# Pedro Bay (P-droh)

# **People and Place**

# Location<sup>1</sup>



Pedro Bay is located on the Alaska Peninsula, at the east end of Iliamna Lake, at the head of Pedro Bay. The town is 176 air miles southwest of Anchorage. Pedro Bay is located in the Iliamna Recording District and the Lake and Peninsula Borough Census Area.

# Demographic Profile<sup>2</sup>

In 2010, there were 42 inhabitants in Pedro Bay, making it the 303<sup>rd</sup> largest of 352 total Alaskan communities with recorded populations that year. The town first appeared in the U.S. Census records in the 1950 with 44 inhabitants. The population has stayed relatively stable since that time. There was 0% population change overall between 1990 and 2010. According to Alaska Department of Labor estimates, between 2000 and 2009, the population of Pedro Bay increased to 62, then decreased again to 48 by 2009, with an average annual growth rate of 1.95%. In a survey conducted by NOAA's Alaska Fisheries Science Center (AFSC) in 2011, community leaders reported that approximately 5 to 15 seasonal workers or transients are present in Pedro Bay each year, especially during summer months (June to September). They also indicated that Pedro Bay's population typically peaks between June and August, and that population fluctuations are mostly driven by fishing activities, with a primarily subsistence focus.

In 2010, a majority of Pedro Bay residents identified themselves as American Indian and Alaska Native (66.7%), along with 28.6% who identified as White, and 4.8% identifying with two or more races. In 2010, no Pedro Bay residents identified themselves as Hispanic. The percentage of the Pedro Bay population made up of White residents decreased by 7.4% between 2000 and 2010. However, these numbers represent an overall increase in the percentage of White residents, from 9.5% in 1990. Likewise, although the percentage of the population that identified themselves as American Indians or Alaska Natives increased by 26.7% between 2000 and 2010, there was an overall decrease from 1990, when 90.5% of the population identified as American Indian or Alaska Native. These percentage fluctuations may be accentuated due to the low overall population in Pedro Bay. The change in population from 1990 to 2010 is provided in Table 1, and changes in racial and ethnic composition from 2000 to 2010 are shown in Figure 1.

<sup>&</sup>lt;sup>1</sup> 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.

<sup>&</sup>lt;sup>2</sup> 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.

Year	U.S. Decennial Census <sup>1</sup>	Alaska Dept. of Labor Estimate of Permanent Residents <sup>2</sup>
1990	42	-
2000	50	-
2001	-	50
2002	-	46
2003	-	45
2004	-	46
2005	-	62
2006	-	54
2007	-	38
2008	-	44
2009	-	48
2010	42	-

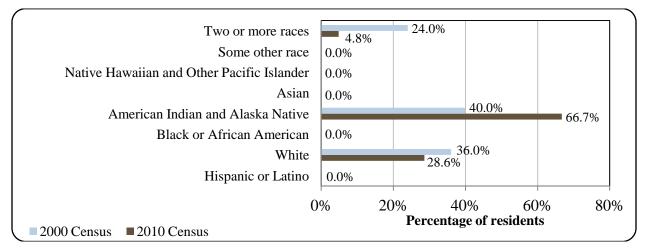
	Table 1. P	opulation	in Pedro	Bay from	1990 to	2010 by Source.
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<sup>1</sup>(1) U.S. Census Bureau (1990). *CP-1: General Population Characteristics of all places within Alaska*. Retrieved November 1, 2011 from http://www.census.gov/prod/www/abs/decennial/1990.html. (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.

<sup>2</sup> 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, Pedro Bay: 2000-2010 (U.S. Census).



In 2010 the average household size in Pedro Bay was 2.21, a decrease from 2.94 persons per household in 2000 and 2.4 in 1990. The total number of households in Pedro Bay stayed stable over time, with 17 in 1990, 17 in 2000, and 19 occupied housing units in 2010. Of the 33 housing units surveyed for the 2010 U.S. Census, 27.3% were owner-occupied, 30.3% were renter-occupied, and 42.4% were vacant or used only seasonally. Between 1990 and 2010, no residents of Pedro Bay lived in group quarters.

In 2010, the gender makeup in Pedro Bay was 45.2% male and 54.8% female. The greater number of women than men in Pedro Bay is anomalous compared to the population of

Alaska as a whole, which overall has more men than women (52% male, 48% female in 2010). The median age in Pedro Bay was 44.5 years in 2010, higher than the U.S. national average of 36.8 years and the median age for Alaska, 33.8 years. In 2010, gender distributions were particularly skewed toward females in the age groups 10-19 and 50-59. There were more males than females in age groups 0-9 and 40-49. In 2010, 19% of Pedro Bay residents were age 60 or older. It is also important to note that no Pedro Bay residents were between the ages of 20 and 29 in 2000. The overall population structure of Pedro Bay in 2000 and 2010 is shown in Figure 2.

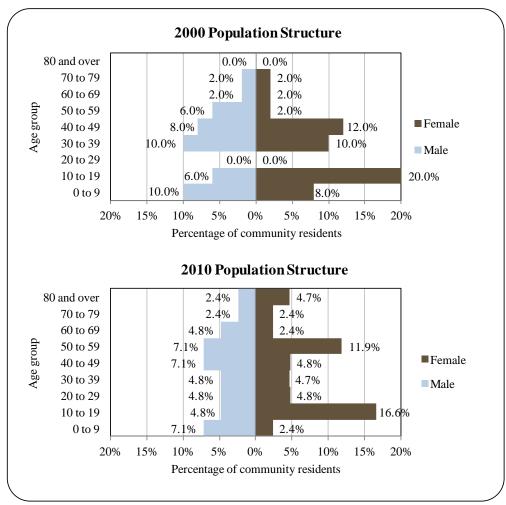


Figure 2. Population Age Structure in Pedro Bay Based on the 2000 and 2010 U.S. Decennial Census.

In terms of educational attainment, according to the 2006-2010 American Community Survey (ACS),<sup>3</sup> 61.5% of Pedro Bay residents aged 25 and over were estimated to hold a high school diploma or higher degree in 2010, compared to 90.7% of Alaskan residents overall. Also in 2010, 0% of residents aged 25 and older were estimated to have less than a 9<sup>th</sup> grade education, compared to 3.5% of Alaskan residents overall; 38.5% were estimated to have a 9<sup>th</sup> to 12<sup>th</sup> grade education but no diploma, compared to 5.8% of Alaskan residents overall; 0% were estimated to have some college but no degree, compared to 28.3% of Alaskan residents overall; 0% were estimated to have an Associate's degree, compared to 8% of Alaskan residents overall; 0% were estimated to have a Bachelor's degree, compared to 17.4% of Alaskan residents overall; and 38.5% were estimated to have a graduate or professional degree, compared to 9.6% of Alaskan residents overall.

