http://www.alaskanative.net/en/main_nav/education/culture_alaska/yupik/

⁷⁰ See footnote 50.

Little Diomed Island.⁷¹ The lower reaches of the river support one of the region's few shellfish populations. Wetlands south of Koyuk provide excellent shorebird nesting habitat. Extensive coastal mudflats attract thousands of feeding shorebirds, and brant use the area in spring. In summer swans, geese, ducks and cranes feed in the area. Aerial surveys have shown that these wetlands support one of the greatest densities of waterfowl and shorebirds in the region (an estimated 44,000 waterfowl, shorebirds, and song-birds). It has also been noted that these sensitive habitats would be very difficult to protect in the event of a large oil spill.⁷²

The Koyuk River, which flows from Kuzitrin Lake to Norton Bay and out into Norton Sound, comprises an essential subsistence use area for Koyuk residents. Villagers harvest fish (e.g., salmon, whitefish, smelt, grayling, Arctic char, and tomcod) from the river and mammals (e.g., moose, caribou, bear, and beaver) and waterfowl from the river valley.⁷³

Koyuk is located in Pacific Halibut Fishery Regulatory Area 4E, and the Bering Sea Sablefish Regulatory Area. With regard to salmon fisheries, Koyuk is located in subdistrict 4 (Norton Bay) of the six Norton Sound salmon subdistricts.⁷⁴ The Village is a member of the NSEDC, a Community Development Quota (CDQ) group that promotes training and employment opportunities for residents, community and development programs for member villages, and offers loans to facilitate involvement of locals in Bering Sea crab and groundfish fisheries. The CDQ program was implemented to help alleviate economic distress in rural communities in western Alaska by allocating a percentage of halibut, crab, and groundfish to six CDQ non-profit organizations representing 65 communities in the Bering Strait and Aleutian Islands region.⁷⁵ Managers of CDQ organizations authorize individual fishermen and fishing vessels to harvest a certain portion of the allocated CDQ.

The Norton Bay Salmon Subdistrict typically has difficulty attracting buyers due to its remoteness and reputation for watermarked fish. However, in recent years NSEDC has taken measures to rebuild the fishery by helping to reinstate outstanding limited entry permits and by finding markets for watermarked salmon, such as a “marinade program” in which fillets removed from watermarked salmon are sold in vacuum sealed packages containing marinade. Timely salmon escapement information is lacking in the Norton Bay Subdistrict due to a lack of counting projects and limited aerial surveys. Currently, the Subdistrict is typically managed using escapement and catch information from the Shaktoolik and Unalakleet Subdistricts because they are believed to exhibit similar trends in salmon run strength and timing. In 2008, a small scale commercial salmon fishery occurred in Norton Bay Subdistrict for the first time since 1997. The fishery was very limited again in 2010 due to a combination of limited tendering

⁷¹ Alaska Department of Commerce, Community, and Economic Development (n.d.). *Coastal Resource Service Area and Municipal Recipient Program: Bering Straits Coastal Resource Service Area*. Retrieved April 24, 2012 from <http://www.commerce.state.ak.us/dca/planning/cciap/recipients/recipient3.htm>.

⁷² National Oceanic and Atmospheric Administration (2011). *Bering Straits Coastal Resource Service Area Coastal Management Plan*. Retrieved April 18, 2012 from

⁷³ Ibid.

⁷⁴ Alaska Department of Fish and Game (n.d.). *Norton Sound Shaktoolik and Unalakleet Subdistricts Chinook Salmon Stock Status and Action Plan*. Retrieved April 13, 2012 from <http://www.arlis.org/docs/vol1/57239745.pdf>.

