

Documentation for April 1, 2010 Bridged-Race Population Estimates for Calculating Vital Rates

The bridged-race April 1, 2010 population file contains estimates of the resident population of the United States based on the population enumerated on April 1, 2010 by county, single-year of age (0, 1, 2,..., 85 years and over), bridged-race category (White, Black or African American, American Indian or Alaska Native, Asian or Pacific Islander), Hispanic origin (not Hispanic or Latino, Hispanic or Latino), and sex (1). The estimates on this file resulted from bridging the 31 race groups used in Census 2010, as specified in the 1997 Office of Management and Budget (OMB) standards for the collection of data on race and ethnicity to the four race categories specified under the 1977 OMB standards (2, 3). Age, sex, and Hispanic origin subtotals for “All races” obtained from this bridged file are consistent with those from the unbridged April 1, 2010 estimates file.

Source of the Estimates

The bridged-race April 1, 2010 population estimates were produced by the Population Estimates Program of the U.S. Census Bureau in collaboration with the National Center for Health Statistics (NCHS). NCHS released the bridged-race April 1, 2010 estimates on November 17, 2011 following release by the U.S. Census Bureau of the unbridged April 1, 2010 census counts on November 3, 2011.

Race Bridging Background

What is race bridging? - Race bridging refers to making data collected using one set of race categories consistent with data collected using a different set of race categories, to permit estimation and comparison of race-specific population-based statistics at a point in time or over time. More specifically, race bridging is a method used to make multiple-race and single-race data collection systems sufficiently comparable to permit estimation and analysis of race-specific statistics.

OMB’s 1977 and 1997 standards on race and ethnicity - In 1997, OMB issued “Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity,” which supersedes the 1977 Statistical Policy Directive 15, “Race and Ethnic Standards for Federal Statistics and Administrative Reporting” (2, 3). Both documents specify rules for the collection, tabulation, and presentation of race and ethnicity data within the Federal statistical system. The race categories specified in both standards represent a social-political construct and are not anthropologically or biologically based. The revised standards increased the minimum number of race categories to be used by Federal agencies from four (White, Black, American Indian or Alaska Native, and Asian or Pacific Islander) to five (White, Black or African American, American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander). In addition, the revised standards require Federal data collection programs to allow respondents to select more than one race category when responding to a query on their racial identity. This

provision means that under the revised standards there are potentially 31 race groups (5 single-race and 26 multiple-race), depending on whether an individual selects one, two, three, four, or all five of the single-race categories.

Why race bridge? - During the transition to full implementation of the 1997 standards on race and ethnicity (see paragraph below), these two different standards for the collection of race and ethnicity data are both being used, creating incomparability across data systems. Further, within a given data system, the change in the race standards results in incomparability across time, thus making it difficult to perform trend analyses. The OMB recognized that race-bridging approaches would be needed to make race data collected under the 1997 standards comparable to race data collected under the 1977 standards. Therefore, the OMB issued “Provisional Guidance on the Implementation of the 1997 Standards for Federal Data on Race and Ethnicity” (4). The guidance document contains a detailed discussion of various bridging methods.

What is the NCHS regression bridging method? – The bridging methodology developed by NCHS bridges the multiple-race group population counts to four single-race categories (5, 6). Information from the pooled 1997-2000 National Health Interview Survey (NHIS) was used to develop the bridging methodology. Regression models with person-level and county-level covariates were used to generate the probability of selecting each single-race category possible for a multiple-race group. The probabilities generated from the fitted regression models are referred to as the NHIS bridging proportions. The Census Bureau has applied the NHIS bridging proportions generated by NCHS to the Census 2000 and Census 2010 counts, to the annual postcensal series of estimates for the 2000-2010 decade, and to the 2000-2010 intercensal estimates. These applications have resulted in bridged population estimates for each of the four single-race categories (White, Black or African American, American Indian or Alaska Native, and Asian or Pacific Islander) by county, age, Hispanic origin group, and sex. The bridging methodology is described in detail in the report, “United States Census 2000 Population with Bridged Race Categories” (which is available for download from this site) (5).