## History, Traditional Knowledge, and Culture

The Pedro Bay area has been occupied by humans since prehistory. Two distinct indigenous populations historically inhabited the Iliamna Lake region: the Central Yup'ik Eskimos south and west of the lake, and the Dena'ina Athabascans on the northern and eastern shores. Most communities in the region are mixed between these groups, but Pedro Bay is the only Iliamna Lake community that is inhabited primarily by Athabascans. In the historic period, archaeological evidence indicates Pedro Bay was occupied in the mid-1700s and was subsequently abandoned.<sup>4</sup> During the Russian period in the early 1800s, the Dena'ina fought with Russian fur traders over trade practices.<sup>5</sup> In 1906, a man named 'Old Pedro' lived at the site of Pedro Bay, from which the name is derived. Later, in 1935, families from nearby villages began to relocate to Pedro Bay.<sup>6</sup> A post office was established in the village in 1936.<sup>7</sup>

# **Natural Resources and Environment**

Pedro Bay lies in a transitional climatic zone with strong maritime influences. Average summer temperatures range from 42 to 62 °F, and winter temperatures range from 6 to 30 °F. Annual rainfall averages 26 inches, with 64 inches of snowfall.<sup>8</sup> The landscape around Pedro Bay is mountainous, with 4,600 of elevation gain within six miles of the shore of Iliamna Lake. Pedro Bay is located in a dense spruce forest.<sup>9</sup> Vegetation in many lowland areas in the region is

<sup>&</sup>lt;sup>3</sup> While American Community Survey (ACS) estimates can provide a good snapshot estimate for larger populations, smaller populations can be misrepresented by ACS estimates if demographic information is not collected from a representative sample of the population. This is especially problematic for Alaskan communities with small populations that have a low probability of being adequately sampled.

<sup>&</sup>lt;sup>4</sup> Fall, James A., Davin L. Holen, Brian Davis, Theodore Krieg, and David Koster. December 2006. *Subsistence Harvests and Uses of Wild Resources in Iliamna, Newhalen, Nondalton, Pedro Bay and Port Alsworth, Alaska, 2004.* Alaska Dept. of Fish and Game, Division of Subsistence, Technical Paper No. 302. Retrieved January 17, 2012 from http://www.subsistence.adfg.state.ak.us/TechPap/tp302.pdf.

<sup>&</sup>lt;sup>5</sup> 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.

<sup>&</sup>lt;sup>6</sup> See footnote 4.

<sup>&</sup>lt;sup>7</sup> See footnote 5.

<sup>&</sup>lt;sup>8</sup> Ibid.

<sup>&</sup>lt;sup>9</sup> Lake and Peninsula Borough. February 2009. *Multi-Hazard Mitigation Plan*. Retrieved January 17, 2012 from http://commerce.alaska.gov/dca/planning/nfip/Hazard\_Mitigation\_Plans/Lake\_Pen\_Boro\_MJ\_HMP.pdf.

a mixture of short and tall shrub, with a mix of spruce and broadleaf forest along river corridors. Higher elevation vegetation is characterized by alpine tundra and barrens.<sup>10</sup>

Lake Clark National Park and Preserve (Preserve) is located north of Pedro Bay, occupying 4 million acres at the north end of the Alaska Peninsula. The Preserve was established to protect scenic beauty, wild rivers and waterfalls, populations of fish and wildlife, watersheds essential for sockeye salmon, and the traditional lifestyle of local residents. Subsistence activities are permitted in the Preserve. The National Park Service works closely with state and federal fish and wildlife management agencies to determine seasons, bag limits, and similar harvest controls. A diversity of fish and wildlife is found in the Preserve, including bears, caribou, moose, wolves, sea mammals, salmon, Arctic char, Arctic grayling, Dolly Varden, northern pike, lake trout, rainbow trout, burbot, and whitefish.<sup>11</sup>

It is also of note that Iliamna Lake is home to North America's only freshwater population of seals.<sup>12</sup> Seal numbers consistently range between 150 and 220 during molting season, and some portion of the population over-winters in the Lake. Local subsistence hunters harvest a small number of these seals each year.<sup>13</sup>

Significant mineral resources are present throughout the Iliamna region. The east end of Iliamna Lake is one of the areas with the highest potential for mineral occurrence in the Lake and Peninsula Borough.<sup>14</sup> Northwest of Pedro Bay, at the divide between the Koktuli River and Upper Talarik Creek, exploration is underway on the Pebble copper-gold-molybdenum deposit.<sup>15</sup> Northern Dynasty Minerals Limited calls the Pebble deposit, "one of the greatest stores of mineral wealth ever discovered," and estimates that the deposit includes 80.6 billion pounds of copper, 107.3 ounces of gold, and 5.6 billion pounds of molybdenum, including both indicated (high confidence) and inferred (low confidence) deposits.<sup>16</sup> Concern has been raised about the possible effects of acid mine drainage from development of the Pebble deposit on salmon. Iliamna Lake is the source of the Kvichak River System, the single most important salmon-producing watershed in the Bristol Bay area.<sup>17</sup> According to the Pebble Partnership, 95% of the metal that would be produced by the Pebble mine is copper. Dissolved copper is known to be toxic to fish.<sup>18</sup> If the Pebble Mine is developed, Bristol Bay salmon fisheries could be affected.<sup>19</sup>

http://alaskacoast.state.ak.us/District/DistrictPlans\_Final/LakeandPen/revised\_phd/vol1\_rphd.pdf.

<sup>13</sup> Withrow, David and Kymberly Yano, Jennifer Burns, Courternay Gomez, and Tatiana Askoak. 2011. *Freshwater Harbor Seals of Lake Iliamna, Alaska. Do They Pup and Over-Winter in the Lake?* Poster presented at the 2011 Alaska Marine Science Symposium. Retrieved January 18, 2012 from

 $ftp://ftp.afsc.noaa.gov/posters/pWithrow04\_freshwater-seals\_2011.pdf.$ 

<sup>16</sup> Northern Dynasty Minerals Limited website. 2012. *The Pebble Deposit*. Retrieved January 13, 2012 from http://www.northerndynastyminerals.com/ndm/Pebble.asp.

<sup>17</sup> See footnote 10.

<sup>&</sup>lt;sup>10</sup> Alaska Department of Natural Resources. April 2005. *Bristol Bay Area Plan for State Lands*. Retrieved January 4, 2012 from http://dnr.alaska.gov/mlw/planning/areaplans/bristol/index.htm.

<sup>&</sup>lt;sup>11</sup> National Park Service. 2011. *Lake Clark National Park & Preserve Management*. Retrieved June 13, 2012 from http://www.nps.gov/lacl/parkmgmt/index.htm.

<sup>&</sup>lt;sup>12</sup> LaRoche + Associates. March 2011. Lake and Peninsula Borough Coastal Management Plan, Revised Public Hearing Draft. Retrieved January 17, 2012 from

<sup>&</sup>lt;sup>14</sup> See footnote 12.

