

## **Kotzebue (KA WT-zuh-byoo)**

### **People and Place**

#### *Location*<sup>1</sup>

Kotzebue is on the Baldwin Peninsula in Kotzebue Sound, on a 3-mile long spit, which ranges in width from 1,100 to 3,600 ft. It is located near the discharges of the Kobuk, Noatak, and Selawik Rivers, 549 air miles northwest of Anchorage and 26 miles above the Arctic Circle. Kotzebue is located in the Kotzebue Recording District. The area encompasses 27.0 square miles of land and 1.7 square miles of water. Kotzebue was incorporated in 1958 and is under the jurisdiction of the Northwest Arctic Borough.

#### *Demographic Profile*<sup>2</sup>

In 2010, there were 3,201 residents in Kotzebue, ranking it 34<sup>th</sup> largest of 352 total Alaskan communities with recorded populations that year (Table 1). Overall between 1990 and 2010, the population increased by 16.4%. Between 2000 and 2009, there was an average annual growth rate of 0.21%, which was slightly under the statewide average of 0.75% and indicative of slight growth over those years. In a survey conducted by NOAA's Alaska Fisheries Science Center (AFSC) in 2011, community leaders estimated that the permanent population of Kotzebue in 2010 was 3,270. In that year, the estimated seasonal or transient population was 400. Community leaders reported that one average, seasonal residents live in Kotzebue between April and October, with the population peaking June through September. However, seasonal population peaks do not appear to be driven by employment in fisheries sectors.

Kotzebue is traditionally an Inupiat Eskimo community. In 2010, 73.6% of residents identified themselves as American Indian or Alaska Native, compared to 71.2% in 2000; 16.0% identified themselves as White, compared to 19.5% in 2000; 1.2% identified themselves as Asian, compared to 1.8% in 2000; 0.9% identified themselves as Black or African American, compared to 0.3% in 2000; 0.3% identified themselves as Native Hawaiian or Other Pacific Islander, compared to 0.1% in 2000; 7.6% identified themselves as two or more races, compared to 6.4% in 2000; and 0.4% identified themselves as some other races, compared to 0.8% in 2000. In addition, 1.3% of residents identified themselves as Hispanic or Latino in 2010, compared to 1.2% in 2000. Further information regarding racial and ethnic trends can be found in Figure 1.

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<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](http://www.commerce.state.ak.us/dca/commdb/CF_BLOCK.htm).

<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>.

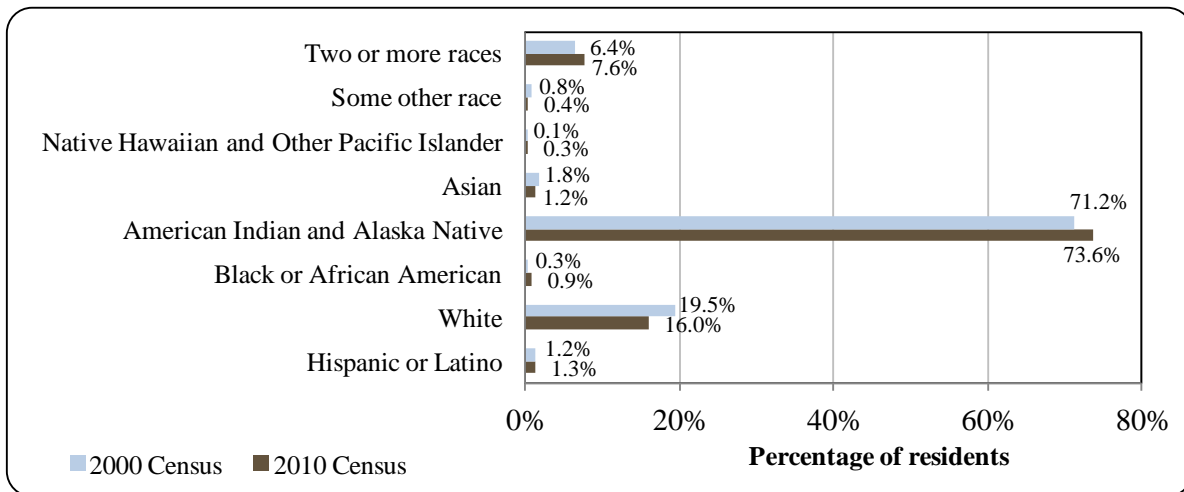
Table 1. Population in Kotzebue from 1990 to 2010 by Source.

Year	U.S. Decennial Census <sup>1</sup>	Alaska Dept. of Labor Estimate of Permanent Residents <sup>2</sup>
1990	2,751	-
2000	3,082	-
2001	-	3,059
2002	-	3,075
2003	-	3,068
2004	-	3,142
2005	-	3,123
2006	-	3,105
2007	-	3,121
2008	-	3,124
2009	-	3,154
2010	3,201	-

<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, Kotzebue: 2000-2010 (U.S. Census).

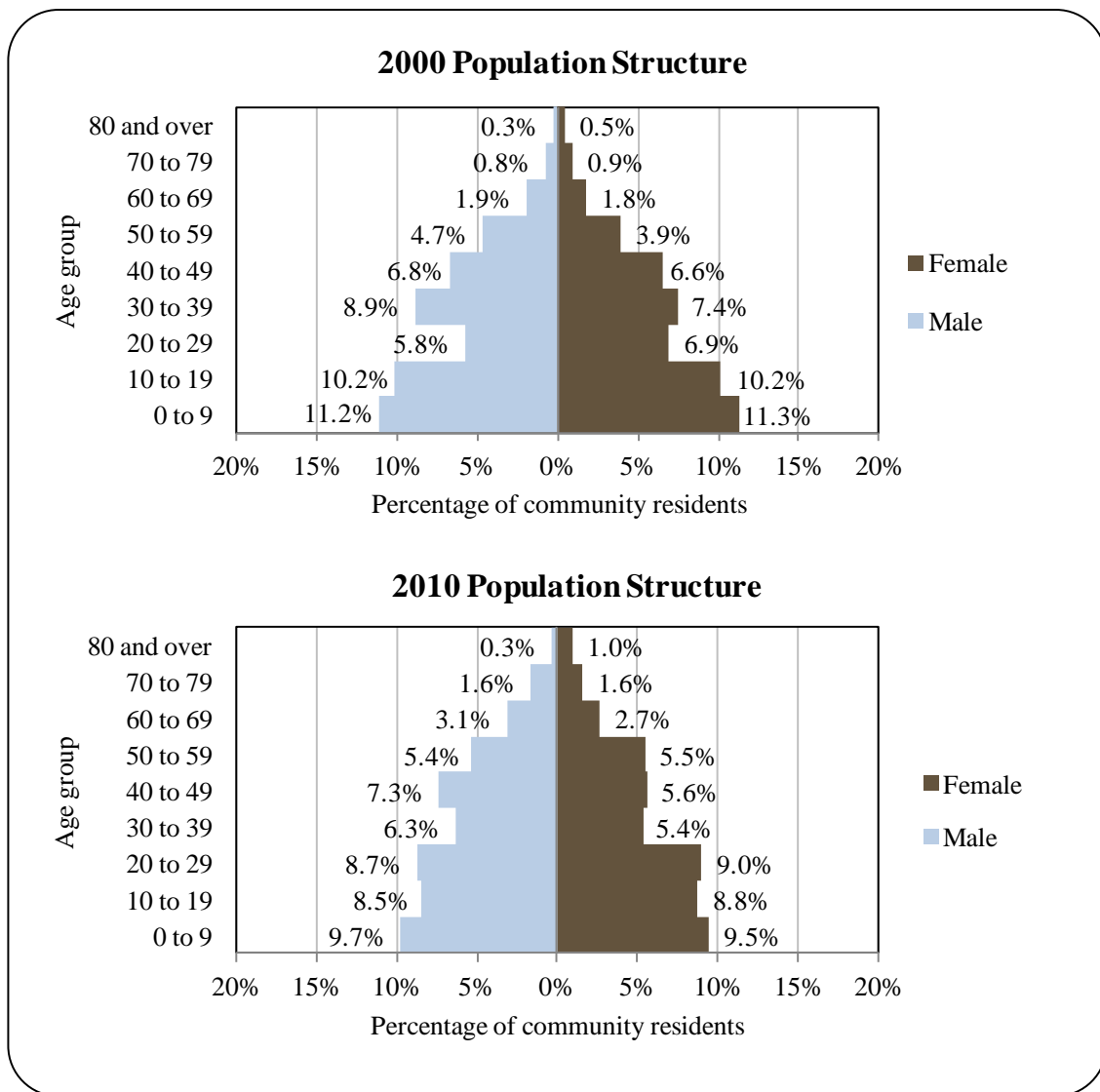


In 2010, the average household size in Kotzebue was 3.31, compared to 3.50 in 1990 and 3.40 in 2000. In that year, there were a total of 1,160 housing units, compared to 911 in 1990 and 1,007 in 2000. Of the households surveyed in 2010, 38% were owner-occupied, compared to 39% in 2000; 47% were renter-occupied, compared to 50% in 2000; 9% were vacant, compared to 7% in 2000; and 8% were occupied seasonally, compared to 5% in 2000. In addition, 47 residents were living in group quarters in 2010, compared to 62 in 2000.