⁷⁵ Fina, M. (2011). Evolution of Catch Share Management: Lessons from Catch Share Management in the North Pacific. *Fisheries*, Vol. 36(4). Retrieved September 12, 2012 from http://www.fakr.noaa.gov/npfmc/PDFdocuments/catch_shares/Fina_CatchShare_411.pdf.

capacity in early July, mechanical breakdowns on tender vessels in August, and limited fishery participation due to concurrent fisheries prosecuted in the Elim and Shaktoolik Subdistricts.⁷⁶

Processing Plants

The 2010 ADF&G's Intent to Operate list does not list a registered processing plant in Koyuk. The closest NSEDC buying station is in Elim, and the closest NSEDC processing plant is in Unalakleet; although, Koyuk does have its own ice delivery system.⁷⁷

Fisheries-Related Revenue

In 2010, Koyuk collected \$148 in fisheries-related revenue.⁷⁸ This amount was collected through Raw Fish Tax and Shared Fisheries Businesses Taxes. Further information regarding fisheries-related revenue accrued between 2000 and 2010 can be found in Table 3.

Commercial Fishing

There is modest participation by Koyuk residents in state fisheries as permit holders, crew members and vessel owners. As such, there is only a small amount of commercial fishing in Koyuk, and only data for herring and salmon have been recorded by the ADF&G. In 2010, 15 residents held a total of 14 permits issued by the Commercial Fisheries Entry Commission (CFEC), compared to 16 and 16 in 2000, respectively. Of these issued permits, 11 were for salmon, compared to 12 in 2000; and three were for herring, compared to four in 2000. Of the CFEC permits issued in 2010, four were actually fished, and they were all salmon permits. No herring permits were fished in 2010. Fisheries prosecuted by residents of Koyuk in 2010 included the Norton Sound gillnet herring and Norton Sound gillnet salmon. Between 2000 and 2010, no fish landings or ex-vessel revenue were recorded in Koyuk.⁷⁹

No Federal Fisheries Permits (FFP) or federal License Limitation Program permits (LLP) were issued to Koyuk residents between 2000 and 2010, and no quota share accounts or quota shares were held in federal catch share fisheries for halibut, sablefish or crab during the decade. Information about CFEC, FFP and LLP permits is presented in Table 4, and information about federal quota is presented in Tables 6 through 8.

There were nine residents who held commercial crew licenses in 2010, compared to seven in 2000. In addition, residents held majority ownership of only one vessel in 2010, an 83.3% decline from six vessels in 2000. The number of vessels homeported in Koyuk mirrored

⁷⁶ Alaska Department of Fish and Game, Division of Commercial Fisheries (2010). *2010 Norton Sound Salmon Season Summary*. Retrieved April 13, 2012 from http://www.adfg.alaska.gov/static/fishing/PDFs/commercial/2010_norton_salmon_summary.pdf.

⁷⁷ See footnote 72.

⁷⁸ A direct comparison between fisheries-related revenue and total municipal revenue cannot reliably be made as not all fisheries-related revenue sources are included in the municipal budget.

⁷⁹ Alaska Commercial Fisheries Entry Commission. (2011). Alaska commercial fishing permits, permit holders, and vessel licenses, 2000 – 2010. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

this trend, falling from six in 2000 to one in 2010. Further information regarding commercial fishing trends can be found in Tables 4 through 10.

Table 3. Known Fisheries-Related Revenue (in U.S. Dollars) Received by the Community of Koyuk: 2000-2010.

Revenue source	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Raw fish tax ¹	\$60	\$121	\$121	\$150	\$150	\$70	\$318	\$169	\$168	\$160	\$67
Shared Fisheries Business Tax ¹	\$60	\$120	\$174	n/a	\$71	\$180	\$218	\$169	\$93	\$67	\$81
Fisheries Resource Landing Tax ¹	n/a	n/a	n/a	n/a							
Fuel transfer tax ²	n/a	n/a	n/a	n/a							
Extraterritorial fish tax ²	n/a	n/a	n/a	n/a							
Bulk fuel transfers ¹	n/a	n/a	n/a	n/a							
Boat hauls ²	n/a	n/a	n/a	n/a							
Harbor usage ²	n/a	n/a	n/a	n/a							
Port/dock usage ²	n/a	n/a	n/a	n/a							
Fishing gear storage on public land ³	n/a	n/a	n/a	n/a							
Marine fuel sales tax ³	n/a	n/a	n/a	n/a							
Total fisheries-related revenue⁴	\$120	\$241	\$295	\$150	\$221	\$250	\$536	\$338	\$261	\$227	\$148
Total municipal revenue⁵	\$694,889	\$698,631	\$839,124	\$749,651	\$942,468	\$796,985	\$881,850	\$879,857	\$1.08 M	\$942,037	\$1.08 M

Note: n/a indicates that no data were reported for that year.

