

Holy Cross

People and Place

*Location*¹



Holy Cross is located in Interior Alaska on the west bank of Ghost Creek Slough off the Yukon River. It is 40 miles northwest of Aniak, 420 miles southwest of Fairbanks, and 330 miles northwest of Anchorage. Holy Cross is located in the Yukon-Koyukuk Census Area and the Kuskokwim Recording District. The area encompasses 31.3 square miles of land and 6.2 square miles of water.

*Demographic Profile*²

In 2010, there were 178 residents in Holy Cross, making it the 206th largest of 352 communities in Alaska with recorded populations that year. Overall between 1990 and 2010, the population decreased by 35.7%. According to Alaska Department of Labor estimates, between 2000 and 2009, the population of permanent residents decreased by 17.6% (Table 1). The average annual growth rate during this period was -0.80%, representing a steady decline over time. According to a survey conducted by NOAA's Alaska Fisheries Science Center (AFSC) in 2011, community leaders reported a slightly higher year-round population in Holy Cross in 2010 (250 year-round residents) than the U.S. Census figure, and indicated that no seasonal workers or transients are present in the community at any point during the year. They also indicated that Holy Cross reaches an annual population peak when subsistence fishermen return from subsistence harvest activities in late summer or fall.

In 2010, a majority of Holy Cross residents identified themselves as American Indian and Alaska Native (91.6%), while 4.5% identified themselves as White, and 3.9% identified as two or more races (Figure 1). Compared to 2000, the percentage of the population that identified as American Indian and Alaska Native decreased by approximately 5%, while the percentages of the population identifying as either White or mixed race increased proportionally.

With the decline in population between 1990 and 2010, the total number of households declined from 86 to 64, and the average number of persons per household also decreased from 3.2 to 2.78 over the period. It is of note that the total number of occupied households in 2000 was the same as the number in 2010 (64), while household sizes were higher in 2000, with an average of 4 occupants per housing unit. Of the 93 housing units surveyed for the 2010 Decennial Census, 57% were owner-occupied, 35.5% were renter-occupied, and 7.5% were vacant. No Holy Cross residents were reported to be living in group quarters between 1990 and 2010.

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>.

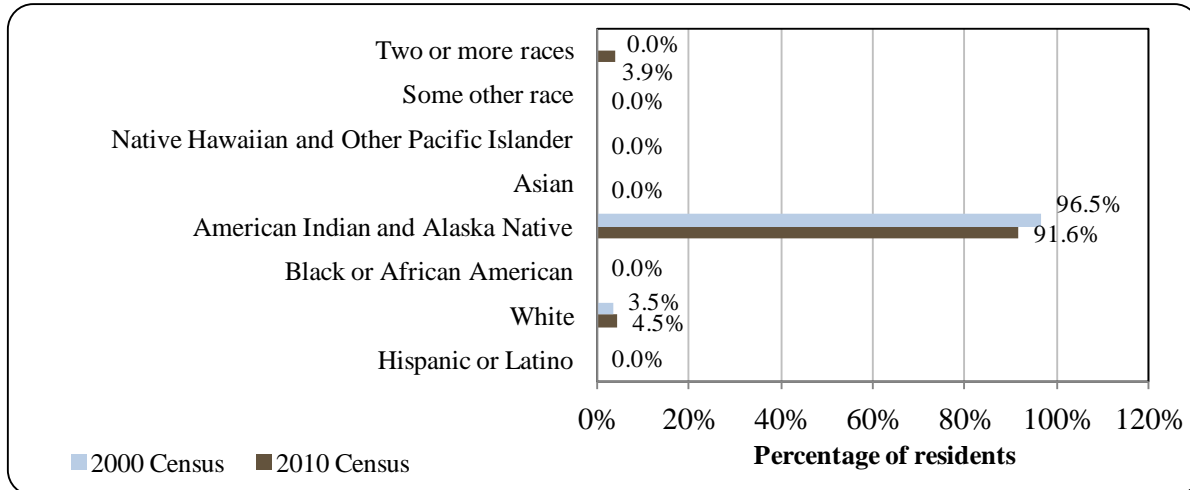
Table 1. Population in Holy Cross from 1990 to 2010 by Source.

Year	U.S. Decennial Census ¹	Alaska Dept. of Labor Estimate of Permanent Residents ²
1990	277	-
2000	227	-
2001	-	227
2002	-	225
2003	-	203
2004	-	206
2005	-	206
2006	-	204
2007	-	199
2008	-	194
2009	-	187
2010	178	-

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, Holy Cross: 2000-2010 (U.S. Census).

