

Grayling (GRAY-leeng)



People and Place

*Location*¹

Grayling is located in Interior Alaska on the west bank of the Yukon River, east of the Nulato Hills. It is 18 air miles north of Anvik. Grayling is located in the Yukon-Koyukuk Census Area and the Kuskokwim Recording District. The area encompasses 10.9 square miles of land and 0.1 square miles of water.

*Demographic Profile*²

In 2010, there were 194 residents in Grayling, making it the 195th largest of 352 communities in Alaska with recorded populations that year. Between 1990 and 2000, the population decreased by 6.7%. According to Alaska Department of Labor estimates, the population continued to decline after 2000, with a low of 152 permanent residents recorded in 2008. However, the population appeared to increase again after 2008, returning to 2000 levels by 2010 (Table 1). According to a survey conducted by NOAA's Alaska Fisheries Science Center (AFSC) in 2011, community leaders estimated that a small number of seasonal workers or transients are present each year in Grayling (10 individuals) during summer months. They also indicated that the annual population peak in June and July is mostly driven by employment in commercial and subsistence fishing.

In 2010, the majority of Grayling residents identified themselves as American Indian and Alaska Native (87.1%), compared to 88.1% in 2000; 6.7% identified themselves as White in 2010, compared to 7.2% in 2000; 6.2% identified themselves as of two or more races in 2010, compared to 4.1% in 2000; 0.0% identified themselves as Hispanic or Latino, compared to 1.0% in 2000; and for both 2000 and 2010, 0.0% of residents identified themselves as Asian, Native Hawaiian and Other Pacific Islander, Black or African American, or of some other race. Further information regarding trends in racial and ethnic composition from 2000 to 2010 can be found in Figure 1.

The number of households in Grayling increased between 1990 and 2010, from 51 occupied housing units in 1990 and 2000 to 55 in 2010. The population decline can be observed in the declining size of these households, from 4 persons per household in 1990 to 3.8 in 2000, and 3.53 in 2010. Of the 63 housing units surveyed in 2010, 57.1% were owner-occupied, 30.2% were rented, and 12.7% were vacant. No Grayling 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 January 17, 2012 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>.

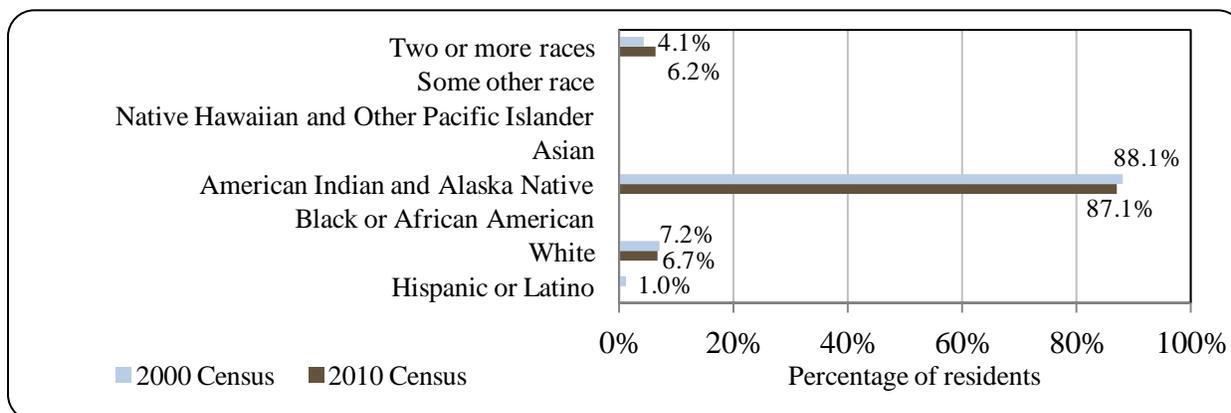
Table 1. Population in Grayling from 1990 to 2010 by Source.

Year	U.S. Decennial Census ¹	Alaska Dept. of Labor Estimate of Permanent Residents ²
1990	208	-
2000	194	-
2001	-	202
2002	-	188
2003	-	162
2004	-	182
2005	-	171
2006	-	173
2007	-	164
2008	-	152
2009	-	177
2010	194	-

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>.