*Reported by community leaders in a survey conducted by the AFSC in 2011.

¹ Alaska Dept. of Comm. and Econ. Dev. (n.d.) *Alaska Taxable (2000-2010)*. Retrieved April 15, 2011 from http://www.commerce.state.ak.us/dca/osa/osa_summary.cfm.

² Alaska Dept. of Comm. and Rural Affairs. (n.d.) *Financial Documents Delivery System*. Retrieved April 15, 2011 at http://www.commerce.state.ak.us/dcra/commfin/CF_FinRec.cfm.

³ Reported by community leaders in a survey conducted by the AFSC in 2011.

⁴ Total fisheries related revenue represents a sum of all known revenue sources in the previous rows.

⁵ Total municipal revenue represents the total revenue that the city reports each year in its municipal budget. Alaska Dept. of Comm. and Rural Affairs. (n.d.) *Financial Documents Delivery System*. Retrieved April 15, 2011 at http://www.commerce.state.ak.us/dcra/commfin/CF_FinRec.cfm.

Table 4. Permits and Permit Holders by Species, Koyuk: 2000-2010.

Species		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Groundfish (LLP) ¹	Total permits	0	0	0	0	0	0	0	0	0	0	0
	Active permits	0	0	0	0	0	0	0	0	0	0	0
	% of permits fished	n/a										
	Total permit holders	0	0	0	0	0	0	0	0	0	0	0
Crab (LLP) ¹	Total permits	0	0	0	0	0	0	0	0	0	0	0
	Active permits	0	0	0	0	0	0	0	0	0	0	0
	% of permits fished	n/a										
	Total permit holders	0	0	0	0	0	0	0	0	0	0	0
Federal Fisheries Permits ¹	Total permits	0	0	0	0	0	0	0	0	0	0	0
	Fished permits	0	0	0	0	0	0	0	0	0	0	0
	% of permits fished	n/a										
	Total permit holders	0	0	0	0	0	0	0	0	0	0	0
Crab (CFEC) ²	Total permits	0	0	0	0	0	0	0	0	0	0	0
	Fished permits	0	0	0	0	0	0	0	0	0	0	0
	% of permits fished	n/a										
	Total permit holders	0	0	0	0	0	0	0	0	0	0	0
Other shellfish (CFEC) ²	Total permits	0	0	0	0	0	0	0	0	0	0	0
	Fished permits	0	0	0	0	0	0	0	0	0	0	0
	% of permits fished	n/a										
	Total permit holders	0	0	0	0	0	0	0	0	0	0	0
Halibut (CFEC) ²	Total permits	0	0	0	0	0	0	0	0	0	0	0
	Fished permits	0	0	0	0	0	0	0	0	0	0	0
	% of permits fished	n/a										
	Total permit holders	0	0	0	0	0	0	0	0	0	0	0
Herring (CFEC) ²	Total permits	4	4	3	3	3	2	3	3	3	4	3
	Fished permits	1	0	0	0	0	0	0	0	0	0	0
	% of permits fished	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Total permit holders	4	4	3	3	3	2	3	3	3	3	3

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Table 4 cont'd. Permits and Permit Holders by Species, Koyuk: 2000-2010.