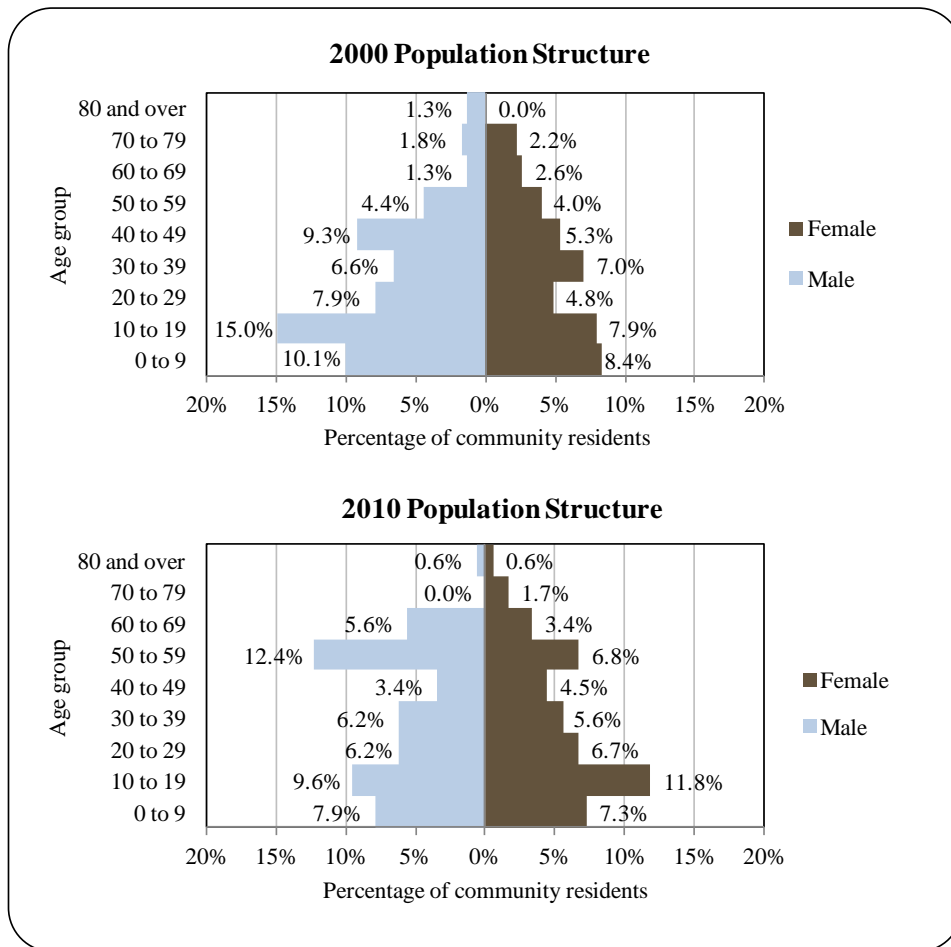


In 2010, the gender makeup in Holy Cross was 51.6% male and 48.3% female, similar to the population of the State as a whole, which was 52% male and 48% female. The median age was estimated to be 31 years in 2010, slightly lower than both the U.S. national average of 36.8 years and the median age for Alaska, 33.8 years. In 2010, 36.6% of the population was under the age of 20, and 11.8% of the Holy Cross population was age 60 or older. The population of Holy Cross was older on average in 2010 than in 2000, when 41.4% of the population had been under the age of 20 and 9.3% had been aged 60 or older. The slight decline in the percentage of the

population under the age of 20 could account for some of the decrease in household size observed between 2000 and 2010. The overall population structure of Holy Cross in 2000 and 2010 is shown in Figure 2.

In terms of educational attainment, the U.S. Census' 2006-2010 American Community Survey (ACS)³ estimated that 85.8% 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 6.7% of residents had less than a 9th grade education, compared to an estimated 3.5% of Alaskan residents overall; an estimated 7.5% had a 9th to 12th grade education but no diploma, compared to an estimated 5.8% of Alaskan residents overall; an estimated 22.5% had some college but no degree, compared to an estimated 28.3% of Alaskan residents overall; 2.5% of resident were estimated to have a Bachelor's degree, compared to 17.4% of Alaskan residents overall; and no Holy Cross residents were estimated to have a graduate or professional degree, compared to 9.6% of Alaskans overall.

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



³ While ACS estimates can provide a good snap shot 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.

History, Traditional Knowledge, and Culture

Holy Cross is an Deg Hit'an Athabascan village, within the Ingalik language group.⁴ The culture of the Lower Yukon Deg Hit'an people was heavily influenced by the neighboring Kwikpamiut Eskimos, whose territory began just downriver from Holy Cross. The mouth of the Innoko River is thought to have been one of the primary locations of trade exchanges between the Yukon Eskimos and the Deg Hit'an.⁵ With regard to material culture, the Deg Hit'an Athabascan people's reliance of salmon fishing more closely resembled Eskimo tradition than that of Athabascan people living further inland.⁶

First contact with Europeans in the Holy Cross region took place during an 1840s expedition led by Lt. Lavrentiy A. Zagoskin of the Russian-American Company, who was directed to explore the Yukon, Kuskokwim, and Innoko Rivers to locate possible portages in the Yukon-Kuskokwim delta.^{7,8} At the time of European contact, the communities of 'Anilukhtapak' and 'Koserefsky' were located near the present site of Holy Cross.⁹ Several decades later, during an expedition through the Yukon delta during the winter of 1878-1879, American Edward Nelson reported a village called 'Askhomute' near the present site of Holy Cross, with a population at that time of 30 residents.^{10,11}

In 1888, a Roman Catholic missionary named Father Aloysius Robaut established a mission and boarding school at Holy Cross in 1888. Ingalik Indians from the surrounding area migrated to Holy Cross to be near the mission.^{12,13} The U.S. Postal Service opened a post office there in 1899 under the name of Koserefsky. The name of the village was changed to Holy Cross in 1912 after the mission.¹⁴ The Yukon gold rush of the late 1800s brought a flood of American prospectors passing through the Holy Cross area. Gold was discovered in the Innoko Valley in 1906, increasing the importance of Holy Cross as a waystation during the early 1900s.¹⁵

In the 1930s the Yukon River changed course, and an extensive sandbar began to form in front of the village of Holy Cross. By the mid-1940s, Holy Cross was only accessible via a narrow, shallow slough.^{16,17} Today, the slough is known as 'Ghost Creek Slough'.¹⁸ The mission boarding school was closed in 1956, and the original mission and several other original buildings

⁴ Alaska Native Knowledge Network. (2006). *Appendix A: Brief Description of Alaskan Athabascan Culture*. Retrieved March 22, 2013 from http://www.ankn.uaf.edu/curriculum/athabascan/athabascans/appendix_a.html.

⁵ VanStone, James. 1979. "Ingalik Contact Ecology: An Ethnohistory of the Lower-Middle Yukon, 1790-1935." *Fieldiana. Anthropology*. 71, pp. i, iii, v-vii, ix-xii, 1-273. (Retrieved October 3, 2012 from <http://www.jstor.org>.)

⁶ VanStone, James. 1976. "The Yukon River Ingalik: Subsistence and the Fur Trade, and a Changing Resource Base." *Ethnohistory*. 23(3), pp. 199-212.

⁷ 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.

⁸ See footnote 5.

⁹ Ibid.

¹⁰ Baker, Marcus. 1906. *Geographic Dictionary of Alaska. Second Edition*. Prepared by James McCormick. Dept. of the Interior, U.S. Geological Survey.

¹¹ See footnote 7.

¹² Ibid.

¹³ See footnote 5.

¹⁴ Holy Cross Tribal Council. 2009. *History of the Council*. Retrieved October 1, 2012 from <http://www.holycrosstribe.org/history.html>.

¹⁵ See footnote 5.

¹⁶ Ibid.

¹⁷ See footnote 14.

¹⁸ See footnote 7.

were torn down at that time.¹⁹ The City of Holy Cross was incorporated in 1968. Today, subsistence and commercial fishing-related activities remain important to residents. The sale of alcohol is banned in the village.²⁰

Natural Resources and Environment

Holy Cross is located in the Innoko Lowlands, an area of low tundra plains that extends from the Yukon-Kuskokwim Delta northeast between the Kaiyuh and Kuskokwim mountain ranges. Many navigable rivers run through the lowlands, including the Innoko River itself, which enters the Yukon River near Holy Cross.²¹ The tundra is covered by many sloughs and small lakes. The climate of Holy Cross is continental. Temperature extremes range from -62 and 93 °F. Annual snowfall averages 79 inches, with 19 inches of total precipitation per year. The Yukon River is ice-free from June through October.²²

The diversity of animal species present in the Innoko Lowlands is typical of interior Alaska, including black and brown bear, moose, caribou, beaver, mink, lynx, fox, porcupine, river otter, muskrat, wolf, wolverine, marten, hare, squirrel, and weasel. The three species of salmon most common in the Yukon and its tributaries are Chinook, chum, and coho. Other freshwater fish found in area rivers and lakes include Arctic grayling, Dolly Varden, northern pike, blackfish, and burbot. The area provides nesting grounds for many bird species, including a variety of ducks, geese, swans, cranes, and loons. Bird species that overwinter include grouse and rock and willow ptarmigan.²³

