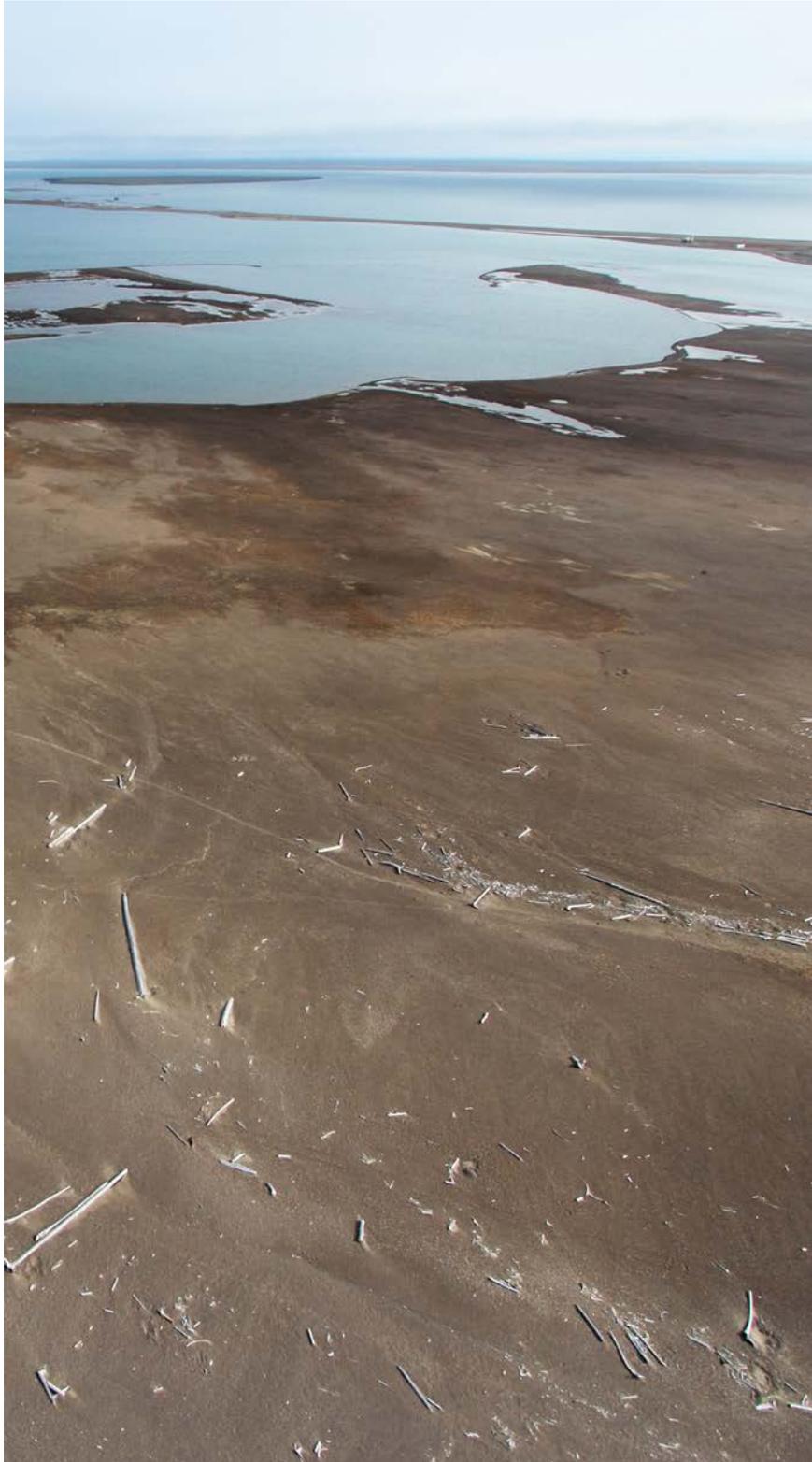




Part II: North Slope Borough Today







Chapter Four Population





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CHAPTER 4: POPULATION

The population across the North Slope Borough has experienced an overall increase since population estimates were initiated in 1880. The North Slope has a very young population, with average ages below the state and national averages. The population increase influences the need for transportation facilities, housing, healthcare, education, subsistence resources, employment, and public services.

While the borough population is predominately comprised of Iñupiat Eskimos, the population is diverse. This regional plan reflects the issues and goals of the local people. The development of the plan was focused on twelve traditional Iñupiat values, found in Table 2, which are widely shared principles embraced by the many cultures represented on the North Slope.