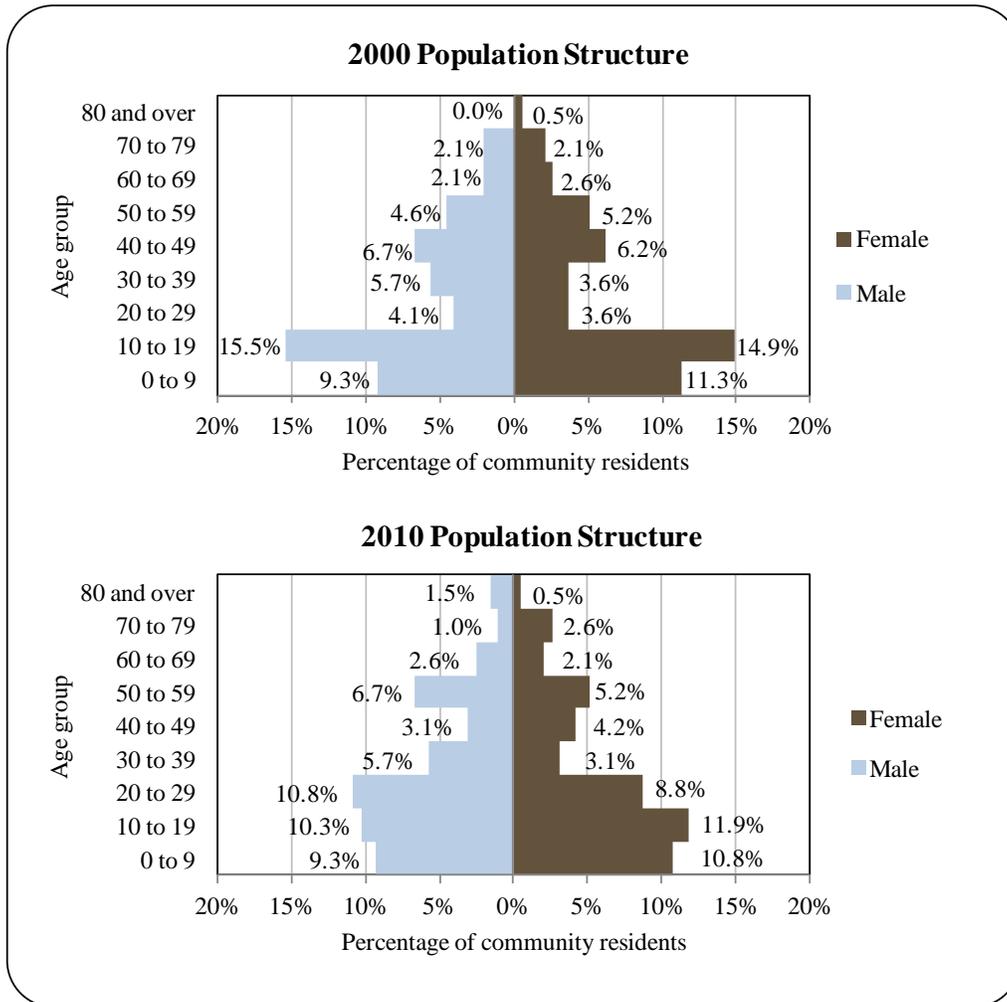
² Alaska Department of Labor. 2011. Current population estimates for Alaskan Communities. Retrieved April 15, 2011, from <http://labor.alaska.gov/research/pop/popest.htm>.

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



In 2010, the gender makeup in Grayling was 51% male and 48.9% female, similar to the gender distribution of the State as a whole (52% male, 48% female). That year, the median age was estimated to be 23.4 years, lower than both the U.S. national average of 36.8 years and the median age for Alaska, 33.8 years. In 2010, a smaller percentage of Grayling residents were under the age of 20 (42.3%) compared to 51% in 2000, and a higher percentage was age 60 or older (10.3%) compared to 9.3% in 2000. The overall population structure of Grayling in 2000 and 2010 is shown in Figure 2.

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



In terms of educational attainment, the U.S. Census’ 2006-2010 American Community Survey (ACS)³ estimated that 54.4% 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 26.7% of residents had less than a 9th grade education, compared to an estimated 3.5% of Alaskan residents overall; an estimated 18.9% had a 9th to 12th grade education but no diploma, compared to an estimated 5.8% of Alaskan residents overall; an estimated 10% had some college but no degree, compared to an estimated 28.3% of Alaskan residents overall; no resident held a Bachelor’s degree, compared to an estimated 17.4% of Alaskan residents overall; and an estimated 3.3% held a graduate or professional degree, compared to an estimated 9.6% of Alaskan residents overall.

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

The Grayling area was historically used for summer fish camps by the Deg Hit'an Athabascan people of the Anvik-Shageluk area (Ingalik) as well as the Doy Hit'an Athabascan (Holikachuk) who inhabited winter villages on the Innoko River north of Shageluk.^{4,5} During the summer of 1900, the steamer Nunivak stopped at Grayling and recorded 65 Native people living there. At that time, the people were suffering from epidemics of measles and influenza.⁶ According to reports from the visit of the Nunivak, Grayling also had a store and a large wood yard to supply steamers at that time. Between 1962 and 1966, the inhabitants of the village of Holikachuk relocated to Grayling. Holikachuk was susceptible to spring flooding, and low water levels in the fall made the return trip from Yukon Fish camps to the winter village difficult. Today, the population of Grayling is made up of both Ingalik and Holikachuk Athabascan people. The village of Grayling is a contemporary subsistence community that maintains strong ties to its traditions. The sale of alcohol is prohibited in the community.⁷

Natural Resources and Environment

The climate of Grayling is continental, with long, cold winters and relatively warm summers. Temperature extremes range between -60 to 87 °F. Annual snowfall averages 110 inches, with 21 inches of total precipitation. The Yukon River is ice-free from June through October.⁸ Low-lands along the Yukon and Innoko rivers are made up of vast marshy flatland, with some forest cover of balsam poplar, willow, and alder within active floodplains. Well drained, south-facing upland slopes host forests of white spruce, paper birch, and quaking aspen, while permafrost, stunted black spruce, and tundra is typical of the poorly drained cold soils of north-facing slopes.⁹ Since Grayling is located in the Yukon River Basin, it is in a zone at risk of melting permafrost, which is expected to accelerate in the next 20 to 30 years if present warming trends continue, leading to large-scale environmental changes in the hydrology and water quality of the Yukon River and its major tributaries.¹⁰

Grayling is within the boundaries of the Innoko National Wildlife Refuge (NWR). One of the primary motivations for creation of the NWR was its importance as a waterfowl area in interior Alaska, noted for its wetlands that provide nesting, resting and staging areas. In addition, the NWR offers excellent raptor and moose habitat. The Innoko Refuge is made up of two units, totaling 4.6 million acres. The area was also established to fulfill treaty obligations and provide the opportunity for continued subsistence uses. Refuge lands are open to sport and subsistence hunting and fishing, as well as trapping.

⁴ VanStone, J. (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>.)

⁵ City of Anvik. (2004). *Anvik Comprehensive Community Plan*. Retrieved December 23, 2011 from: <http://www.commerce.state.ak.us/dca/plans/Anvik-CP-2004.pdf>.