Protected areas near Holy Cross include the Yukon Delta and Innoko National Wildlife Refuges (NWR). The eastern boundary of the Yukon Delta NWR is located less than 20 miles south of Holy Cross and the Innoko NWR is located just to the north, along the eastern bank of the Yukon River between Grayling and Koyukuk. Both areas were established in 1980 with the passage of the Alaska National Interest Lands Conservation Act. The 22-million acre Yukon Delta NWR provides essential habitat for waterfowl and migratory birds, including some of the most productive subarctic goose habitat. In addition, the refuge supports muskox, caribou, brown and black bear, wolves, and moose, salmon, and marine mammals.²⁴ One of the primary motivations for creation of the Innoko NWR was its importance as a waterfowl area in interior Alaska, noted for its wetlands that provide nesting, resting and staging areas. In addition, this NWR offers excellent raptor and moose habitat. The Innoko NWR is made up of two units, totaling 4.6 million acres.²⁵ These areas were also established to fulfill treaty obligations and provide the opportunity for continued subsistence uses. NWR lands are open to sport and subsistence hunting and fishing, as well as trapping.²⁶ In addition to these NWR, Holy Cross is

¹⁹ See footnote 14.

²⁰ See footnote 7.

²¹ See footnote 5.

²² See footnote 20.

²³ See footnote 21.

²⁴ U.S. Fish and Wildlife Service. 2011. *Yukon Delta National Wildlife Refuge*. Retrieved December 8, 2011 from <http://yukondelta.fws.gov/>.

²⁵ U.S. Fish and Wildlife Service. 2010. *Innoko National Wildlife Refuge*. Retrieved October 4, 2011 from <http://innoko.fws.gov/>.

²⁶ See footnotes 24 and 25.

located approximately 80 miles east of the eastern boundary of the Andreafsky Wilderness Area, which covers slightly more than 5% of the Yukon Delta NWR.²⁷

The Yukon-Kuskokwim delta is rich in mineral deposits. Gold was discovered in the Klondike area of the upper Yukon River in 1896, and prospectors began searching closer to Holy Cross – along the Innoko River – in 1898. Commercial quantities of gold were discovered in the Innoko Valley in 1906.²⁸ As of 2010, the Iditarod and Innoko mining districts have produced more than 2.3 million ounces of gold.²⁹

Natural hazard risks in the Yukon-Koyukuk Census Area include flooding, wildfire, earthquakes, snow and avalanche, severe weather, landslides and erosion. Shallow earthquakes in the region would be considered ‘intraplate’ earthquakes, which can have a magnitude of up to 7.0 on the Richter scale.³⁰

According to the Alaska Department of Environmental Conservation, there are no notable active environmental cleanup sites located in Holy Cross as of September 2012.³¹

Current Economy³²

According to the 2011 AFSC survey, community leaders indicated that commercial and subsistence fishing are the primary economic activities in Holy Cross. The summer fishing season is the peak of the seasonal economy, along with construction and local capital improvement projects. There are also approximately 50 full-time jobs in the community.³³

Based on household surveys for the 2006-2010 ACS,³⁴ in 2010, the per capita income in Holy Cross was estimated to be \$12,358 and the median household income was estimated to be \$25,833. This represents an increase from the per capita and median household incomes reported in the year 2000 (\$8,542 and \$21,875, respectively). If inflation is taken into account by converting the 2000 values to 2010 dollars,³⁵ 2010 per capita income estimate remains slightly higher than the real 2000 per capita income of \$11,233. In contrast, the 2010 median household income estimate is revealed to be a decrease from the real 2000 median household income of \$28,765. In 2010, Holy Cross ranked 258th of 305 Alaskan communities with per capita income data that year, and 258th in median household income, out of 299 Alaskan communities with household income data.

²⁷ Wilderness.net (n.d). *Andreafsky Wilderness*. Retrieved December 8, 2011 from <http://www.wilderness.net>.

²⁸ See footnote 21.

²⁹ Szumigala, D.J., L.A. Harbo, and J.N. Adleman. *Alaska's Mineral Industry 2010*. Alaska Dept. of Natural Resources and Alaska Dept. of Commerce, Community and Economic Development, Special Report 65.

³⁰ State of Alaska. 2002. *Hazard Mitigation Plan*. Retrieved February 8, 2012 from <http://biotech.law.lsu.edu/blaw/DOD/manual/.%5CFull%20text%20documents%5CState%20Authorities%5CAla.%20SHMP.pdf>.

³¹ Alaska Dept. of Environmental Conservation. 2012. *List of Contaminated Site Summaries By Region*. Retrieved October 3, 2012 from <http://dec.alaska.gov/spar/csp/list.htm>.

³² Unless otherwise noted, all monetary data are reported in nominal values.

³³ Holy Cross Tribe. 2009. *History*. Retrieved October 1, 2012 from <http://www.holycrosstribe.org/history.html>.

³⁴ 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>.

³⁵ Inflation was calculated using the Anchorage Consumer Price Index for 2000 and 2010 (retrieved January 5, 2012 from the Alaska Department of Labor, <http://labor.alaska.gov/research/cpi/inflationcalc.htm>).

However, Holy Cross's small population size may have prevented the ACS from accurately portraying economic conditions.³⁶ The slight increase in per capita income suggested by the 2006-2010 ACS is not supported by economic data compiled by the Alaska Local and Regional Information (ALARI) database maintained by the Alaska Department of Labor and Workforce Development (DOLWD). If total wages reported in the ALARI database for 2010 are divided by the 2010 population reported by the U.S. Census, the resulting per capita income estimate for Holy Cross in 2010 is \$6,861.^{37,38} This discrepancy suggests that caution is warranted when citing an increase in per capita income in Holy Cross between 2000 and 2010. The relatively low per capita income estimates for Holy Cross in 2010 from both data sources are reflected in the fact that the community was recognized as "distressed" by the Denali Commission,³⁹ indicating that over 70% of residents aged 16 and older earned less than \$16,120 in 2010. It is important to note that both ACS and DOLWD data are based on wage earnings, and these income statistics do not take into account the value of personal use and subsistence within the local economy.

In 2010, a much smaller percentage of Holy Cross residents was estimated to be in the civilian labor force (43.8%) compared to the civilian labor force statewide (68.8%). In the same year, 40.6% of local residents were estimated to be living below the poverty line, more than four times the statewide poverty rate of 9.5%, and the unemployment rate was estimated to be 16.1%, more than twice the statewide unemployment rate of 5.9%. An additional estimate of unemployment is based on the ALARI database, which shows a local unemployment rate of 24.3%, more than twice the state rate estimate of 11.5%.⁴⁰

Also based on the 2006-2010 ACS, just over half of the employed civilian workforce in Holy Cross was estimated to be employed in the public sector (50.9%), while 43.4% were employed in the private sector, and the remaining 5.7% were estimated to be self-employed. Out of 53 people aged 16 and over that were estimated to be employed in the civilian labor force in 2010, the greatest number worked in educational services, health care and social services (45.3%), construction (15.1%), transportation, warehousing and utilities (13.2%), public administration (9.4%), professional, scientific, management, and administrative and waste management services (5.7%), and agriculture, forestry, and fishing industries (5.7%) (Figure 3). The number of individuals employed in the fishing industry is probably underestimated in Census statistics; fishermen may hold another job and characterize their employment accordingly. Compared to employment statistics in 2000, the most notable shifts in the distribution of employment by industry included a decline in careers categorized as 'other services' and an increase in retail trade, construction, and agriculture, forestry, fishing, hunting, and mining industry employment.