Species		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Sablefish (CFEC) ²	Total permits	0	0	0	0	0	0	0	0	0	0	0
	Fished permits	0	0	0	0	0	0	0	0	0	0	0
	% of permits fished	n/a	n/a									
	Total permit holders	0	0	0	0	0	0	0	0	0	0	0
Groundfish (CFEC) ²	Total permits	0	0	0	0	0	0	0	0	0	0	0
	Fished permits	0	0	0	0	0	0	0	0	0	0	0
	% of permits fished	n/a	n/a									
	Total permit holders	0	0	0	0	0	0	0	0	0	0	0
Other Finfish (CFEC) ²	Total permits	0	0	0	0	0	0	0	0	0	0	0
	Fished permits	0	0	0	0	0	0	0	0	0	0	0
	% of permits fished	n/a	n/a									
	Total permit holders	0	0	0	0	0	0	0	0	0	0	0
Salmon (CFEC) ²	Total permits	12	12	12	12	12	12	12	13	12	12	11
	Fished permits	0	0	0	0	0	0	0	0	0	3	4
	% of permits fished	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	36%
	Total permit holders	12	12	12	12	12	12	12	13	13	12	12
<i>Total CFEC Permits²</i>	<i>Permits</i>	<i>16</i>	<i>16</i>	<i>15</i>	<i>15</i>	<i>15</i>	<i>14</i>	<i>15</i>	<i>16</i>	<i>15</i>	<i>16</i>	<i>14</i>
	<i>Fished permits</i>	<i>1</i>	<i>0</i>	<i>3</i>	<i>4</i>							
	<i>% of permits fished</i>	<i>6%</i>	<i>0%</i>	<i>19%</i>	<i>29%</i>							
	<i>Permit holders</i>	<i>14</i>	<i>14</i>	<i>14</i>	<i>14</i>	<i>14</i>	<i>13</i>	<i>14</i>	<i>15</i>	<i>15</i>	<i>14</i>	<i>13</i>

¹National Marine Fisheries Service. (2011). Data on License Limitation Program, Alaska Federal Processor Permits (FPP), Federal Fisheries Permits (FFP), and Permit holders. NMFS Alaska Regional Office. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

²Alaska Commercial Fisheries Entry Commission. (2011). Alaska commercial fishing permits, permit holders, and vessel licenses, 2000 – 2010. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

Table 5. Characteristics of the Commercial Fishing Sector in Koyuk: 2000-2010.

Year	Crew License Holders ¹	Count Of All Fish Buyers ²	Count Of Shore-Side Processing Facilities ³	Vessels Primarily Owned By Residents ⁴	Vessels Homeported ⁴	Vessels Landing Catch In Koyuk ²	Total Net Pounds Landed In Koyuk ^{2,5}	Total Ex-Vessel Value Of Landings In Koyuk ^{2,5}
2000	7	0	0	6	6	0	0	\$0
2001	0	0	0	4	4	0	0	\$0
2002	0	0	0	1	1	0	0	\$0
2003	1	0	0	0	0	0	0	\$0
2004	1	0	0	0	1	0	0	\$0
2005	4	0	0	0	1	0	0	\$0
2006	3	0	0	0	1	0	0	\$0
2007	1	0	0	0	0	0	0	\$0
2008	2	0	0	0	0	0	0	\$0
2009	5	0	0	0	0	0	0	\$0
2010	9	0	0	1	1	0	0	\$0

¹ Alaska Department of Fish and Game. (2011). Alaska sport fish and crew license holders, 2000 – 2010. ADF&G Division of Administrative Services. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

² Alaska Department of Fish and Game, and Alaska Commercial Fisheries Entry Commission. (2011). Alaska fish ticket data. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

³ Alaska Department of Fish and Game. (2011). Data on Alaska fish processors. ADF&G Division of Commercial Fisheries. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

⁴ Alaska Commercial Fisheries Entry Commission. (2011). Alaska commercial fishing permits, permit holders, and vessel licenses, 2000 – 2010. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

⁵ Totals only represent non-confidential data.

Table 6. Halibut Catch Share Program Participation by Residents of Koyuk: 2000-2010.

Year	Number of Halibut Quota Share Account Holders	Halibut Quota Shares Held	Halibut IFQ Allotment (Pounds)
2000	0	0	0
2001	0	0	0
2002	0	0	0
2003	0	0	0
2004	0	0	0
2005	0	0	0
2006	0	0	0
2007	0	0	0
2008	0	0	0
2009	0	0	0
2010	0	0	0

Source: National Marine Fisheries Service. (2011). Alaska Individual Fishing Quota (IFQ) permit data. NMFS Alaska Regional Office. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

Table 7. Sablefish Catch Share Program Participation by Residents of Koyuk: 2000-2010.

