Estimates of the Total Population of Counties in Texas by Age, Sex and Race/Ethnicity for July 1, 2011

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Introduction

The estimates of the total population of counties in Texas by age, sex and race/ethnicity for July 1, 2011 are completed by personnel from the Texas State Data 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 writeup. 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 State Data Center at The University of Texas at San Antonio.

Methodology

To derive estimates of age, sex and race/ethnic detail from the estimates of the total population for counties for July 1, 2011, 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, 2011. 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, 2011.

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, 2011. The baseline populations for both the projections and estimates consist of four groups. These are an Non-Hispanic White (Anglo), Non-Hispanic Black, Hispanic (of all races), and a 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, 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 initial release of 2010 based estimates and projections for the State does not include a separate Non-Hispanic Asian population. The Office of the State Demographer and the Texas State Data Center are working to refine the methodology to ensure production of defensible projections for this group. Once the methods have been refined a supplemental set of estimates and projections will be released that provide Non-Hispanic Asian specific populations.

The use of these classifications allowed for the creation of 4 mutually exclusive groups (i.e., Non-Hispanic White or Anglo, Non-Hispanic Black or African American, Hispanic, and Non-Hispanic Other) that are directly comparable to those used in 2000. The potential estimate of two other subgroups was examined but a decision was made not to include separate population values for these groups in current projections and estimates. These were a Non-Hispanic Asian alone and a multi-race group. They were not included because of the small number of persons in these groups in many counties and, in the case of multiple race groups, a lack of historical data for rate computations. The creation of projections and estimates for these groups for the State and selected counties will be reconsidered in the future.

It is essential to note that the use of these population bases will result in some discontinuities with previous age, sex and race/ethnicity estimates made by the program. The previous post 2000 estimates and projections of the population 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, 2011 projections were obtained by using standard cohort component techniques with single years of age, sex and racial/ethnic cohorts and assumptions related to 2007-2010 rates of fertility, 2009-2010 rates of mortality and 2000-2012 net migration for each cohort. Age, sex and race/ethnicity specific fertility rates were computed using births by age, sex and race/ethnicity and place of residence of the mother. The numerators for such rates are the average number of births for 2007 through 2010 for mothers in each age, sex and race/ethnicity group and the denominators are the population counts by age, sex and race/ethnicity. Birth data to compute the rates were obtained from the Texas Department of State Health Services and data on women by age (10-49 years) and race/ethnicity were obtained from the 2010 Census of Population.

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, 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 State 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 2000 population to produce an expected 2010 population. This expected population was compared to the actual Census count to estimate net migration for 2000-2010. For the purposes of these 2011 age, sex, race/ethnicity estimates for counties in Texas, the 1.0 scenario, otherwise called the 2000 -2010 scenario was utilized. This projection scenario assumes that the trends in the age, sex and race/ethnicity net migration rates of the 2000's 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, 2011, 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, 2011.

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.

If you have any questions concerning these estimates, please contact:

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