³⁶ While ACS estimates can provide a good snap shot 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.

³⁷ Alaska Department of Labor and Workforce Development (n.d.). *Alaska Local and Regional Information Database*. Retrieved April 23, 2012 from <http://live.laborstats.alaska.gov/alari/>.

³⁸ 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>.

³⁹ Denali Commission. 2011. *Distressed Community Criteria 2011 Update*. Retrieved April 16, 2012 from www.denali.gov.

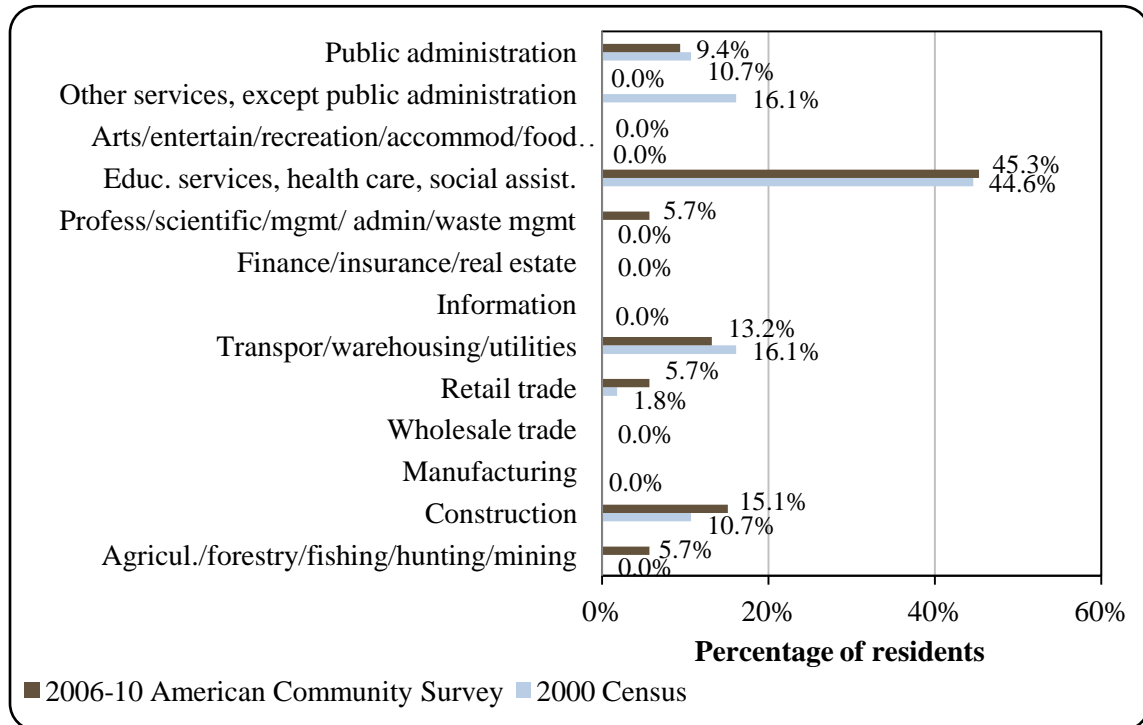
⁴⁰ See footnote 37.

ALARI industry employment statistics differ from ACS estimates, with the highest percentage of employed residents (59.3%) reported to be working in local government in 2010, along with 24.7% employed in education and health services, 4.9% working in trade, transportation, and utilities, 3.7% in natural resources and mining, 2.5% in construction, 1.2% in financial activities, 1.2% in professional and business services, 1.2% in state government, and 1.2% in other industries.⁴¹

Viewing employment from the perspective of occupation, 2006-2010 ACS estimates indicate that the highest percentages of the Holy Cross workforce were employed in sales and office occupations (32.1%) and service occupations (30.2%), along with 22.6% employed in natural resources, construction, and maintenance occupations, 15.1% in management, business, science, and arts occupations, and 0% in production, transportation, and material moving service occupations (Figure 4). Between 2000 and 2010, the percentage of the workforce employed in sales and office occupations increased by approximately 50%, and the percentages employed in service occupations and natural resources, construction, and maintenance occupations also increased notably. There was a 100% decline in the number of individuals estimated to be working in production, transportation, and material moving occupations between 2000 and 2010.

According to the ALARI database, top occupations in Holy Cross in 2010 were laborers and freight, stock, and material movers (16 workers), and community and social service specialists (6 workers).⁴² Discrepancies between 2006-2010 ACS and ALARI statistics can be explained in part by different category definitions. It is also important to note that, as with income statistics, ACS and DOLWD employment statistics do not reflect residents' activity in the subsistence economy.

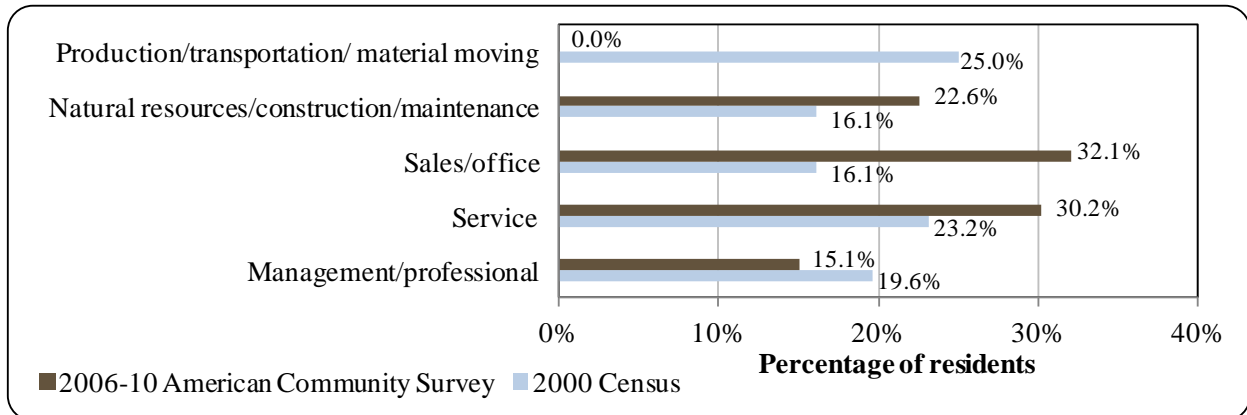
Figure 3. Local Employment by Industry in 2000-2010, Holy Cross (U.S. Census).