⁶ See footnote 4.

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 Ibid.

⁹ Interior Rivers Resource Conservation and Development Council. (1997). *Area Plan*. Retrieved October 24, 2012 from <http://www.commerce.state.ak.us/oed/>.

¹⁰ Hooper, R. P. (2003). Introduction. *Water and Sediment Quality in the Yukon River Basin, Alaska During Water Year 2001*. Paul F. Schuster, ed. U.S. Geological Survey. Open-File Report 03-427.

Local terrestrial wildlife includes moose, bear, wolves, lynx, wolverine, river otter, beaver, porcupine, caribou, snowshoe hare, red fox, red squirrel, marten, muskrat, weasel, mink, shrews, voles, and mice.¹¹ Anadromous fish species found in the Grayling area include all five Pacific salmon species, Arctic lamprey, smelt, Arctic cisco, and additional freshwater species include northern pike, blackfish, stickleback, burbot and five species of whitefish.¹² Edible and useful plants include cranberries, blueberries, salmon or cloud berries, rose hips, Indian potatoes, wild celery, wild onion, wild rhubarb, and sour dock.¹³

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 Grayling – along the Innoko River – in 1898. Commercial quantities of gold were discovered in the Innoko Valley in 1906.¹⁴ As of 2010, the Iditarod and Innoko mining districts have produced more than 2.3 million ounces of gold.¹⁵ Currently, a large-scale gold operation is being developed by Donlin Gold north of Crooked Creek, to the southeast of Grayling. The mine is projected to operate for 25 years, with over 33 million ounces of gold speculated to be in the area.¹⁶ Additional mineral deposits in the region include Wolf Creek Mountain mercury/antimony deposit and Stuyahok and Arnold Kako gold deposits to the southwest, and McLeod copper/molybdenum deposits to the northeast.¹⁷

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.¹⁸

According to the Alaska Department of Environmental Conservation, there are no notable active environmental cleanup sites located in Grayling as of October, 2012.¹⁹

Current Economy²⁰

Grayling has a mixed cash and subsistence economy. Subsistence is the dominant livelihood for many residents, including subsistence fishing, hunting, trapping, and berry picking. Important subsistence resources for Grayling residents include salmon, moose, black bear, small game, and waterfowl. Most wage employment is found through seasonal work.²¹ Some residents are also involved in commercial fisheries. According to the 2011 AFSC survey,

¹¹ U.S. Fish and Wildlife Service. (2010). *Innoko National Wildlife Refuge*. Retrieved October 4, 2011 from <http://innoko.fws.gov/>.

¹² See footnote 9.

¹³ See footnote 5.

¹⁴ See footnote 4.

¹⁵ Szumigala, D.J., L.A. Harbo, and J.N. Adleman. (2010). *Alaska's Mineral Industry 2010*. Alaska Dept. of Natural Resources and Alaska Dept. of Commerce, Community and Economic Development, Special Report 65.

¹⁶ Donlin Gold. (n.d.) *Homepage*. Retrieved December 27, 2011 from: <http://www.donlingold.com/>

¹⁷ Alaska Dept. of Comm. (n.d.). *Mineral Resources of Alaska*. Retrieved December 21, 2011 from: <http://commerce.alaska.gov/ded/dev/minerals/mining.htm>

¹⁸ 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>.

¹⁹ Alaska Dept. of Environmental Conservation. (2012). *List of Contaminated Site Summaries By Region*. Retrieved October 24, 2012 from <http://dec.alaska.gov/spar/csp/list.htm>.

²⁰ Unless otherwise noted, all monetary data are reported in nominal values.

²¹ See footnote 7.

community leaders reported that commercial and subsistence fishing are the most important natural resource-based industries in Grayling. They indicated that a new commercial fishery for Arctic lamprey (eel) began in 2003, and also expressed the hope that new commercial fishing opportunities will be developed in the region (see *History and Evolution of Fisheries* section).

Based on household surveys for the 2006-2010 ACS,²² in 2010, the per capita income in Grayling was estimated to be \$8,138 and the median household income was estimated to be \$32,656. This represents an increase from the per capita and median household incomes reported in the year 2000 (\$7,049 and \$21,875, respectively). However, if inflation is taken into account by converting the 2000 values to 2010 dollars,²³ the real per capita income estimate in 2010 is shown to be \$9,269, slightly lower than the 2000 figure. The real median household income estimate is \$28,765, still lower than the 2006-2010 ACS estimates for 2010. In 2010, Grayling ranked 293rd of 305 Alaskan communities with per capita income data that year, and 231st in median household income, out of 299 Alaskan communities with household income data.

Grayling's small population size may have prevented the ACS from accurately portraying economic conditions.²⁴ However, additional evidence for a decrease in per capita income between 2000 and 2010 is provided 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 Grayling in 2010 is \$5,369.^{25,26} The relatively low per capita income estimates for Grayling in 2010 from both data sources are reflected in the fact that the community was recognized as "distressed" by the Denali Commission,²⁷ 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 Grayling residents was estimated to be in the civilian labor force (36.1%) compared to the civilian labor force statewide (68.8%). In the same year, 13% of local residents were estimated to be living below the poverty line, higher than the statewide poverty rate estimate of 9.5%, and the unemployment rate was estimated to be 14.3%, more than twice the statewide unemployment rate of 5.9%.²⁸ An additional estimate of

²² U.S. Census Bureau (n.d.). *Profile of selected social, economic and housing characteristics of all places within Alaska*. Datasets utilized include the 2010 American Community Survey 5-year estimates. Retrieved November 1, 2011 from <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>.

²³ 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>).

²⁴ 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.