While the federal and state governments provide estimated population counts and socioeconomic data, since the 1980s, the North Slope Borough has been conducting an independent census and socioeconomic research that includes issues important to North Slope residents, such as subsistence activities and use of the Iñupiaq language. The most recent census was conducted in 2015. Topics addressed include: population, employment, income, housing, education, subsistence, and other community indices. The following section

provides an overview of socioeconomic characteristics. The NSB censuses are the primary source for the information in this chapter, supplemented by state and federal socioeconomic data.

HISTORICAL POPULATION AND POPULATION TRENDS

The North Slope Borough is comprised of 94,762 square miles,⁴⁹ with an estimated 2017 population of 8,356 residents.^{50, 51} The borough's population density is one resident for every 19.6 square miles. While the resident population is primarily concentrated in the borough seat of government of Utqiagvik, hundreds of residents live in each village.

Historical Population

The U.S. decennial census provides data on some settlements within the current North Slope Borough boundary as far back as 1880, when there was approximately 1,198 residents. The U.S. decennial censuses for the North Slope region have varied greatly; some decade counts included numerous areas within the North Slope region, like 1890, while other decennial counts only included several of the more established settlements, such as the 1900 decennial census.

⁴⁹ State of Alaska. Department of Commerce, Community, and Economic Development. 2018. *Alaska Community Database Online: North Slope Borough*. www.commerce.alaska.gov/dcra/DCRAExternal/community.

⁵⁰ State of Alaska. Department of Community, Commerce, and Economic Development. 2017. Letter to Mayor Brower. *FY 18 Population Figure for Property Tax Revenue Limitation Purposes*.

⁵¹ The total does not include approximately 2,174 people that work in the Prudhoe Bay region and are not permanent residents or the 427 other outside persons that are considered to live outside the communities. These figures are from the Alaska Department of Labor and Workforce Development, Research & Analysis Section. From the North Slope Borough. 2015. *North Slope Borough 2015 Economic Profile and Census Report Volume XI*. Prepared by Circumpolar Research Associates Shepro, C., Maas, C. and D. Gallaway and edited by Jason Bergerson for the North Slope Borough. www.north-slope.org/your-government/nsb-2015-economic-profile-census-report.





Some years included population counts for some villages, only to disappear for decade. Such is the case for Point Lay, whose population was 77 in 1890. Yet the census did not include Point Lay again for another fifty years, when the population was estimated at 117 in 1940. Some areas, like most of those from 1880, and many from subsequent years, like Sea Horse Island in 1980, and Cross Island, Demarcation Point, and others in 1940, are only counted once and never reappear. Although the North Slope census count was sporadic a century ago, today the borough spends a significant amount of both

time and money in ensuring correct population counts.

The North Slope Borough population has increased for every U.S. decennial census year since 1940, as shown in Table 6. Figure 8 provides an illustration of the population increases from 1940. The number of residents in any community can vary seasonally; subsistence activities may take residents out the community for weeks at a time and some teachers at the North Slope Borough School District and their families may live elsewhere during the summer months.

Table 6: NSB Decennial Census, 1880 - 2010

Year	Population	Source	Census Areas
1880	1,198	U.S. Decennial Census	Tikizat, Ip Not, Tikirak, Cape Dyer, Cape Lisburne, Point Lay, Otokkok, Kolumatourok, Noonaagemute, Ootkaiowik, Pinoshuragin, Ootiwakh, Refuge Inlet, Lolmullit, Colville River
1890	1,028	U.S. Decennial Census	Cape Smyth, Icy Cape, Point Barrow, Point Belcher, Point Hope, Point Lay, Sea Horse Island, Wainwright Inlet
1900	937	U.S. Decennial Census	Cape Smythe settlement, Point Hope village
1910	816	U.S. Decennial Census	Barrow village, Point Barrow, Point Hope
1920	997	U.S. Decennial Census	Barrow district (including Barrow, Point Barrow, and Wainwright villages), Point Hope District, including Tigara village
1930	409	U.S. Decennial Census	Point Barrow village, Tigara village, Wainwright village
1940	1,516	U.S. Decennial Census	Barrow village, Beard Bay, Brower village, Cape Halkett village, Coleville River, Harrison Bay, Kalovik, Killik River, Meade River, Olektak, Point Barrow village, Point Lay village, Tigara (Point Hope) village, Wainwright village, Cross Island, Demarcation Point, Humphry Point, Konganevik Point, Martin Point, Tigvariak Island
1950	1,678	U.S. Decennial Census	Anaktuvuk Pass village, Barrow village, Point Hope village, Point Lay village, Wainwright village, Kaktovik village, Tikiluk village
1960	2,101	U.S. Decennial Census	Anaktuvuk Pass, Barrow, Barter Island, Meade River, Point Hope, Wainwright
1970	3,027	U.S. Decennial Census	Anaktuvuk Pass city, Barrow city, Kaktovik, Point Hope city, Wainwright city
1980	4,199	U.S. Decennial Census	North Slope Borough
1990	5,979	U.S. Decennial Census	North Slope Borough
2000	7,385	U.S. Decennial Census	North Slope Borough
2010*	9,430	U.S. Decennial Census	North Slope Borough

