



INSIDE THIS ISSUE:

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- North Dakota Population: It's a Record 1
- Estimates Process Updates Data Annually 2
- How Accurate are Annual Population Estimates? 2

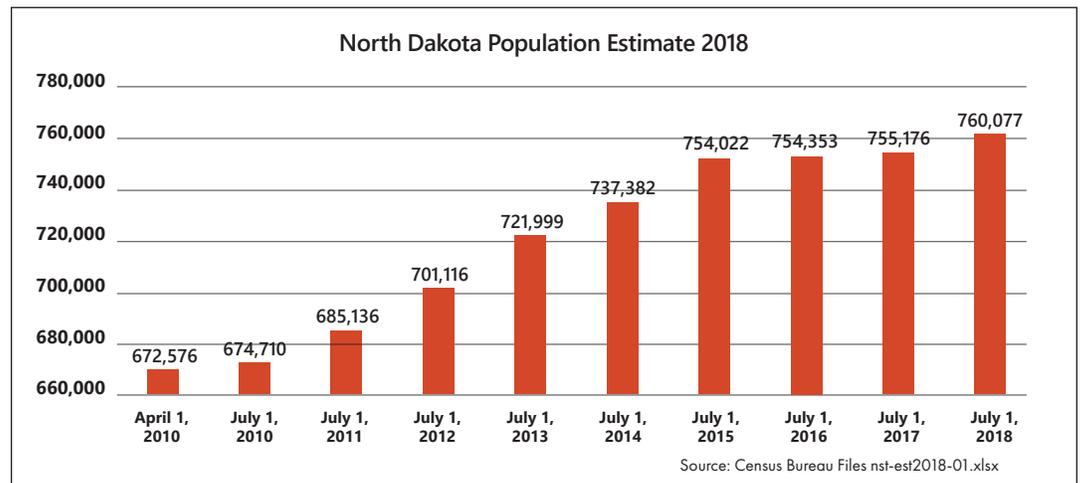
What Does Estimate Tell us About North Dakota?

The Census Bureau's December release on state population estimates highlighted declining natural rates as a key explanation of why nine of the 50 states lost population. Birth rates in particular have dropped in all 50 states from 2017 to 2018. For North Dakota, the decline has been less than any other state. It retained the third-highest rate of births for the fifth consecutive year after Utah and Alaska. Overall, North Dakota's rate of natural growth comes in fourth of the 50 states.

North Dakota's relative young population combined with a relatively high birth rate and net in-migration differentiated it from the decline found in the nine states losing population.

Source: Census Bureau Annual Population Estimates 2002 through 2009, file st-est00int-alldata.csv and author's notes.

North Dakota Population: It's a Record!



The Census Bureau released its annual population estimate of the states on December 19, 2018. This release shows North Dakota reaching a population of 760,077, compared to last year's total of 755,393. Estimates for July 1, 2010, through 2012 have been revised upward while the original estimate from 2013 through 2017 was revised down. This is common as the Census Bureau gains additional data from various federal sources that allow it to better estimate the actual population in a given year.

The result of these revisions shows North Dakota gaining population quickly after Census 2010 up to 2015, then much more slowly since 2015. The revised estimate shows the state experiencing a

period of continued growth since 2010, revising our previously understood slight loss of population between 2015 and 2016.

The estimate provides a numeric explanation as to how the population has changed over the past year and since the last census, called "The Components of Change." The first is "natural rate," simply the number of births less the number of deaths. The second component is "migration," which is broken into domestic and international. Both components can be either positive or negative.

In North Dakota, our natural rate grew significantly since Census 2010. In 2011, our natural rate

was only 3,157, growing to its highest point so far in 2016 at 5,169 and dropping only slightly by 2018 to 4,656. The explanation for our change in natural rate is the in-migration of young adults between 2011 and 2015, which made the state the fourth-youngest of the 50 states. The median age of individuals moving into the state was about 23 years of age.