Year	Number of Sablefish Quota Share Account Holders	Sablefish Quota Shares Held	Sablefish IFQ Allotment (Pounds)
2000	0	0	0
2001	0	0	0
2002	0	0	0
2003	0	0	0
2004	0	0	0
2005	0	0	0
2006	0	0	0
2007	0	0	0
2008	0	0	0
2009	0	0	0
2010	0	0	0

Source: National Marine Fisheries Service. (2011). Alaska Individual Fishing Quota (IFQ) permit data. NMFS Alaska Regional Office. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

Table 8. Bering Sea and Aleutian Island Crab Catch Share Program Participation by Residents of Koyuk: 2000-2010.

Year	Number of Crab Quota Share Account Holders	Crab Quota Shares Held	Crab IFQ Allotment (Pounds)
2005	0	0	0
2006	0	0	0
2007	0	0	0
2008	0	0	0
2009	0	0	0
2010	0	0	0

Source: National Marine Fisheries Service. (2011). Alaska Individual Fishing Quota (IFQ) permit data. NMFS Alaska Regional Office. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

Table 9. Landed Pounds and Ex-vessel Revenue, by Species, in Koyuk: 2000-2010.

	<i>Total Net Pounds¹</i>										
	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>
Crab	0	0	0	0	0	0	0	0	0	0	0
Finfish	0	0	0	0	0	0	0	0	0	0	0
Halibut	0	0	0	0	0	0	0	0	0	0	0
Herring	0	0	0	0	0	0	0	0	0	0	0
Other Groundfish	0	0	0	0	0	0	0	0	0	0	0
Other Shellfish	0	0	0	0	0	0	0	0	0	0	0
Pacific Cod	0	0	0	0	0	0	0	0	0	0	0
Pollock	0	0	0	0	0	0	0	0	0	0	0
Sablefish	0	0	0	0	0	0	0	0	0	0	0
Salmon	0	0	0	0	0	0	0	0	0	0	0
<i>Total²</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
	<i>Ex-vessel Value (nominal U.S. dollars)</i>										
	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>
Crab	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Finfish	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Halibut	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Herring	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other Groundfish	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other Shellfish	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pacific Cod	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pollock	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Sablefish	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Salmon	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<i>Total²</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>	<i>\$0</i>

Source: Alaska Department of Fish and Game, and Alaska Commercial Fisheries Entry Commission. (2011). Alaska fish ticket data. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

¹ Net pounds refers to the landed weight recorded in fish tickets.

² Totals only represent non-confidential data.

Table 10. Landed Pounds and Ex-vessel Revenue, by Species, by Koyuk Residents: 2000-2010.

	<i>Total Net Pounds¹</i>										
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Crab	--	--	--	0	0	0	0	0	0	0	--
Finfish	--	--	--	0	0	0	0	0	0	0	--
Halibut	--	--	--	0	0	0	0	0	0	0	--
Herring	--	--	--	0	0	0	0	0	0	0	--
Other Groundfish	--	--	--	0	0	0	0	0	0	0	--
Other Shellfish	--	--	--	0	0	0	0	0	0	0	--
Pacific Cod	--	--	--	0	0	0	0	0	0	0	--
Pollock	--	--	--	0	0	0	0	0	0	0	--
Sablefish	--	--	--	0	0	0	0	0	0	0	--
Salmon	--	--	--	0	0	0	0	0	0	0	--
<i>Total²</i>	--	--	--	0	0	0	0	0	0	0	--
	<i>Ex-vessel Value (nominal U.S. dollars)</i>										
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Crab	--	--	--	\$0	\$0	\$0	\$0	\$0	\$0	\$0	--
Finfish	--	--	--	\$0	\$0	\$0	\$0	\$0	\$0	\$0	--
Halibut	--	--	--	\$0	\$0	\$0	\$0	\$0	\$0	\$0	--
Herring	--	--	--	\$0	\$0	\$0	\$0	\$0	\$0	\$0	--
Other Groundfish	--	--	--	\$0	\$0	\$0	\$0	\$0	\$0	\$0	--
Other Shellfish	--	--	--	\$0	\$0	\$0	\$0	\$0	\$0	\$0	--
Pacific Cod	--	--	--	\$0	\$0	\$0	\$0	\$0	\$0	\$0	--
Pollock	--	--	--	\$0	\$0	\$0	\$0	\$0	\$0	\$0	--
Sablefish	--	--	--	\$0	\$0	\$0	\$0	\$0	\$0	\$0	--
Salmon	--	--	--	\$0	\$0	\$0	\$0	\$0	\$0	\$0	--
<i>Total²</i>	--	--	--	\$0	\$0	\$0	\$0	\$0	\$0	\$0	--