* The 2010 U.S. Decennial Census includes the estimated industrial center Prudhoe Bay non-resident workforce of 2,174 people.

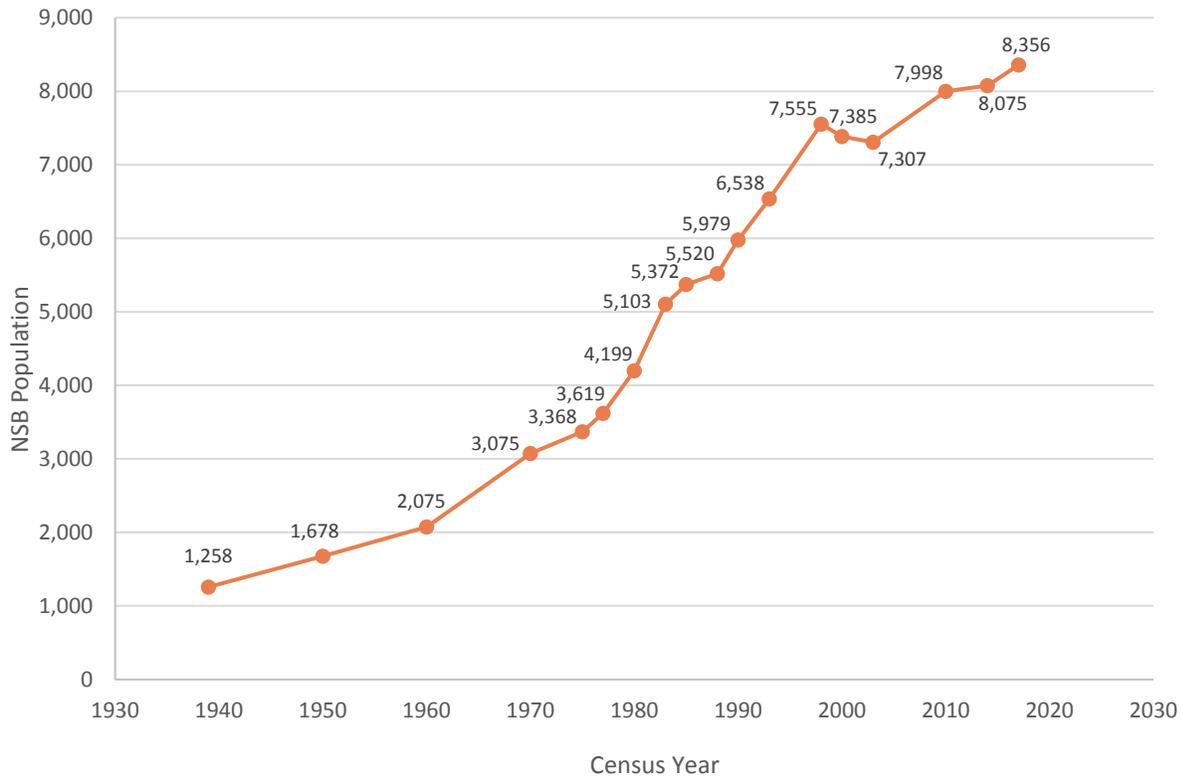




Table 7: NSB Census Population Estimates, 1993 - 2015^{52, 53, 54}

Year	Population
1993	6,538
1998	7,555
2003	7,307
2010	7,998
2015	8,075

Figure 8: North Slope Borough Population, 1940 - 2017⁵⁵



The population dynamics of North Slope Borough communities have undergone significant change since 2003 (a NSB census year), and especially between 2010 and 2015.

There were also some significant changes in the population’s ethnic composition between 2003 and 2015. In 2003, Iñupiat residents accounted for 74.1 percent of the total North Slope

⁵² North Slope Borough. 2015. *North Slope Borough 2015 Economic Profile and Census Report Volume XI*. Prepared by Circumpolar Research Associates Shepro, C., Maas, C. and D. Gallaway and edited by Jason Bergerson for the North Slope Borough. www.north-slope.org/assets/images/uploads/NSB_Economic_Profile_and_Census_Report_2015_FINAL.pdf.