<sup>&</sup>lt;sup>15</sup> Parker, Geoffrey Y., Francis M. Raskin, Carol Ann Woody, and Lance Trasky. 2008. "Pebble Mine: Fish, Minerals, and Testing the Limits of Alaska's Large Mine Permitting Process." *Alaska Law Review* 25:1.

<sup>&</sup>lt;sup>18</sup> See footnote 15.

<sup>&</sup>lt;sup>19</sup> Pg. 36 in Duffield, John., Christopher Neher, David A. Patterson, and Oliver S. Goldsmith. 2007. *Economics of Wild Salmon Ecosystems: Bristol Bay, Alaska*. USDA Forest Service Proceedings RMRS-P-49. Retrieved December 21, 2011 from http://www.fs.fed.us/rm/pubs/rmrs\_p049/rmrs\_p049\_035\_044.pdf.

In a survey conducted by the AFSC in 2011, community leaders expressed concern that development of the Pebble Mine will damage the subsistence way of life.

In the past, the oil and gas industry was interested in the potential for oil and gas development in the eastern Iliamna region. Between 1902 and 1981, 26 onshore exploration wells drilled were drilled on the Alaska Peninsula, but all have been plugged and abandoned.<sup>20</sup> Offshore in Cook Inlet, the oil and gas industry is very active, with a number of new wells being drilled each year.<sup>21</sup>

Natural hazards in the Pedro Bay area include risk of wildfire, severe weather, earthquake and volcanic activity, and flooding. Pedro Bay was at the highest risk from wildfire and severe weather. Wildfire was identified as the number one hazard in Pedro Bay because the community is located in a dense spruce forest with many trees that have been killed by spruce bark beetle outbreaks. Water for firefighting is not readily available, and no fire department is present in the community.<sup>22</sup> With regard to weather, high winds are a particular concern in the community, and the Pedro Bay airport often experiences high wind shear.<sup>23</sup> Pedro Bay was rated as having a medium risk of earthquakes and volcanic activity, and a low risk of flooding. Many fault lines pass through the Lake and Peninsula Borough, and numerous active volcanoes are present in the Alaska Peninsula. Earthquakes and volcanic activity occur at regular intervals in the area. Flooding in Pedro Bay is a particular problem along the road to the airport, and may be associated with ice jams at culverts on the road. Avalanche hazard is not a threat in the immediate village of Pedro Bay, but is a threat for residents who travel in nearby avalanche zones.<sup>24</sup>

According to the Alaska Department of Environmental Conservation, one active environmental cleanup site was located in Pedro Bay as of June 2012. A tank farm was located adjacent to the Dena'ina schoolyard in Pedro Bay. Site assessment between 1993 and 1998 found that the storage and distribution of fuel at the site had resulted in extensive soil and groundwater contamination, with the possibility of contamination to migrate to a nearby creek and into Iliamna Lake. In April of 1999, a spill took place within the tank farm. Acute spill response took place in the days following the spill, and further cleanup activities in 1999 included capture and treatment of impacted site groundwater and capping of the site using clean fill soil. In subsequent years, bioremediation techniques were being used to metabolize petroleum contamination. In addition, a groundwater interception and treatment system was being used to treat groundwater at the site and prevent leaching into the creek.<sup>25</sup>

<sup>&</sup>lt;sup>20</sup> See footnote 10.

<sup>&</sup>lt;sup>21</sup> Resource Development Council. (n.d.). *Alaska's Oil and Gas Industry*. Retrieved January 26, 2012 from http://www.akrdc.org/issues/oilgas/overview.html.

<sup>&</sup>lt;sup>22</sup> Lake and Peninsula Borough. February 2009. *Multi-Hazard Mitigation Plan*. Retrieved January 17, 2012 from http://commerce.alaska.gov/dca/planning/nfip/Hazard\_Mitigation\_Plans/Lake\_Pen\_Boro\_MJ\_HMP.pdf.

 $<sup>^{23}</sup>$  See footnote 12.

<sup>&</sup>lt;sup>24</sup> See footnote 22.

<sup>&</sup>lt;sup>25</sup> Alaska Dept. of Environmental Conservation (n.d.). *List of Contaminated Sites by Region*. Retrieved April 17, 2012 from http://dec.alaska.gov/spar/csp/list.htm.

# Current Economy<sup>26</sup>

Pedro Bay's economy is based around seasonal summer employment in Bristol Bay salmon fisheries and the Iliamna Lake tourism industry. In 2010, three area residents held commercial salmon fishing permits.<sup>27</sup> In a survey conducted by the AFSC in 2010, community leaders indicated that subsistence fishing and sport hunting and fishing are important foundations of the local economy. Several wilderness lodges operate in Pedro Bay. Most families also depend heavily on subsistence activities, utilizing resources including salmon, trout, moose, bear, rabbit, and seal.<sup>28</sup> Most families in Pedro Bay and other Iliamna-area communities travel to fish camps along Iliamna Lake's many tributaries during the summer.<sup>29</sup>

Based on household surveys conducted for the 2006-2010 ACS,<sup>30</sup> in 2010, the per capita income in Pedro Bay was estimated to be \$17,526 and the median household income was estimated to be \$40,750. This represents an increase from the per capita and median household incomes reported in the year 2000 (\$18,420 and \$36,750, respectively). However, if inflation is taken into account by converting 2000 values to 2010 dollars,<sup>31</sup> real per capita and median household income are both shown to have decreased, from a real per capita income of \$24,222 and real median household income of \$48,326 in the year 2000. In 2010, Pedro Bay ranked 174<sup>th</sup> of 305 Alaskan communities with per capita income data that year, and 185<sup>th</sup> in median household income, out of 299 Alaskan communities with household income data.

Although Pedro Bay's small population size may have prevented the ACS from accurately portraying economic conditions,<sup>32</sup> additional evidence for a decrease in per capita income 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 Pedro Bay in 2010 is \$14,656.<sup>33,34</sup> Despite the apparent decline in per capita income in the community between 2000 and 2010, Pedro Bay was not recognized as "distressed" by the Denali

<sup>&</sup>lt;sup>26</sup> Unless otherwise noted, all monetary data are reported in nominal values.

<sup>&</sup>lt;sup>27</sup> 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.

<sup>&</sup>lt;sup>28</sup> Ibid.

<sup>&</sup>lt;sup>29</sup> LaRoche + Associates. March 2011. Lake and Peninsula Borough Coastal Management Plan, Revised Public Hearing Draft. Retrieved January 17, 2012 from

http://alaskacoast.state.ak.us/District/DistrictPlans\_Final/LakeandPen/revised\_phd/vol1\_rphd.pdf.

<sup>&</sup>lt;sup>30</sup> 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.

<sup>&</sup>lt;sup>31</sup> Inflation was calculated using the Anchorage Consumer Price Index for 2010 (retrieved January 5, 2012 from the Alaska Department of Labor, http://labor.alaska.gov/research/cpi/inflationcalc.htm).