In 2010, the gender distribution of Kotzebue was 51.0% male and 49.0% female. This was similar to both the gender distribution statewide (52.0% male, 48.0% female) and distribution in 2000 (50.5% male, 49.5% female). The median age that year was 27.2 years, which was lower than the statewide median of 33.8 years, but higher than the 2000 median of 25.9 years.

Compared with 2000, the population structure in 2010 was somewhat more constricted. In that year, 36.5% of residents were under the age of 20, compared to 42.9% in 2000; 10.3% were over the age of 59, compared to 6.2% in 2000; 35.5% were between the ages of 30 and 59, compared to 38.3% in 2000; and 17.7% were between the ages of 20 and 29, compared to 12.7% in 2000. The increase in older age brackets with a subsequent decrease in younger age brackets reflects an aging population.

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



Gender distribution by age cohort continued to be relatively even between 2000 and 2010. In that year, the greatest absolute gender difference occurred within the 40 to 49 age range (7.3% male, 5.6% female), followed by the 30 to 39 (6.3% male, 5.4% female) and 80 and over (0.3% male, 1.0% female) age ranges. Of those three, the greatest relative gender difference occurred within the 80 and older range.

In terms of educational attainment, the U.S. Census' 2006-2010 American Community Survey (ACS)<sup>3</sup> estimated that 83.2% of residents aged 25 and over held a high school diploma or higher degree in 2010, compared to an estimated 90.7% of Alaskan residents overall. Also in that year, an estimated 6.7% of residents had less than a 9<sup>th</sup> grade education, compared to an estimated 3.5% of Alaskan residents overall; an estimated 10.1% had a 9<sup>th</sup> to 12<sup>th</sup> grade education but no diploma, compared to an estimated 5.8% of Alaskan residents overall; an estimated 24.2% had some college but no degree, compared to an estimated 28.3% of Alaskan residents overall; 9% of resident held a Bachelor's degree, compared to an estimated 17.4% of Alaskan residents overall; and an estimated 8.6% held a graduate or professional degree, compared to an estimated 9.6% of Alaskan residents overall.

### *History, Traditional Knowledge, and Culture*

Archaeological findings in northwest Alaska indicate that people have continuously occupied the Kotzebue Sound area for the past 4,000 years. Evidence from the oldest sites show that humans were in the area 6,000 years ago, and perhaps as early as 8,000 to 10,000 years ago. Two cultures can be linked with continuous occupation of the Kotzebue Sound area: the Arctic Small Tool tradition (4,200 to 1,000 years ago) and Northern Maritime tradition (1,400 years ago to present). The area near present day Kotzebue has been occupied as a village for the past 600 years. The oldest excavated Kotzebue site is dated at 1400 C.E.<sup>4</sup>

The permanent settlement of *Kikitaruk* was unusual for its time, in that most settlements were semi-permanent as most people of the area followed migratory caribou herds. But the coastal resources of the area allowed for permanent settlement, and *Kikitaruk* established itself as a regional trading hub. Centuries before European contact, *Kikitaruk* was a busy center of trading activities and a stopping point for trade routes throughout the Arctic linking Siberian Chukchi and northern MacKenzie Eskimos and Canadian Athabascans.<sup>5</sup>

In the first half of the 19<sup>th</sup> century, the Kotzebue territory of *Qikiqtagrumiut* was a group of regional winter settlements, focused around a larger settlement located south of present-day Kotzebue. The estimated population of the *Qikiqtagrumiut* was 375 as of 1840. *Sisualik*, located on a spit 10 miles northwest of Kotzebue, was the site of the largest Eskimo fair in the World; attracting 2,000 or more people from throughout northwest Alaska and the Asiatic mainland. The fair, peaking in July, included feasts, dancing, games, and trade. Interior peoples traded furs, jade, salmon skin clothing, and birchbark baskets for muktuk, seal oil, ivory, and walrus hides

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<sup>3</sup> 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.

<sup>4</sup> Georgette, S., and H. Loon. 1993. Subsistence Use of Fish and Wildlife in Kotzebue, a Northwest Alaska Regional Center. Technical Paper No. 167. Alaska Dept. of Fish and Game. Retrieved August 22, 2012 from: <http://www.subsistence.adfg.state.ak.us/TechPap/tp167.pdf>.

<sup>5</sup> Alaska State Housing Authority. (1971). *Kotzebue, Alaska Comprehensive Development Plan*. Retrieved August 17, 2012 from: <http://www.commerce.state.ak.us/dca/plans/Kotzebue-CP-1971.pdf>.

from coastal peoples. Tobacco, metal implements, and firearms reached Sisualik through trade routes from Russian before Europeans arrived in the region. The Great Famine of 1882-84 decimated the Qikiqtagrmiut. Other factors, including introduced diseases, loss of autonomy, and Euro-American influences also contributed towards deteriorating traditional societies.<sup>6</sup>

The first explorer to the Kotzebue Sound was Otto von Kotzebue in 1816. Europeans continued to periodically visit the Kotzebue Sound area during the first half of the 19<sup>th</sup> century, although there was little interaction with the Qikiqtagrmiut. After 1850, foreign traffic increased in the area as commercial interests in whales, ivory, and fur intensified. The period between 1880 and 1900 was a time of significant change in the region, as famine and disease severely eroded traditional life. In 1897, the Religious Society of Friends missionaries arrived, establishing living quarters, schools, and churches in what would be present-day Kotzebue. In 1898, the discovery of hold along the Kobuk River brought thousands of prospectors to Kotzebue. Inupiaq residents earned cash from miners by building boats and dog sleds, provided meat and dried fish, hauled mail and freight, and manufactured clothing. By 1900, most of the miners had left, most without realizing their sought after fortune.<sup>7</sup>

In 1909, the resident population of Kotzebue was 193. The community's population has grown since 1900, with rapid growth occurring immediately after World War II during the construction of the Air Base White Alice and Distant Early Warning system sites. The population went from 372 in 1939, to 623 in 1950, and 1,290 in 1960.<sup>8</sup>

The passage of the Alaska Native Claims Settlement Act (ANCSA) in 1971 greatly transformed Kotzebue. The Kikiktagruk Inupiat Corporation received title to much of the Baldwin Peninsula, as did the NANA Regional Corporation. In the late 1980s, Kotzebue continued to grow as a regional transportation and commercial hub. Nearly all goods and services in the region are supplied from the community.<sup>9</sup>

Within the core of Kotzebue, a historic district is mentioned. Official designation on the National Register of Historic Places (NRHP) has not been submitted.<sup>10</sup> The Cape Krusenstern Archeological District National Monument, located in the vicinity of Kotzebue, is listed on the NRHP.<sup>11</sup>

## Natural Resources and Environment

Kotzebue is located in the transitional climate zone, which is characterized by long, cold winters and cool summers. The average low temperature during January is -12 °F (-24 °C); the average high during July is 58 °F (14 °C). Temperature extremes have been measured from -52 to 85 °F (-47 to 29 °C). Annual snowfall averages 40 inches, with total precipitation of 9 inches per year. Kotzebue Sound is ice-free from early July until early October.

Kotzebue is surrounded by Cape Krusenstern National Monument, Noatak National Preserve, Kobuk Valley National Park, and Selawik National Wildlife Refuge. Kotzebue is

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<sup>6</sup> See footnote 4.

<sup>7</sup> Ibid.

<sup>8</sup> The City of Kotzebue, Donahue, J., McClintock, B., and Kotzebue IRA Council. (2000). *City of Kotzebue Comprehensive Plan*. Retrieved August 17, 2012 from: <http://www.commerce.state.ak.us/dca/plans/Kotzebue-CP-2000.pdf>.

<sup>9</sup> See footnote 4.

<sup>10</sup> See footnote 8.

