

Tyonek (tie-OH-neck)



People and Place

*Location*¹

Tyonek lies on a bluff on the northwest shore of Cook Inlet, 43 miles southwest of Anchorage. Tyonek is not located directly on the Kenai Peninsula. Tyonek is located in the Anchorage Recording District, the Kenai Peninsula Census Area, and the Kenai Peninsula Borough.

*Demographic Profile*²

In 2010, there were 171 inhabitants in Tyonek, making it the 210th largest of 352 total Alaskan communities with recorded populations that year. Overall since 1990, the population of Tyonek increased by 11%. The change in population from 1990 to 2010 is provided in Table 1.

In 2010, a majority of Tyonek residents identified themselves as American Indian and Alaska Native (88.3%). Other ethnic groups present in Tyonek in that year included White (5.3%), two or more races (6.4%), and Hispanic or Latino (5.3%). Between 2000 and 2010, the percentage of the population identifying themselves as American Indian and Alaska Native decreased by 7%, with corresponding increased in the percentages of the population identifying themselves as White, two or more races, and Hispanic or Latino. Changes in racial and ethnic composition from 2000 to 2010 are shown in Figure 1.

The average household size in Tyonek in 2010 was 2.44, a decrease from 2.8 persons per household in 1990 and 2.92 in 2000. The total number of households in Tyonek increased from 55 in 1990 to 66 in 2000 to 70 occupied housing units by 2010. Of the 144 housing units surveyed for the 2010 Decennial Census, 46 were owner-occupied, 24 were renter-occupied, and 74 were vacant or used only seasonally. Throughout this period no residents of Tyonek were reported to be living in group quarters.

The gender makeup of Tyonek in 2010 was 56.1% male and 43.9% female, slightly more skewed than the state as a whole (52% male, 48% female). The median age was estimated to be 33.6 years, lower than both the U.S. national average of 36.8 years and the median age for Alaska, 33.8 years. The greatest percentage of the population fell within the age group 0 to 9 years in 2010, while the second greatest percentage fell within the age group 50 to 59 years. The overall population structure of Tyonek in 2000 and 2010 is shown in Figure 2.

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

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

According to the 2006-2010 American Community Survey (ACS),³ in terms of educational attainment, 85.4% of Tyonek 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, 4.2% of residents aged 25 and older were estimated to have less than a ninth grade education, compared to 3.5% of Alaskan residents overall; 10.4% were estimated to have a ninth to 12th grade education but no diploma, compared to 5.8% of Alaskan residents overall; 64.6% were estimated to have a high school diploma or equivalent, compared to 27.4% of Alaskan residents overall; and 20.8% were estimated to have some college but no degree, compared to 28.3% of Alaskan residents overall. There were no Tyonek residents estimated to have an Associate’s degree, a Bachelor’s degree, or a graduate or professional degree in 2010.

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

Year	U.S. Decennial Census ¹	Alaska Dept. of Labor Estimate of Permanent Residents ²
1990	154	-
2000	193	-
2001	-	161
2002	-	181
2003	-	192
2004	-	185
2005	-	199
2006	-	199
2007	-	179
2008	-	154
2009	-	166
2010	171	-

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

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

³ 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.

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

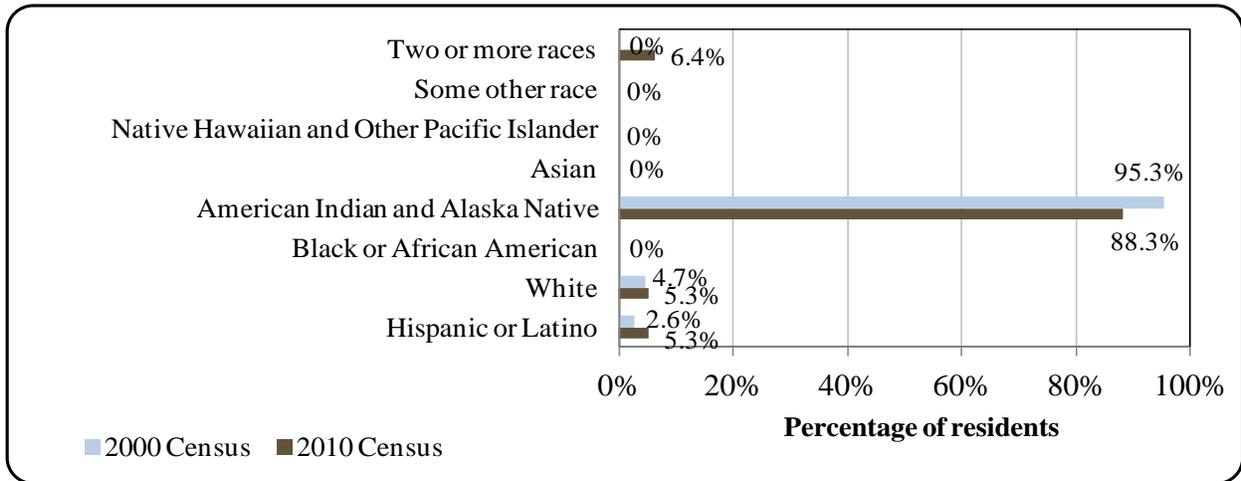
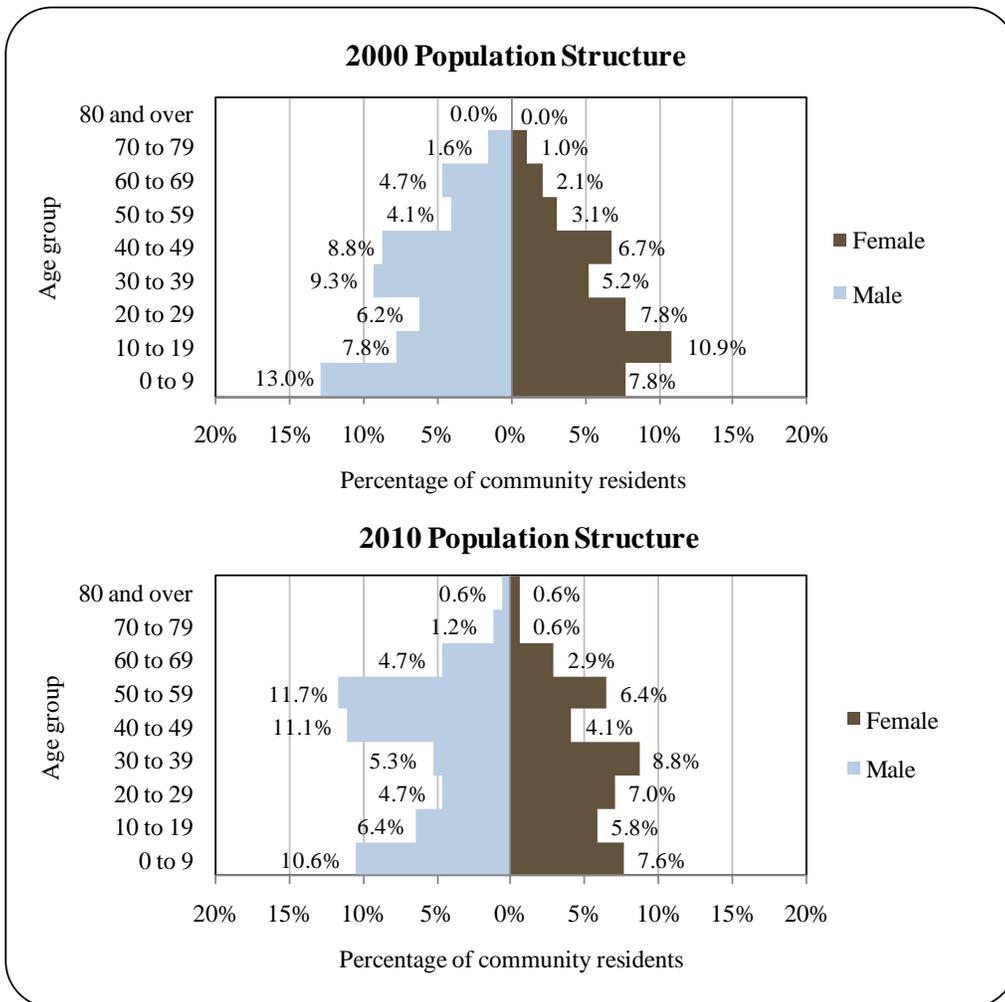