⁵³ North Slope Borough. 2010. *North Slope Borough 2010 Economic Profile and Census Report Volume X*. Prepared by Circumpolar Research Associates Shepro, C., Maas, C. and D. Gallaway with J. McAnich for the North Slope Borough. www.north-slope.org/your-government/census-2010.

⁵⁴ North Slope Borough. 2003. *North Slope Borough 2003 Economic Profile and Census Report, Volume IX*. Prepared by Circumpolar Research Associates Shepro, C., Maas, C. and D. Gallaway.

⁵⁵ Where two census numbers are available, the graph includes only the NSB Economic Profile and Census Report estimate.





population. In 2010, the percentage of Iñupiat residents increased to 76.4. However, just five years later, the percentage of Iñupiat residents increased nearly 6 percent from 2003 to 80 percent while the percentage of non-Iñupiat dropped significantly. These ethnic composition changes have occurred primarily in Utqiagvik; North Slope village populations have remained at levels where Iñupiat comprise between 88 and 94 percent of the population. In Utqiagvik, the population change was an increase from 59 percent Iñupiat in 2003 to 70 percent in 2015, with a corresponding drop from 21 percent Caucasian in 2003 to 12 percent in 2015.⁵⁶

An exodus of some segments of the population, particularly Caucasians and other non-Iñupiat residents, accounts for much of the recent ethnic changes.⁵⁷ Much of the ethnic composition change can be attributed to economic downturns; the recession in Alaska and decline of oil prices worldwide have caused slowdowns in oil field production on the North Slope. Workforce layoffs, facilities' shutdown, and spending declines by industry have had their affect in the North Slope and all of Alaska. The state's economic health has declined, putting further pressure on the North Slope economy in terms of declining support for essential services.⁵⁸

Forecasting Trends

The student population of the North Slope Borough School District appears to be rebounding from earlier declines. While the numbers of students enrolled have been

increasing in all schools with the exception of Meade River School in Atkasuk, they have yet to equal those recorded in the 1999 - 2000 school year. More detail on this issue is to be found in Chapter 12, Education. The increase in the school age population is a positive sign of growth for the North Slope region's population. It also can have a less than positive affect on the economy for the region. In 2015, the 0 - 15 age cohort grew at a full three percent. At the same time, the 16 - 64 age cohort, the current and projected labor force, declined by 3.8 percent. The population 65 years of age and over grew by 0.6 percent, shown in Figure 9. The result of these shifts is a change in the dependency ratios. This shift indicates that more resources and funding will need to go toward both education and senior services, while the labor force and the economy are shrinking to support those investments is in decline.⁵⁹

Additional teachers and educational facility space will be needed to educate a larger number of students. Daycares, already needed in all communities, will become even more in demand. Additional recreation and social spaces, such as community centers, are already sought in every community. An increasing youth population will exacerbate the need for a place where kids can socialize with their peers. The elderly population will also need additional senior housing and services as well as health care facilities.

⁵⁶ North Slope Borough. 2015. North Slope Borough 2015 Economic Profile and Census Report Volume XI. Prepared by Circumpolar Research Associates Shepro, C., Maas, C. and D. Gallaway and edited by Jason Bergerson for the North Slope Borough. www.north-slope.org/your-government/nsb-2015-economic-profile-census-report.