<sup>11</sup> National Park Service. (n.d.). *National Register of Historic Places*. Retrieved August 17, 2012 from: <http://nrhp.focus.nps.gov/natregsearchresult.do?fullresult=true&recordid=1>.

located on the northern end of the Baldwin Peninsula. The Baldwin Peninsula is composed primarily of unconsolidated Quaternary sediments. These sediments are mostly eolian, glacial, and marine in origin. Illinoian glaciers deposited till and outwash over marine sediments. Loess was deposited over the glacier sediments during glacial retreat. Sea level rose, and in some areas, marine sediments were deposited over the eolian silts. Late Wisconsin and Holocene sediments are primarily silts, clays, and fine sands; with the oldest sediments exposed on coastal bluffs. An exploratory petroleum well drill 10 miles east of Cape Blossom hit bedrock at a depth of 900 feet. The nearest bedrock outcrops at sea level are on the Choris Peninsula to the southeast, at Ekichuk Lake on Hotham Inlet to the northeast, and at Cape Krusenstern Lagoon northwest of the project site. The Baldwin Peninsula is located within a zone of continuous permafrost. The depth of the bottom of permafrost is probably between 200 and 300 feet. During the summer, the active permafrost layer extends 2 to 4 inches beneath the surface.<sup>12</sup>

The prominent vegetation type on the Baldwin Peninsula is moist coastal tundra. Continuous, uniformly developed cotton grass tussocks with sparse groups of other sedges and dwarf shrubs dominate. Few trees grow in the area, particularly near Kotzebue. However, some stands can be found in the Noatak and Kobuk River drainages, and driftwood is scattered along the coast. Kotzebue residents collected various edible plants including greens, berries (cranberries, salmon berries, blue berries, and black berries), and roots. Cotton grass, wild rhubarb, and wild onion, wild peas, willow leaves, and sprouts are also traditionally gathered.<sup>13</sup>

Terrestrial mammals in the area include moose, caribou, bear, wolves, fox, lynx, mink, marten, wolverine, land otter, beaver, and muskrat. Marine mammals include bearded seal, ringed seal, walrus, beluga whale, and other whales. There is a historic area for taking seal located near the entrance to Hotham Inlet from Kotzebue. Polar bears rarely venture as far south as Kotzebue, but they have been spotted in the area. The region is home to more than 50 species of fish, including Arctic char, whitefish, Dolly Varden, sheefish, Northern pike, grayling, herring, cod, and all five species of Pacific salmon. Birds are present in the area between May and September. Most birds are migratory because of Kotzebue's proximity to Asian and North American flyways.<sup>14</sup>

The primary mineral development project on the Baldwin Peninsula is the Red Dog Mine, which is the world's largest zinc and lead mine. Mineral deposits are located in the DeLong Mountains, which are part of the Brooks Range. The Kobuk River Valley contains many placer gold deposits. On Jade Creek, gold and jade deposits can be found. The Ambler Mining District, east of Kotzebue, has vast deposits of jade, copper, and other minerals. The Noatak District, north of Kotzebue, contains gold deposits at Lucky Six Creek. The Selawik District, southeast of Kotzebue, has one reported gold operation on Shovel Creek, which was mined until shortly after World War II. Finally, the Shungnak District, east of Kotzebue, contains many placer gold deposits throughout several drainages.<sup>15</sup>

Environmental hazards present in the community include flooding, erosion, severe weather, and earthquakes. In general, most hazards are area wide. Primary flooding and erosion hazards come from storm surge flooding, wave and slough erosion, sea ice, and permafrost melt. Kotzebue is located on the coast, and is therefore susceptible to significant storm surge flooding.

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<sup>12</sup> See footnote 8.

<sup>13</sup> Ibid.

<sup>14</sup> Ibid.

<sup>15</sup> Stoops, L. (2004). *Northwest Arctic Borough Comprehensive Economic Development Strategy*. Retrieved August 20, 2012 from: <http://www.commerce.state.ak.us/dca/plans/NorthwestArcticBorough-EDP-2004.pdf>.

Permafrost and erosion place strains on transportation and utility infrastructure, as well as constraints on community expansion. Potential effects of climate change include increased flood events, sea level rise, offshore ice retreat, and more severe coastal erosion. Sea-ice poses unique hazards to submerged infrastructure. Phenomenon such as strudel scour and ice gouging can potentially damage underwater utilities. In addition, offshore drilling platforms and shoreside facilities can become susceptible to ice overrides and pressure ridging.

Climate change is expected to alter seal levels, change wind and deep-ocean circulation patterns, marine resource productivity, species distribution, and outbreaks of disease and harmful algal blooms. Permafrost melt is expected to result in land subsidence, which may impact local infrastructure; especially in poorly drained areas. Storm systems produce high winds that generate large waves and currents. Storm surges can temporarily raise water levels by as much as 23 feet, increasing the vulnerability of shorelines and floodplains to sediment and nutrient migrations. The retreat of sea ice facilities storm damage to the shorelines of the Baldwin Peninsula to the extent that communities may be forced to relocate. Deposition, resulting from storm surges, can alter drainage hydrography and reduce channel capacity; increasing flooding and bank erosion. Floodwaters pose environmental health hazards through the dispersal of harmful materials or the contamination of water sources. In addition to storms, extreme weather can also include extreme cold temperatures and heavy snow accumulations. Winter storms can produce temperatures of -40 to -60 °F. Heavy snow and ice storms impact transportation and supply networks. While the risk is present, the Kotzebue area has a relatively low risk of earthquakes. There is no historical precedence of earthquakes impacting the community. In addition, the probability of secondary impacts from earthquakes is also low.<sup>16</sup>

According to the Alaska Department of Environmental Conservation, there were no significant environmental remediation sites active in Kotzebue as of 2010. However, Kotzebue is a regional center, transportation hub, and former military site. As such, there are many smaller, ongoing cleanup projects active in the community.<sup>17</sup>

## **Current Economy**<sup>18</sup>

Kotzebue is a service and transportation center for many villages in the Northwest Arctic Borough. Due to its location at the confluence of three river drainages, Kotzebue is the transfer point between ocean and inland water shipping and also the air transport center for the region. Activities related to oil and mineral exploration and development have contributed to the economy. The majority of income is directly or indirectly related to government employment, including the School District, Maniilaq Association, NANA Corporation, and City and Borough governments. In a survey conducted by the AFSC in 2011, community leaders reported that Kotzebue's resource-based economy is reliant on mining, fishing, and sport hunting/fishing.

In 2010,<sup>19</sup> the estimated per capita income was \$23,067 and the estimated median household income was \$66,908, compared to \$18,289 and \$57,163 in 2000, respectively.

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<sup>16</sup> City of Kotzebue; WHPacific, Inc.; and Bechtol Planning and Development. (2008). *City of Kotzebue, Alaska Local Hazards Mitigation Plan*. Retrieved August 21, 2012 from: [http://www.commerce.state.ak.us/dca/planning/nfip/Hazard\\_Mitigation\\_Plans/Kotzebue\\_LHMP.pdf](http://www.commerce.state.ak.us/dca/planning/nfip/Hazard_Mitigation_Plans/Kotzebue_LHMP.pdf).

<sup>17</sup> Alaska Dept. of Environmental Conservation. (n.d.). *Contaminated Sites Program*. Retrieved August 21, 2012 from: <http://dec.alaska.gov/spar/csp/list.htm>.

<sup>18</sup> Unless otherwise noted, all monetary data are reported in nominal values.

However, after adjusting for inflation by converting 2000 values into 2010 dollars,<sup>20</sup> the real per capita income (\$24,050), and real median household income (\$75,169) indicate that while individual earnings remained unchanged, household earnings declined. In 2010, Kotzebue ranked 124<sup>th</sup> of 305 communities from which per capita income was estimated, and 55<sup>th</sup> of 299 communities from which median household income was estimated.

However, Kotzebue's small population size may have prevented the ACS from accurately portraying economic conditions.<sup>21</sup> Another understanding of per capita income is obtained through economic data compiled by the Alaska Local and Regional Information (ALARI) database maintained by the Alaska Department of Labor and Workforce Development (DOLWD). According to the ALARI database, residents earned \$58.4 million in total wages in 2010.<sup>22, 23</sup> When matched with the 2010 decennial population, the per capita income equals \$18,245, which is slightly less than the 2010 ACS estimate.