Figure 2. Population Age Structure in Tyonek Based on the 2000 and 2010 U.S. Decennial Census.



*History, Traditional Knowledge, and Culture*⁴

Tyonek is a Dena'ina Athabascan village practicing a subsistence lifestyle. Various settlements in this area include Old Tyonek Creek, Robert Creek, Timber Camp, Beluga, and Moquawkie Indian Reservation. Captain Cook's journal provides a description of the Upper Cook Inlet Athabascans in 1778 who possessed iron knives and glass beads. He concluded that the Natives were trading indirectly with the Russians. Russian trading settlements were established at "Tuiunuk" and Iliamna prior to the 1790s but were destroyed due to dissension between the Natives and the Russians. Between 1836 and 1840, half of the region's Indians died from a smallpox epidemic. The Alaska Commercial Company had a major outpost in Tyonek by 1875. In 1880, "Tyonok" station and village, believed to be two separate communities, had a total of 117 residents, including 109 Athabascans, six "creoles", and two whites. After gold was discovered at Resurrection Creek in the 1880s, Tyonek became a major disembarkation point for goods and people. A saltery was established in 1896 at the mouth of the Chuitna River north of Tyonek.

In 1915, the Tyonek Reservation (also known as Moquawkie Indian Reservation) was established. The devastating influenza epidemic of 1918-19 left few survivors among the Athabascans. The village was moved to its present location atop a bluff when the old site near Tyonek Timber flooded in the early 1930s. The population declined when Anchorage was founded. In 1965, the federal court ruled that the Bureau of Indian Affairs had no right to lease Tyonek Indian land for oil development without permission of the Athabascans themselves. The tribe subsequently sold rights to drill for oil and gas beneath the reservation to a group of oil companies for \$12.9 million. The reservation status was revoked with the passage of the Alaska Native Claims Settlement Act in 1971. Beluga, a site near Tyonek, is owned by Chugach Electric Association and provides some electricity for Anchorage.

Natural Resources and Environment

Winter temperatures typically range 4 to 22 °F (-15.6 to -5.6 °C); summer temperatures average from 46 to 65 °F (7.8 to 18.3 °C). Temperature extremes have been recorded from -27 to 91 °F (-32.8 to 32.8 °C). Average annual precipitation is 23 inches, with 82 inches of snow.⁵

Tyonek is located near the Lake Clark National Park and Preserve (LACL), an area that is managed by the National Park Service (NPS). The following information was obtained from a report issued by the NPS.⁶ The Chigmit Mountains divide the subpolar marine climate of Cook Inlet from the continental climate of Interior Alaska. Local climatic conditions within these two regimes vary with elevation and the distance from mountains and large bodies of water. LACL encompasses approximately 4 million acres of public and private lands in southwestern Alaska and contains more than 6,000 miles of rivers and streams. The Alaska and Aleutian mountain ranges form a continuous watershed divide separating the coast from the interior. Glacial ice covers approximately 30% of the park. LACL contains 130 miles of coastline in western lower

⁴ 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.

⁵ Ibid.

⁶ Bennett, A. J., W. L. Thompson, and D. C. Mortenson (2006). Vital signs monitoring plan, Southwest Alaska Network. National Park Service, Anchorage, AK. Appendix II: Network Park Ecological Profiles.