<sup>&</sup>lt;sup>32</sup> While American Community Survey (ACS) estimates can provide a good snapshot estimate for larger populations, smaller populations can be misrepresented by ACS estimates if demographic information is not collected from a representative sample of the population. This is especially problematic for Alaskan communities with small populations that have a low probability of being adequately sampled. <sup>33</sup> See footnote 30.

<sup>&</sup>lt;sup>34</sup> 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/.

Commission in 2010.<sup>35</sup> It is important to note that both ACS and DOLWD data are based on wage earnings, and do not take into account the value of subsistence within the local economy.

Based on the 2006-2010 ACS, in 2010, a smaller percentage of Pedro Bay residents was estimated to be in the civilian labor force (47.4%) than was estimated to be in the civilian labor force statewide (68.8%). In the same year, 0% of Pedro Bay residents were estimated to be living below the poverty line, compared to 9.5% of Alaskan residents overall, and the unemployment rate was estimated to be 0%, compared to a statewide unemployment rate of 5.9%. A very different picture of unemployment is provided by data compiled on the ALARI database, which indicates that a higher than average percentage (22.6%) of the Pedro Bay labor force was unemployed, compared to a statewide unemployment rate estimate of 11.5%.<sup>36</sup>

Also based on the 2006-2010 ACS, nine people aged 16 and older were estimated to be employed in the civilian labor force. Compared to 2000, this represents a substantial decline in the workforce, from 27 to 9. In addition, it is important to note that many fewer industries and occupations were represented in 2010 than in 2000. In 2010, 6 people (66.7% of the labor force) was estimated to be employed in the public sector, and a majority of the (66.7%) was estimated to be working in information services industries and sales/office occupations. While the concentration of the workforce in fewer industries and occupations may be due to a real population decline in Pedro Bay, it is also important to note that the sampling methods utilized by the U.S. Census Bureau were altered between 2000 and 2010. The shift in sampling methods may also account for some of the differences observed in employment estimates.<sup>37</sup> It is also important to note that, while none of the civilian labor force was estimated to be working in agriculture, forestry, fishing, hunting, and mining in 2010, the number of individuals employed by fishing may be underestimated in census statistics. Fishermen may hold another job and characterize their employment accordingly. Information about employment by industry is presented in Figure 3, and employment is broken down by occupation in Figure 4.

An alternative estimate of employment is provided by economic data compiled in the ALARI database, which indicate that there were 25 employed residents in Pedro Bay in 2010, of which 72% were employed in local government, 12% in educational and health services, 4% in natural resources and mining, 4% in professional and business services, 4% in leisure and hospitality, and 4% in other industries.<sup>38</sup> As with income statistics, it should also be noted that ACS and DOLWD employment statistics do not reflect residents' activity in the subsistence economy.

<sup>&</sup>lt;sup>35</sup> Denali Commission. 2011. *Distressed Community Criteria 2011 Update*. Retrieved April 16, 2012 from www.denali.gov.

<sup>&</sup>lt;sup>36</sup> See footnote 34.

<sup>&</sup>lt;sup>37</sup> See footnote 32.

<sup>&</sup>lt;sup>38</sup> See footnote 34.

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

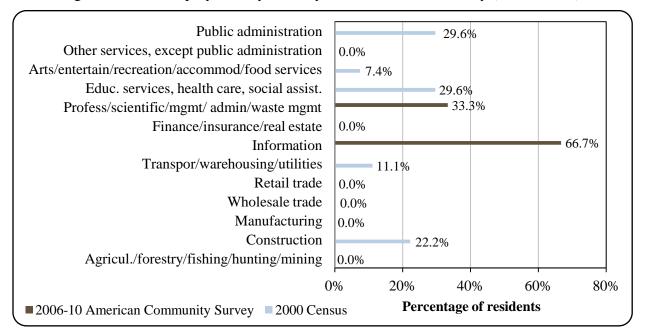
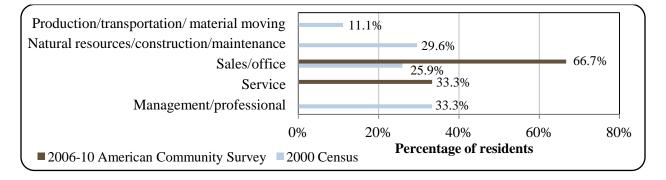


Figure 4. Local Employment by Occupation in 2000-2010, Pedro Bay.



# Governance

Pedro Bay is an unincorporated community under the jurisdiction of the Lake and Peninsula Borough. The community does not administer any local taxes, although the Borough does administer a 2% fish tax, 6% bed tax, \$3/person per day guide tax, and \$1/person per day lodge guide tax.<sup>39</sup> Given that Pedro Bay is not incorporated, no municipal revenue or municipal sales tax revenue was reported between 2000 and 2010. Pedro Bay did not receive Community or State Revenue Sharing contributions between 2000 and 2010. The community did receive one fisheries-related grant during the period: in 2010, the Denali Commission provided \$30,000 for design of the waterfront and a boat launch (Table 2).

<sup>&</sup>lt;sup>39</sup> Alaska Dept. of Comm. And Rural Affairs. (n.d.). *Community Information Summaries*. Retrieved January 24, 2012 from http://www.commerce.state.ak.us/dca/commdb/CF\_CIS.htm.

Year	Total Municipal Revenue <sup>1</sup>	Sales Tax Revenue <sup>2</sup>	State/Community Revenue Sharing <sup>3,4</sup>	Fisheries- Related Grants (State and Federal) <sup>5</sup>
2000	n/a	n/a	n/a	\$30,000
2001	n/a	n/a	n/a	n/a
2002	n/a	n/a	n/a	n/a
2003	n/a	n/a	n/a	n/a
2004	n/a	n/a	n/a	n/a
2005	n/a	n/a	n/a	n/a
2006	n/a	n/a	n/a	n/a
2007	n/a	n/a	n/a	n/a
2008	n/a	n/a	n/a	n/a
2009	n/a	n/a	n/a	n/a
2010	n/a	n/a	n/a	n/a

Table 2. Selected Municipal, State, or Federal Revenue Streams for the Communityof Pedro Bay from 2000 to 2010.

<sup>1</sup> 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.
<sup>2</sup> 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.