According to 2006-2010 ACS estimates, 70.8% of residents aged 16 and over were part of the civilian labor force in 2010. In that year, unemployment was estimated at 14.7%, compared to an estimated 5.9% statewide; and an estimated 15.3% of residents lived below the poverty line, compared to an estimated 9.5% of Alaskan residents overall. In addition, an estimated 59.3% worked in the private sector, an estimated 36.5% worked in the public sector, an estimated 3.8% were self-employed, and an estimated 0.4% were unpaid family workers. Based on unemployment insurance claimants, the DOLWD estimated that the local unemployment rate was 11.3% in 2010.

By industry, the 2006-2010 ACS estimated that most (40.7%) employed residents worked in education services, health care, and social assistance sectors in 2010; followed by retail trade sectors (11.2%); transportation, warehousing, and utilities sectors (11.2%); and public administration sectors (11.1%). Also in that year, an estimated 4.6% of employed residents worked in sectors which included fisheries. Between 2000 and 2010, significant proportion gains were seen in public administration, education services, health care and social assistance sectors. Conversely, significant proportional declines were seen in professional, scientific, management, administrative, and waste management sectors (Figure 3).

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<sup>19</sup> 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>.

<sup>20</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>21</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>22</sup> ALARI estimates based on wages reported for unemployment insurance purposes. Estimates do not include self-employed or federally employed residents.

<sup>23</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/>.



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

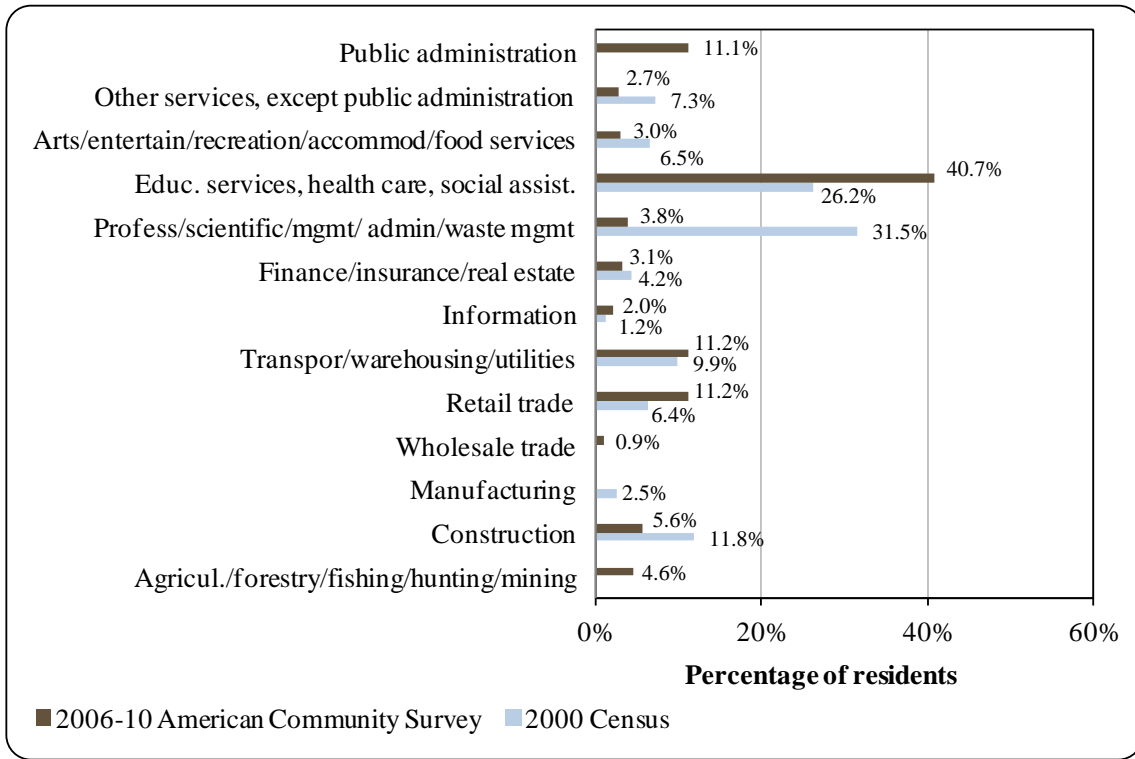
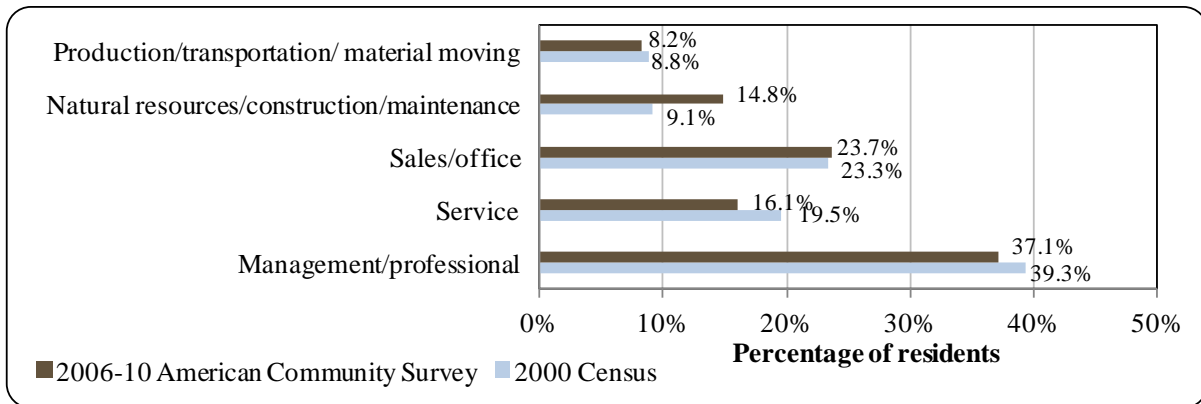


Figure 4. Local Employment by Occupation in 2000-2010, Kotzebue (U.S. Census).



By occupation type, the 2006-2010 ACS estimated that most (37.1%) employed residents held management or professional positions; followed by sales or office positions (23.7%); service positions (16.1%); natural resources, construction, or maintenance positions (14.8%); and production, transportation, or material moving positions (8.2%). For the most part, no significant proportional changes occurred between 2000 and 2010, although there was a modest proportional increase in the number of natural resources, construction, and maintenance positions. However, the proportion attributed to fisheries positions cannot be determined. Another source of occupation data is the ALARI database. According 2010 ALARI estimates,

most (26.9%) residents worked in educational and health service sectors; followed by local government sectors (23.0%); and trade, transportation, and utilities sectors (16.8%) (Figure 4).<sup>24</sup>

## Governance

Kotzebue is a second-class city located in the Northwest Arctic Borough. Incorporated in 1958, the city has a manager, or “Strong Mayor” form of government. There is a 7-member city council, 11-member school board, 7-member planning commission, and 6 municipal employees. There is also a U.S. Bureau of Indian Affairs recognized tribal government. The Alaska Native Claims Settlement Act (ANCSA) chartered regional corporation representing Kotzebue is the NANA Regional Corporation, and the local ANCSA-chartered non-profit is the Maniilaq Association. The ANCSA-chartered village corporation is the Kikiktagruk Inupiat Corporation.

There is an Alaska Department of Fish and Game (ADF&G) office located in Kotzebue. The closest National Marine Fisheries Service (NMFS) office is located in Anchorage 549 miles southeast. The closest U.S. Bureau of Citizenship and Immigration Services is located in Nome, 181 miles southwest.

The City collects a 6% sales tax, 6% accommodations tax, 6% alcohol tax, and 6% gaming tax. In 2010, the total municipal budget was \$10.77 million, compared to \$7.63 million in 2000; an increase of 9.2% after adjusting for inflation.<sup>25</sup> Municipal budgets steadily increased between 2000 and 2010, peaking in 2010. Also in that year, sales tax revenues accounted for 29.9% of the municipal budget, compared to 32.3% in 2000. In addition, state allocated Community Revenue Sharing accounted for 2.4% of the municipal budget in 2010, compared to 1.3% from State Revenue Sharing in 2000. State and federal fisheries-related grants awarded to Kotzebue between 2000 and 2010 included \$56,099 for Swan Lake Harbor improvements, \$462,000 for Kotzebue Sound chum salmon enhancement projects, \$45.2 million for DeLong Mountain Harbor construction, and \$27,000 for a fish processor business plan. Information regarding municipal finances can be found in Table 2.