Cook Inlet. The rivers emptying into Cook Inlet carry very high loads of suspended sediments, mainly fine glacial flour.

Both white and Sitka spruce grow along the coast. Conifer forests have multi-aged trees with thick moss understory, devil's club, salmonberry, and scattered alder. The center of the park is primarily glacial ice and bedrock or till. Most valley glaciers are in retreat, leaving large expanses of moraines and ground till, which are slowly re-vegetating with mosses and lichens, fireweed and *Dryas*, willow and alder. The western side of the park is dominated by a series of large long lakes with their eastern extents in the Alaska Range and their western edge bounded by terminal moraines from the most recent advances of large valley glaciers. Low ridges and subdued mountains lie between the lake systems. The northern part of the park, by the Stony River, is boreal in character, with black spruce, muskeg, aspen and birch, and subject to wildfire. Further south, vegetation is a mosaic of spruce and mixed spruce/birch or cottonwood forests, paper birch, low shrubs dominated by dwarf birch, dwarf shrub tundra with ericaceous shrubs, scattered wetlands, and alpine tundra.

Intertidal sand flats in some locations within LACL support dense populations of mollusk bivalves, including razor, littleneck, and soft-shell clams. Forty-six species of fish are listed as present or probably present in LACL. In marine waters, small pelagic schooling fish, including capelin, sand lance, eulachon, and Pacific herring, occur in nearshore and estuarine waters, while halibut and gray cod are found offshore. Sockeye salmon are a keystone species in the LACL aquatic and terrestrial ecosystem. Sculpin, least cisco, lake trout, rainbow trout, and burbot all derive nutrients from sockeye salmon in one form or another. Salmon influence the seasonal distribution and abundance of birds and mammals that prey on them. In the interior of the park and preserve, bald eagles are exclusively associated with river-lake systems that support salmon. Bears depend on abundant salmon to bolster fat reserves vital to survival during hibernation. Because much of Lake Clark remains ice-free until February, salmon carcasses support overwintering bald eagles and are an important food resource for an array of vertebrate predators and scavengers, including wolves, coyotes, red fox, wolverine, and lynx.

Thirty-six species of terrestrial mammals are documented or expected to occur within LACL, including moose, Dall sheep, and the Mulchatna caribou herd, which calves adjacent to the western boundary of the preserve. This herd is one of the most important for local subsistence and nonlocal Alaska hunters and heavily supports Alaska's guide and transporter industry. Brown/grizzly bears, common in all habitats, are most numerous along the coast. Black bears use all areas of the park and preserve except the higher elevations. Other terrestrial mammals include wolves, lynx, coyotes, wolverines, porcupines, snowshoe hares, hoary marmots, arctic ground squirrels, and pikas, mink, beaver, river otter, red squirrel, American marten, short tail weasel, and least weasel.

Harbor seals haul out at three sites within LACL and pup near the mouth of the Tuxedni River. Beluga whales seasonally occur off the mouths of glacial rivers in both bays and are most numerous during August and September. Sea otter occasionally stray into LACL waters.

One hundred eighty-nine species of birds are documented or expected to occur in LACL. Bird species occurring within LACL include bald eagle, golden eagle, northern goshawk, sharp-shinned hawk, northern harrier, merlin, osprey, and peregrine falcons. Waterfowl nest and molt in wetlands throughout the area. Large migratory flocks of ducks, swans, and geese rest and feed in the LACL. Sea ducks, primarily white-winged scoters and surf scoters, are the most abundant waterfowl on the coast. The coast also provides important breeding habitat for mallards, American widgeon, Barrow's golden-eye, and red-throated loons. Other waterfowl occurring

within the park include diving ducks, other ducks, trumpeter swans, and Canada geese. Seabird breeding colonies occur along Cook Inlet and concentrate at Tuxedni and Chinitna Bays. Seabird surveys have revealed black-legged kittiwakes, horned puffins, double-crested cormorants, pelagic cormorants, glaucous-winged gulls, tufted puffins, common murre, and pigeon guillemots.

Current Economy⁷

Subsistence activities augment the local economy with salmon, moose, beluga whale, and waterfowl. In 2010, 17 residents held commercial fishing permits. Tyonek offers recreational fishing and hunting guide services. Some residents trap during winter. The North Foreland Port Facility at Tyonek is the preferred site for export of Beluga coal.⁸ Top employers in 2010⁹ included the Native Village of Tyonek, Tyonek Contractors LLC, Tyonek Native Corp., Kenai Peninsula Borough School, Aurora Gas LLC, and Cook Inlet Housing Authority.

In 2010, per capita income in Tyonek was estimated to be \$14,644 and the median household income was estimated to be \$20,625, compared to \$11,261 and \$26,667 in 2000, respectively. Taking inflation into account by converting the 2000 values to 2010 dollars,¹⁰ the real per capita income in 2000 is shown to have been \$14,808 and the real 2000 median household income was \$35,607. This shows a slight decrease in per capita income between 2000 and 2010 and a substantial decrease in median household income during this period. In 2010, Tyonek ranked 209th out of 305 Alaskan communities with per capita income that year, and 275th out of 299 Alaskan communities with household income data. However, Tyonek's small population size may have prevented the ACS from accurately portraying economic conditions.¹¹ A potentially more accurate 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, the per capita income in Tyonek in 2010 was \$9,736, which indicates an even more substantial decrease in per capita income compared to the real per capita income values reported by the U.S. Census in 2000.¹² This is supported by the fact that the community was recognized as "distressed" by the Denali Commission indicating that over 70% of residents aged 16 and older earned less than \$16,120 in 2010.¹³ However, it should be noted that American Community Survey and DOLWD data are based on wage earnings and does not take into account the value of subsistence within the local economy.

⁷ Unless otherwise noted, all monetary data are reported in nominal values.

⁸ 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.

⁹ 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/>.