Approximately 85 percent of children in the state are born to women ages 20 to 34, so the influx of this cohort had a major impact on the change in the number of births. Conversely, deaths did not increase significantly. In 2011, there were

See POPULATION on Page 2

How Accurate are Annual Population Estimates?

There is no exact way to tell as the Annual Estimate is relatively new.

We can compare the annual estimate 10 years ago to the intercensal estimate, created after Census 2010 for the same year. The 2008 annual estimate put the state of North Dakota at 641,481, but the intercensal census completed in 2012 for the same year places the population at 657,569, a difference of 16,088 or 2.45 percent, the third-highest of the 50 states. In fact, the 2012 intercensal estimate indicates the population of the state was higher for each year from 2001 through 2009 than the original estimate for the given year. The highest difference occurred for the year 2009 where the original annual estimate indicated the state's population was 646,844, 18,124, or 2.8 percent less than the intercensal estimate indicates. In other words, Census 2010 found more than 18,000 more individuals in the state than expected.

Source: Census Bureau Annual Population Estimates 2002 through 2009, file st-est00int-alldata.csv and author's notes.

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Estimate Process Updates Data Annually

The Census Bureau prepares a population estimate as of July 1 for each state, county and city each year. State total estimates are released in December of the given year; counties in March; and cities in May the following years for each year of the decade after the census.

The decennial census dates back to 1790, but the annual population estimate of state resident population was only begun in 1994 and has been evolving ever since. The decennial census is a complete count of every resident of the state, while the annual

population estimate uses various administrative records in its formulation. The estimate is essentially an update of the most recent census.

Another difference is that the estimate for a given year will be updated through the remainder of the decade. For example, for years ending with "01" there will be the initial estimate created for that year and then an update each year for the next eight years. So, each year from 2010 to 2019 there has been or will be an annual estimate for each of these years and an update of prior year back to the last

decennial census.

Starting after Census 2010, the Census Bureau created one additional estimate for the proceeding decade, called the intercensal estimate. This estimate has the advantage of being anchored with a decennial census on either end and fully updated data from various other government sources such as the tax returns from the IRS at the time it is published.

Source: Census Bureau Annual Population Estimates 2002 through 2009, file st-est00int-alldata.csv and author's notes.

Population: Story Continued from Page 1

6,054 deaths. By 2018, that figure had only grown to 6,213.

Unlike the fairly smooth changes that we have seen in the state's natural rate, migration has been a much wilder ride. In 2011, net-migration was 6,130. In 2013, the estimated net migration grew to 16,437 but dropped by 2016 to a negative-4,878. The change occurred in domestic migration. International migration into the state, traditionally a much smaller element than domestic migration, has gradually increased throughout the decade.

While net migration is positive, this is driven this year by the high number in the international migration figures. The good news is that the high number of domestic migrants leaving

Natural Rate Components

Year	2011	2012	2013	2014	2015	2016	2017	2018
Births	9,211	9,783	10,252	10,980	11,404	11,333	11,182	10,869
Deaths	6,054	5,935	6,224	6,210	6,348	6,164	6,054	6,213
Natural Rate	3,157	3,938	4,028	4,770	5,056	5,169	5,128	4,656

Annual Migration

Year	2011	2012	2013	2014	2015	2016	2017	2018
Domestic	5,991	10,571	15,341	9,531	9,334	(6,287)	(6,997)	(2,379)
International	1,077	1,137	1,096	787	2,068	1,409	2,659	2,597
Migration (Net)	6,130	11,708	16,437	10,318	11,412	(4,878)	(4,338)	218

Note: Figures are compiled using different sources and do not total

the state in 2016 and 2017 has dropped significantly. Given that the timeframe of the estimate is from July 1 to June 30, the loss likely occurred in late 2017 rather than the first half of 2018.

Growth in the state's domestic product and income figures from

the Bureau of Economic Analysis suggest that the state entered 2018 likely in a migration-neutral mode and has likely returned to a positive domestic migration trend since.

Source: Census Bureau Files nst-est2018-alldata and prior year's estimates.

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