## Infrastructure

### *Connectivity and Transportation*<sup>26</sup>

Air is the primary, year-round means of transportation for residents of Kotzebue. The state-owned Ralph Wien Memorial Airport supports daily jet service to Anchorage and several air taxis to the region’s villages provided by Alaska Airlines, Bering Air, ERA Alaska, and Ryan Air Service. The airport has a 5,900-ft-long by 150-ft-wide main paved runway and 3,876-ft-long by 90-ft-wide crosswind gravel runway. A seaplane base is also operated by the state in Kotzebue. As of June 2012, roundtrip airfare from Anchorage to Kotzebue costs \$462.<sup>27</sup>

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<sup>24</sup> Ibid.

<sup>25</sup> Inflation calculated using 2010 Anchorage CPI from Alaska DOL: <http://labor.alaska.gov/research/cpi/cpi.htm>.

<sup>26</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](http://www.commerce.state.ak.us/dca/commdb/CF_BLOCK.htm).

<sup>27</sup> Airfare calculated using lowest fare. Retrieved November 22, 2011 from [www.travelocity.com](http://www.travelocity.com).

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

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	\$7,630,055	\$2,462,302	\$101,700	\$27,000
2001	\$8,245,475	\$2,438,736	\$115,000	\$12,700,000
2002	\$8,349,876	\$2,379,449	\$126,000	\$32,500,000
2003	\$7,111,582	\$2,405,615	\$127,000	\$462,000
2004	\$8,291,588	\$2,423,193	-	n/a
2005	\$7,712,663	\$2,616,005	-	n/a
2006	\$9,419,213	\$2,727,047	-	n/a
2007	\$9,429,107	\$2,790,336	-	n/a
2008	\$10,131,509	\$2,589,153	-	n/a
2009	\$10,446,645	\$2,930,225	\$257,562	n/a
2010	\$10,770,514	\$3,255,000 <sup>6</sup>	\$255,470	\$56,099

<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](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](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, 2011 from <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, 2011 from [http://www.commerce.state.ak.us/dca/commdb/CF\\_Grants.htm](http://www.commerce.state.ak.us/dca/commdb/CF_Grants.htm).

<sup>6</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](http://www.commerce.state.ak.us/dcra/commfin/CF_FinRec.cfm).

The shipping season lasts 100 days, from early July to early October, when the sound is ice-free. Due to river sediments deposited by the Noatak River 4 miles above Kotzebue, its harbor is shallow. Deep draft vessels must anchor 15 miles out, and cargo is lightered to shore and warehoused. Crowley Marine Services operates shallow draft barges to deliver cargo to area communities. Water taxi services are not available. There are 26 miles of local gravel road used by cars, trucks, and motorcycles during the summer. Snowmobiles are preferred in winter for local transportation.

### *Facilities*<sup>28</sup>

Electricity in Kotzebue is provided by a diesel plant owned by the Kotzebue Electric Association. Kotzebue also uses ten 50-kilowatt wind turbines for supplemental electrical generation. The City operates water and sewage systems. Water is supplied by the 150-million-gallon Vortac Reservoir, located one and a half miles from the city. Water is then treated and stored in a 1.5-million-gallon tank. Before circulation in the water mains, the water is heated with a waste heat recovery system at the electric plant. A washeteria is privately operated within the community. Piped sewage is treated in a 32-acre zero discharge facultative lagoon west of the airport. Around 80% of homes are fully plumbed, and 521 homes are served by the City's water

<sup>28</sup> See footnote 26.

system. A transfer station and Class 2 permitted landfill with balefill is available. Recycling and hazardous waste disposal are also provided.

A public library, recreational and entertainment center, food bank, and Boys & Girls Club are also available in the community. Safety services are provided by the city police department and the state trooper post in Kotzebue itself. The City also maintains its own volunteer fire department with additional fire and rescue services provided by the Maniilaq Air Ambulance and NANA Search and Rescue. Visitor accommodations are provided by Bibber's Bed and Breakfast, Bison's Bed and Breakfast, and the Nullagvik Hotel. The community is also home to the NANA Museum.

With regard to fisheries-related infrastructure, Alaska's Department of Community and Rural Affairs (DCRA) community profile of Kotzebue states that the harbor is shallow and cargo from deep raft vessels must be lightered to shore. DCRA also reports that no public dock space exists for permanent and transient vessels to moor at. However, in the 2011 AFSC survey, community leaders reported that a barge landing area exists in the community and there are plans to construct new dock space for permanent, transient or public moorage in the next 10 years. The current dock infrastructure is serviced by electricity and water although no fuel tanks exist at the dock. Within the next 10 years, Kotzebue hopes to make improvements to its existing dock structure and construct both dry dock space and haul out facilities, although haul out facilities for small boats (less than 60 tons) already exist in the community. Community leaders indicate that limited boat repair and fisheries-related businesses are available in Kotzebue, and that residents typically travel to nearby cities of Nome, Anchorage, and Fairbanks to access fisheries-related businesses and services.

### *Medical Services*<sup>29</sup>

The Maniilaq Medical Health Center provides residents with basic medical services. The hospital is a qualified Acute Care facility. Long-term care is provided at the Kotzebue Senior Center, and specialized care is provided at the Maniilaq Alcohol Program's Maniilaq Camp and the Lake Street House, both operated by the Maniilaq Association. Emergency Services have limited highway coastal and airport access, and are provided by 911 Telephone Service and volunteers.

### *Educational Opportunities*<sup>30</sup>

As of 2011, there were two schools in Kotzebue. The June Nelson Elementary School had 388 students enrolled and 23 teachers. The Kotzebue Middle/High School had 298 students enrolled and 24 teachers.

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<sup>29</sup> Ibid.

<sup>30</sup> Alaska Department of Education and Early Development. (2012). *Statistics and Reports*. Retrieved April 24, 2012 from <http://eed.alaska.gov/stats/>.

## Involvement in North Pacific Fisheries

### *History and Evolution of Fisheries*

Kotzebue residents have been fishing in the regions for at least 600 years. Marine mammals such as seal and beluga are of primary importance, and their capture is always a cause for celebration. Salmon, whitefish, sheefish, and Arctic char are major fish species sought for subsistence. They are all used commercially by the Kotzebue Sound Area Fisheries Cooperative.<sup>31</sup> The Cooperative owns and operates a local processing plant and acts as a catalyst for organizing local fishermen to work together in commercial fishing. In a survey conducted by the AFSC in 2011, community leaders reported that the commercial gillnet salmon season typically runs from July 12 to August 15. In addition, community leaders reported an increase in the number of vessels shorter than 35 ft, compared to 2005.

The summer chum season runs from July through August, and is focused on Noatak and Kobuk River chum. Small numbers of sockeye, Chinook, coho, and pink salmon also occur, but their contribution to commercial harvests is negligible. Dolly Varden are at times, incidentally caught in the last weeks of the commercial salmon season.<sup>32</sup>

From 1914 to 1918, the Midnight Sun Packing Company operated a small cannery in the Kotzebue district and processed slightly over 100,000 fish. However, between 1918 and 1961, no commercial fishing took place. The present commercial fishery began in 1962, primarily for chum salmon. Most fishing takes place along and within a 10-mile-side channel between the Baldwin Peninsula and Sheshalik Spit. Fishing is closely regulated during the early season when most of the fish are passing through the district, bound for the Kobuk River. The commercial season is set later to harvest the large run of chum salmon to the Noatak River.<sup>33</sup>

Commercial catches vary from year to year due to changes in migration patterns of chum salmon. Fishing usually begins in mid-July when fishermen in small outboard skiffs fish set gillnets. Kotzebue chum salmon are of high quality and are in high demand. Fish are dressed with heads on, iced, and transported to offshore Japanese freezer ships or shipped to Anchorage or Seattle markets. Commercial fisheries for Arctic char and inconnu (whitefish) also occur. Arctic char run later than salmon, and are fished following the salmon season. Funding for the State-owned Sikusuliaq Springs Fish Hatchery on the Noatak River was discontinued in 1983. The State had invested close to \$20 million in capital improvement and operating costs of the hatchery.<sup>34</sup> The hatchery closed in 1996; however, runs continued until 2000.<sup>35</sup>

A commercial fishery for sheefish has operated in the Kotzebue Sound since the 1960s, but it is historically small and does not contribute significantly to the local economy. In most years, sheefish quota was not met, and the fishery remained open throughout the winter.

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<sup>31</sup> Alaska State Housing Authority. (1971). *Kotzebue, Alaska Comprehensive Development Plan*. Retrieved August 17, 2012 from: <http://www.commerce.state.ak.us/dca/plans/Kotzebue-CP-1971.pdf>.