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

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

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

Pedro Bay 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 Pedro Bay Village. The Native village corporation is the Pedro Bay Native Corporation, which manages 97,002 acres of land. The regional Native corporation to which Pedro Bay belongs is the Bristol Bay Native Corporation (BBNC).<sup>40</sup>

Pedro Bay is also a member of the Bristol Bay Native Association (BBNA), a regional non-profit organization headquartered in Dillingham that provides social, economic, cultural, and educational opportunities and initiatives for the benefit of the Tribes and the Native people of Bristol Bay.<sup>41</sup> The BBNA is one of the 12 regional Alaska Native 501(c)(3) nonprofit organizations that were identified under ANCSA and charged with naming incorporators to create regional for-profit corporations. Today, these regional Native Associations receive federal funding to administer a broad range of services to villages in their regions.<sup>42</sup>

The closest regional office of the Alaska Department of Fish and Game (ADF&G) is located in King Salmon. The nearest Alaska Department of Natural Resources office is a Division of Parks and Outdoor Recreation office in Homer, and the nearest Alaska Department of Commerce, Community, and Economic Development offices are in Dillingham and

<sup>&</sup>lt;sup>40</sup> 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.

<sup>&</sup>lt;sup>41</sup> Bristol Bay Native Association. (n.d.). *BBNA homepage*. Retrieved November 16, 2011 from www.bbna.com.

<sup>&</sup>lt;sup>42</sup> 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.

Anchorage. Kodiak and Homer have the nearest National Marine Fisheries Service (NMFS) offices, although the Anchorage office may be more accessible for the people from this area. Anchorage and Kodiak have the closest U.S. Bureau of Citizenship and Immigration Services offices.

# Infrastructure

# Connectivity and Transportation

Pedro Bay is accessible by air and water. There is a state-owned 3,000 feet long by 60 feet wide gravel airstrip.<sup>43</sup> Scheduled and charter air service to Pedro Bay is available through Iliamna Air Service, Inc. As of spring 2012, roundtrip flights from Pedro Bay to Anchorage, with a transfer in the regional hub of Iliamna, cost approximately \$500.<sup>44</sup> Barge service is available from Naknek via the Kvichak River. Goods are also sent by barge from Homer to Iliamna Bay on the Cook Inlet side and portaged over a 14-mile road to Pile Bay, a village 10 miles to the east of Pedro Bay.<sup>45</sup> An unimproved trail, the Iliamna-Pile Bay Trail, runs along the northern shore of Iliamna Lake, connecting Pile Bay to Pedro Bay and the communities of Iliamna and Newhalen to the west.<sup>46</sup>

The existing road between Cook Inlet and Pile Bay is used for the transport of fishing vessels from winter retrofitting in Homer to summer fishing grounds in Bristol Bay and back. It is also often the only route by which heavy equipment can reach the Iliamna area. The road has not been adequately maintained. It is narrow in places and several bridges need to be replaced. Improvements to this transportation link were identified as a priority in the 2011 Lake and Peninsula Borough Coastal Management Plan.<sup>47</sup>

# Facilities

Water in Pedro Bay is derived from Iliamna Lake and individual wells. Most of the occupied homes in Pedro Bay use individual wells and septic tank systems. Water is also derived directly from Iliamna Lake. Some households use honeybuckets or outhouses. There is no piped water or sewer system in the community, but the Village Council does operate a sewage lagoon for sewage treatment and offers honeybucket hauling and septic pumping services. The Village Council also operates a landfill and provides refuse collection services. According to a survey conducted by the AFSC in 2011, community leaders reported that a road is currently being constructed to a new landfill site which is scheduled to be completed starting in 2012. An aluminum recycling program is organized by the local school. Electricity is provided to Pedro Bay from a diesel powerhouse owned and operated by the Village Council.<sup>48</sup> In the future, Pedro Bay could be connected to distribution of hydroelectric power from the Tazamina Hydroelectric

http://alaskacoast.state.ak.us/District/DistrictPlans\_Final/LakeandPen/revised\_phd/vol1\_rphd.pdf.

<sup>48</sup> See footnote 40.

<sup>&</sup>lt;sup>43</sup> See footnote 40.

<sup>&</sup>lt;sup>44</sup> Personal communication, Iliamna Air Service Inc., March 15, 2012.

<sup>&</sup>lt;sup>45</sup> See footnote 40.

<sup>&</sup>lt;sup>46</sup> Alaska Department of Natural Resources. April 2005. *Bristol Bay Area Plan for State Lands*. Retrieved January 4, 2012 from http://dnr.alaska.gov/mlw/planning/areaplans/bristol/index.htm.

<sup>&</sup>lt;sup>47</sup> LaRoche + Associates. March 2011. Lake and Peninsula Borough Coastal Management Plan, Revised Public Hearing Draft. Retrieved January 17, 2012 from

Project, which currently serves the communities of Iliamna, Newhalen, and Nondalton.<sup>49</sup> Additional community facilities and services in Pedro Bay include a school library, post office, and emergency response services provided by the Pedro Bay First Responders. No police services are provided locally.<sup>50</sup> The nearest state trooper post is located in the City of Iliamna.<sup>51</sup> Telephone service is available in Pedro Bay. No cable providers offer service locally. Internet is available at the school only.<sup>52</sup> According to the 2011 AFSC survey, community leaders reported that fiber optic cables are in development.

Regarding fisheries-related facilities, community leaders reported in the 2011 AFSC survey that there are no dock facilities in Pedro Bay. They indicated that residents tie boats of up to 20 feet in length on the shore. The community cannot accommodate larger vessels, and no commercial fishing boats are moored in Pedro Bay. They did indicated the presence of haul-out facilities, and that plans were underway to construct a barge landing area, and to provide roads and electricity serving boat landing areas. Community leaders also reported that Pedro Bay residents travel to Anchorage, Dillingham or Iliamna to access fisheries-related businesses and services not available locally.

# Medical Services

Local hospitals or health clinics include the Pedro Bay Clinic. The clinic is a Community Health Aide Program site. Emergency Services have lake and air access. Emergency services are provided by a health aide, and alternate health care is provided by the Pedro Bay First Responders.<sup>53</sup> The nearest hospital is located in Homer.

# Educational Opportunities

There is one school in Pedro Bay, the Dena'ina School. The school offers a pre-school through 12<sup>th</sup> grade education. As of 2011, no students were enrolled in the Dena'ina School, and one teacher was employed.<sup>54</sup> According to a survey conducted by the AFSC in 2011, community leaders reported that the school closed in November, 2010.

# **Involvement in North Pacific Fisheries**

# History and Evolution of Fisheries

Subsistence harvest of fisheries resources has been important for residents of the Iliamna Lake region since prehistory. Commercial exploitation of salmon resources began to develop in Bristol Bay in the 1890s, and today is one of the most important commercial salmon fisheries in the world. Harvest primarily consists of sockeye salmon returning to spawn in the many lakes of

<sup>&</sup>lt;sup>49</sup> See footnote 47.

<sup>&</sup>lt;sup>50</sup> 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.

<sup>&</sup>lt;sup>51</sup> Alaska Dept. of Public Safety. 2012. *Alaska State Trooper Detachments*. Retrieved June 1, 2012 from http://www.dps.state.ak.us/ast/detachments.aspx.

<sup>&</sup>lt;sup>52</sup> See footnote 50.

<sup>&</sup>lt;sup>53</sup> Ibid.