⁵⁷ Ibid

⁵⁸ Ibid

⁵⁹ Ibid

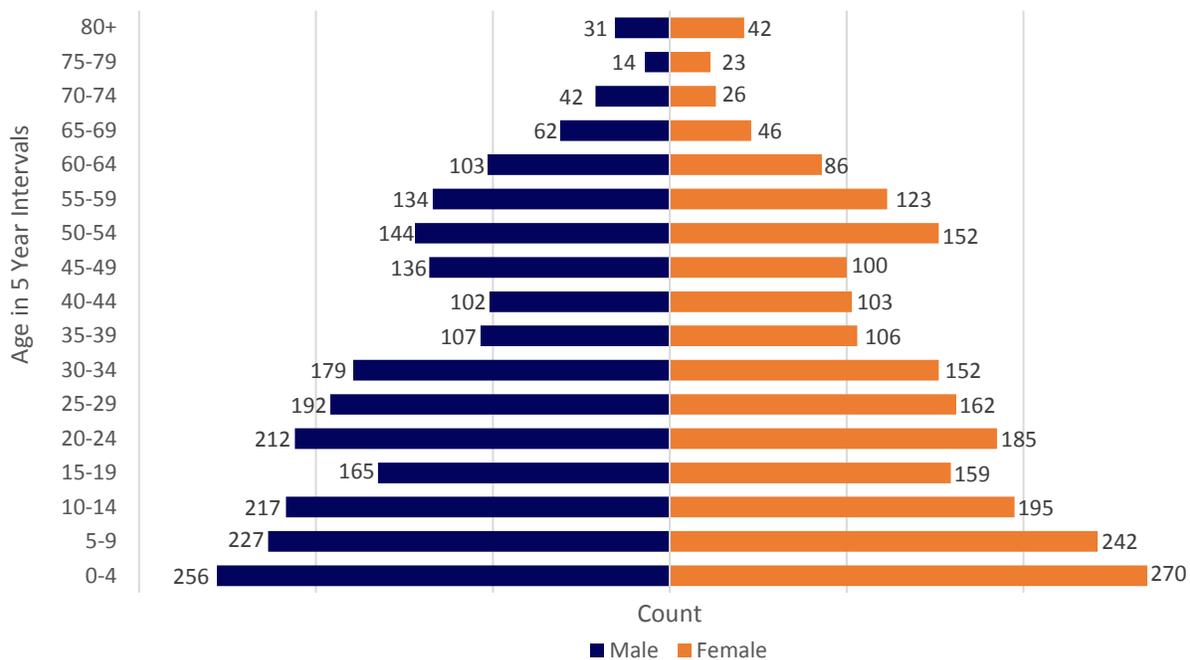




Table 8: Dependency Ratios 2003, 2010, and 2015⁶⁰

Age Cohorts	Census Year		
	2015	2010	2003
0-15	33.1%	30.1%	31.4%
0-18	37.2%	35.8%	N/A
18-24	11.4%	13.6%	N/A
55-64	9.9%	9.3%	5.7%
62+	8.6%	5.6%	N/A
65+	6.4%	5.8%	5.6%
16-64	60.3%	64.1%	63.0%
18-64	57.6%	60.3%	N/A
Youth Dependency Ratio	54.8%	46.9%	49.8%
Age Dependency Ratio	10.4%	8.4%	8.8%
Total Dependency Ratio	65.2%	53.3%	58.6%

Figure 9: 2015 Population Pyramid^{61, 62}



⁶⁰ North Slope Borough. 2015. North Slope Borough 2015 Economic Profile and Census Report Volume XI. Prepared by Circumpolar Research Associates Shepro, C., Maas, C. and D. Gallaway and edited by Jason Bergerson for the North Slope Borough. www.north-slope.org/your-government/nsb-2015-economic-profile-census-report.

⁶¹ Ibid

⁶² Includes only those individuals responding to the survey.





POPULATION INCREASE

The U.S. and NSB censuses do not collect data on new residents or current residents moving out of the village or borough, also known as resident in-migration and out-migration. Out-migration is often attributed to high school graduates leaving to attend college, workers seeking employment opportunities elsewhere, or residents leaving to be close to other family members or loved ones. In-migration would most often be attributed to new residents moving to the village to live with or near family members or for employment.

One potential indicator of the prevalence of in- and out- migration may be the number of people who apply for the annual Alaska Permanent Fund Dividend (PFD). The Permanent Fund program tracks the dividend recipients by zip code and community. Figure 10 illustrates the combined number of adult and child applicants for the PFD program living in the North Slope Borough between 2000 and 2015.⁶³ Over the period from 2000 through 2015, the highest combined total of PFD applicants was in 2000 at 6,981, 404 people less than the U.S. Decennial Census for the same year. The year with the least applications submitted by both child and adult residents was in 2005, at 6,263.

The State of Alaska uses PFD applications in conjunction with birth and death data and the U.S. Census to determine the population of a community. The number of PFD applications does not always provide an accurate portrayal of

a community's population, leading to an undercount of the existing population and thus to an estimate that is not reflective of the actual population in the community.⁶⁴ Some of the issues with using the PFD as an indicator of in- and out- migration can be problematic. There are number of reasons an Alaska resident would choose not to apply for PFD dividend, including:

- Retain residency in another state;
- Consider the PFD investments unethical;
- Consider it a bribe by oil companies that are buying approval / silence;
- Too much pride / already receive free health care and other dividends;
- In the military;
- Avoid jury duty or other obligations;
- PFD would be garnished by the state for unpaid child support or other liens.^{65, 66}

The strongest component of population growth is natural increase, with more births occurring than deaths. Between 2010 and 2015, 922 residents were born and 231 persons passed away, for a net increase of 691 people living throughout the borough. As shown in Table 9, births and deaths have been fairly constant over the six-year period. Every year births have exceeded deaths.