<sup>32</sup> Georgette, S. and Loon, H. (1993). *Subsistence Use of Fish and Wildlife in Kotzebue, a Northwest Alaska Regional Center*. Technical Paper No. 167. Alaska Dept. of Fish and Game. Retrieved August 22, 2012 from: <http://www.subsistence.adfg.state.ak.us/TechPap/tp167.pdf>.

<sup>33</sup> Stoops, L. (2004). *Northwest Arctic Borough Comprehensive Economic Development Strategy*. Retrieved August 20, 2012 from: <http://www.commerce.state.ak.us/dca/plans/NorthwestArcticBorough-EDP-2004.pdf>.

<sup>34</sup> Ibid.

<sup>35</sup> Eggers, D. M.; and Clark, J. H. (2006). *Assessment of Historical Runs and Escapement Goals for Kotzebue Area Chum Salmon*. Fishery Manuscript No. 06-01. Retrieved August 22, 2012 from: <http://www.sf.adfg.state.ak.us/FedAidpdfs/fms06-01.pdf>.

Fishermen use gill setnets under ice, and most commercial catch is sold to local residents or kept for personal use.<sup>36</sup> No sheefish have been fished commercially since 2005.

Kotzebue is located in the Arctic Management Area and thus is not located within a Federal Statistical and Reporting Area, a Pacific Halibut Fishery Regulatory Area, or a Sablefish Regulatory Area. Kotzebue is not eligible to participate in either the Community Development Quota program or the Community Quota Entity program.

### *Processing Plants*

According to the ADF&G's 2010 Intent to Operate list, Kotzebue does not have a registered processing plant. The closest seafood processor is located in Nome.

Attracting commercial seafood processors to Kotzebue has been difficult because of the small size and unpredictability of local fisheries, as well as depressed market conditions. Chum harvests historically have been dictated largely by market conditions; which have fluctuated greatly, resulting in low harvests numbers in many years. Commercial chum salmon harvests between 1982 and 2001 ranged from 55,907 to 521,406 with a 20 year average of 220,720 fish. Between 1997 and 2001; however, chum salmon harvests decreased significantly. While many residents held commercial salmon permits, most permits remained inactive during recent years. Permit activity was likely market-driven and in 2002, the last significant local fish buyer decided to not purchase fish in Kotzebue. In 2002 and 2003, one salmon permit holder became a licensed agent for a buyer outside of Kotzebue, and worked with other permit holders to provide product for the market. In 2004, one buyer provided a limited local market for permit holders.<sup>37</sup> In that year, there was a fish processor operated under a combined effort by the Bering Sea Fishermen's Association and NANA Regional Corp.<sup>38</sup>

### *Fisheries-Related Revenue*

Between 2000 and 2010, there was no known fisheries-related revenue received by the community of Kotzebue, with the exception of \$475 in Shared Fisheries Business Taxes in 2006 (Table 3).

### *Commercial Fishing*

Commercial fishing effort in Kotzebue is predominately focused on Noatak River chum salmon.<sup>39</sup> Local fish are caught in Sub-district 1 of the Kotzebue Sound District. Historical chum harvests between 1962 and 2004 averaged 201,250 fish.<sup>40</sup> In 2000, 144 residents held 147 commercial fishing permits issued by the Commercial Fisheries Entry Commission (CFEC). The number of CFEC permits held by residents peaked in 2005 at 157. In 2010, 155 residents, or 4.8% of the population, held 148 CFEC permits. Of the CFEC permits held in 2010, 97% were for salmon, compared to 96% in 2000; 1% were for crab, compared to 1% in 2000; 1% were for

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<sup>36</sup> See footnote 32.

<sup>37</sup> See footnote 35.

<sup>38</sup> See footnote 33.

<sup>39</sup> Alaska Dept. of Fish and Game. (n.d.). *Northwest Drainages Management Area*. Retrieved August 22, 2012 from: <http://www.adfg.alaska.gov/index.cfm?ADFG=ByAreaInteriorNorthwest.moreoverview>.

<sup>40</sup> See footnote 35.

herring, compared to 0% in 2000; and 1% were for “other” finfish, compared to 3% in 2000. Between 2000 and 2010, no residents held Federal Fisheries Permits (FFP) or License Limitation Program (LLP) permits. In addition, no residents participated in federal catch share fisheries for halibut, crab, or sablefish between 2000 and 2010. Fisheries prosecuted by Kotzebue residents in 2010 included: Kotzebue gillnet salmon, Norton Sound gillnet salmon, and statewide power troll salmon.<sup>41</sup>

Residents held 98 commercial crew licenses in 2010, compared to 87 in 2000; marking a decadal peak for number of crew licenses held in the community. In addition, residents held majority ownership of four vessels that year, compared to six in 2000. Fisheries participation varied significantly between 2000 and 2010. In 2010, 40% of CFEC permits held were actively fished, compared to 38% in 2000. Permit activity was at its lowest 2001 and 2002 at 2% of permits fished. Permit activity varied by fishery in 2010, from 41% of salmon permits fished, to 0% of crab, herring, and “other” finfish permits. “Other” finfish permits were actively fished between 2001 and 2005, while crab permits were only actively fished in 2005. No herring permits were actively fished between 2000 and 2010.

No landings were reported in Kotzebue between 2000 and 2010, although there were between one and four fish buyers registered there. Landings were reported in the community in 2001, 2004, 2005, 2006, and 2007. Total landings for those years are considered confidential, with the exception of 2005. In that year, 626,418 pounds of seafood were landed, valued at \$129,304 ex-vessel. Landings by species in Kotzebue are considered confidential. Landings reported by residents between 2000 and 2010 are also considered confidential. Further information regarding commercial fishing trends can be found in Tables 4 through 10.

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<sup>41</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.]

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

Revenue source	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Raw fish tax <sup>1</sup>	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 <sup>1</sup>	n/a	n/a	n/a	n/a	n/a	n/a	\$475	n/a	n/a	n/a	n/a
Fisheries Resource Landing Tax <sup>1</sup>	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 <sup>2</sup>	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 <sup>2</sup>	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 <sup>1</sup>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Boat hauls <sup>2</sup>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Harbor usage <sup>2</sup>	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 <sup>2</sup>	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 <sup>3</sup>	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 <sup>3</sup>	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
<b>Total fisheries-related revenue<sup>4</sup></b>	n/a	n/a	n/a	n/a	n/a	n/a	\$475	n/a	n/a	n/a	n/a
<b>Total municipal revenue<sup>5</sup></b>	\$7.63 M	\$8.25 M	\$8.35 M	\$7.11 M	\$8.29 M	\$7.71 M	\$9.42 M	\$9.43 M	\$10.13 M	\$10.45 M	\$10.77 M

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](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](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 in its annual municipal budgets. 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](http://www.commerce.state.ak.us/dcra/commfin/CF_FinRec.cfm).



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

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	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	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	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Total permit holders	0	0	0	0	0	0	0	0	0	0	0
Federal Fisheries Permits <sup>1</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	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Total permit holders	0	0	0	0	0	0	0	0	0	0	0
Crab (CFEC) <sup>2</sup>	Total permits	1	0	3	2	2	4	3	3	2	1	2
	Fished permits	0	0	0	0	0	1	0	0	0	0	0
	% of permits fished	0%	n/a	0%	0%	0%	25%	0%	0%	0%	0%	0%
	Total permit holders	1	0	3	2	2	4	3	3	2	1	2
Other shellfish (CFEC) <sup>2</sup>	Total permits	1	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	0%	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Total permit holders	1	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	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Total permit holders	0	0	0	0	0	0	0	0	0	0	0
Herring (CFEC) <sup>2</sup>	Total permits	0	0	1	1	1	1	1	1	1	1	1
	Fished permits	0	0	0	0	0	0	0	0	0	0	0
	% of permits fished	n/a	n/a	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Total permit holders	0	0	1	1	1	1	1	1	1	1	1