⁴¹ Ibid.

⁴² Ibid.

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



Governance

Holy Cross is a 2nd Class City located in an unorganized borough. The City was incorporated in 1698, and has a manager or “Strong Mayor” form of government, with a seven-person city council including the Mayor, a seven-person school board, and several municipal employees. No sales or property taxes are administered by the City.⁴³ Locally-generated revenue sources during the 2000-2010 period included state-contracted services, building and equipment rentals, water, sewer, and washeteria service fees, land leases, concessions, and bingo and pull tab receipts. The City also received shared revenues from the state and federal government. State shared funds included contributions from the State Revenue Sharing program from 2000 to 2003 and from the Community Revenue Sharing program in 2009 and 2010, as well as Municipal Energy Assistance, Telephone / Electric Co-op tax refunds, and the SAFE Communities program (funding for public safety, fire, utilities, infrastructure, etc.). Federal revenue sharing dollars came from the Payment In Lieu of Taxes program. Holy Cross also received capital/special project grants in some years during the 2000-2010 period. Between 2000 and 2010, no fisheries-related grants were received by the City of Holy Cross. This information about selected revenue streams is presented in Table 2.

Holy Cross was included under the Alaska Native Claims Settlement Act (ANCSA), and is federally recognized as a Native village. The authorized traditional entity, recognized by the Bureau of Indian Affairs (BIA), is Holy Cross Village. The Native village corporation is Deloycheet, Incorporated, which manages 138,727 acres of land. The regional Native corporation to which Holy Cross belongs is Doyon, Limited.⁴⁴

Holy Cross is also a member village of the Tanana Chiefs Conference, a tribal 501(c)(3) non-profit organization headquartered in Fairbanks. It is a consortium of 42 villages of Interior Alaska that works to meet “the health and social service challenges for more than 10,000 Alaska Natives spread across a region of 235,000 square miles in Interior Alaska.” The non-profit provides health and tribal development services, as well as educational and employment services

⁴³ 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.

⁴⁴ Ibid.

to individuals of member tribes.⁴⁵ The Tanana Chiefs Conference is one of the 12 regional Alaska Native 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.⁴⁶

The closest offices of the Alaska Department of Fish and Game (ADF&G) are located in Emmonak and Bethel, although the Emmonak office is only open during the summer season. The closest office of the Alaska Department of Commerce, Community and Economic Development is also in Bethel. However, the Anchorage and Fairbanks offices of these agencies may be more accessible to people living in Holy Cross than the coastal villages. Anchorage has the nearest offices of the National Marine Fisheries Service (NMFS), Alaska Department of Natural Resources, and U.S. Bureau of Citizenship and Immigration Services.

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

Year	Total Municipal Revenue ¹	Sales Tax Revenue ²	State/Community Revenue Sharing ^{3,4}	Fisheries-Related Grants (State and Federal) ⁵
2000	\$207,339	n/a	\$29,823	n/a
2001	\$197,252	n/a	\$28,789	n/a
2002	\$272,173	n/a	\$26,014	n/a
2003	\$160,431	n/a	\$28,000	n/a
2004	\$137,123	n/a	n/a	n/a
2005	\$114,055	n/a	n/a	n/a
2006	\$189,204	n/a	n/a	n/a
2007	\$189,303	n/a	n/a	n/a
2008	\$228,948	n/a	n/a	n/a
2009	\$366,540	n/a	\$106,307	n/a
2010	\$391,070	n/a	\$105,897	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.

⁴⁵ Tanana Chiefs Conference website.2007. *History*. Retrieved January 9, 2012 from <http://www.tananachiefs.org/>.

⁴⁶ 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>.

Infrastructure

Connectivity and Transportation

Holy Cross can be accessed by air and water. The State owns and operates a 4,000 feet long by 100 feet wide gravel airstrip.⁴⁷ As of early June, 2012, roundtrip airfare between Holy Cross and Anchorage was \$584.⁴⁸ Residents use private boats for fishing, subsistence, and recreation.⁴⁹ According to a survey conducted by the AFSC in 2011, community leaders reported that all vessels used in Holy Cross are under 35 feet in length. Holy Cross is serviced by barge during the summer months.⁵⁰ Plans are currently being developed for relocation of the barge landing site due to sediment fill slowly making the existing landing site inaccessible.⁵¹ In addition to air and water access, local residents have access to 7.5 miles of local roads. Motor bikes, 3-wheelers, snowmobiles, and dog teams are common modes of overland transportation.⁵²

Facilities

The City of Holy Cross operates a piped water and sewer system which serves 71 housing units and the local school. Water is sourced from a deep well and chlorinated before it is distributed. Residents of housing units not connected to the piped system haul water from the washeteria. The City operates a sewage lagoon for piped sewage, and some households use individual septic tanks or outhouses, or haul honeybuckets. The City operates a landfill, but does not provide refuse collection services. Individuals are responsible for hauling their own garbage. Electricity in Holy Cross is provided by an Alaska Village Electric Cooperative diesel powerhouse, operated by the REA Coop.⁵³ Police services in Holy Cross are provided by state troopers stationed 40 miles upriver in Aniak. The City operates a jail. Fire and rescue services are provided by the City Volunteer Fire Department. Additional community facilities include the Holy Cross Community Hall, a school gymnasium, and a school/community library. Community services include an elder nutrition program. Local and long-distance telephone service is available in Holy Cross. Internet service is available at the school only. No cable providers offer service locally.⁵⁴

With regard to fisheries-related infrastructure, community leaders reported in the 2011 AFSC survey that no dock space is available in Holy Cross. However, smaller vessels (up to 24 feet in length) are in use in Holy Cross, and fuel barges can also be accommodated at the barge landing site. Community leaders reported that no fisheries-related businesses and services are

⁴⁷ 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.

⁴⁸ Airfare was calculated using lowest fare. <http://www.travelocity.com> (retrieved November 22, 2011).

⁴⁹ See footnote 47.

⁵⁰ Ibid.

⁵¹ U.S. Army Engineer District. 2011. *Trip Report to the Denali Commission*. Retrieved October 2, 2012 from https://www.denali.gov/dcpdb/index.cfm?fuseAction=Project.ProjectAtAGlance&project_id=6739.

⁵² See footnote 47.

⁵³ Today, the Rural Electric Administration has transformed into the Rural Utilities Service, and is part of the U.S. Department of Agriculture. (Source: National Rural Electric Cooperative Association. 2012. *History of Electric Co-ops*. Retrieved October 2, 2012 from <http://www.nreca.coop/members/history/pages/default.aspx>.)

⁵⁴ See footnote 47.

available in Holy Cross, with the exception of fishing gear repair and storage, which local residents do themselves.