¹⁰ Inflation was calculated using the Anchorage Consumer Price Index for 2010 (retrieved October 18, 2011 from the Alaska Department of Labor, <http://labor.alaska.gov/research/cpi/inflationcalc.htm>).

¹¹ 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.

¹² See footnote 9.

¹³ Denali Commission (2011). *Distressed Community Criteria 2011 Update*. Retrieved April 16, 2012 from: www.denali.gov.

Based on the 2006-10 ACS, 67.3% of the population age 16 and older was estimated to be in the civilian labor force, compared to the statewide rate of 68.8%. The local unemployment rate was 28.2%, compared to the statewide unemployment rate of 5.9%. Approximately 35.9% of local residents were living below the poverty line, compared to 9.6% of Alaskans overall. It should be noted that income and poverty statistics are based on wage income and other money sources; the relatively low income figures and high poverty rates reported for Tyonek are not reflective of the value of subsistence to the local economy. In addition, these unemployment and poverty statistics are likely inaccurate given the small population of Tyonek. A more accurate estimate is based on the ALARI database, which indicates that the unemployment rate in 2010 was 27.3%.

Based on household surveys conducted for the 2006-2010 ACS, the greatest percentage of workers was employed in the public sector (63.5%), while 36.5% were employed in the private sector. Out of 74 people aged 16 and over that were estimated to be employed in the civilian labor force in 2010, the greatest percentage worked in public administration (25.9%), transportation, warehousing, and utilities (22.4%), arts, entertainment, recreation, accommodation, and food services (12.1%), educational services, health care, and social assistance (12.1%), and construction (10.3%). Smaller percentages of the workforce were employed in finance, insurance, and real estate (6.9%), retail trade (5.2%), and agriculture, forestry, fishing, hunting, and mining (5.2%) (Figures 3 and 4). However, given the data reported in the *Commercial Fishing* section below, the number of individuals employed in the farming, fishing, and forestry industries may be underestimated by census statistics as fishermen may hold another job and characterize their employment accordingly.

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

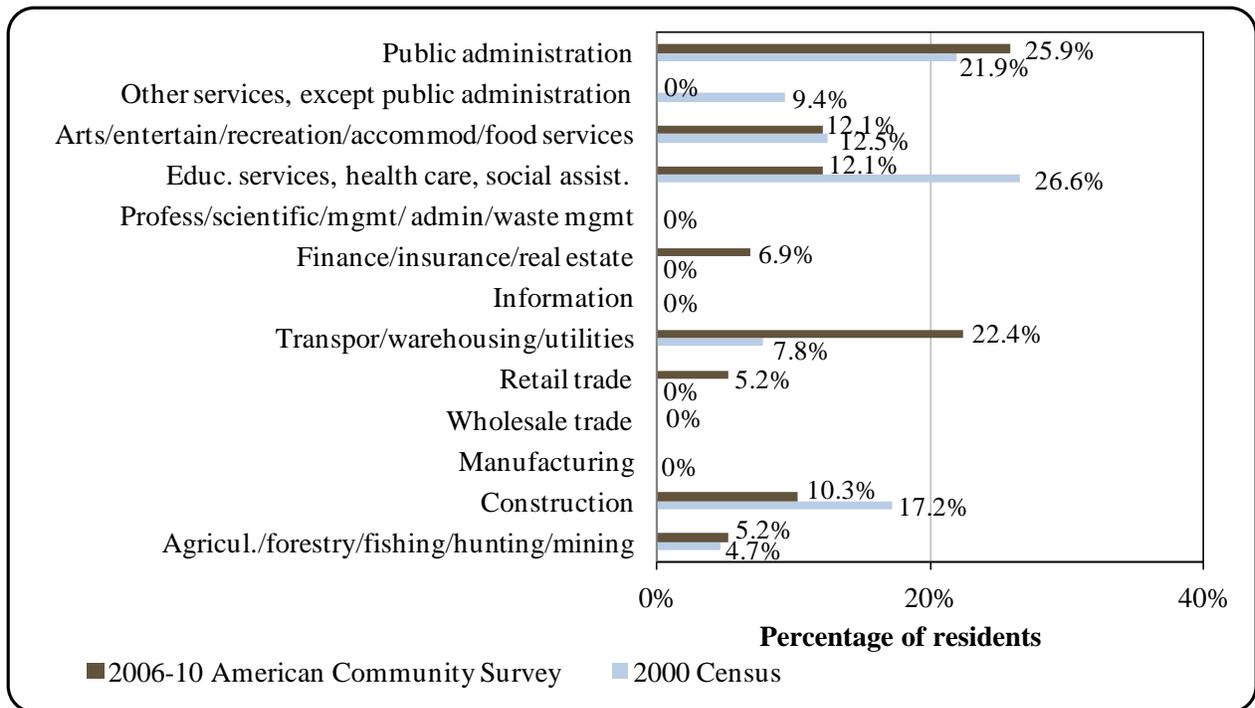
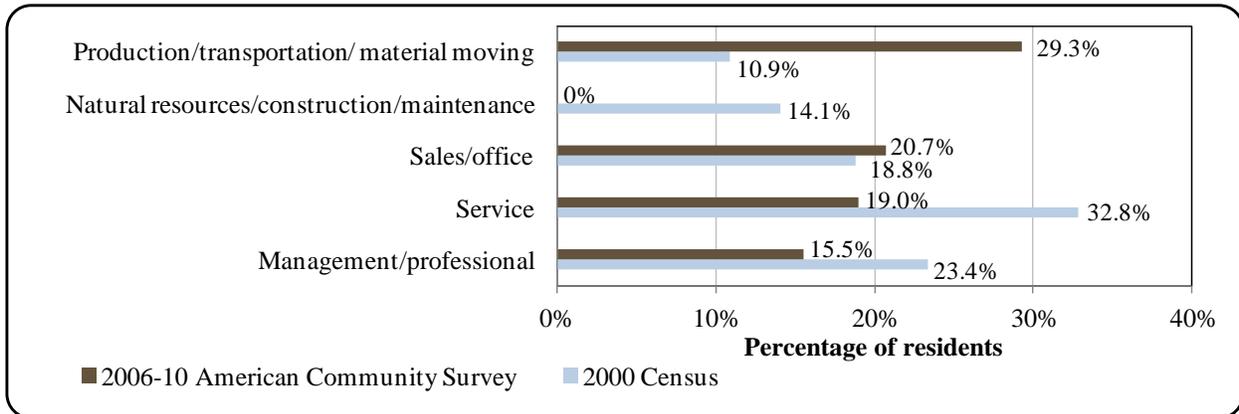


Figure 4. Local Employment by Occupation in 2000-2010, Tyonek (U.S. Census).