²⁵ 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/>.

²⁶ U.S. Census Bureau (2010). *Profile of selected social, economic and housing characteristics of all places within Alaska*. Datasets utilized include the 2010 (Demographic Profile SF) Decennial Census. Retrieved November 1, 2011 from <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>.

²⁷ Denali Commission. (2011). *Distressed Community Criteria 2011 Update*. Retrieved April 16, 2012 from www.denali.gov.

²⁸ See footnote 26.

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%.²⁹

Also based on the 2006-2010 ACS, three-quarters of the employed civilian workforce in Grayling was estimated to be employed in the public sector (75%), while the remaining 25% was estimated to be employed in the private sector. Out of 32 people aged 16 and over that were estimated to be employed in the civilian labor force in 2010, the 62.5% worked in educational services, health care and social services, 12.5% in public administration, 9.4% in retail trade, 9.4% in finance and insurance, and real estate and rental and leasing, and 6.3% in transportation, warehousing, and utilities industries (Figure 3). Compared to employment statistics in 2000, the most notable shifts in the distribution of employment by industry included an increased concentration of employment in education services, health care, and social services and public administration industries, and an apparent disappearance of arts, entertainment, recreation, accommodation, and food services (from 11.5% of the workforce in 2000 to 0% in 2010), and agriculture, forestry, fishing, hunting, and mining industries (from 3.8% of the workforce in 2000 to 0% in 2010). It is important to note that 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.

ALARI industry employment statistics differ slightly from ACS estimates, showing the highest percentage of employed residents (66.3%), and the next highest percentage working in education and health services (10.9%). In addition, ALARI estimates show a greater diversity of employment than ACS estimates, with 8.7% of the local workforce employed in trade, transportation, and utilities industries, 3.3% in manufacturing, 3.3% in financial activities, 2.2% in natural resources and mining, 2.2% in construction, 1.1% in professional and business services, 1.1% in state government, and 1.1% in other industries.³⁰

Viewing employment from the perspective of occupation, 2006-2010 ACS estimates indicate that the highest percentages of the Grayling workforce were employed in service occupations in 2010 (50%). This represents a large increase from 15.4% of the total workforce employed in service occupations in 2000. The increase in employment in natural resource/construction/maintenance occupations was also substantial, from 0% in 2000 to 15.2% in 2010. These increases were balanced by decreased percentages of the workforce employed in other occupations in 2010 compared to 2000 (Figure 4).

²⁹ See footnote 25.

³⁰ Ibid.

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

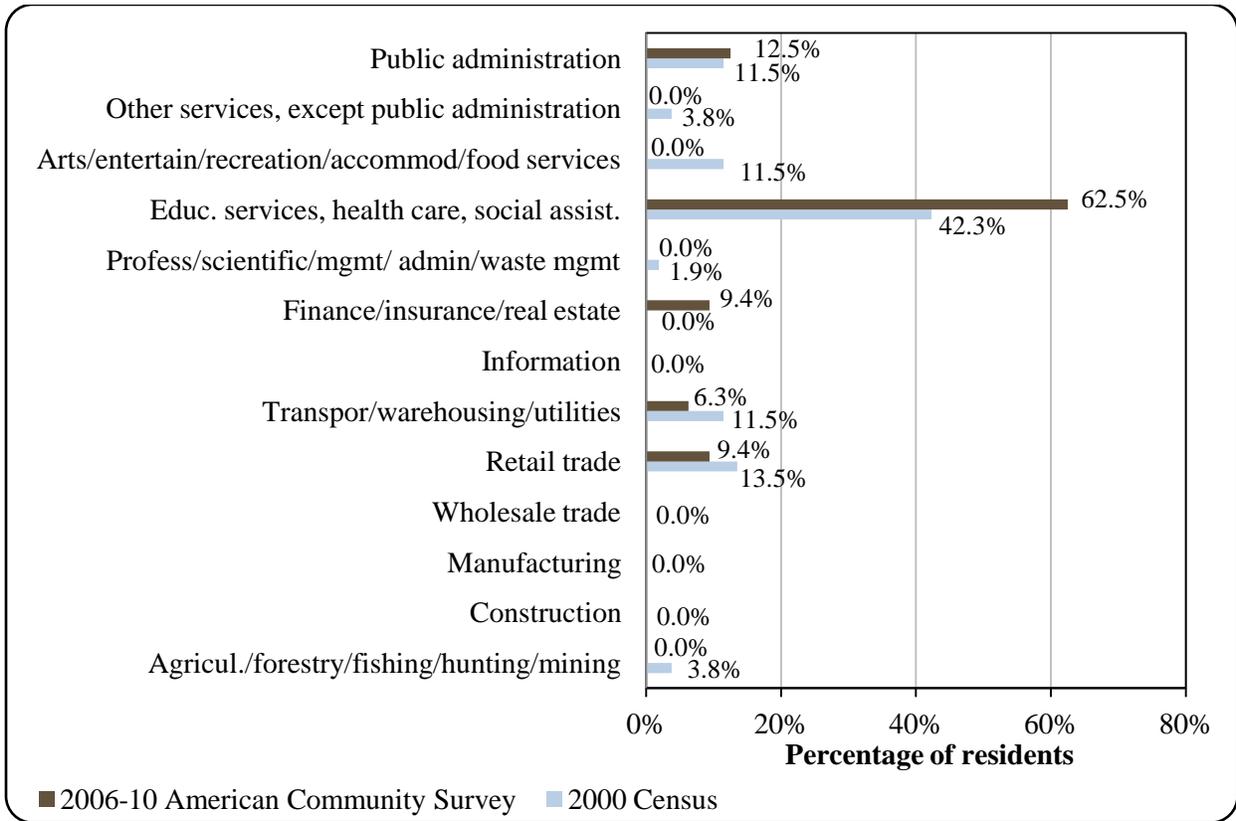
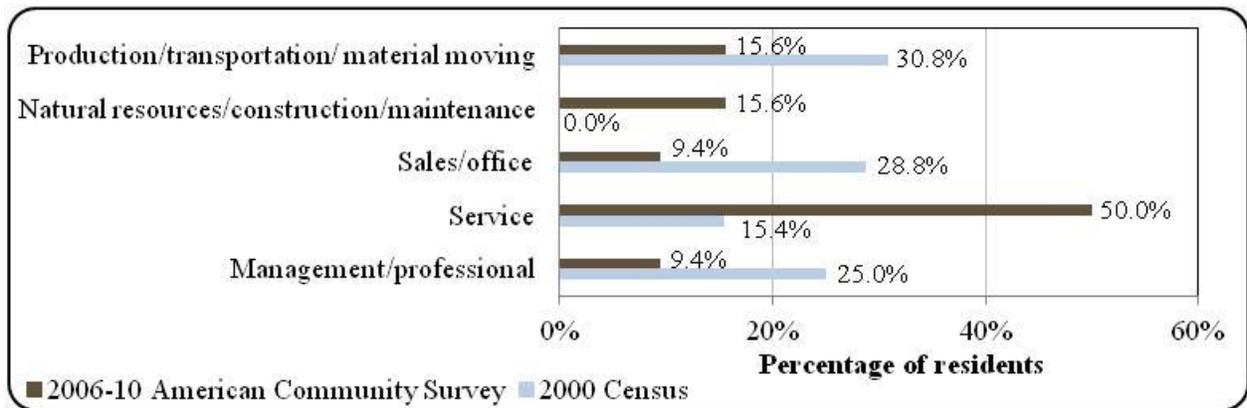