Medical Services

Basic medical services are provided in Holy Cross at the Theresa Demientieff Health Clinic. The clinic is owned by the Village Council and operated by the Yukon Kuskokwim Health Corporation. It is part of the Community Health Aid Program. Emergency services have river and air access in Holy Cross. Emergency services are provided by the health aide.⁵⁵ The nearest hospital is located in Bethel.

Educational Opportunities

There is one school in Holy Cross which offers a preschool through 12th grade education. As of 2011, the Holy Cross School had 41 students and 4 teachers.⁵⁶

Involvement in North Pacific Fisheries

History and Evolution of Fisheries

Subsistence salmon fishing has long provided a basis for life in Deg Hit'an communities of the Lower Yukon River. Chinook salmon were the most important food fish, while chum and coho salmon were processed into dried fish, and chum salmon was an important food for sled dogs. The Deg Hit'an primarily used large basket traps for salmon harvest. They also used dipnets, which they would hold in the water as they drifted down river with the current in canoes. Villagers from Koserefsky and Anilukhtakpuk (formerly located near Holy Cross) most often had fish camps on the eastern bank of the Yukon River.⁵⁷

The first recorded commercial harvest of salmon on the Yukon River took place in 1918, and early harvests were relatively large. Concerns about providing sufficient salmon resources for subsistence harvest led to limitations on commercial salmon fishing during several periods, including a complete commercial fishing closure on the Yukon River between 1925 and 1931. In the 1980s, concerns about possible overharvest of Chinook runs led to reduced commercial fisheries in the late 1980s and 1990s.⁵⁸

Poor returns of Chinook salmon in the late 1990s and early 2000s resulted in restrictive management of the commercial fishery and complete closure in 2001 to ensure subsistence resources.⁵⁹ Yukon River Chinook runs showed signs of improvement for several years following the 2001 commercial closure, but restricted commercial harvest in 2008 and complete

⁵⁵ Ibid.

⁵⁶ Alaska Department of Education and Early Development. (2012). *Statistics and Reports*. Retrieved April 24, 2012 from <http://eed.alaska.gov/stats/>.

⁵⁷ VanStone, James. 1979. "Ingalik Contact Ecology: An Ethnohistory of the Lower-Middle Yukon, 1790-1935." *Fieldiana. Anthropology*. 71, pp. i, iii, v-vii, ix-xii, 1-273. (Retrieved October 3, 2012 from <http://www.jstor.org>.)

⁵⁸ Clark, McGregor, Mecum, Krasnowski, and Carroll. 2006. "The Commercial Salmon Fishery in Alaska." *Alaska Fisheries Research Bulletin* 12(1):1-146. Alaska Dept. of Fish and Game. Retrieved January 4, 2012 from <http://www.adfg.alaska.gov/static/home/library/PDFs/afrb/clarv12n1.pdf>.

⁵⁹ Ibid.

closure of Chinook harvest in 2009 led to declaration of a fishery disaster that year.⁶⁰ A fishery disaster was again declared for the 2012 season, when the commercial Chinook salmon fishery was closed and subsistence fishery was significantly restricted. ADF&G, the Alaska Board of Fisheries, and constituents are working together to develop a conservation plan that restricts Chinook harvest while allowing for greater harvest of more abundant species, including gear and other management restrictions.⁶¹

Like Yukon Chinook salmon runs, chum salmon runs have seen poor returns since 1998. A relatively strong run in 2007 led to some effort to redevelop the Yukon chum fishery, but this process is challenged by the need to reduce incidental harvest of co-migrating Chinook salmon. Further, beginning in 2008, the fall chum salmon run has not been large enough to provide for commercial opportunity. From 2008 to 2010, management actions have been taken to delay commercial fishing to provide for escapement and subsistence use.⁶²

In years when commercial salmon fishing is open, fishing is allowed along the entire 1,200 miles of the main stem of the Yukon River, as well as 225 miles of the Tanana River. There are 7 fishing districts, 10 subdistricts, and 28 statistical areas. Fishing takes place with set and drift gillnets, and fish wheels are also allowed in Upper Yukon districts (Districts 4, 5, and 6). Subsistence fishermen also most often utilize these gear types. Many subsistence fishermen are also commercial fishermen.⁶³

Some commercial fishing also takes place in the area for “freshwater fish”, which may target species such as Arctic char, northern pike, rainbow trout, Dolly Varden char, and sheefish.⁶⁴

Holy Cross is located in District 3 of the Lower Yukon River salmon fishery. It is also important to note that the ocean area into which the Yukon River flows is encompassed by Federal Statistical and Reporting Area 514, Pacific Halibut Fishery Regulatory Area 4E, and the Bering Sea Sablefish Regulatory Area. Holy Cross is not eligible to participate in the Community Quota Entity program or the Community Development Quota program.

In the 2011 AFSC survey, community leaders reported that Holy Cross actively participates in fisheries management processes in Alaska through sending a representative to sit on a regional fisheries advisory and/or working group run by ADF&G. When asked to report challenges faced by the fishing economy, community leaders indicated that Holy Cross has been negatively impacted by reduced fishing hours, outlawing fish wheels, the reduction of legal mesh size in the salmon gillnet fishery, and the lack of a processing facility in District 3 of the Lower Yukon River salmon fishery. Without a processing facility, local fishermen have difficulty making money in the commercial salmon fishery. Community leaders also indicated that Holy Cross has been negatively impacted by salmon by-catch in the high seas pollock fishery, and expressed the opinion that the high seas harvest should be shut down for several years as an experiment to find out whether Chinook salmon begin to come back in higher numbers.

⁶⁰ Upton, H.F. 2010. *Commercial Fishery Disaster Assistance*. Congressional Research Service Report for Congress. Retrieved October 3, 2012 from <http://www.fas.org/sgp/crs/misc/RL34209.pdf>.

⁶¹ Alaska Dept. of Fish and Game. 2012. *2012 Alaska Chinook Salmon Fishery Disaster – FAQ*. Retrieved October, 2012 from <http://www.adfg.alaska.gov/index.cfm?ADFG=hottopics.federalChinookdisaster>.

⁶² Wolfe, R.J. and C. Scott. (2010). *Continuity and Change in Salmon Harvest Patterns, Yukon River Drainage, Alaska*. Final Report for Study 07-253, U.S. Fish and Wildlife Service.

⁶³ See footnote 58.

⁶⁴ Alaska Dept. of Fish and Game. 2006. *Our Wealth Maintained: A Strategy for Conserving Alaska's Diverse Wildlife and Fish Resources*. Retrieved June 21, 2012 from <http://www.adfg.alaska.gov/index.cfm?ADFG=species.wapview>.

Processing Plants

According to ADF&G's 2010 Intent to Operate list, Holy Cross does not have a registered processing plant. In the 2011 AFSC survey, community leaders indicated that there hasn't been a processing plant in District 3 of the Lower Yukon River salmon fishery for many years, and expressed the desire for a processing facility to be developed in District 3 to provide greater economic opportunity in the region.