<sup>&</sup>lt;sup>54</sup> Alaska Department of Education and Early Development. (2012). *Statistics and Reports*. Retrieved April 24, 2012 from http://eed.alaska.gov/stats/.

the Bristol Bay region, along with several other species harvested in lower volumes.<sup>55</sup> Subsistence harvest continues to be an important foundation for the local economy in Pedro Bay, and some residents are also involved in commercial salmon fisheries. Several sportfishing lodges are located in Pedro Bay as well.<sup>56</sup>

Cook Inlet is the nearest marine area to the community of Pedro Bay. The Inlet is encompassed by Federal Statistical and Reporting Area 630, Pacific Halibut Fishery Regulatory Area 3A, and the Central Gulf of Alaska Sablefish Regulatory Area. In addition, Bristol Bay, the area where most Pedro Bay residents engage in commercial fishing activity, is encompassed by Federal Statistical and Reporting Area 514, Pacific Halibut Fishery Regulatory Area 4E, and the Bering Sea Sablefish Regulatory Area. Pedro Bay is not eligible to participate in either the Community Development Quota program or the Community Quota Entity program. According to a survey conducted by the AFSC in 2011, community leaders reported that Pedro Bay engaged in the fisheries management process in Alaska through sending a representative to sit on regional fisheries advisory and/or working groups run by ADF&G.

## **Processing Plants**

ADF&G's 2010 Intent to Operate list does not list a registered processing plant in Pedro Bay. According to the list, processing facilities were located in Bristol Bay communities including Dillingham, Egegik, and Naknek, as well as Cook Inlet communities including Homer, Kenai, and Nikiski.

### Fisheries-Related Revenue

No data were reported about fishing-related revenue received by the community of Pedro Bay from municipal, state or federal sources (Table 3).

## **Commercial Fishing**

Pedro Bay is an inland community, located on the eastern shore of Iliamna Lake. Pedro Bay residents primarily utilize fisheries resources for subsistence purposes, but some residents also engage in commercial fishing activity. In a survey conducted by the AFSC in 2011, community leaders reported that Pedro Bay residents primarily participate in the Bristol Bay fishery for sockeye salmon between July 1<sup>st</sup> and August 31<sup>st</sup> each year. In 2010, three Pedro Bay residents held state Commercial Fisheries Entry Commission (CFEC) permits for the set gillnet salmon fishery in Bristol Bay. Of these, two were actively fished in 2010. No Federal Fisheries Permits (FFP) or federal License Limitation Program permits (LLP) were issued to Pedro Bay residents between 2000 and 2010. This permit information is presented in Table 4. Between 2000 and 2010, no quota share accounts or quota shares were held by Pedro Bay residents in federal catch share fisheries for halibut, sablefish, or crab (Tables 6 through 8).

Also in 2010, no Pedro Bay residents held commercial crew licenses, and no residents were the primary owner of a fishing vessel (Table 5). These numbers represent a decline from

<sup>&</sup>lt;sup>55</sup> 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.

<sup>&</sup>lt;sup>56</sup> See footnote 50.

the year 2000, when five Pedro Bay residents held crew licenses and nine residents were the primary owner of a fishing vessel. In 2010, no fishing vessels were homeported in Pedro Bay. According to the 2011 AFSC survey, local residents use boats of up to 20 feet in length, and larger vessels cannot be accommodated in the community, although ADF&G did report some vessels as homeported there between 2000 and 2009 (Table 5).

Given the lack of fish buyers or shore-side fish processors in Pedro Bay (Table 5), no landings or ex-vessel revenue information was reported for the community (Table 9). Pedro Bay vessel owners and permit holders delivered their catches elsewhere between 2000 and 2010. Information regarding landings and ex-vessel revenue generated by vessel owners residing in Pedro Bay is considered confidential between 2000 and 2004 due to the small number of participants, and no vessel owners were present in the community between 2005 and 2010 (Table 10).

Revenue source	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Raw fish tax <sup>1</sup>	n/a										
Shared Fisheries Business Tax <sup>1</sup>	n/a										
Fisheries Resource Landing Tax <sup>1</sup>	n/a										
Fuel transfer tax <sup>2</sup>	n/a										
Extraterritorial fish tax <sup>2</sup>	n/a										
Bulk fuel transfers <sup>1</sup>	n/a										
Boat hauls <sup>2</sup>	n/a										
Harbor usage <sup>2</sup>	n/a										
Port/dock usage <sup>2</sup>	n/a										
Fishing gear storage on public land <sup>3</sup>	n/a										
Marine fuel sales tax <sup>3</sup>	n/a										
Total fisheries-related revenue <sup>4</sup>	n/a										
Total municipal revenue <sup>5</sup>	n/a										

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

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

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> Reported by community leaders in a survey conducted by the AFSC in 2011.

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

<sup>5</sup> 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.

Species		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Groundfish (LLP) <sup>1</sup>	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) <sup>1</sup>	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	Total permits	0	0	0	0	0	0	0	0	0	0	0
Permits <sup>1</sup>	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) <sup>2</sup>	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) <sup>2</sup>	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) <sup>2</sup>	Total permits	0	0	0	0	0	0	0	0	0	0	0
<b>-</b> · · ·	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. Permits and Permit Holders by Species, Pedro Bay: 2000-2010.

Species		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Sablefish (CFEC) <sup>2</sup>	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) <sup>2</sup>	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) <sup>2</sup>	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
Salmon (CFEC) <sup>2</sup>	Total permits	3	3	2	3	3	3	3	2	3	3	3
	Fished permits	3	3	1	3	3	2	3	2	3	3	2
	% of permits fished	100%	100%	50%	100%	100%	67%	100%	100%	100%	100%	67%
	Total permit holders	3	3	2	3	3	3	3	2	3	3	3
Total CFEC Permits <sup>2</sup>	Permits	3	3	2	3	3	3	3	2	3	3	3
	Fished permits	3	3	1	3	3	2	3	2	3	3	2
	% of permits fished	100%	100%	50%	100%	100%	67%	100%	100%	100%	100%	67%
	Permit holders	3	3	2	3	3	3	3	2	3	3	3

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

<sup>1</sup> 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.]

<sup>2</sup> 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.]

Year	Crew License Holders <sup>1</sup>	Count Of All Fish Buyers <sup>2</sup>	Count Of Shore- Side Processing Facilities <sup>3</sup>	Vessels Primarily Owned By Residents <sup>4</sup>	Vessels Homeported <sup>4</sup>	Vessels Landing Catch In Pedro Bay <sup>2</sup>	Total Net Pounds Landed In Pedro Bay <sup>2,5</sup>	Total Ex- Vessel Value Of Landings In Pedro Bay <sup>2,5</sup>
2000	5	0	0	9	11	0	0	\$0
2001	2	0	0	9	12	0	0	\$0
2002	2	0	0	13	15	0	0	\$0
2003	3	0	0	11	13	0	0	\$0
2004	1	0	0	13	14	0	0	\$0
2005	1	0	0	0	1	0	0	\$0
2006	0	0	0	0	1	0	0	\$0
2007	1	0	0	0	1	0	0	\$0
2008	1	0	0	0	1	0	0	\$0
2009	2	0	0	0	0	0	0	\$0
2010	0	0	0	0	0	0	0	\$0

## Table 5. Characteristics of the Commercial Fishing Sector in Pedro Bay: 2000-2010.

<sup>1</sup> 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.]