⁶³ The PFD annual reports for 2016 and 2017 did not include applicants by location.

⁶⁴ North Slope Borough. 2015. *North Slope Borough 2015 Economic Profile and Census Report Volume XI*. Prepared by Circumpolar Research Associates Shepro, C., Maas, C. and D. Gallaway and edited by Jason Bergerson for the North Slope Borough. www.north-slope.org/your-government/nsb-2015-economic-profile-census-report.

⁶⁵ North Slope Borough. 2015. *North Slope Borough 2015 Economic Profile and Census Report Volume XI*. Prepared by Circumpolar Research Associates Shepro, C., Maas, C. and D. Gallaway and edited by Jason Bergerson for the North Slope Borough. www.north-slope.org/your-government/nsb-2015-economic-profile-census-report.

⁶⁶ Theriault Boots, Michelle. 2014. *Why some Alaskans don't apply for the PFD*. www.adn.com/alaska-news/article/why-some-alaskans-dont-apply-pfd/2014/10/02/.





Figure 10: PFD Applicants, 2000 - 2015^{67, 68}

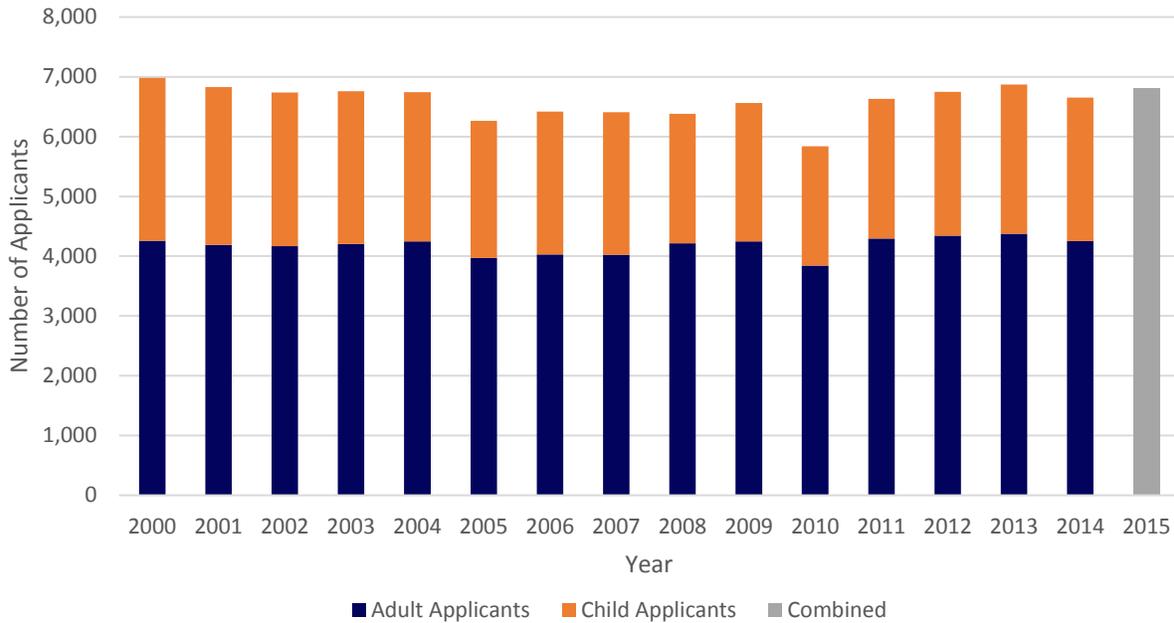


Table 9: Components of Population Change, 2010 to 2015⁶⁹

Period (July-based)	End of Period Population	Population Change	Growth Rate	Births	Deaths	Natural Increase	Net Migration
April 2010- July 2010	9,476	46	1.95%	44	14	30	16
2010-11	9,584	108	1.13%	177	42	135	-27
2011-12	9,715	131	1.36%	176	34	142	-11
2012-13	9,876	161	1.64%	178	49	129	32
2013-14	9,739	-137	-1.40%	174	47	127	-264
2014-15	9,895	156	1.59%	173	45	128	28

⁶⁷ State of Alaska. Department of Revenue. 2015. Permanent Fund Dividend Division. *Annual Reports 2000-2015*. <https://pfd.alaska.gov/Division-Info/Annual-Reports>.