According to the 2010 Intent to Operate list, the nearest processing facilities were located in Anvik (approximately 40 miles upriver in District 4) and Saint Mary's (approximately 180 miles downriver in District 2). In Anvik, Bonasila, Inc. operates a salmon roe processing facility, and Boreal Seafoods, Inc. is a registered processing plant in Saint Mary's that purchases salmon from local fishermen, with processing focused on Chinook, chum, and coho.⁶⁵

Fisheries-Related Revenue

Between 2000 and 2010, there was little known fisheries-related revenue generated in Holy Cross. The only known source was the Shared Fisheries Business Tax, which generated a total of \$329 between 2000 and 2010. No other known fisheries-related revenue was reported during this period (Table 3).⁶⁶

Commercial Fishing

Holy Cross is a river fishing community, located approximately 275 miles up the Yukon River. The primary fisheries resource available to Holy Cross fishermen is salmon. Between 2000 and 2010, Holy Cross residents participated in commercial salmon fishery as permit holders, crew license holders, and vessel owners. The number of vessels homeported in Holy Cross each year was typically slightly higher than the number of vessels reported to be primarily owned by Holy Cross residents. According to a survey conducted by the AFSC in 2011, community leaders reported that commercial fishing boats using Holy Cross as a base of fishing operations were all under 35 feet in length and were mostly gillnetters. No fish buyers or processing facilities were located in the community, and no landings were delivered locally. Information about the commercial fishing sector in Holy Cross is presented in Table 5.

During the 2000-2010 period, all but one Commercial Fisheries Entry Commission (CFEC) permit held in Holy Cross were for Yukon River salmon gillnet fisheries. In 2008, one permit was also held for freshwater fish ('other finfish'), but was not actively fished that year. In all years during the decade, a majority of salmon permits were held in the Lower Yukon River gillnet fishery, with a smaller number held in the Upper Yukon River gillnet fishery. The only salmon permits that were actively fished between 2000 and 2010 were for the Lower Yukon River. The total number of salmon permit holders and number of permits held remained stable through the decade. However, the number of permits that were actively fished showed a declining trend. No permits were actively fished in 2001-2002 and 2008-2010. The lack of permit activity in these years is explained by complete closures of the commercial Chinook

⁶⁵ Boreal Fisheries. 2009. *Homepage*. Retrieved May 31, 2012 from <http://www.borealfish.com/>.

⁶⁶ 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.

fishery in 2001 and 2009, and restricted commercial fishing effort in other years (see *History and Evolutions of Fisheries* section). This information about CFEC permits is presented in Table 4.

Between 2000 and 2010, no residents of Holy Cross held Federal Fisheries Permits (FFP), License Limitation Program permits (LLP), or participated in federal halibut, sablefish, or crab catch share fisheries. Information about federal permits held by Holy Cross residents is presented in Table 4, and information about federal catch share participation is presented in Tables 6 through 8.

Given the lack of fish buyers and shore-side processing facilities in Holy Cross between 2000 and 2010, no landings or revenue information is reported in the community (Table 9). Information about landings and ex-vessel revenue earned by Holy Cross vessel owners between 2000 and 2010 is considered confidential due to the small number of participants (Table 10).

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

Revenue source	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Raw fish tax ¹	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Shared Fisheries Business Tax ¹	n/a	\$45	n/a	\$72	n/a	n/a	n/a	\$47	\$49	\$58	\$61
Fisheries Resource Landing Tax ¹	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fuel transfer tax ²	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Extraterritorial fish tax ²	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Bulk fuel transfers ¹	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Boat hauls ²	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Harbor usage ²	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Port/dock usage ²	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Fishing gear storage on public land ³	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Marine fuel sales tax ³	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
<i>Total fisheries-related revenue</i> ⁴	<i>n/a</i>	<i>\$45</i>	<i>n/a</i>	<i>\$72</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>	<i>\$47</i>	<i>\$49</i>	<i>\$58</i>	<i>\$61</i>
<i>Total municipal revenue</i> ⁵	<i>\$207,339</i>	<i>\$197,252</i>	<i>\$272,173</i>	<i>\$160,431</i>	<i>\$137,123</i>	<i>\$114,055</i>	<i>\$189,204</i>	<i>\$189,303</i>	<i>\$228,948</i>	<i>\$366,540</i>	<i>\$391,070</i>

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

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.

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Table 4. Permits and Permit Holders by Species, Holy Cross: 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	-	-	-	-	-	-	-	-	-	-	-
	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	-	-	-	-	-	-	-	-	-	-	-
	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	-	-	-	-	-	-	-	-	-	-	-
	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	-	-	-	-	-	-	-	-	-	-	-
	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	-	-	-	-	-	-	-	-	-	-	-
	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	-	-	-	-	-	-	-	-	-	-	-
	Total permit holders	0	0	0	0	0	0	0	0	0	0	0
Herring (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	-	-	-	-	-	-	-	-	-	-	-
	Total permit holders	0	0	0	0	0	0	0	0	0	0	0

Table 4. Cont. Permits and Permit Holders by Species, Holy Cross: 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	-	-	-	-	-	-	-	-	-	-	-
	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	-	-	-	-	-	-	-	-	-	-	-
	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	1	0	0
	Fished permits	0	0	0	0	0	0	0	0	0	0	0
	% of permits fished	-	-	-	-	-	-	-	-	0%	-	-
	Total permit holders	0	0	0	0	0	0	0	0	1	0	0
Salmon (CFEC) ²	Total permits	9	10	10	11	11	11	10	11	10	10	10
	Fished permits	5	0	0	4	2	4	3	1	0	0	0
	% of permits fished	56%	0%	0%	36%	18%	36%	30%	9%	0%	0%	0%
	Total permit holders	9	10	10	11	11	12	11	11	10	10	10
<i>Total CFEC Permits²</i>	<i>Permits</i>	<i>9</i>	<i>10</i>	<i>10</i>	<i>11</i>	<i>11</i>	<i>11</i>	<i>10</i>	<i>11</i>	<i>11</i>	<i>10</i>	<i>10</i>
	<i>Fished permits</i>	<i>5</i>	<i>0</i>	<i>0</i>	<i>4</i>	<i>2</i>	<i>4</i>	<i>3</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>0</i>
	<i>% of permits fished</i>	<i>56%</i>	<i>0%</i>	<i>0%</i>	<i>36%</i>	<i>18%</i>	<i>36%</i>	<i>30%</i>	<i>9%</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>
	<i>Permit holders</i>	<i>9</i>	<i>10</i>	<i>10</i>	<i>11</i>	<i>11</i>	<i>12</i>	<i>11</i>	<i>11</i>	<i>11</i>	<i>10</i>	<i>10</i>

¹ National 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.]

² 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.]