Governance

Tyonek is an unincorporated town located in the Kenai Peninsula Borough. Because of Tyonek’s unincorporated status, no municipal taxes were administered between 2000 and 2010. Tyonek did not receive any State or Community Revenue Sharing contributions or fisheries-related grants between 2000 and 2010. Information about selected aspects of Tyonek’s community revenue is presented in Table 2.

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

Year	Total Municipal Revenue ¹	Sales Tax Revenue ²	State/Community Revenue Sharing ^{3,4}	Fisheries-Related Grants (State and Federal) ⁵
2000	n/a	n/a	n/a	n/a
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

¹ Alaska Dept. of Comm. and Rural Affairs. (n.d.). *Financial Documents Delivery System*. Retrieved April 15, 2011 from http://www.commerce.state.ak.us/dca/commfin/CF_FinRec.cfm.

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

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

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

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

Tyonek was included in 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, is the Tyonek Native Corporation. The regional native corporation to which Tyonek belongs is the Cook Inlet Region, Inc. (CIRI).¹⁴ CIRI is one of 12 Alaska-based regional corporations established ANCSA to benefit Alaska Natives who had ties to the Cook Inlet region. The Company is owned by more than 7,300 Alaska Native shareholders of Athabascan and Southeast Indian, Inupiat, Yupik, Alutiiq (Sugpiaq) and Aleut (Unangax) descent. It is based in Anchorage and has interests across Alaska, the lower 49 and abroad. CIRI's well-diversified portfolio of business operations and investments includes: traditional and alternative energy and resource development, oilfield and construction services, environmental services, real estate investment and management, tourism and hospitality, telecommunications, aerospace defense, private equity and venture capital investments. CIRI also created a family of nonprofit service organizations that provide needed health care, housing, employment, education and other social and cultural enrichment services for Alaska Natives and others.¹⁵

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

Infrastructure

Connectivity and Transportation

Tyonek is not accessible by road. Permission is required to land at the local 3,000 foot long by 90 foot wide gravel airstrip, owned by the Village of Tyonek, although regularly-scheduled flights are available. A state-owned 4,003 foot long gravel airstrip is available at Nikolai Creek, and a 2,400 foot gravel airstrip, owned by Arco Alaska, is located at Beluga. Regular commercial air service is not available between Tyonek or Beluga and Anchorage. Private and charter flights are available. A local road connects to nearby Beluga. Barges deliver goods to the village.¹⁶

*Facilities*¹⁷

A piped water and sewer system serves the entire community, including approximately 90 homes and facilities. Water is derived from Second Lake and is treated and stored in a 175,000-gallon tank. Backup water supplies are available from a lake near the airport. A small coin-operated washeteria, with one washer and dryer, is available. Law enforcement services are provided by state troopers in Girdwood. Fire and rescue services are provided by the Tyonek

¹⁴ 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.

¹⁵ Cook Inlet Region, Incorporated (2012). CIRI Company Overview. Retrieved on May 10, 2012 from <http://www.ciri.com/content/company/business.aspx>.

¹⁶ See footnote 14.

¹⁷ Ibid.

Volunteer Rescue Squad. The Boys and Girls Club operates a youth center, and Tyonek also has a community hall and a school library.

*Medical Services*¹⁸

Medical care is provided by the Indian Creek Health Clinic, which is owned by the Village Council and operated by the Native Village of Tyonek. The clinic is a Community Health Aid Program site. Alternate health care is provided by the Tyonek Volunteer Rescue Squad. Emergency services only have air access and are provided by volunteers and a health aide. The nearest hospital is located in Anchorage.

*Educational Opportunities*¹⁹

The Tebughna School provides instruction to students in kindergarten through 12th grade. In 2011 the school had 35 students and 5 teachers.

Involvement in North Pacific Fisheries

History and Evolution of Fisheries

Originally, the Kachemak Tradition Eskimos and Dena'ina Athabascans occupied the Cook Inlet region. Kachemak Eskimos were the first to arrive approximately 3,000 years ago followed by Dena'ina Athabascans. These groups utilized both marine and riverine ecosystems, relying on marine mammals and fish using drift nets, weirs, and dip nets, and basket traps. In general all five species of Pacific salmon and Dolly Varden char were utilized throughout the Cook Inlet.

Commercial fishing for Chinook salmon in the Cook Inlet began to increase substantially during the 1940s. Before 1940, commercial fishermen harvested approximately 60,000 Chinook annually, however, over the next decade harvests would more than double. Average harvests of Chinook were about 13,000 fish during the 1960s, 12,000 fish during the 1970s, 25,000 fish during the 1980s, and 17,000 fish during the 1990s. Sockeye salmon harvests did not exceed three million fish in any year until 1982. Prior to that, the peak decadal average occurred in the 1940s at 1.6 million fish. Commercial harvests of sockeye averaged 4.5 million fish in the 1980s and 4.1 million fish in the 1990s. Coho salmon harvests averaged less than 400,000 annually until the 1980s when the annual commercial harvest averaged about 540,000 fish. During the 1990s average annual harvest dropped to 360,000 fish. The largest commercial harvest of pink salmon in the Cook Inlet occurred in 1952 when almost five million were caught. Commercial harvests of chum salmon peaked in the 1980s at an average annual catch of around 906,000 fish.²⁰

A commercial herring fishery began in the Lower Cook Inlet in 1914. A total of eight salteries were operating during the fisheries peak and over 7,900 tons were averaged between

¹⁸ Ibid.