⁶⁸ The 2010 PFD Annual Report was missing applicant figures for Point Hope. The 2015 PFD Annual Report did not provide child applicants and adult applicants separately.

⁶⁹ North Slope Borough. 2015. North Slope Borough 2015 Economic Profile and Census Report Volume XI. Prepared by Circumpolar Research Associates Shepro, C., Maas, C. and D. Gallaway and edited by Jason Bergerson for the North Slope Borough. www.north-slope.org/your-government/nsb-2015-economic-profile-census-report.





PRUDHOE BAY WORKERS

Virtually no one lives in the Prudhoe Bay area year-round. It is not a community as is typically understood throughout the U.S. The center of activity in Prudhoe Bay is Deadhorse. The airport, hotels, and a store are all located in Deadhorse. However, there are not retail stores, homes, or apartment buildings. Workers travel to the area for rotational shifts – often several weeks on and several weeks off. The workers travel to Prudhoe Bay from within Alaska and the lower 48. Counting permanent residents is difficult in an area without permanent homes. The U.S. Census relies on self-reporting. Many

Prudhoe Bay workers staying in group quarters reported it was their “usual residence” in 2010, though almost none did in the previous census. As a result, Prudhoe Bay, which the census gave a population of 5 in 2000, had 2,174 reported residents in 2010.⁷⁰

While Prudhoe Bay employment grew considerably between 2000 and 2015, as shown in Figure 11, there is no evidence that workers have established permanent residences in the area. The increase should be considered a statistical anomaly rather than true population growth.⁷¹

Figure 11: Annual Average Prudhoe Bay Workforce, 1980 - 2017



⁷⁰ State of Alaska. Department of Labor and Workforce Development. 2016. *When the North Slope is Home*. Alaska Economic Trends. September 2016. <http://labor.alaska.gov/trends/sep16.pdf>.

⁷¹ Ibid





POPULATION GROWTH PROJECTIONS

Determining population estimates for small communities in rural Alaska is problematic, even though both the U.S. Census Bureau and the State of Alaska calculate them annually. According to the 2015 North Slope Borough Census, the problem with the rural Alaska population estimates is, in part, because the U.S. Decennial Census is an estimate based on a combination of surveys and administrative reports.⁷² The U.S. Census reported that for the 2010 Decennial Census “approximately 74 percent of the households returned their census forms by mail; the remaining households were counted by census workers walking neighborhoods throughout the United States.”⁷³ While the U.S. Census does conduct door-to-door counts, rural Alaskan villages are difficult to reach, accommodations are often non-existent, and weather conditions make walking throughout the community difficult, questioning the effectiveness of this method in these communities. The 2015 NSB Census also considers the survey return rate for rural Alaskan communities. Seventy-four percent is a national return rate. These issues may lead to chronic undercounting and/or inaccurate Census data for population and/or employment.⁷⁴

The State of Alaska uses a combination of trend lines based on the prior U.S. Decennial Census as well as Permanent Funds Dividend applications, birth and death rates, and migration to complete

population estimates. As noted earlier in this chapter, there are many reasons that an Alaska resident may not submit a PFD application. The lack of personal contact with rural residents may also contribute to undercounting.⁷⁵

The State of Alaska population projections for the North Slope Borough are higher than projected in this plan because they include the Prudhoe Bay workforce coupled with a 2010 census of fewer residents than determined by the NSB Census results in a projected population that has perpetuated these differences.

Because population projections for Alaska’s rural communities are difficult, most of the village comprehensive plans present population projections on annual percentage growth or contraction as well as a linear trend method. The linear trend projection assumes that a village’s population will increase or decrease by the same number of people in each future decade as the average per decade increase or decrease observed during the specific interval, for example, between 1980 and 2010. The plans that provide the linear trend method all indicate that future growth falls well within the range for modest growth. This relatively simple method of projecting the future population is often as accurate as more complex methods,⁷⁶ but as previously discussed, has limitations for small and rural communities. Ideally, the population estimates used for the linear trend would be North Slope Borough Census population

⁷² North Slope Borough. 2015. North Slope Borough 2015 Economic Profile and Census Report Volume XI. Prepared by Circumpolar Research Associates Shepro, C., Maas, C. and D. Gallaway and edited by Jason Bergerson for the North Slope Borough. www.north-slope.org/your-government/nsb-2015-economic-profile-census-report.

⁷³ U.S. Department of Commerce. U.S. Census Bureau. 2016. *What is the Census?* www.census.gov/2010census/about/.