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

Year	Crew licenses 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 Holy Cross ²	Total net pounds landed in Holy Cross ^{2,5}	Total ex-vessel value of landings in Holy Cross ^{2,5}
2000	6	0	0	13	15	0	0	\$0
2001	0	0	0	17	19	0	0	\$0
2002	2	0	0	17	18	0	0	\$0
2003	7	0	0	19	21	0	0	\$0
2004	6	0	0	23	24	0	0	\$0
2005	9	0	0	1	2	0	0	\$0
2006	4	0	0	18	19	0	0	\$0
2007	5	0	0	18	19	0	0	\$0
2008	0	0	0	18	19	0	0	\$0
2009	1	0	0	19	20	0	0	\$0
2010	0	0	0	17	18	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 Holy Cross: 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 Holy Cross: 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 Holy Cross: 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 Holy Cross: 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 Holy Cross Residents: 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.

Recreational Fishing

Between 2000 and 2010, no active sport fish guide businesses were registered in Holy Cross. However, several licensed sport fish guides were present in the community each year. The number of licensed guides varied between four and one per year, with a declining trend over the period. The number of sportfishing licenses purchased by Holy Cross residents (irrespective of point of sale) ranged from 48 to 71 per year. The number of licenses purchased by residents each year was slightly higher than the total number of licenses sold in Holy Cross, with the exception of 2009 and 2010 (Table 11).

In a survey conducted by the AFSC in 2011, community leaders reported that sport fishermen in Holy Cross primarily target chum, Chinook, and coho salmon. The Alaska Statewide Harvest Survey,⁶⁷ conducted by ADF&G between 2000 and 2010, also noted sport harvest of sockeye salmon in Holy Cross, as well as harvest of razor clams by Holy Cross recreational fishers. No kept/release log book data were reported for sportfishing charters out of Holy Cross between 2000 and 2010.⁶⁸

Holy Cross is located within Alaska Sport Fishing Survey Area Y – Yukon River Drainage. Information is available about both saltwater and freshwater sportfishing activity at this regional scale (Table 11). Between 2000 and 2010, saltwater sportfishing activity was minimal, with between 0 and 81 non-resident angler days fished per year, and between 0 and 89 Alaska resident angler days fished per year. The low numbers reported for saltwater sportfishing make sense given that a majority of residents in Yukon drainage communities live a great distance from the ocean, and fishing activities take place primarily in fresh water. Between 2000 and 2010, Alaska resident anglers in the Yukon River drainage consistently fished more days in freshwater (4,783 – 10,400 angler days per year) than non-resident anglers (2,573 – 5,761 angler days per year).

Table 11. Sport Fishing Trends, Holy Cross: 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 Holy Cross ²
2000	0	4	60	16
2001	0	4	48	0
2002	0	4	66	38
2003	0	3	57	47
2004	0	3	57	49
2005	0	2	69	30
2006	0	2	63	38
2007	0	1	57	48
2008	0	2	68	67
2009	0	2	71	84
2010	0	2	60	61

⁶⁷ 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).

⁶⁸ 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.]

Table 11 Cont. Sport Fishing Trends, Holy Cross: 2000-2010.

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	81	45	3,345	7,878
2001	29	14	4,063	6,454
2002	0	89	5,761	9,194
2003	0	17	3,344	5,756
2004	17	0	5,479	7,613
2005	0	0	4,182	4,783
2006	0	0	3,607	7,816
2007	0	0	3,168	8,226
2008	0	0	2,573	10,400
2009	0	0	2,969	7,639
2010	0	0	3,983	5,151

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/sportfishingsurvey/> (Accessed September 2011).

Subsistence Fishing

Historically, subsistence harvest has been foundational to the economy and culture of the Deg Hit’an Athabascan people. Salmon were of primary importance, as well as a secondary dependence on large and small game animals.⁶⁹ Today, subsistence and fishing-related activities remain important to the economy and way of life of Holy Cross residents.⁷⁰ Fish are the most reliable subsistence resource in the lower-middle Yukon River region. In addition to salmon, non-salmon fish are a vital component of the subsistence fish harvest, partly due to their year-round availability. Non-salmon fish species harvested by residents of Holy Cross include whitefish, sheefish, northern pike, Arctic grayling, longnose sucker, burbot, Alaska blackfish, and Arctic lamprey.⁷¹

⁶⁹ VanStone, J.. 1976. “The Yukon River Ingalik: Subsistence and the Fur Trade, and a Changing Resource Base.” *Ethnohistory*. 23(3), pp. 199-212.

⁷⁰ 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.

⁷¹ Brown, C, Burr, J., Elkin, K., and Walker, R. 2005. *Contemporary Subsistence Use and Population Distribution of Non-Salmon Fish in Grayling, Anvik, Shageluk, and Holy Cross*. Alaska Dept. of Fish and Game, Tech. Paper No. 289. Retrieved October 4, 2012 from <http://www.subsistence.adfg.state.ak.us/TechPap/tp289.pdf>.

According to data reported in ADF&G’s Community Subsistence Information System, in 2002, 21% of Holy Cross households were estimated to participate in harvest or use of non-salmon fish, while estimates were not reported regarding the percentage of households participating in salmon, halibut, marine mammal, or marine invertebrate subsistence, or the per capita subsistence harvest in Holy Cross between 2000 and 2010 (Table 12). In 2002, total estimated non-salmon fish harvest was reported to be 5,310 pounds (Table 13).

ADF&G also reported information regarding subsistence salmon permits issued to Holy Cross households between 2000 and 2008. During this period, the number of permits issued was relatively stable from year to year, varying between 48 and 65 per year, while the number of permits returned varied from 21 to 36 per year. Chinook were by far the most heavily harvested salmon species during this time period, averaging 2,395 Chinook taken per year. Chum and coho were the next most heavily harvested species, averaging 803 and 135 fish harvested per year, respectively. A small number of pink and sockeye salmon were also reported as harvested in some years during the period (Table 13).

No information was reported by management agencies regarding subsistence harvest of halibut (Table 14) or marine mammal species (Table 15) by residents of Holy Cross between 2000 and 2010.

Table 12. Subsistence Participation by Household and Species, Holy Cross: 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	21%	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, Holy Cross: 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	62	26	1,249	1,092	70	20	n/a	n/a	n/a
2001	63	28	2,711	1,084	n/a	n/a	60	n/a	n/a
2002	60	23	1,813	155	n/a	n/a	n/a	n/a	5,310
2003	55	21	2,395	223	498	n/a	n/a	n/a	n/a
2004	48	29	1,993	352	27	n/a	n/a	n/a	n/a
2005	51	31	2,817	1,342	84	n/a	n/a	n/a	n/a
2006	65	32	3,165	1,049	16	17	n/a	n/a	n/a
2007	60	36	2,902	568	213	n/a	n/a	n/a	n/a
2008	55	34	2,509	1,361	38	20	n/a	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, Holy Cross: 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, Holy Cross: 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	n/a	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	n/a
2003	n/a	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	n/a
2005	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
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	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 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.