Why does NCHS use bridged-race population estimates? - Vital statistics rates are based on information obtained from vital records collected through the state-based Vital Statistics Cooperative Program (numerators) and population estimates derived from the U.S. Census Bureau (denominators). Because of differences in the timing of implementation of the 1997 OMB standards on race and ethnicity, beginning with the 2000 data year, the numerators and denominators of vital rates have incompatible race data. The questions about race on the 2000 and 2010 censuses were based on the 1997 OMB standards and so allowed respondents to select more than one race category. As a result, population estimates for 2000 and beyond have five single-race categories and up to 26 multiple-race categories. Implementation of the 1997 standards within the Vital Statistics Cooperative System started in 2003, on an individual state basis, and is proceeding slowly as states implement revised birth and death certificates which incorporate the 1997 OMB standards. As of 2010, 13 states had not revised the race question on their death certificate and 12 had not revised it on their birth certificate

and were still collecting race data using the 1977 race categories. For this reason and because of the need for birth and death trend data, NCHS continues to compute rates using the 1977 OMB race categories. When a sufficient number of states have adopted the revised birth and death certificates, rates will be presented using population estimates that comply with the 1997 standards.

Population Estimates Background

What are April 1, census counts? The census of population (decennial census) enumerates the resident population of the United States as of April 1 of the census year. Data on sex, race, age, Hispanic origin, and marital status are collected from 100% of the enumerated population and are referred to as census counts. The Census Bureau adjusts the 100% April 1 count data for 1) errors in the census data discovered, 2) misreported age data, and 3) nonspecified race and Hispanic origin.

What are postcensal population estimates? - Postcensal population estimates are estimates made for the years following a census, before the next census has been taken. They are derived by updating the resident population enumerated in the decennial census using various measures of population change, including births to U.S. resident women, deaths to U.S. residents, net international immigration, net movement of U.S. Armed Forces and civilian citizens of the U.S, and migration within the U.S. The Census Bureau annually produces a series of postcensal estimates that includes estimates for the current data year and revised estimates for earlier years. Estimates for earlier years in a given series are revised to reflect changes in the components of population change data sets (for example, a preliminary natality file is replaced with a final natality file). A series of estimates is referred to as a Vintage and the last year in the series is used to name it. For example, the Vintage 2002 postcensal series has estimates for July 1, 2000, July 1, 2001, and July 1, 2002.

What are intercensal population estimates? - Intercensal population estimates are estimates made for the years between two completed censuses which take into account the census at both the beginning and end of the decade. With the completion of the decennial census at the end of a decade, the postcensal estimates for the intercensal period are modified to account for differences between the census counts for the end of the decade) and the postcensal estimates for April 1 of that census year. for example, after completion of the 2010 census, the postcensal estimates for the period between April 1, 2000 and April 1, 2010 were modified to account for differences between the April 1, 2010 census counts and the 2000-based April 1, 2010 postcensal estimates. Replacement of postcensal estimates with intercensal estimates is desirable because as the end of the decade approaches, the postcensal estimates become increasingly less accurate.

Production of the April 1,2010 Population Estimates

Using the race bridging methodology described in “Race Bridging Background”, the Census Bureau, in collaboration with NCHS, derived the April 1, 2010 bridged-race estimates from the April 1, 2010 census counts with 31 race groups (the 31 race groups used in Census 2010)

Variance of Bridged-Race Population Estimates

Population estimates generally are assumed to be fixed and do not contribute to the variance of rates. However, this is not true for bridged-race population estimates. Although efforts were made to use the best available data and methods to produce the bridged-race estimates, the modeling process introduces error into the estimates. The potential for error will be greatest for the smallest population groups, particularly the smaller race groups and county level estimates. Methodology to compute variances for bridged-race population estimates has been developed (7).

NCHS Use of Bridged-Race Population Estimates

NCHS publishes national (and some state) birth and death rates on an annual basis. For the 2001-2009 preliminary and final birth and death reports, NCHS used the bridged-race postcensal population estimates to calculate race-specific birth and death rates. The 2001-2009 vital rates in these reports were calculated using population estimates from the bridged-race postcensal estimates series corresponding with each data year (i.e., vital rates for 2001 were calculated using population estimates from the Vintage 2001 postcensal series, vital rates for 2002 were calculated using estimates from the Vintage 2002 postcensal series, and so forth). Vital rates for 2001-2009 are being recalculated using the bridged-race intercensal population estimates. Some revised rates have been published; others are forthcoming (8). Vital rates in the 2010 birth and death reports will be calculated using the bridged-race April 1, 2010 estimates derived from April 1, 2010 census counts. The July 1, 2010 bridged-race intercensal population estimates are used to calculate selected birth measures in the 2010 birth report.

