Estimates of the Total Population of Counties in Texas by Age, Sex, and Race/Ethnicity for July 1, 2018

Produced by:

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at
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Introduction

The estimates of the total population of counties in Texas by age, sex, and race/ethnicity for July 1, 2018 are completed by personnel from the Texas Demographic Center offices in the Institute for Demographic and Socioeconomic Research at The University of Texas at San Antonio. The total population estimates which are used as the base for these estimates were reviewed in provisional form by a network of reviewers from across the State and, where appropriate, changes were made in the provisional estimates prior to the release of the final estimates of total population shown here.

The methodology used to prepare the estimates of the age, sex, and racial/ethnic composition of the estimated population in each county in Texas is described in this write-up. Due to space limitations, only a summary of the methodology is presented. Those wishing for more detailed information on the methodology should contact program personnel in the Texas Demographic Center at The University of Texas at San Antonio.

Methodology

To derive estimates of age, sex, and race/ethnicity detail from the estimates of the total population for counties for July 1, 2018, a procedure was used to first project, from the 2010 base population, the proportion of the population expected to be in each age, sex, and racial/ethnic group in each county as of July 1, 2018. These proportions were then multiplied by the estimate of total population for the county for racial/ethnic groups controlled to the total for the county estimate of total population for July 1, 2018.

The projection of the proportion of persons who were in each age, sex, and racial/ethnic group was obtained by projecting the 2010 population of each county by age, sex, and race/ethnicity forward to July 1, 2018. The baseline populations for both the projections and estimates consist of five groups. These are Non-Hispanic White (Anglo), Non-Hispanic Black, Hispanic (of all races), Non-Hispanic Asian and Non-Hispanic Other population group. These consist of the census categories: Non-Hispanic White alone, Non-Hispanic Black or African American alone, Hispanics of all races, Non-Hispanic Asian alone and persons in all other non-Hispanic racial groups referred to as the Other population group. This latter (Other population) group also includes all persons listing two or more races.

The use of these classifications allowed for the creation of 5 mutually exclusive groups (i.e., Non-Hispanic White or Anglo, Non-Hispanic Black or African American, Hispanic, Non-Hispanic Asian and Non-Hispanic Other). This is the first time Non-Hispanic Asians were broken out and estimated separately from the Non-Hispanic Other group. One can simply aggregate the Non-Hispanic Asian

and the Non-Hispanic Other to be comparable to the Non-Hispanic Other group in our previous estimates post 2010.

For our estimates between 2000 and 2010, however, we utilized a somewhat different set of groupings in which multi-race groups were allocated to individual single race groups. This was necessary because the 2000 Census was the first to allow respondents to indicate that they were members of more than one race. As a result, single race groups for 1990 and 2000 were not directly comparable and any computation of fertility, mortality, or migration rates that did not adjust for this change in data collection procedures would have resulted in incorrect rates for the four major groups and to clearly fallacious projections. The procedures used to make allocations of multi-race groups to the single race/ethnicity categories are described in the procedures for the pre-2010 projections (see Texas Population Estimates and Projections Program 2009). With the completion and release of 2010 data, there were appropriate data for the two adjoining decennial periods of 2000 and 2010, and thus in the estimates presented here, direct census categories that did not require allocations have been used. This provides directly comparable values for 2000 to 2010 and directly comparable fertility, mortality, and migration rates for 2000 and 2010. The major change resulting from this is that the Non-Hispanic Other category increases as a result of including two or more races in this category for both 2000 and 2010.

It was also necessary to adjust the base population for "special populations". Special populations are populations who reside in an area, usually in institutional settings, who do not generally experience the same demographic processes over time as the indigenous population in the area. Rather, they tend to come into and leave an area at fixed intervals. Examples of such populations are college populations, prison populations, and other persons in institutional settings. Because their movement into and out of an area is a function of events (e.g., enrollment, graduation, incarceration), which are not determined by local socioeconomic conditions, special populations must be removed from the base populations of projection areas before birth, death, and migration rates are applied to the base population. If special populations of substantial size are not removed, they will create distortions in age and other characteristics of the population that will remain in the population through the cohort aging process and create inaccuracies in the projections. Special populations are, therefore, generally removed from the cohort base, the base cohorts projected forward and a separate projection of the special population for the projection date is added to the projected base cohorts to obtain the projection of the total population.

The July 1, 2018 projections were obtained by using standard cohort component techniques with single years of age, sex, and racial/ethnic cohorts and assumptions related to 2009-2011 rates of mortality and 2010 –2015 net migration for each cohort.

While 2010 Census base population was aged forward and projected to July 1, 2018 to obtain population estimates for those ages 9 and over, birth data from the vital statistics record were used to estimate those ages 8 and under. Mother's race/ethnicity had been used in our estimates to represent

the race/ethnicity of the newborn. Further research suggests, however, that there were significant differences between the race/ethnicity distribution in the birth data and that of the zero-year -olds in the 2010 census. To address this discrepancy, we used the 2010 census zero-year-olds as our baseline births, and then we applied the county level racial/ethnic trends observed in the birth data to obtain a new set of birth data for 2011 to 2018 that are more consistent with the racial/ethnic distribution of the 2010 census. To minimize random reporting errors and year-to-year fluctuations, we used a three-year moving average method to estimate the temporal trends and sex ratios.

To obtain baseline mortality measures, survival rates by single years of age, for both sexes and for each of the racial/ethnic groups, were needed. Survival rates for Anglos, Blacks, Hispanics, Asians and the Other racial/ethnic category were computed using death data from the Texas Department of State Health Services.

Migration is the most difficult component process to project and for which to obtain baseline rates. For the Texas Population Estimates and Projections Program's projections, rates were derived using a standard residual migration formula. Thus, births and deaths by age, sex, and race/ethnicity cohort were added or subtracted (as appropriate) to the 2010 population to produce an expected 2015 population. This expected population was compared to the 2015 population to estimate net migration for 2010-2015. We assume that the trends in the age, sex, and race/ethnicity net migration rates between 2010 and 2015 will characterize those occurring in the future of Texas.

Utilizing the expected rates of change projected for each age, sex, and race/ethnicity cohort for July 1, 2018. these proportions were then applied to the total residential population for counties estimated for the same date. Special populations, which were removed prior to the computation of residential population estimates, were then added back into their county cohorts. County population estimates by age, sex, and race/ethnicity are then controlled to the total population estimated for each county. The result is an estimated population by age, sex, and race/ethnicity for each county in Texas which sums to the total population estimate for the state for July 1, 2018.

Comparisons to Other Estimates

The estimates presented here may differ from those available from other sources due to differences in both assumptions and estimation techniques. Users should thus be careful to compare both the assumptions and methodologies underlying different estimates when comparing estimates from different sources.