Table 4 cont'd. Permits and Permit Holders by Species, Kotzebue: 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	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	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	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Total permit holders	0	0	0	0	0	0	0	0	0	0	0
Other Finfish (CFEC) <sup>2</sup>	Total permits	4	5	5	6	5	6	2	3	1	1	1
	Fished permits	0	1	1	1	1	2	0	0	0	0	0
	% of permits fished	0%	20%	20%	17%	20%	33%	0%	0%	0%	0%	0%
	Total permit holders	4	5	5	6	5	5	2	3	1	1	1
Salmon (CFEC) <sup>2</sup>	Total permits	141	142	142	143	144	146	149	147	145	149	144
	Fished permits	56	58	2	2	37	39	42	46	47	60	59
	% of permits fished	40%	41%	1%	1%	26%	27%	28%	31%	32%	40%	41%
	Total permit holders	141	148	141	143	146	145	151	150	148	152	154
<i>Total CFEC Permits<sup>2</sup></i>	<i>Permits</i>	<i>147</i>	<i>147</i>	<i>151</i>	<i>152</i>	<i>152</i>	<i>157</i>	<i>155</i>	<i>154</i>	<i>149</i>	<i>152</i>	<i>148</i>
	<i>Fished permits</i>	<i>56</i>	<i>59</i>	<i>3</i>	<i>3</i>	<i>38</i>	<i>42</i>	<i>42</i>	<i>46</i>	<i>47</i>	<i>60</i>	<i>59</i>
	<i>% of permits fished</i>	<i>38%</i>	<i>40%</i>	<i>2%</i>	<i>2%</i>	<i>25%</i>	<i>27%</i>	<i>27%</i>	<i>30%</i>	<i>32%</i>	<i>39%</i>	<i>40%</i>
	<i>Permit holders</i>	<i>144</i>	<i>151</i>	<i>144</i>	<i>145</i>	<i>148</i>	<i>149</i>	<i>153</i>	<i>152</i>	<i>149</i>	<i>152</i>	<i>155</i>

<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.]

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

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 Kotzebue <sup>2</sup>	Total Net Pounds Landed in Kotzebue <sup>2,5</sup>	Total Ex-Vessel Value of Landings in Kotzebue <sup>2,5</sup>
2000	87	1	0	6	6	0	--	--
2001	87	3	0	5	4	7	--	--
2002	2	3	0	5	5	0	--	--
2003	3	2	0	4	3	0	--	--
2004	55	4	1	2	2	1	--	--
2005	51	5	1	8	8	4	626,418	\$129,304
2006	57	2	0	5	4	2	--	--
2007	51	2	0	5	3	1	--	--
2008	51	2	0	3	1	0	--	--
2009	91	2	0	3	1	0	--	--
2010	98	4	0	4	3	0	--	--

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

<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.

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

<b>Year</b>	<b>Number of Halibut Quota Share Account Holders</b>	<b>Halibut Quota Shares Held</b>	<b>Halibut IFQ Allotment (Pounds)</b>
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 Kotzebue: 2000-2010.

<b>Year</b>	<b>Number of Sablefish Quota Share Account Holders</b>	<b>Sablefish Quota Shares Held</b>	<b>Sablefish IFQ Allotment (Pounds)</b>
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 Kotzebue: 2000-2010.

<b>Year</b>	<b>Number of Crab Quota Share Account Holders</b>	<b>Crab Quota Shares Held</b>	<b>Crab IFQ Allotment (Pounds)</b>
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 Kotzebue: 2000-2010.

	<i>Total Net Pounds<sup>1</sup></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	--	--	--	--	--	--	--	--	--	--	--
Finfish	--	--	--	--	--	--	--	--	--	--	--
Halibut	--	--	--	--	--	--	--	--	--	--	--
Herring	--	--	--	--	--	--	--	--	--	--	--
Other Groundfish	--	--	--	--	--	--	--	--	--	--	--
Other Shellfish	--	--	--	--	--	--	--	--	--	--	--
Pacific Cod	--	--	--	--	--	--	--	--	--	--	--
Pollock	--	--	--	--	--	--	--	--	--	--	--
Sablefish	--	--	--	--	--	--	--	--	--	--	--
Salmon	--	--	--	--	--	--	--	--	--	--	--
<i>Total<sup>2</sup></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	--	--	--	--	--	--	--	--	--	--	--
Finfish	--	--	--	--	--	--	--	--	--	--	--
Halibut	--	--	--	--	--	--	--	--	--	--	--
Herring	--	--	--	--	--	--	--	--	--	--	--
Other Groundfish	--	--	--	--	--	--	--	--	--	--	--
Other Shellfish	--	--	--	--	--	--	--	--	--	--	--
Pacific Cod	--	--	--	--	--	--	--	--	--	--	--
Pollock	--	--	--	--	--	--	--	--	--	--	--
Sablefish	--	--	--	--	--	--	--	--	--	--	--
Salmon	--	--	--	--	--	--	--	--	--	--	--
<i>Total<sup>2</sup></i>	--	--	--	--	--	--	--	--	--	--	--

*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.

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

	<i>Total Net Pounds<sup>1</sup></i>										
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Crab	--	--	--	--	--	--	--	--	--	--	--
Finfish	--	--	--	--	--	--	--	--	--	--	--
Halibut	--	--	--	--	--	--	--	--	--	--	--
Herring	--	--	--	--	--	--	--	--	--	--	--
Other Groundfish	--	--	--	--	--	--	--	--	--	--	--
Other Shellfish	--	--	--	--	--	--	--	--	--	--	--
Pacific Cod	--	--	--	--	--	--	--	--	--	--	--
Pollock	--	--	--	--	--	--	--	--	--	--	--
Sablefish	--	--	--	--	--	--	--	--	--	--	--
Salmon	--	--	--	--	--	--	--	--	--	--	--
<i>Total<sup>2</sup></i>	--	--	--	--	--	--	--	--	--	--	--
	<i>Ex-vessel Value (nominal U.S. dollars)</i>										
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Crab	--	--	--	--	--	--	--	--	--	--	--
Finfish	--	--	--	--	--	--	--	--	--	--	--
Halibut	--	--	--	--	--	--	--	--	--	--	--
Herring	--	--	--	--	--	--	--	--	--	--	--
Other Groundfish	--	--	--	--	--	--	--	--	--	--	--
Other Shellfish	--	--	--	--	--	--	--	--	--	--	--
Pacific Cod	--	--	--	--	--	--	--	--	--	--	--
Pollock	--	--	--	--	--	--	--	--	--	--	--
Sablefish	--	--	--	--	--	--	--	--	--	--	--
Salmon	--	--	--	--	--	--	--	--	--	--	--
<i>Total<sup>2</sup></i>	--	--	--	--	--	--	--	--	--	--	--

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*

Tourism is a rapidly growing industry in Kotzebue, driven in large part to sport hunting and fishing. Tourism infrastructure has been expanding. NANA Regional Corp. opened a new 78 room hotel in Kotzebue in 2011.<sup>42</sup> Golden Eagle Outfitters provides guided sportfishing excursions, targeting Dolly Varden, northern pike, sheefish, Arctic grayling, and chum salmon.<sup>43</sup> Sheefish are a popular target for private anglers on the Kobuk River, as the river supports one of the largest sheefish populations in the world. Typically, private anglers based in Kotzebue will fly to remote locations on the Upper Kobuk to target this species. The communities of Ambler

<sup>42</sup> Associated Press. (2011, August 31). NANA development opens new Kotzebue hotel. *Anchorage Daily News*. Retrieved August 22, 2012 from: <http://www.adn.com/2011/08/31/2041468/nana-development-opens-new-kotzebue.html>.

<sup>43</sup> Golden Eagle Outfitters. (n.d.). *Kotzebue*. Retrieved August 22, 2012 from: <http://www.alaskawildernessexpeditions.com/kotzebue.html>.

and Kobuk are seasonally inundated with recreational fishermen, many of whom originate in Kotzebue or Bettles. Float excursions are a popular activity, and many large parties will spend days floating the Kobuk as far downriver as Kiana. Most sheefish sportfishing is conducted in August and September. By mid-September, most recreational fishermen on the Kobuk River fish for sheefish only as a secondary attraction, with most their efforts focused on hunting moose and caribou.<sup>44</sup> Dolly Varden, northern pike, Arctic grayling, burbot, lake trout, and Arctic char are also popular targets within the Kobuk River watershed.<sup>45</sup>

No sport fish guide businesses actively operated in Kotzebue between 2000 and 2010 despite several being registered between those years. However, one sport fish guide license was issued in 2010. Also in that year, 438 sportfishing licenses were sold in the community, compared to 101 in 2000. The number of sportfishing licenses sold in the community peaked in 2010. In addition, Kotzebue residents held 389 sportfishing licenses in 2010, compared to 329 in 2000. The number of sportfishing licenses held by residents peaked in 2007 at 514. According to ADF&G Harvest Survey records, private anglers from Kotzebue have targeted all five species of Pacific salmon, rainbow trout, Dolly Varden, whitefish, burbot, Arctic grayling, northern pike, sheefish, Pacific halibut, smelt, and razor clams. In a survey conducted by the AFSC in 2011, community leaders reported that local anglers generally target pink and chum salmon, crab, shrimp, and clams. Species-specific harvest information from charter logbook records is not available for Kotzebue.