⁷⁴ North Slope Borough. 2015. North Slope Borough 2015 Economic Profile and Census Report Volume XI. Prepared by Circumpolar Research Associates Shepro, C., Maas, C. and D. Gallaway and edited by Jason Bergerson for the North Slope Borough. www.north-slope.org/your-government/nsb-2015-economic-profile-census-report.

⁷⁵ Ibid

⁷⁶ Rayer, Stefan. 2008. Population Forecast Errors: A Primer for Planners. University of Florida. [https://app.bebr.ufl.edu/sites/default/files/Research%20Reports/Rayer%20\(2008\)%20-%20JPER.pdf](https://app.bebr.ufl.edu/sites/default/files/Research%20Reports/Rayer%20(2008)%20-%20JPER.pdf).





estimates instead of U.S. Decennial Census estimates because of the imprecise nature of the latter. However, given that the NSB Census has not been undertaken for as many years to show trends over longer periods, the linear projection in the village plans utilize the U.S. Decennial Census. Because not all the NSB plans have been updated with a consistent linear trend population project, the population projections included in tables 10 and 11 are estimated at a one percent and one-half percent growth rates annually. One percent growth represents the largest growth rate of the adopted village

comprehensive plans (that use this method). Because the one percent growth rate results in the largest population estimate for the planning horizons, these figures were also used to calculate public infrastructure capacity. The exception for the population project in this areawide plan is Utqiagvik, whose high growth rate is used as nine new residents per month over the planning horizon, shown in Table 10. Table 11 shows a lower growth rate at one-half percent, with Utqiagvik gaining four residents per month.

Table 10: High Growth Population Projections, Five, Ten, and Twenty Years

Village*	Population Projection Year			
	2015	2020	2025	2035
Anaktuvuk Pass	393	413	434	480
Atqasuk	248	261	274	393
Nuiqsut	449	472	496	548
Kaktovik	262	275	289	320
Point Hope	711	747	785	868
Point Lay	269	283	297	328
Utqiagvik	4,825	5,365	5,905	6,985
Wainwright	550	578	608	671
Total**	7,707	8,394	9,088	10,593

*village population projects use a one percent growth rate. Utqiagvik assumes an increase of nine residents per month based on previous growth rates.

**2015 total differs from census total because census is the estimated population based on counts while the 2015 figures used in the projection are DCCED certified population estimates.

Table 11: Low Growth Population Projections, Five, Ten, and Twenty Years

Village*	Population Projection Year			
	2015	2020	2025	2035
Anaktuvuk Pass	393	403	413	434
Atqasuk	248	254	261	274
Nuiqsut	449	460	472	496
Kaktovik	262	269	275	289
Point Hope	711	729	747	786
Point Lay	269	276	283	297
Utqiagvik	4,825	5,065	5,305	5,785
Wainwright	550	564	578	608
Total**	7,707	8,020	8,334	8,969

*village population projects use a half percent growth rate. Utqiagvik assumes an increase of four residents per month.

**2015 total differs from census total because census is the estimated population based on counts while the 2015 figures used in the projection are DCCED certified population estimates.





COMMUNITY INPUT, FINDINGS, NEEDS, AND CHALLENGES

During the public input process, residents did not discuss population dynamics. While population dynamics play a large role in determining services and programs for current and future residents, these issues are included in other areas of this plan, namely health care, education, and economic development.

Findings

The NSB population has increased for every U.S. decennial census year since 1940.

The number of residents in any community can vary seasonally; subsistence activities may take residents out the community for weeks at a time and some teachers at the North Slope Borough School District and their families may live elsewhere during the summer months.

While the U.S. Census does conduct door-to-door counts, rural Alaskan villages are difficult to reach: overnight accommodations are often not available and weather conditions make walking throughout the community difficult.

The number and percentage of young people and elderly are increasing.

Not all Alaska residents submit PFD applications that are used for estimating populations.

Prudhoe Bay workers travel from within Alaska and the lower 48 to rotational jobs on the North Slope.

Needs & Challenges

The state and federal censuses do not accurately reflect the number of people living in the North Slope Borough.

Providing financial resources for the services and programs targeting the growing youth and elderly populations – including daycares, senior housing, and recreational spaces for teens will be needed.

Counting permanent residents is difficult in the Prudhoe Bay region, an area without permanent homes. Censuses rely on self-reporting

A lack of personal contact with rural residents and relying on PFD applications may contribute to undercounting rural populations.

Calculating population projections for small communities can be difficult; small changes can make a big impact on the projected number of residents.