<sup>2</sup> 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.]

<sup>3</sup> 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.]

<sup>4</sup> 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.]

<sup>5</sup> Totals only represent non-confidential data.

Year	Number of Halibut Quota Share 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

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

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 Pedro Bay: 2000-2010.

Year	Number of Sablefish Quota Share 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 byResidents of Pedro Bay: 2000-2010.

Year	Number of Crab Quota	Crab Quota Shares	Crab IFQ
	Share Holders	Held	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.]

Total Net Pounds <sup>1</sup>											
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
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
$Total^2$	0	0	0	0	0	0	0	0	0	0	0
		Ex	-vessel	Value (r	ıominal	U.S. de	ollars)				
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
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
$Total^2$	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

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

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 receiver to r mask <sup>1</sup> Net pounds refers to the landed weight recorded in fish tickets. <sup>2</sup> Totals only represent non-confidential data.

				Total N	et Poun	ds <sup>1</sup>					
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Crab	-	-	-	-	-	0	0	0	0	0	0
Finfish	-	-	-	-	-	0	0	0	0	0	0
Halibut	-	-	-	-	-	0	0	0	0	0	0
Herring	-	-	-	-	-	0	0	0	0	0	0
Other Groundfish	-	-	-	-	-	0	0	0	0	0	0
Other Shellfish	-	-	-	-	-	0	0	0	0	0	0
Pacific Cod	-	-	-	-	-	0	0	0	0	0	0
Pollock	-	-	-	-	-	0	0	0	0	0	0
Sablefish	-	-	-	-	-	0	0	0	0	0	0
Salmon	-	-	-	-	-	0	0	0	0	0	0
$Total^2$	0	0	0	0	0	0	0	0	0	0	0
		Ex	-vessel	Value (I	nominal	U.S. da	ollars)				
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Crab	-	-	-	-	-	\$0	\$0	\$0	\$0	\$0	\$0
Finfish	-	-	-	-	-	\$0	\$0	\$0	\$0	\$0	\$0
Halibut	-	-	-	-	-	\$0	\$0	\$0	\$0	\$0	\$0
Herring	-	-	-	-	-	\$0	\$0	\$0	\$0	\$0	\$0
Other Groundfish	-	-	-	-	-	\$0	\$0	\$0	\$0	\$0	\$0
Other Shellfish	-	-	-	-	-	\$0	\$0	\$0	\$0	\$0	\$0
Pacific Cod	-	-	-	-	-	\$0	\$0	\$0	\$0	\$0	\$0
Pollock	-	-	-	-	-	\$0	\$0	\$0	\$0	\$0	\$0
Sablefish	-	-	-	-	-	\$0	\$0	\$0	\$0	\$0	\$0
Salmon	-	-	-	-	-	\$0	\$0	\$0	\$0	\$0	\$0
$Total^2$	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

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

*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.]

<sup>1</sup> Net pounds refers to the landed weight recorded in fish tickets.

<sup>2</sup> Totals only represent non-confidential data.

### **Recreational Fishing**

Although active sport fish guide businesses were only present in Pedro Bay in a few years during the 2000-2010 period, licensed sport fish guides were present in all years. The number of licensed guides present in the community varied between two and eight per year. Pedro Bay residents purchased between 7 and 19 sport fish licenses per year. The number of licenses sold in Pedro Bay was consistently larger, varying between 101 and 174 per year. This indicates that sportfishing activities are a tourism draw in Pedro Bay. This information about the sportfishing sector is presented in Table 11.

In a survey conducted by the AFSC in 2011, community leaders reported that residents use private boats for sportfishing, and sportfishing lodges are also present in the area. Community leaders also indicated that sockeye, chinook, and pink salmon are the primary species targeted by recreational fishermen in the area. The Alaska Statewide Harvest Survey,<sup>57</sup> conducted by ADF&G between 2000 and 2010, also noted sockeye salmon as the primary recreational target of Pedro Bay sport fishermen. No kept/release log book data were reported for fishing charters out of Newhalen between 2000 and 2010.<sup>58</sup>

Pedro Bay is located within Alaska Sport Fishing Survey Area S – Kvichak River Drainage. Information is available about both saltwater and freshwater sportfishing activity at this regional scale. Overall between 2000 and 2010, non-Alaska resident anglers fished more angler days than Alaska residents in both freshwater and saltwater. Non-Alaska resident anglers fished consistently more days than Alaska resident anglers in both freshwater and saltwater during this period, reflective of the large amount of sportfishing related tourism in the region. Freshwater sportfishing activity was significantly more important than saltwater fishing in the region. The number of freshwater angler days for non-Alaska resident sport fishermen varied between 17,234 and 30,340 from 2000 to 2010, while Alaska resident freshwater angler days varied between 3,077 and 10,297. This information about the sportfishing sector in and near Pedro Bay is also displayed in Table 11.

Year	Active Sport Fish Guide Businesses <sup>1</sup>	Sport Fish Guide Licenses <sup>1</sup>	Sport Fishing Licenses Sold to Residents <sup>2</sup>	Sport Fishing Licenses Sold in Pedro Bay <sup>2</sup>
2000	0	6	14	122
2001	0	6	13	125
2002	0	4	14	106
2003	0	4	7	101
2004	0	3	12	132
2005	1	2	17	174
2006	1	6	16	154
2007	1	7	19	172
2008	1	8	16	156
2009	0	5	12	160
2010	1	3	7	108

Table 11. Sport Fishing Trends, Pedro Bay: 2000-2010.

<sup>&</sup>lt;sup>57</sup> 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).

<sup>&</sup>lt;sup>58</sup> 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.]

	Saltw	ater	Freshwater		
Year	Angler Days Fished – Non- Residents <sup>3</sup>	Angler Days Fished – Alaska Residents <sup>3</sup>	Angler Days Fished – Non- Residents <sup>3</sup>	Angler Days Fished – Alaska Residents <sup>3</sup>	
2000	68	168	20,848	10,297	
2001	214	43	21,554	8,202	
2002	435	14	19,495	6,618	
2003	74	50	18,248	5,831	
2004	129	101	20,785	5,263	
2005	38	79	22,156	4,179	
2006	114	28	28,013	4,054	
2007	229	38	30,340	3,077	
2008	179	65	24,104	5,127	
2009	0	0	17,234	6,514	
2010	0	22	20,068	5,613	

<sup>1</sup> 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.]