Figure 4. Local Employment by Occupation in 2000-2010, Grayling (U.S. Census).



Governance

Grayling is a 2nd Class City and is not located within and organized borough. The City was incorporated in 1969, 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.³¹ Locally-generated income sources during the 2000-2010 period included facilities leases, room and equipment rentals, and water, sewer, and washeteria service fees. Outside revenue sources included various shared revenues from state and federal programs, as well as capital project grants. The City received state contributions from the State Revenue Sharing program from 2000 to 2003 (approximately \$25,000 per year), and contributions from the Community Revenue Sharing program in 2009 and 2010 (just over \$100,000 per year), as well as telephone/electric co-op refunds and funds from the SAFE Communities program (local police, public safety, fire, and utilities funding). Grayling also received shared funds from both the state and federal Payment In Lieu of Taxes programs in some years during the 2000-2010 period. Capital/special projects grants were received toward upgrades to community facilities such as the washeteria and community hall, purchase and repair of heavy equipment, road maintenance, and other community projects. Between 2000 and 2010, no fisheries-related grants were received by the City of Grayling. This information about selected revenue streams is presented in Table 2.

Table 2. Selected Municipal, State, or Federal Revenue Streams for the Community of Grayling 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	\$107,418	n/a	\$23,948	n/a
2001	\$208,198	n/a	\$28,000	n/a
2002	\$210,440	n/a	\$27,761	n/a
2003	\$150,224	n/a	\$27,000	n/a
2004	\$124,663	n/a	n/a	n/a
2005	\$72,485	n/a	n/a	n/a
2006	\$128,347	n/a	n/a	n/a
2007	\$123,688	n/a	n/a	n/a
2008	\$202,852	n/a	n/a	n/a
2009	\$145,623	n/a	\$107,478	n/a
2010	\$143,613	n/a	\$107,886	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.

³¹ 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.

Grayling 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 the Organized Village of Grayling. The Native village corporation is the Hee-Yea-Lingde Corporation, which manages 92,160 acres of land. The regional Native corporation to which Grayling belongs is Doyon, Limited.³²

Grayling 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 to individuals of member tribes.³³ 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.³⁴

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 Grayling 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.

Infrastructure

Connectivity and Transportation

Grayling is accessible year-round by air. The State owns and operates a 2,315 ft long by 60 ft wide gravel runway.³⁵ According to the 2011 AFSC survey, community leaders reported that improvements to the airport were completed within the last 10 years. As of fall, 2012, roundtrip airfare between Grayling and Anchorage was \$640.³⁶ During summer months, the community is also accessible by water, and receives both riverboat and barge service. Residents travel between Grayling and other area villages by skiff during summer, and ATVs, snowmobiles, and dog teams are common modes of overland transportation in the region. Currently there are no roads in Grayling.³⁷ However, in the 2011 AFSC survey, community leaders noted that some roads are expected to be completed in the next 10 years.

³² Ibid.

³³ Tanana Chiefs Conference. (2007). *History*. Retrieved January 9, 2012 from <http://www.tananachiefs.org/>.

³⁴ 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>.

³⁵ See footnote 31.

³⁶ Airfare retrieved October 24, 2012 from Era Aviation, <http://www.flyera.com/>.

³⁷ See footnote 31.

Facilities

Water in Grayling is derived from an infiltration gallery³⁸ at Grayling Creek, and is treated and stored before being distributed to homes via a city-operated pipe system. The piped water system serves all households in the village, and all but three residences are connected to the piped sewer system. The City maintains a sewage lagoon for collection and treatment of sewage. A landfill is also maintained by the City, but public refuse collection services are not provided. Individuals must haul their own garbage. Electricity in Grayling is provided by a diesel powerhouse operated by the Alaska Village Electric Cooperative.³⁹ In the 2011 AFSC survey, community leaders indicated that improvements to the diesel powerhouse and the landfill have been completed in the last 10 years, and improvements to water and sewer treatment and pipe systems are planned to be completed within the next 10 years. In addition, community leaders indicated that alternative energy sources are expected to be added within the next 10 years.