Note: Cells showing -- indicate that the data are considered confidential.

Source: Alaska Department of Fish and Game, and Alaska Commercial Fisheries Entry Commission. (2011). Alaska fish ticket data. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

¹ Net pounds refers to the landed weight recorded in fish tickets.

² Totals only represent non-confidential data.

Recreational Fishing

Between 2000 and 2010 there were no sport fish guide businesses or licensed sport fish guides in Koyuk. However, starting in 2007, sport fishing licenses were sold in the community, with between 37 and 48 licenses sold per year. Between 2000 and 2010, Koyuk residents purchased between 34 and 58 sport fishing licenses (irrespective of point of sale). In some years, the number of sport fishing licenses sold in Koyuk was greater than the number of licenses purchased by residents of Koyuk, indicating that a small number of non-local resident sport fishermen may use Koyuk as a base of fishing activity. Further information about the sport fishing sector in and near Koyuk is displayed in Table 11.

Table 11. Sport Fishing Trends, Koyuk: 2000-2010.

Year	Active Sport Fish Guide Businesses ¹	Sport Fish Guide Licenses ¹	Sport Fishing Licenses Sold to Residents ²	Sport Fishing Licenses Sold in Koyuk ²
2000	0	0	35	0
2001	0	0	41	0
2002	0	0	47	0
2003	0	0	50	0
2004	0	0	47	0
2005	0	0	53	0
2006	0	0	34	0
2007	0	0	46	48
2008	0	0	49	48
2009	0	0	58	50
2010	0	0	37	37

Year	Saltwater		Freshwater	
	Angler Days Fished – Non-Residents ³	Angler Days Fished – Alaska Residents ³	Angler Days Fished – Non-Residents ³	Angler Days Fished – Alaska Residents ³
2000	196	2,663	3,789	11,795
2001	64	988	2,087	7,816
2002	94	1,650	4,321	12,260
2003	30	1,530	3,632	7,211
2004	204	497	4,183	8,439
2005	56	1,940	8,307	6,764
2006	90	1,400	3,547	12,535
2007	49	530	3,688	12,400
2008	0	655	3,761	17,579
2009	133	897	4,198	11,995
2010	43	34	4,334	6,199

¹ Alaska Department of Fish and Game. (2011). Alaska sport fish guide licenses and businesses, 2000 – 2010. ADF&G Division of Administrative Services. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

² Alaska Department of Fish and Game. (2011). Alaska sport fish and crew license holders, 2000 – 2010. ADF&G Division of Administrative Services. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

³ Alaska Department of Fish and Game. (2011). Alaska Sport Fishing Survey results, 2000 – 2010. ADF&G Division of Sport Fish, Alaska Statewide Harvest Survey project. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. http://www.adfg.alaska.gov/sf/sport_fishingsurvey/ (Accessed September 2011).