Release of Bridged-Race Population Estimates

In response to the need for bridged estimates by a wide range of users, NCHS makes the bridged-race population estimates available for download from the web site “U.S. Populations with Bridged Race Categories” (<http://www.cdc.gov/nchs/about/major/dvs/popbridge/popbridge.htm>). The report detailing the bridging methodology, “United States Census 2000 Population with Bridged Race Categories”, also is available for download from this site (5).

Geographic Codes in the Bridged-Race Population Files

County geography changes over time—new counties are created and old counties are deleted or their boundaries are modified. Changes that have occurred in the county FIPS codes on the bridged-race population files (as a result of county geography changes) are detailed in Appendix I.

Comments and Questions

NCHS would appreciate receiving feedback on the usefulness of the bridged-race estimates as well as notification of any problems that have been identified. Comments or questions about the estimates may be sent via e-mail to:

PopEst@cdc.gov.

Suggested Citation

National Center for Health Statistics. Estimates of the April 1, 2010 resident population of the United States, by county, single-year of age (0, 1, 2, ..., 85 years and over), bridged race, Hispanic origin, and sex. Prepared under a collaborative arrangement with the U.S. Census Bureau. Available from: http://www.cdc.gov/nchs/nvss/bridged_race.htm as of November 17, 2011, following release by the U.S. Census Bureau of the unbridged April 1, 2010 census counts on November 3, 2011.

References

1. National Center for Health Statistics. Estimates of the April 1, 2010 resident population of the United States, by county, single-year of age (0, 1, 2, ..., 85 years and over), bridged race, Hispanic origin, and sex. Prepared under a collaborative arrangement with the U.S. Census Bureau. Available from: http://www.cdc.gov/nchs/nvss/bridged_race.htm as of November 17, 2011, following release by the U.S. Census Bureau of the unbridged April 1, 2010 census counts on November 3, 2011.
2. Office of Management and Budget. Revisions to the standards for the classification of Federal data on race and ethnicity. Federal Register 62FR58781-58790, October 30, 1997. Available from: <http://www.whitehouse.gov/omb/fedreg/1997standards.html>.
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6. Parker JD, Schenker N, Ingram DD, Weed JA, Heck KE, Madans JH. Bridging between two standards for collecting information on race and ethnicity: an application to Census 2000 and vital rates. Public Health Reports 119(2):192-205. 2004
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9. U.S. Census Bureau. U.S. Census Bureau. Substantial changes to counties and county equivalent entities: 1970-present. Available from: 2010. <http://www.census.gov/geo/www/tiger/ctychng.html>.

April 1, 2010 Bridged-Race Population Estimates File

The files contain bridged-race estimates of the April 1, 2010 resident population of the United States by county single-year of age (0, 1, 2, ..., 85 years and over), bridged-race category (White, Black or African American, American Indian or Alaska Native, Asian or Pacific Islander), Hispanic origin (not Hispanic or Latino, Hispanic or Latino), and sex. There is a record on the files for each combination of county, age, race, Hispanic origin, and sex. The bridged-race population estimates on the file were derived by the U.S. Census Bureau and released by NCHS on November 17, 2011. Release of the bridged-race estimates followed release by the U.S. Census Bureau of the unbridged April 1, 2010 census counts on November 3, 2011.

Control totals: April, 2010 population file

File name	Number of records	Estimate month, year	Total population count	File size
census_0401_2010.txt	4,324,768	April 1, 2010	308,745,538	81MB
census_0401_2010.sas7bdat				184MB

File Layout: census_0401_2010.txt

TXT file with population estimates for April 1, 2010, ages 0 to 85+ years

Location	Field size	Item and code outline	Format
1-2	2	<u>State FIPS code</u>	Numeric
3-5	3	<u>County FIPS code</u>	Numeric
6-7	2	<u>Age</u> (0, 1, 2, ..., 85 years and over)	Numeric
8	1	<u>Bridged-race-sex</u> 1=White male 2=White female 3=Black or African American male 4=Black or African American female 5=American Indian or Alaska Native male 6=American Indian or Alaska Native female 7=Asian or Pacific Islander male 8=Asian or Pacific Islander female	Numeric
9	1	<u>Hispanic origin</u> 1=not Hispanic or Latino 2=Hispanic or Latino	Numeric
10-17	8	<u>April 1, 2010 population estimate</u>	Numeric