Kotzebue is located within Alaska Sport Fishing Survey Area X – Northwest Alaska, which include the drainages of Selawik, Kobuk, Noatak, Wulik, and Kivalina rivers and all saltwater in the northern half of Kotzebue Sound to and including Point Hope. Information on saltwater angler days fished for 2010 is unavailable. Otherwise, angler days fished on marine waters was insignificant between 2000 and 2009. Total saltwater angler days fished peaked in 2008 at 420 with non-Alaskan residents accounting for the majority of recreational fishing effort. In 2010, freshwater angler days fished totaled 1,088, compared to 1,401 in 2000. Total freshwater angler days fished peaked in 2003 at 1,873. Non-Alaskan residents accounted for 35.3% of freshwater angler days fished in 2010, compared to 31.3% in 2000. Overall, Alaskan residents comprise a larger portion of freshwater angler days fished than non-Alaskan residents. Information regarding recreational fishing trends can be found in Table 11.

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<sup>44</sup> Georgette, S.; and Loon, H. (1990). *Subsistence and Sport Fishing of Sheefish on the Upper Kobuk River, Alaska*. Technical Paper No. 175. Retrieved August 22, 2012 from: <http://www.subsistence.adfg.state.ak.us/TechPap/tp175.pdf>.

<sup>45</sup> Alaska Dept. of Fish and Game. (n.d.). *Northwest Drainages Management Area*. Retrieved August 22, 2012 from: <http://www.adfg.alaska.gov/index.cfm?ADFG=ByAreaInteriorNorthwest.moreoverview>.

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

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 Kotzebue <sup>2</sup>
2000	0	1	329	101
2001	0	0	355	136
2002	0	0	356	83
2003	0	0	349	83
2004	0	0	345	260
2005	0	0	307	186
2006	0	1	432	329
2007	0	1	514	265
2008	0	4	419	290
2009	0	2	389	264
2010	0	1	421	438

Year	Saltwater		Freshwater	
	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	14	201	438	966
2001	44	86	509	801
2002	27	15	275	973
2003	298	17	934	939
2004	115	19	450	709
2005	35	308	408	510
2006	36	35	394	875
2007	79	27	237	763
2008	352	68	512	639
2009	251	n/a	347	913
2010	n/a	n/a	356	732

<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*

Subsistence activities are extremely important to Kotzebue residents, and for many residents, participation in subsistence activities supplement or replace wage employment. In many cases, unemployment statistics are often misleading since many residents are working, although not in “occupations” captured by traditional labor statistics.

The subsistence season begins each year at spring ice breakup, usually in May. During breakup, travel becomes increasingly difficult, and many residents move to seasonal subsistence camps on the coast northwest of Kotzebue before travelling on ice becomes unsafe. When the water becomes open enough to permit boat travel, local hunters go out in search of marine mammals, particularly bearded seal, but also ringed seal and walrus. Migrating waterfowl are also hunted, and their eggs are gathered when available. Near Kotzebue, residents continue to jig for sheefish on the last remnants of shoreside ice. As the ice clears, residents fish for herring, whitefish, and Dolly Varden. Beluga whale hunting also begins at this time. From a subsistence perspective, May through July is the busiest time of year for harvesting. With cool, dry weather, oil and “black meat” (half-dried bearded seal) is produced from harvested seal.<sup>46</sup>

Summer arrives in late June or July. At this time many residents turn their efforts towards salmon fishing for both subsistence and commercial purposes. Berry picking begins around this time, and many residents gather salmonberries, blueberries, blackberries, and cranberries. Incidental Dolly Varden harvesting begins in early August. Salmon fishing concludes around the end of August, while berry picking continues through September. Migrating caribou herds make their way through the area around the beginning of fall in late August. Both caribou and moose are hunted during this time. As sea ice begins to form in October, Kotzebue hunters pursue young bearded seals and spotted seals. Saffron cod (tomcod) are jigged on ice forming near shorelines. During the winter, caribou, moose, ptarmigan, and hare are hunted. Wolf, wolverine, and fox are also hunted or trapped for furs. In early winter, nets are set under the ice in the Hotham Inlet to fish for sheefish. In late winter, sheep hunting takes place in the Baird Mountains, and moose, caribou, seal, and fur bearer hunting continues.<sup>47</sup>

Seasonal subsistence patterns are particularly susceptible to variations in weather, temperature, travel conditions, and species availability. Long term changes also can occur as a result of diminishing wildlife populations, climate change, and habitat regime shifts.<sup>48</sup>

In a 1993 survey of Kotzebue households, an estimated 23.1% harvested marine mammals (principally bearded seals), an estimated 51.3% harvested salmon, an estimated 44.8% harvested sheefish, and an estimated 38.3% harvested Dolly Varden. Overall, an estimated 75.1% of households harvested fish that year.<sup>49</sup>

ADF&G subsistence data are limited for 2000 through 2010. Information regarding subsistence participation by household is unavailable. Significant data on salmon harvests are only available for 2000 and 2001. In 2001, residents reported harvesting 17,713 chum salmon, compared to 36,896 in 2000. The significant decline in salmon harvests could possibly be attributed to cyclical variations in annual chum runs. Between 2000 and 2008, Chinook, pink, coho, and pink salmon were also harvested, but to a lesser degree. Subsistence Halibut Registration Certificates were held by residents in 2007 through 2009, however there were no

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<sup>46</sup> See footnote 44.

<sup>47</sup> Ibid.

<sup>48</sup> Ibid.

<sup>49</sup> Ibid.

reports of halibut harvests. Between 2000 and 2010, an estimated 89 beluga whales, 10 sea otters, 8 walrus, and 6 polar bears were harvested. Beluga whale harvests significantly peaked in 2007 at 69 animals. No information is available regarding Steller sea lion, spotted seal, and harbor seal harvests.

According to ADF&G *Community Subsistence Information System* records, “other” species Kotzebue residents use or harvest include king crab, mussels, pinkneck calms, razor clams, shrimp, Tanner crab, bearded seal, bowhead whale, gray whale, minke whale, ribbon seal, ringed seal, spotted seal, Bering cisco, blackfish, broad whitefish, burbot, Dolly Varden, Arctic grayling, herring, humpback whitefish, least cisco, northern pike, saffron cod, sheefish, and sucker. Information regarding subsistence trends can be found in Tables 12 through 15.

### Additional Information

In a survey conducted by the AFSC in 2011, community leaders expressed concern over a lack of funds available to develop local fisheries. Leaders expressed that the community was being adversely affected by not being able to participate in the CFQ program. They also contend that outside CDQ groups are attempting to expand their effort into Kotzebue area fisheries, and local fishermen lacks the funds to compete. Finally, the Magnuson Stevens Act prevents Kotzebue from directly negotiating with Japan and requires the community to sell product through intermediaries.

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

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

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

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

Table 13. Subsistence Fishing Participation for Salmon, Marine Invertebrates, and Non-Salmon Fish, Kotzebue: 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	780	186	205	36,896	636	n/a	n/a	n/a	n/a
2001	793	156	7	17,713	n/a	25	35	n/a	n/a
2002	3	3	1	n/a	n/a	n/a	44	n/a	n/a
2003	1	1	1	n/a	n/a	n/a	29	n/a	n/a
2004	2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2005	1	1	n/a	n/a	n/a	n/a	15	n/a	n/a
2006	2	2	1	n/a	n/a	n/a	8	n/a	n/a
2007	1	1	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2008	7	4	2	n/a	n/a	n/a	76	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).

Table 14. Subsistence Halibut Fishing Participation, Kotzebue: 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	1	n/a	n/a
2008	2	n/a	n/a
2009	2	n/a	n/a
2010	1	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, Kotzebue: 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	9	n/a	1	2	n/a	n/a	n/a
2002	4	n/a	1	n/a	n/a	n/a	n/a
2003	n/a	n/a	1	1	n/a	n/a	n/a
2004	1	n/a	2	n/a	n/a	n/a	n/a
2005	1	n/a	n/a	n/a	n/a	n/a	n/a
2006	2	n/a	1	n/a	n/a	n/a	n/a
2007	69	7	2	1	n/a	n/a	n/a
2008	1	n/a	n/a	1	n/a	n/a	n/a
2009	2	n/a	n/a	1	n/a	n/a	n/a
2010	n/a	3	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.