The Alaska Statewide Harvest Survey,⁸⁰ conducted by ADF&G between 2000 and 2010, does not provide information about species targeted by private anglers in Koyuk. Given the lack of charter businesses, no kept/release log book data were reported out of Koyuk between 2000 and 2010.⁸¹ Koyuk is located within Alaska Sport Fishing Survey Area W – Seward Peninsula and Norton Sound. Information is available about both saltwater and freshwater sport fishing activity at this regional scale. Between 2000 and 2010, saltwater sport fishing activity was minimal, with up to 204 non-Alaska resident angler days fished per year, and up to 2,663 Alaska resident angler days fished per year. However, the number of Alaska resident angler days fished per year saw a significant drop in 2010, falling 96.2% from 2009 (from 897 to 34). A majority of sport fishing activity occurred in freshwater, with Alaska resident anglers fishing consistently more angler days (from 6,199 – 17,579 angler days per year) than non-Alaska resident anglers (from 2,087 – 8,307 angler days per year). Still, this number also fell for Alaska residents, 48.3% from 2009 (from 11,995 to 6,199) and 90.3% from 2000 (from 11,795 to 6,199). Further information about the sport fishing sector in and near Koyuk is displayed in Table 11.

Subsistence Fishing

The Koyuk River is the primary source of subsistence fisheries resources for the village of Koyuk. This river contains Chinook, coho, chum, and pink salmon, and is therefore listed by the National Marine Fisheries Service (NMFS) as Essential Fish Habitat.⁸² No information was reported by ADF&G between 2000 and 2010 regarding per capita subsistence harvest or household participation in the subsistence harvest of salmon, halibut, marine mammals, marine invertebrates or non-salmon fish (Table 12). However, permit and harvest data are available for salmon.

According to the species listed by ADF&G in Table 13, pink salmon made up the majority of recorded subsistence salmon harvests in 2008, followed by chum, coho, and Chinook. In that year, reported harvests totaled 9,092 salmon, compared to 7,533 in 2000. Limited sockeye and Chinook salmon are harvested. No marine invertebrates or non-salmon fish harvests were reported during this time period. No information was reported regarding individual subsistence harvest of halibut (Table 14). Between 2000 and 2010, an estimated 53 beluga whales were harvested. Most whales were harvested in 2001 and 2002, with harvests dropping significantly in years following. One walrus was reported harvested in 2005. No information was reported on subsistence harvests of Steller sea lions, harbor seals, or spotted seals (Table 15).

⁸⁰ Alaska Department of Fish and Game (2011). Alaska Sport Fishing Survey results, 2000 – 2010. ADF&G Division of Sport Fish, Alaska Statewide Harvest Survey project. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. <http://www.adfg.alaska.gov/sf/sportfishingsurvey/> (Accessed September 2011).

⁸¹ Alaska Department of Fish and Game (2011). Alaska sport fish charter logbook database, 2000 – 2010. ADF&G Division of Administrative Services. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

⁸² Bureau of Land Management (2008). *Kobuk-Seward Peninsula Record of Decision and Approved Management Plan*. Retrieved April 13, 2012 from http://www.blm.gov/ak/st/en/prog/planning/ksp/ksp_documents/ksp_rod_and_approved.html.

Table 12. Subsistence Participation by Household and Species, Koyuk: 2000-2010.

Year	% Households Participating in Salmon Subsistence	% Households Participating in Halibut Subsistence	% Households Participating in Marine Mammal Subsistence	% Households Participating in Marine Invertebrate Subsistence	% Households Participating in Non-Salmon Fish Subsistence	Per Capita Subsistence Harvest (pounds)
2000	n/a	n/a	n/a	n/a	n/a	n/a
2001	n/a	n/a	n/a	n/a	n/a	n/a
2002	n/a	n/a	n/a	n/a	n/a	n/a
2003	n/a	n/a	n/a	n/a	n/a	n/a
2004	n/a	n/a	n/a	n/a	n/a	n/a
2005	n/a	n/a	n/a	n/a	n/a	n/a
2006	n/a	n/a	n/a	n/a	n/a	n/a
2007	n/a	n/a	n/a	n/a	n/a	n/a
2008	n/a	n/a	n/a	n/a	n/a	n/a
2009	n/a	n/a	n/a	n/a	n/a	n/a
2010	n/a	n/a	n/a	n/a	n/a	n/a

Note: n/a indicates that no data were reported for that year.