Police service is provided by state troopers stationed in Aniak. Fire and rescue services are provided by the City Volunteer Fire Department. Additional community facilities include the Native village corporation building, and a teen center. Telephone service is available throughout the village, and internet is currently available at the school building only. No cable providers offer service locally.⁴⁰ In the 2011 AFSC survey, community leaders also noted the presence of a U.S. post office, and indicated that broadband internet is expected within the next 10 years.

With regard to fisheries-related infrastructure, community leaders reported in the 2011 AFSC survey that no dock space is available in Grayling. However, there is a barge landing area in the village, and community leaders indicated that vessels of up to 150 feet in length can be accommodated. Fuel barges are the primary vessel type that utilizes the barge landing area, and they indicated that the number of fuel barges visiting Grayling has increased over the past five years. Community leaders also reported that both boat fuel and fishing tackle are available for sale in Grayling, and indicated that residents most commonly travel to Emmonak, Galena, or Fairbanks to access fisheries-related businesses and services not available locally.

Medical Services

Medical services are provided locally at the Grayling Clinic. The clinic is owned by the City and operated by the Yukon-Kuskokwim Health Corporation. It is a Community Health Aid Program site. Emergency services have river and air access to Grayling, and local emergency service is provided by the health aide.⁴¹ The nearest hospital is located in Bethel.

³⁸ Infiltration galleries are a type of well constructed near rivers or ponds to collect infiltrated surface waters. Since the water infiltrates through a layer of soil/sand, it is significantly free from suspended impurities including microorganisms usually present in surface water. (Definition retrieved February 22, 2012 from http://phys4.harvard.edu/~wilson/arsenic/conferences/Feroze_Ahmed/Sec_3.htm.)

³⁹ 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.

⁴⁰ Ibid.

⁴¹ Ibid.

Educational Opportunities

One school is located in Grayling. The David Louis Memorial School offers preschool through 12th grade, and as of 2011 had 45 student and 5 teachers. Grayling is located in the Iditarod Area School District.⁴²

Involvement in North Pacific Fisheries

History and Evolution of Fisheries

Deg Hit'an (Ingalik) and Doy Hit'an (Holikachuk) people have long fished the waters in and around Grayling for subsistence purposes. Historically, the Grayling area was utilized for summer fish camps by residents of the winter village sites of Shageluk and Holikachuk. Chinook salmon was 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 dip nets, which they would hold in the water as they drifted down river with the current in canoes. Coho fishing commonly continued into September, and some Deg Hit'an and Doy Hit'an people made fall trips to the coast to trade dried fish. In October, people returned to winter villages and began to focus on ice-gillnet fishing for whitefish, as well as harvest of northern pike, burbot, and Arctic lamprey.⁴³

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. 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.⁴⁴ Yukon River Chinook runs showed signs of improvement for several years following the 2001 commercial closure, but restricted commercial harvest in 2008 and complete closure of Chinook harvest in 2009 led to declaration of a fishery disaster that year.⁴⁵ 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 abundance species, including gear and other management restrictions.⁴⁶

⁴² Alaska Department of Education and Early Development. (2012). *Statistics and Reports*. Retrieved April 24, 2012 from <http://eed.alaska.gov/stats/>.

⁴³ 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>.)

⁴⁴ 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>.

⁴⁵ Upton, Harold 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>.

⁴⁶ 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>.

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.⁴⁷

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.⁴⁸

In addition to salmon fishing, a commercial fishery for Arctic lamprey (also referred to as ‘eel’) began in November 2003 in the Grayling region. The annual lamprey run is brief, and the fishery lasts for only a few days each year. Eels are caught using dip nets or ‘eeling sticks’, and are brought to Grayling to be sold to the fish buyer, Kwik’pak Fisheries, LLC.⁴⁹ Kwik’pak Fisheries is a subsidiary of the Community Development Quota (CDQ) group for the Yukon region, the Yukon Delta Fisheries Development Association (YDFDA).

Grayling is located in District 4 of the Upper 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. Grayling is a member of the YDFDA, the CDQ group for the Yukon Delta. Grayling is not eligible to participate in the Community Quota Entity program.

In the 2011 AFSC survey, community leaders indicated that Grayling does not actively participate in fisheries management processes in Alaska. However, Grayling is represented regionally through the Western Interior Regional Advisory Council on subsistence issues, as well as through the G.A.S.H. (Grayling, Anvik, Shageluk, Holy Cross) advisory committee to ADF&G. Community leaders reported in the 2011 AFSC survey that a decline in commercial fishing activity in Grayling since the 1980s and 1990s has had a negative impact on the community, and expressed the hope that additional commercial fishing activity and job opportunities will be developed in Grayling.

Processing Plants

According to the ADF&G’s 2010 Intent to Operate list, Grayling does not have a registered processing plant. The nearest shore-side processing facility is a salmon roe processing facility in Anvik operated by Bonasila, Inc.⁵⁰

In the 2011 AFSC community survey, community leaders reported that Kwik’pak Fisheries, LLC purchases eels harvested in the winter freshwater commercial fishery near Grayling. Kwik’pak Fisheries offers employment, training, and educational opportunities to area

⁴⁷ 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.

⁴⁸ See footnote 44.

⁴⁹ City of Anvik. (2004). *Anvik Comprehensive Community Plan*. Retrieved December 23, 2011 from: <http://www.commerce.state.ak.us/dca/plans/Anvik-CP-2004.pdf>.