<sup>2</sup> 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.]

<sup>3</sup> 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 a survey conducted by the AFSC in 2011, community leaders indicated that the local economy is largely based on subsistence fishing and hunting for salmon, seal, moose, and other resources, and commercial fishing is less important for the community. Community leaders also expressed concern that development of the Pebble Mine may threaten the subsistence way of life. The ADF&G also recorded community concerns during fieldwork for a 2004 survey of subsistence resource use in Pedro Bay and surrounding communities. They noted local residents' concerns about overharvest of Dolly Varden char in the sport fishery and the impact of motorized boat traffic on stream habitat. In addition, they expressed concern that the Pile River moose herd is declining due to increasing wolf and bear populations.<sup>59</sup>

Pedro Bay residents reported using the eastern third of Iliamna Lake and the area as far inland to the north as Sixmile Lake for subsistence purposes. In addition to salmon, Pedro Bay residents harvested freshwater including northern pike, rainbow trout, Dolly Varden char, lake

<sup>&</sup>lt;sup>59</sup> Fall, James A., Davin L. Holen, Brian Davis, Theodore Krieg, and David Koster. December 2006. *Subsistence Harvests and Uses of Wild Resources in Iliamna, Newhalen, Nondalton, Pedro Bay and Port Alsworth, Alaska, 2004.* Alaska Dept. of Fish and Game, Division of Subsistence, Technical Paper No. 302. Retrieved January 17, 2012 from http://www.subsistence.adfg.state.ak.us/TechPap/tp302.pdf.

trout, and Arctic grayling. Lake trout and Dolly Varden char are taken in the greatest quantities. Pedro Bay residents also hunt harbor seal for subsistence.<sup>60</sup>

Results of the 2004 ADF&G subsistence survey indicate that every household in Pedro Bay successfully harvested at least one subsistence resource in 2004. Data show that the entire population of Pedro Bay is active in its subsistence pursuits, involving young people as well as adults, although local residents expressed fears that decreasing abundance of fish and wildlife resources would discourage younger people from fully embracing the subsistence way of life.<sup>61</sup> In 2004, 100% of households participated in salmon subsistence, 72% participated in halibut subsistence, and 56% participated in non-salmon fish subsistence (not including halibut). A 2003 estimate of non-salmon fish subsistence participation suggested a higher rate of participation of 84%. No information was reported by ADF&G regarding participation in marine invertebrate or marine mammal subsistence by residents of Pedro Bay during the 2000-2010 period. This information is presented in Table 12.

Per capita, Pedro Bay residents were estimated to harvested 305 pounds of land and seabased subsistence resources in 2004 (Table 12). ADF&G also reported estimates of total nonsalmon fish harvest in 2003 (831 pounds) and 2004 (963 pounds) (Table 13). According to results of the ADF&G subsistence survey, the species of non-salmon fish that were harvested by the greatest number of households in Pedro Bay in 2004 included Dolly Varden char, rainbow trout, northern pike, lake trout, steelhead, cod, and rockfish.<sup>62</sup>

Information was available regarding total subsistence salmon harvest for seven years between 2000 and 2008. During this period, the number of subsistence salmon permits issued to Pedro Bay households varied between 1 and 22. Sockeye salmon was by far the most heavily harvested salmon species in the area. For those years in which data were reported, an average of 3,641 sockeye was harvested per year. This information is presented in Table 13.

No information was reported regarding the number of Subsistence Halibut Registration Certificates (SHARC) issued to residents of Pedro Bay between 2003 and 2010 (Table 14), despite the fact that ADF&G reported a high percentage of households participating in halibut subsistence in 2004 (Table 12). This may be due to the fact that only 6% of Pedro Bay households reported harvesting halibut directly, given the long distance they must travel to access saltwater fisheries, while 67% of households received halibut through subsistence sharing networks.<sup>63</sup> Likewise, no information was reported by management agencies regarding subsistence harvest of marine mammals by residents of Pedro Bay (Table 15), although harbor seals are a known subsistence resource locally.

<sup>&</sup>lt;sup>60</sup> LaRoche + Associates. March 2011. Lake and Peninsula Borough Coastal Management Plan, Revised Public Hearing Draft. Retrieved January 17, 2012 from

http://alaskacoast.state.ak.us/District/DistrictPlans\_Final/LakeandPen/revised\_phd/vol1\_rphd.pdf.

<sup>&</sup>lt;sup>61</sup> See footnote 59.

<sup>&</sup>lt;sup>62</sup> 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).

<sup>&</sup>lt;sup>63</sup> See footnote 59.

Year	% Households Participating in Salmon Subsistence	% Households Participating in Halibut Subsistence	% Households Participating in Marine Mammal Subsistence	% Households Participating in Marine Invertebrate Subsistence	% Households Participating in Non-Salmon Fish Subsistence	Per Capita Subsistence Harvest (pounds)	
2000	n/a	n/a	n/a	n/a	n/a	n/a	
2001	n/a	n/a	n/a	n/a	n/a	n/a	
2002	n/a	n/a	n/a	n/a	n/a	n/a	
2003	n/a	n/a	n/a	n/a	84%	n/a	
2004	100%	72%	n/a	n/a	56%	305	
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-<br/>Salmon Fish, Pedro Bay: 2000-2010.

Year	Subsistence Salmon Permits Issued <sup>1</sup>	Salmon Permits Returned <sup>1</sup>	Chinook Salmon Harvested <sup>1</sup>	Chum Salmon Harvested <sup>1</sup>	Coho Salmon Harvested <sup>1</sup>	Pink Salmon Harvested <sup>1</sup>	Sockeye Salmon Harvested <sup>1</sup>	Lbs of Marine Inverts <sup>2</sup>	Lbs of Non- Salmon Fish <sup>2</sup>
2000	10	10	n/a	n/a	n/a	n/a	1,815	n/a	n/a
2001	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2002	n/a	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2003	1	1	n/a	n/a	n/a	n/a	20	n/a	831
2004	22	20	n/a	n/a	n/a	n/a	4,803	n/a	963
2005	16	15	n/a	n/a	n/a	n/a	4,162	n/a	n/a
2006	21	18	n/a	n/a	n/a	n/a	4,319	n/a	n/a
2007	19	15	n/a	n/a	n/a	n/a	5,487	n/a	n/a
2008	18	17	n/a	n/a	n/a	n/a	4,884	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.* 

<sup>1</sup> 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.

<sup>2</sup> 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).

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

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

*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, Pedro Bay: 2000-2010.

Year	# of Beluga Whales <sup>1</sup>	# of Sea Otters <sup>2</sup>	# of Walrus <sup>2</sup>	# of Polar Bears <sup>2</sup>	# of Steller Sea Lions <sup>3</sup>	# of Harbor Seals <sup>3</sup>	# of Spotted Seals <sup>3</sup>
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.

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup>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.