¹⁹ Alaska Department of Education and Early Development. (2012). *Statistics and Reports*. Retrieved April 24, 2012 from <http://eed.alaska.gov/stats/>.

²⁰ Clark, J. H.; et al. (2006). *The Commercial Salmon Fishery in Alaska*. Retrieved June 14, 2012 from: <http://www.adfg.alaska.gov/static/home/library/PDFs/afrb/clarv12n1.pdf>.

1924 and 1926. In 1939, a fishery was started in and around Resurrection Bay and Day Harbor within the Eastern District. Again, peak years occurred from 1944 to 1946 where the average harvest was 16,250 tons. The fishery died out during the late 1950s due to over-harvesting. A Lower Cook Inlet herring sac roe fishery began in 1969; however, it went into decline after 1973 until limits were established in 1974. However, quotas were never followed and Outer and Eastern districts were eventually closed until 1984 for stock recovery.²¹

Today, the Cook Inlet is managed according to two distinct management areas: Upper and Lower Cook Inlet. The city of Anchorage plays a complex role in the Alaskan fishing industry. Historically, Anchorage was built around mining, and later petroleum. Fishing was never a central component of the city's economy in its early years. However, as fisheries developed in the Cook Inlet and around the Kenai Peninsula, Anchorage found itself playing an increasingly important role in the support of those fisheries.

Tyonek is located in the Tyonek Subdistrict setnet subsistence fishery, within the Northern District of the Upper Cook Inlet Management Area. The Alaska Board of Fisheries has found that salmon in the Tyonek Subdistrict are customarily and traditionally used for subsistence purposes. Subsistence fishing is open during two seasons per year. The early season runs from May 15 through June 15, while the late season is open June 16 through October 15.

Tyonek lies on a bluff on the northwest shore of Cook Inlet and is not located directly on the Kenai Peninsula.²² The area is included in Federal Statistical and Reporting Area 630, Pacific Halibut Fishery Regulatory Area 3A, and the Central Gulf of Alaska Sablefish Regulatory Area. The community is not eligible for the Community Development Quota program, but is eligible for the Community Quota Entity (CQE) program. However, the community has not formed a non-profit entity eligible to purchase quota share. The impetus for the CQE program followed the implementation of the halibut and sablefish Individual Fishing Quota (IFQ) program in 1995. The IFQ program restructured fixed gear halibut and sablefish fisheries into a catch share program which issued transferable quota shares that allocated a portion of the annual Total Allowable Catch to eligible vessels and processors. Although the IFQ program resulted in many benefits to fishermen, processors, and support businesses, and unintended consequence was that many quota holders in smaller Alaskan communities either transferred quota outside the community or moved out themselves. In addition, as quota became increasingly valuable, entry into halibut or sablefish fisheries became difficult. In many cases, it was more profitable for small-scale operators to sell or lease their quota rather than fish it due to low profit margins and high quota value. These factors lead to decreased participation in communities traditionally dependent on the halibut or sablefish fisheries. To address this issue, the North Pacific Fishery Management Council implemented the CQE program in 2005. Under the program, eligible communities could form a non-profit corporation to purchase and manage quota share on their behalf.²³

²¹ Schroeder, T. R. (1989). *A Summary of Historical Data for the Lower Cook Inlet, Alaska, Pacific Herring Sac Roe Fishery*. Retrieved June 14, 2012 from: <http://www.sf.adfg.state.ak.us/FedAidPDFs/FRB.1989.04.pdf>

²² 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.

²³ North Pacific Fishery Management Council (2010). *Review of the Community Quota Entity (CQE) Program under the Halibut/Sablefish IFQ Program*. Retrieved October 23, 2012 from: <http://www.fakr.noaa.gov/npfmc/PDFdocuments/halibut/CQEREport210.pdf>.

Processing Plants

According to ADF&G's 2010 Intent to Operate list, Tyonek does not have a registered processing plant. The nearest processing plant is located in Anchorage.

Fisheries-Related Revenue

Between 2000 and 2010, no data were reported on fisheries-related revenue received by Tyonek (Table 3).

Commercial Fishing

In 2010, there were 17 Tyonek residents holding 18 commercial fishing permits issued by the Commercial Fisheries Entry Commission (CFEC) for the Cook Inlet salmon set gill net fishery (Table 4). The number of CFEC salmon permits and permit holders decreased slightly between 2000 and 2010, while the number of permits reported as fished varied considerably from year to year. There were no Tyonek residents holding Federal Fisheries Permits or License Limitation Program (LLP) permits between 2000 and 2010. Between 2000 and 2010, there were an average of five crew license holders in Tyonek each year, with six crew license holders in 2010. During this period, there were no fish buyers or shore-side processing facilities located in Tyonek. There were an average of four commercial fishing vessels primarily owned by Tyonek residents between 2000 and 2010, and an average of three vessels homeported in Tyonek during this period. There were no vessels landing catch in Tyonek between 2000 and 2010, and therefore no landings or associated ex-vessel revenue to report during this period (Table 5). There were no halibut or sablefish quota share account holders located in Tyonek between 2000 and 2010 (Tables 6 and 7) and no crab quota share account holders between 2005 and 2010 (Table 8). As previously stated, there were no commercial landings recorded in Tyonek between 2000 and 2010 and therefore no associated ex-vessel revenue to report during this period (Table 9). Landings by Tyonek residents and associated ex-vessel revenue between 2000 and 2010 was considered confidential due to a small number of participants (Table 10).