File layout: census_0401_2010.sas7bda
 SAS file with April 1, 2010 population estimates, ages 0 to 85+ years:

Variable name	Item and code outline	Format
ST_FIPS	<u>State FIPS code</u>	Numeric
CO_FIPS	<u>County FIPS code</u>	Numeric
AGE	<u>Age</u> (0, 1, 2, ..., 85 years and over)	Numeric
RACESEX	<u>Bridged-race-sex</u> 1=White male 2=White female 3=Black or African American male 4=Black or African American female 5=American Indian or Alaska Native male 6=American Indian or Alaska Native female 7=Asian or Pacific Islander male 8=Asian or Pacific Islander female	Numeric
HISP	<u>Hispanic origin</u> 1=not Hispanic or Latino 2=Hispanic or Latino	Numeric
POP2010	<u>April 1, 2010 population estimate</u>	Numeric

APPENDIX I

County geography changes over time – new counties are created and old counties are deleted or their boundaries altered. (9). As a result, the counties/county equivalents for which estimates are available in each of the bridged-race population series varies somewhat. For example, the Vintage 2009 files have population estimates for three new county equivalents (Wrangell Borough, Petersburg Census Area, and Prince of Wales-Hyder Census Area) and do not have estimates for two former county equivalents (Wrangell-Petersburg Census Area and Prince of Wales-Outer Ketchikan Census Area). Vintage 2008 has estimates for two new Alaska entities and does not have estimates for one former entity. Vintage 2002, Vintage 2005, Vintage 2006, and Vintage 2007 have estimates for the same 3,141 counties and county equivalents; Vintage 2003 and Vintage 2004 have estimates for the same 3,140 counties and county equivalents. The tables below summarize differences in county geography across the various estimates series.

New counties and county equivalents on the bridged-race population files: 1990-2010

Estimates series	County or county equivalent						
	Number of counties	Broomfield, CO (08014)	Hoonah-Angoon Census Area, AK (02105)	Skagway Municipal., AK (02230)	Petersburg Census Area, AK (02195)	Prince of Wales-Hyder Census Area, AK (02198)	Wrangell City and Borough, AK (02275)
2010 census							
April 1, 2010	3,143	X	X	X	X	X	X
2000-2010 intercensal estimates							
July 1, 2000- July 1, 2010	3,143	X	X	X	X	X	X
2000-2009 postcensal estimates							
Vintage 2009	3,143	X	X	X	X	X	X
Vintage 2008	3,142	X	X	X-	--*--	-*-	-*-
Vintage 2005 -Vintage 2007	3,141	X	--*--	-*-	--*--	-*-	-*-
Vintage 2003 - Vintage 2004	3,140	--*--	--*--	-*-	--*--	-*-	-*-
Vintage 2002	3,141	X	--*--	-*-	-*-	-*-	-*-
Vintage 2001	No county estimates on file, only national estimates						
2000 Census							
April 1, 2000	3,141	--*--	--*--	-*-	--*--	-*-	-*-
1990-1999 intercensal estimates							
July 1, 1990- July 1, 1999	3,141	--*--	--*--	-*-	--*--	-*-	-*-

--*-- County or county equivalent is not on the file.

X County or county equivalent is on the file.

Specific details:

Broomfield County, Colorado (FIPS code=08014) was created effective November 15, 2001 from parts of four Colorado counties: Adams, Boulder, Jefferson, and Weld. There are estimates for this county on some, but not all, of the bridged-race files. Note that data for Broomfield County do not appear on NCHS birth or mortality files until data year 2003.

Hoonah-Angoon Census Area, AK (FIPS code = 02105). The Hoonah-Angoon Census Area was created from the remainder of the former Skagway-Hoonah-Angoon Census Area (FIPS code = 02232) when Skagway Municipality (FIPS code = 02230) was created effective June 20, 2007. Note that no data for Hoonah-Angoon Census Area appear on NCHS birth and mortality files.