⁵⁰ Ibid.

residents and their families, and works to “enable Yupik families to continue the traditional lifestyle their people have practiced for thousands of years...fishing, hunting and living off the land.”⁵¹

Fisheries-Related Revenue

Between 2000 and 2010, no known fisheries-related revenue was generated in Grayling (Table 3).

Commercial Fishing

Between 2000 and 2010, Grayling residents participated in commercial fisheries as state permit holders, crew license holders, and vessel owners. The number of crew license holders declined over the period, from six in 2000 to one in 2010, while the number of Grayling residents that were the primary owner of a fishing vessel remained stable at one per year (with zero vessel owners reported in 2004). There was also one vessel homeported in Grayling in all years except 2004 (Table 5). In the 2011 AFSC survey, community leaders indicated that the only fishing vessels that base out of Grayling are under 35 feet in length, and typically use gillnet or beach seine gear. Community leaders also noted that the number of commercial fishing boats has remained stable over the past 5 years, although they reported that there are more boats under 35 feet in length than 5 years ago.

During the 2000-2010 period, Grayling residents held state-issued Commercial Fisheries Entry Commission (CFEC) permits in Upper Yukon salmon fisheries, including gillnet and fish wheel permits. The number of salmon permit holders and total salmon permits held both remained relatively stable over this period, with between 10 and 12 salmon permit holders and between 10 and 11 total permits held. However, few salmon permits were actively fished during the 2000-2010 period. In 2007, one Upper Yukon fish wheel permit was active, and in 2009, one Upper Yukon fish wheel and one Upper Yukon gillnet permit were actively fished. Beginning in 2003 with the start of the Arctic lamprey fishery, between 9 and 25 Grayling residents held ‘other finfish’ permits per year. In 2003 and 2010, 80% of total ‘other fishfish’ permits were actively fished, while 58% of other finfish permits were actively fished on average between 2003 and 2010. Information about CFEC permits in Grayling is presented in Table 4.

No Grayling residents held Federal Fisheries Permits (FFP) or License Limitation Program (LLP) permits from 2000 to 2010 (Table 4). In addition, no residents participated in federal catch share fisheries for halibut, sablefish, or crab during this period (Tables 6, 7, and 8).

According to data reported by ADF&G and NMFS, no fish buyers or shore-side processing facilities were reported in Grayling during the 2000-2010 period, and no landings or revenue were recorded in the community (Table 5). However, this information conflicts with reports that Kwik’pak Fisheries, LLC has been purchasing Arctic lamprey in Grayling since 2003.⁵² However, given the lack of fish buyers reported in Grayling, landings or ex-vessel revenue information was also not lacking in the community during the 2000-2010 period (Table 9). Information about landings and revenue earned by vessel owners residing in Grayling, including all delivery locations, is considered confidential in most years due to the small number of participants (Table 10).

⁵¹ Kwikpak Fisheries. (n.d.). *Homepage*. Retrieved from: <http://kwikpakfisheries.com/>.

⁵² See footnote 49.

Table 3. Known Fisheries-Related Revenue (in U.S. Dollars) Received by the Community of Grayling: 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	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
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	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
<i>Total municipal revenue</i> ⁵	\$107,418	\$208,198	\$210,440	\$150,224	\$124,663	\$72,485	\$128,347	\$123,688	\$202,852	\$145,623	\$143,613

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.

NOAA-TM-AFSC-259 – Volume 7
Community Profiles for North Pacific Fisheries – Alaska: Grayling

Table 4. Permits and Permit Holders by Species, Grayling: 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, Grayling: 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	16	12	9	11	14	17	18	25
	Fished permits	0	0	0	13	0	0	8	1	9	10	20
	% of permits fished	-	-	-	81%	0%	0%	73%	7%	53%	56%	80%
	Total permit holders	0	0	0	16	12	9	11	14	17	18	25
Salmon (CFEC) ²	Total permits	10	10	10	11	11	11	11	11	11	11	11
	Fished permits	0	0	0	0	0	0	0	1	0	2	0
	% of permits fished	0%	0%	0%	0%	0%	0%	0%	9%	0%	18%	0%
	Total permit holders	10	10	10	11	11	11	11	12	12	12	11
<i>Total CFEC Permits²</i>	<i>Permits</i>	<i>10</i>	<i>10</i>	<i>10</i>	<i>27</i>	<i>23</i>	<i>20</i>	<i>22</i>	<i>25</i>	<i>28</i>	<i>29</i>	<i>36</i>
	<i>Fished permits</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>13</i>	<i>0</i>	<i>0</i>	<i>8</i>	<i>2</i>	<i>9</i>	<i>12</i>	<i>20</i>
	<i>% of permits fished</i>	<i>0%</i>	<i>0%</i>	<i>0%</i>	<i>48%</i>	<i>0%</i>	<i>0%</i>	<i>36%</i>	<i>8%</i>	<i>32%</i>	<i>41%</i>	<i>56%</i>
	<i>Permit holders</i>	<i>10</i>	<i>10</i>	<i>10</i>	<i>22</i>	<i>19</i>	<i>16</i>	<i>19</i>	<i>24</i>	<i>26</i>	<i>27</i>	<i>34</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 Grayling: 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 Grayling ²	Total Net Pounds Landed In Grayling ^{2,5}	Total Ex-Vessel Value Of Landings In Grayling ^{2,5}
2000	6	0	0	1	0	0	0	\$0
2001	7	0	0	1	0	0	0	\$0
2002	5	0	0	1	0	0	0	\$0
2003	2	0	0	1	0	0	0	\$0
2004	1	0	0	0	0	0	0	\$0
2005	2	0	0	1	0	0	0	\$0
2006	4	0	0	1	0	0	0	\$0
2007	3	0	0	1	0	0	0	\$0
2008	1	0	0	1	0	0	0	\$0
2009	7	0	0	1	0	0	0	\$0
2010	1	0	0	1	0	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 Grayling: 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 Grayling: 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 Grayling: 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 Grayling: 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 Grayling Residents: 2000-2010.