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

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

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

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

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

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

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

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

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

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

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

Species		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Sablefish (CFEC) ²	Total permits	0	0	0	0	0	0	0	0	0	0	0
	Fished permits	0	0	0	0	0	0	0	0	0	0	0
	% of permits fished	-	-	-	-	-	-	-	-	-	-	-
	Total permit holders	0	0	0	0	0	0	0	0	0	0	0
Groundfish (CFEC) ²	Total permits	0	0	0	0	0	0	0	0	0	0	0
	Fished permits	0	0	0	0	0	0	0	0	0	0	0
	% of permits fished	-	-	-	-	-	-	-	-	-	-	-
	Total permit holders	0	0	0	0	0	0	0	0	0	0	0
Other Finfish (CFEC) ²	Total permits	0	0	0	0	0	0	0	0	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) ²	Total permits	20	19	20	21	20	19	17	17	17	18	18
	Fished permits	17	13	7	5	8	11	11	10	11	12	13
	% of permits fished	85%	68%	35%	24%	40%	58%	65%	59%	65%	67%	72%
	Total permit holders	23	21	20	21	20	21	17	16	17	17	17
<i>Total CFEC Permits²</i>	<i>Permits</i>	<i>20</i>	<i>19</i>	<i>20</i>	<i>21</i>	<i>20</i>	<i>19</i>	<i>17</i>	<i>17</i>	<i>17</i>	<i>18</i>	<i>18</i>
	<i>Fished permits</i>	<i>17</i>	<i>13</i>	<i>7</i>	<i>5</i>	<i>8</i>	<i>11</i>	<i>11</i>	<i>10</i>	<i>11</i>	<i>12</i>	<i>13</i>
	<i>% of permits fished</i>	<i>85%</i>	<i>68%</i>	<i>35%</i>	<i>24%</i>	<i>40%</i>	<i>58%</i>	<i>65%</i>	<i>59%</i>	<i>65%</i>	<i>67%</i>	<i>72%</i>
	<i>Permit holders</i>	<i>23</i>	<i>21</i>	<i>20</i>	<i>21</i>	<i>20</i>	<i>21</i>	<i>17</i>	<i>16</i>	<i>17</i>	<i>17</i>	<i>17</i>

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

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

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

Year	Crew License Holders ¹	Count of All Fish Buyers ²	Count of Shore-Side Processing Facilities ³	Vessels Primarily Owned by Residents ⁴	Vessels Homeported ⁴	Vessels Landing Catch in Tyonek ²	Total Net Pounds Landed in Tyonek ^{2,5}	Total Ex-Vessel Value of Landings in Tyonek ^{2,5}
2000	5	0	0	3	2	0	0	\$0
2001	4	0	0	5	4	0	0	\$0
2002	6	0	0	5	4	0	0	\$0
2003	4	0	0	5	4	0	0	\$0
2004	9	0	0	4	3	0	0	\$0
2005	8	0	0	4	3	0	0	\$0
2006	3	0	0	4	3	0	0	\$0
2007	3	0	0	3	2	0	0	\$0
2008	6	0	0	4	3	0	0	\$0
2009	3	0	0	4	3	0	0	\$0
2010	6	0	0	2	1	0	0	\$0

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

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

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

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

⁵ Totals only represent non-confidential data.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

² Totals only represent non-confidential data.

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

	<i>Total Net Pounds¹</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>Total²</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>Total²</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.]

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

² Totals only represent non-confidential data.

Recreational Fishing

Although several sport fish guide businesses were locally registered between 2000 and 2004, none were reported active. The number of sport fish guide licenses held by Tyonek residents decreased from 11 in 2000 to one in 2008, and there were no Tyonek residents holding sport fish guide licenses in 2009 and 2010 (Table 11). No kept/released log book data were reported for fishing charters out of Tyonek between 2000 and 2010.²⁴

The number of sportfishing licenses sold to community residents (irrespective of the location of the point of sale) varied between 2000 and 2010, with an average of 30 sportfishing licenses sold to Tyonek residents each year. The number of sportfishing licenses sold in Tyonek was consistently lower during this period, averaging eight per year. This suggests that Tyonek residents often travel to other areas or nearby communities to participate in sportfishing activities. The Alaska Statewide Harvest Survey, conducted by ADF&G between 2000 and 2010, did not note any species as targeted by private anglers in Tyonek.²⁵

Tyonek is located in the West Cook Inlet Drainages Alaska Sport Fishing Survey Area. Information is available about both saltwater and freshwater sportfishing activity at this regional scale. Between 2000 and 2010, sportfishing activity in this region was variable (Table 11). For saltwater sportfishing, non-Alaska resident angler days fished varied between 1,017 and 2,258 days between 2000 and 2005, while Alaska resident angler days fished varied between 788 and 2,595 during this period. There were no saltwater angler days fished in this region between 2006 and 2010. Between 2000 and 2003, Alaska resident anglers fished more freshwater angler days per year in this region, but between 2004 and 2010 non-Alaska resident anglers fished more freshwater angler days per year in this region.

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

Year	Active Sport Fish Guide Businesses ¹	Sport Fish Guide Licenses ¹	Sport Fishing Licenses Sold to Residents ²	Sport Fishing Licenses Sold in community ²
2000	0	11	31	11
2001	0	8	33	3
2002	0	7	27	12
2003	0	6	34	19
2004	0	7	27	0
2005	0	3	26	0
2006	0	2	26	9
2007	0	2	25	8
2008	0	1	32	7
2009	0	0	37	12
2010	0	0	28	4

²⁴ 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.]

²⁵ 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).

Table 11 cont'd. Sport Fishing Trends, Tyonek: 2000-2010.