Source: Alaska Department of Fish and Game. 2011. Community Subsistence Information System (CSIS). ADF&G Division of Subsistence. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. <http://www.adfg.alaska.gov/sb/CSIS/> (Accessed February 2011).

Table 13. Subsistence Fishing Participation for Salmon, Marine Invertebrates, and Non-Salmon Fish, Koyuk: 2000-2010.

Year	Subsistence Salmon Permits Issued ¹	Salmon Permits Returned ¹	Chinook Salmon Harvested ¹	Chum Salmon Harvested ¹	Coho Salmon Harvested ¹	Pink Salmon Harvested ¹	Sockeye Salmon Harvested ¹	Lbs of Marine Inverts ²	Lbs of Non-Salmon Fish ²
2000	75	70	385	4,580	259	2,290	19	n/a	n/a
2001	82	69	460	4,445	276	5,203	14	n/a	n/a
2002	84	76	557	3,971	509	6,049	n/a	n/a	n/a
2003	81	75	373	3,397	510	4,184	46	n/a	n/a
2004	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2006	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2007	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2008	85	82	187	3,330	1,084	4,489	2	n/a	n/a
2009	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2010	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Note: n/a indicates that no data were reported for that year.

¹ Fall, J.A., C. Brown, N. Braem, J.J. Simon, W.E. Simeone, D.L. Holen, L. Naves, L. Hutchinson-Scarborough, T. Lemons, and T.M. Krieg. 2011, revised. Alaska subsistence salmon fisheries 2008 annual report. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 359, Anchorage. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle.

² Alaska Department of Fish and Game. (2011). Community Subsistence Information System (CSIS). ADF&G Division of Subsistence. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. <http://www.adfg.alaska.gov/sb/CSIS/> (Accessed February 2011).

Table 14. Subsistence Halibut Fishing Participation,
 Koyuk: 2003-2010.

Year	SHARC Issued	SHARC Cards Fished	SHARC Halibut Lbs Harvested
2003	n/a	n/a	n/a
2004	n/a	n/a	n/a
2005	n/a	n/a	n/a
2006	n/a	n/a	n/a
2007	n/a	n/a	n/a
2008	n/a	n/a	n/a
2009	n/a	n/a	n/a
2010	n/a	n/a	n/a

Note: n/a indicates that no data were reported for that year.

Source: Fall, J.A. and D. Koster. (2011). Subsistence harvests of Pacific halibut in Alaska, 2009. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 357, Anchorage. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle.

Table 15. Subsistence Harvests of Marine Mammal Resources, Koyuk: 2000-2010.

Year	# of Beluga Whales ¹	# of Sea Otters ²	# of Walrus ²	# of Polar Bears ²	# of Steller Sea Lions ³	# of Harbor Seals ³	# of Spotted Seals ³
2000	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2001	13	n/a	n/a	n/a	n/a	n/a	n/a
2002	17	n/a	n/a	n/a	n/a	n/a	n/a
2003	3	n/a	n/a	n/a	n/a	n/a	n/a
2004	9	n/a	n/a	n/a	n/a	n/a	n/a
2005	5	n/a	1	n/a	n/a	n/a	n/a
2006	3	n/a	n/a	n/a	n/a	n/a	n/a
2007	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2008	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2009	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2010	3	n/a	n/a	n/a	n/a	n/a	n/a

Note: n/a indicates that no data were reported for that year.

¹ Frost, K.J., and R.S. Suydam. 2010. Subsistence harvest of beluga or white whales (*Delphinapterus leucas*) in northern and western Alaska, 1987–2006. *J. Cetacean Res. Manage.* 11(3): 293–299. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle.

² U.S. Fish and Wildlife Service. 2011. Marking, Tagging and Reporting Program data bases for northern sea otter, Pacific walrus and polar bear. Office of Marine Mammals Management. Anchorage, Alaska. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle.

³ Wolfe, R.J., Fall, J.A. and M. Riedel. 2009. The subsistence harvest of harbor seals and sea lions by Alaska Natives in 2008. Alaska Native Harbor Seal Commission and Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 347, Anchorage.