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

According to results of the 2011 AFSC survey, sportfishing in Grayling primarily occurs using private boats, and a majority of activity is by local residents. Between 2000 and 2010, no active sport fish guide businesses or licensed sport fish guides were present in Grayling. Until 2007, sportfishing licenses were not sold in the community, but between 2008 and 2010, an average of 37 licenses were sold per year. A greater number of licenses were sold in Grayling than were sold to Grayling residents in those years, indicating that despite the lack of active guide businesses, some non-resident private anglers may participate in sportfishing near Grayling (Table 11).

A number of guide business offer sportfishing trips in the Innoko River targeting northern pike, although these guide businesses are not based in Grayling. Sport fishermen often catch pike weighing more than 20 pounds in the area. Local residents in Grayling and other area

communities are concerned about the impact of increased recreational fishing activity on pike stocks.^{53,54}

The Alaska Statewide Harvest Survey,⁵⁵ conducted by ADF&G between 2000 and 2010, noted sport harvest of Arctic grayling in Grayling. No kept/release log book data were reported for fishing charters out of Grayling between 2000 and 2010.⁵⁶

Grayling 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-Alaska 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, Grayling: 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 Grayling ²
2000	0	0	39	0
2001	0	0	9	0
2002	0	0	9	0
2003	0	0	19	0
2004	0	0	22	0
2005	0	0	8	0
2006	0	0	19	0
2007	0	0	2	0
2008	0	0	23	17
2009	0	0	8	39
2010	0	0	11	55

⁵³ U.S. Fish and Wildlife Service, Office of Subsistence Management. (2003). *Subsistence and Recreational Use Issues and Information Meetings*. Final Report FIS-01-238. Retrieved October 24, 2012 from <http://alaska.fws.gov/asm/pdf/fisheries/reports/01-238final.pdf>.

⁵⁴ Brown, C, J. Burr., K. Elkin., and R. Walker,. (2005). *Contemporary Subsistence Uses and Population Distribution of Non-Salmon Fish in Grayling, Anvik, Shageluk, and Holy Cross*. Retrieved October 24, 2012 from <http://www.subsistence.adfg.state.ak.us/TechPap/tp289.pdf>.

⁵⁵ 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).

⁵⁶ 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'd. Sport Fishing Trends, Grayling: 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

In the 2011 AFSC survey, community leaders indicated that Chinook, chum, and coho salmon are three of the most important subsistence fishing resources in Grayling. Non-salmon fish are also essential subsistence resources. Local fishers harvest Arctic lamprey and burbot in the Yukon River near Grayling, and travel further upstream to fish for pike, whitefish, and sheefish. Grayling residents also still travel to areas near the old village of Holikachuk to fish for pike, sheefish, whitefish, and blackfish in the lakes systems of the upper Innoko River.⁵⁷ Northern pike has been identified as a particularly important subsistence species, and increased attention has been paid to management of pike stocks given poor returns of salmon to the Yukon River in recent years.⁵⁸

According to data reported in ADF&G's Community Subsistence Information System, 68% of Grayling households were estimated to participate in harvest or use of non-salmon fish in

⁵⁷ Brown, Caroline, Burr, John, Elkin, Kim, and Walker, Robert. (2005). *Contemporary Subsistence Uses and Population Distribution of Non-Salmon Fish in Grayling, Anvik, Shageluk, and Holy Cross*. Retrieved October 24, 2012 from <http://www.subsistence.adfg.state.ak.us/TechPap/tp289.pdf> .

⁵⁸ U.S. Fish and Wildlife Service, Office of Subsistence Management. (2003). *Subsistence and Recreational Use Issues and Information Meetings*. Final Report FIS-01-238. Retrieved October 24, 2012 from <http://alaska.fws.gov/asm/pdf/fisheries/reports/01-238final.pdf>.

2002, while no estimates were reported regarding the percentage of households participating in subsistence harvest of salmon, halibut, marine mammals, or marine invertebrates, or the per capita subsistence harvest in Grayling between 2000 and 2010 (Table 12). In 2002, total estimated non-salmon fish harvest was reported to be 46,379 lbs (Table 13).

ADF&G also reported information regarding subsistence salmon permits issued to Grayling households between 2000 and 2008. During this period, the number of permits issued was relatively stable from year to year, varying between 46 and 50 per year, while the number of permits returned varied from 14 to 24 per year. Chinook and chum salmon were the two most heavily harvested salmon species during this period, averaging 1,610 Chinook and 1,244 chum harvested per year. Several hundred coho were also harvested in most years, and some pink and sockeye salmon harvest was reported in some years as well (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 Grayling between 2000 and 2010.

Table 12. Subsistence Participation by Household and Species, Grayling: 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	68%	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, Grayling: 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	49	24	840	758	372	n/a	18	n/a	n/a
2001	48	21	1,077	406	144	n/a	n/a	n/a	n/a
2002	46	16	2,249	1,363	30	30	n/a	n/a	46,379
2003	44	14	1,613	1,513	559	3	n/a	n/a	n/a
2004	44	22	1,869	1,396	233	n/a	n/a	n/a	n/a
2005	45	18	1,878	1,792	234	3	n/a	n/a	n/a
2006	49	14	1,702	1,335	224	n/a	n/a	n/a	n/a
2007	48	14	1,500	958	271	n/a	n/a	n/a	n/a
2008	50	15	1,761	1,672	25	200	6	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, Grayling: 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, Grayling: 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.