Year	Saltwater		Freshwater	
	Angler Days Fished – Non-residents ³	Angler Days Fished – Alaska Residents ³	Angler Days Fished – Non-residents ³	Angler Days Fished – Alaska Residents ³
2000	2,258	2,430	7,410	11,230
2001	2,037	1,483	6,555	8,557
2002	1,476	1,255	7,170	9,296
2003	1,017	788	8,057	8,413
2004	1,143	1,786	7,867	7,013
2005	1,756	2,595	8,097	8,011
2006	0	0	10,605	5,166
2007	0	0	10,242	9,463
2008	0	0	9,217	7,410
2009	0	0	8,133	5,619
2010	0	0	8,733	4,047

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

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

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

Subsistence Fishing

Tyonek is a Dena'ina Athabascan village where residents practice a subsistence lifestyle. Subsistence activities contribute salmon, moose, beluga whale, and waterfowl to the local diet. Some residents trap furbearers during winter.²⁶

In 2006, the only year that a household subsistence survey was conducted by ADF&G in the community of Tyonek between 2000 and 2010, 75% of households were recorded as using salmon for subsistence, 15% of households used halibut, 13% used marine mammals, 28% used marine invertebrates, and 40% used non-salmon fish (not including halibut). Per capita, residents of Tyonek harvested 226.7 pounds of land and sea-based subsistence resources in 2006. Information about per capita subsistence harvest and household participation in subsistence activities is presented in Table 12.

Subsistence salmon fishing regulations for the Tyonek Subdistrict setnet fishery were established by court order in 1980. The lands adjacent to the Tyonek Subdistrict are owned by the Tyonek Native Corporation. Subsistence salmon fishing is open during two seasons per year, May 15 to June 15 and June 16 to October 15. A subsistence fishing permit is required and there

²⁶ 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.

are separate permits for each season of the fishery. The permit is a household permit and comes with an annual possession limit for each household member. The gear allowed in the Tyonek Subdistrict subsistence salmon fishery includes set gillnets of a specific size. Gear must be marked, and fishing within 600 feet of another set gillnet or within 300 feet of a dam or other artificial obstruction are prohibited.²⁷ In years for which data were reported between 2000 and 2010, an average of 62 subsistence salmon permits was issued to Tyonek residents with an average of 48 permits returned. Chinook salmon were the primary species harvested under subsistence permits (an average of 1,095 per year), along with sockeye, coho, chum, and pink salmon.

In 2006, per capita harvest of marine invertebrates was 248 pounds and per-capita harvest of non-salmon fish (not including halibut) was 3,940 pounds. Information about subsistence harvest of salmon, marine invertebrates, and non-salmon fish (not including halibut) is presented in Table 13. The ADF&G Division of Subsistence noted that marine invertebrates harvested included clams, while non-salmon fish harvested included burbot, Dolly Varden, eulachon (hooligan candlefish), grayling, pike, rainbow trout, and whitefish.²⁸ Data were not reported regarding subsistence harvest of halibut in Tyonek between 2003 and 2010 (Table 14).

Between 2000 and 2010, in years for which data were reported, an average of 219 pounds of marine mammals (an average of five animals per year) were harvested for subsistence use, which consists of seals. Information was not reported on any subsistence marine mammal harvest of beluga whales, sea otter, or walrus. Information about subsistence harvest of marine mammals is presented in Table 15. While information on subsistence harvest of sea lion and spotted seal was not reported between 2000 and 2010, between one and five harbor seals were harvested each year for years in which data were reported during this period.

Although not reported by ADF&G Division of Subsistence (Table 15), a review of the literature, including ethnographic and subsistence-related studies, first-hand historical accounts, and archaeological research, revealed documentation of the hunting and use of beluga by upper Cook Inlet Dena'ina, including the people of Tyonek, since at least the 1700s until present. Several sources also noted the high value that Cook Inlet Dena'ina placed on beluga products such as beluga meat and oil. Tyonek residents' level of beluga hunting activity has varied over the years, primarily due to changes in resource availability; however, cultural ties remained strong. After a decline in Cook Inlet beluga hunting during the 1940s through the 1960s, Tyonek residents began regularly hunting beluga again in the late 1970s. A decline in the Cook Inlet beluga population in the 1990s led to restrictions placed on beluga hunting in 1999. Since that time, residents' harvests of beluga, in addition to their harvest methods, have been regulated.²⁹

²⁷ Holen, D. and J.A. Fall (2011). *Overview of subsistence salmon fisheries in the Tyonek Subdistrict and Yentna River, Cook Inlet, Alaska*. Alaska Department of Fish and Game Division of Subsistence Special Publication No. BOF 2011-01, Anchorage.

²⁸ 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).

²⁹ Stephen R. Braund & Associates and Huntington Consulting (2011). *Relationship Between the Native Village of Tyonek, Alaska and Beluga Whales in Cook Inlet, Alaska*. Submitted to NOAA Fisheries, Juneau, Alaska, June 2011.

Table 12. Subsistence Participation by Household and Species, Tyonek: 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	75%	15%	13%	28%	40%	226.7
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, Tyonek: 2000-2010.

Year	Subsistence Salmon Permits Issued ¹	Salmon Permits Returned ¹	Chinook Salmon Harvested ¹	Chum Salmon Harvested ¹	Coho Salmon Harvested ¹	Pink Salmon Harvested ¹	Sockeye Salmon Harvested ¹	Lbs of Marine Inverts ²	Lbs of Non-Salmon Fish ²
2000	46	45	1,083	n/a	26	6	43	n/a	n/a
2001	50	34	1,185	7	51	3	144	n/a	n/a
2002	81	52	1,477	6	132	14	294	n/a	n/a
2003	67	57	1,327	12	46	7	114	n/a	n/a
2004	75	57	1,154	n/a	120	n/a	75	n/a	n/a
2005	59	48	881	n/a	100	n/a	15	n/a	n/a
2006	63	44	770	n/a	3	n/a	8	248	3,940
2007	53	46	1,013	n/a	43	n/a	132	n/a	n/a
2008	60	45	961	7	101	10	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.

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

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

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

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

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

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

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

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

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

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

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

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