Petersburg Census Area (FIPS code=02195). Petersburg Census Area was created from part of the former Wrangell-Petersburg Census Area (FIPS code = 02280) effective June 1, 2008. Note that no data for this Census Area appear on NCHS birth and mortality files.

Prince of Wales-Hyder Census Area (FIPS code = 02198). Prince of Wales-Hyder Census Area was created from the remainder of the former Prince of Wales-Outer Ketchikan Census Area (FIPS code = 02201) after part (Outer Ketchikan) was annexed by Ketchikan Gateway Borough (FIPS code = 02130) effective May 19, 2008 and another part was included in the new Wrangell Borough (effective June 1, 2008). Note that no data for this Census Area appear on NCHS birth and mortality files

Skagway Municipality, AK (FIPS code = 02230). Skagway Municipality was created from part of the former Skagway-Hoonah-Angoon Census Area (FIPS code = 02232) effective June 20, 2007; boundaries are identical to the Skagway census subarea. The remainder of the former Skagway-Hoonah-Angoon Census Area was established as the new Hoonah-Angoon Census Area (FIPS code = 02105). Note that no data for Skagway Municipality appear on NCHS birth and mortality files.

Wrangell City and Borough (FIPS code = 02275). Effective June 1, 2008, Wrangell City and Borough was created from part of Wrangell-Petersburg Census Area (FIPS code = 02280) and part of Prince of Wales-Outer Ketchikan Census Area (FIPS code = 02201). Note that no data for Wrangell Borough appear on NCHS birth and mortality files.

Deleted counties and county equivalents: bridged-race population files for 1990-2010

Estimates series	County or county equivalent				
	Number of counties	Clifton Forge County, VA 51560	Prince of Wales-Outer Ketchikan Census Area, AK (02201)	Skagway-Hoonah-Angoon Census Area, AK (02232)	Wrangell – Petersburg Census Area, AK (02280)
2010 census					
April 1, 2010	3,143	*-	*-	*-	*-
2000-2010 intercensal estimates					
July 1, 2000- July 1, 2010	3,143	*-	*-	*-	*-
2000-2009 postcensal estimates					
Vintage 2009	3,143	*-	*-	*-	*-
Vintage 2008	3,142	--*--	X	--*--	X
Vintage 2005 - Vintage 2007	3,141	--*--	X	X	X
Vintage 2003 - Vintage 2004	3,140	--*--	X	X	X
Vintage 2001	No county estimates on file, only national estimates				
2000 census					
April 1, 2000	3,141	X	X--	X	X
1990-1999 intercensal estimates					
July 1, 2000- July 1, 2009	3,141	X	X	X	X

--*-- County or county equivalent is not on the file.

X County or county equivalent is on the file.

Specific details:

Clifton Forge County, Virginia (FIPS code = 51560). On July 1, 2001, Clifton Forge city, Virginia, formerly an independent city, merged with Alleghany county (FIPS code=51005). There are no estimates for this county on the bridged-race postcensal population files. Note that data for Clifton Forge city appear on NCHS birth and mortality files prior to data year 2003; beginning with the 2003 data year, no data for Clifton Forge city appear on the birth and death files.

Prince of Wales-Outer-Ketchikan Census Area (FIPS code = 02201). Part of this area (Outer Ketchikan) was annexed by Ketchikan Gateway Borough (FIPS code = 02130), part was included in the new Wrangell City and borough (FIPS code = 02275), and the remainder was renamed Prince of Wales-Hyder Census Area (FIPS code = 02198). Note that data for this area appear on NCHS birth and mortality files for 1994 – present.

Skagway-Hoonah-Angoon Census Area, AK (FIPS code = 02232). Effective June 20, 2007, Skagway-Hoonah-Angoon Census area was split to create Skagway Municipality (FIPS = 02230) and Hoonah-Angoon Census Area (FIPS code = 02105), Note that data for Skagway-Hoonah-Angoon Census Area appear on NCHS birth and mortality files for 1994 – present.

Wrangell-Petersburg Census Area (FIPS code = 02280). Effective June 1, 2008, Wrangell-Petersburg Census Area was split to create part of Wrangell City and Borough (FIPS code = 02275) and all of Petersburg Census Area (FIPS code = 02195). Note that data for Wrangell-Petersburg Census Area appear on NCHS birth and mortality files for 1994 – present