



## Single Year of Age County Population Estimates, 1969–2019

(<https://seer.cancer.gov>)

### 2010–2019

The single year of age populations estimates for 2010–2019 were created using bridged race vintage 2019 population estimates by year, county, single-year of age, Hispanic origin and sex available from the National Center for Health Statistics (NCHS) Web site ([https://seer.cancer.govhttps://www.cdc.gov/nchs/nvss/bridged\\_race.htm](https://seer.cancer.govhttps://www.cdc.gov/nchs/nvss/bridged_race.htm)). This file contains populations by year, county, race, Hispanic origin, sex and age. The race groups included in these estimates are White, Black, American Indian and Alaska Native and Asian/Pacific Islander. The age groups consisted of the following 86 categories: <1, 1, 2, 3, ...84, and 85+ years. The following steps were taken to create 2010–2019 single year of age estimates:

- One record was created by year, county, race, Hispanic origin and sex with variables for each of the age-specific populations.
- The Federal Information Processing Standards (FIPS) county codes used by NCHS were collapsed to match the county list used by the NCI (See Appendix 1 (<https://seer.cancer.govmethods.html#appendix1>) of methods documentation).
- Adjustments to the NCHS populations for the state of Hawaii were made using the 2000 Census SF1 (<https://seer.cancer.govhttps://www.census.gov/data/datasets/2000/dec/summary-file-1.html>) and 2010 Census SF1 (<https://seer.cancer.govhttps://www.census.gov/data/datasets/2010/dec/summary-file-1.html>) files. The proportion of the White Alone population estimate to the total (all racial/ethnic groups combined) population was calculated from the SF1 data for 2000 and 2010 by county, sex, and age. Using the proportions for 2000 and 2010, proportions for 2010–2019 were extrapolated. The proportion was applied to the total (all racial/ethnic groups combined) population estimate from the Census Bureau to produce the Hawaii-adjusted White population. Additional racial/ethnic populations for Hawaii were developed in the following manner:
  - Hispanic White = Hawaii-adjusted White X (Census Hispanic White/Census White)
  - Non-Hispanic White = Hawaii-adjusted White - New Hispanic White
  - Hispanic Nonwhite = (Census Total - Hawaii-adjusted White) X (Census Hispanic Nonwhite/Census Nonwhite)
  - Non-Hispanic Asian/Pacific Islander = Hawaii-adjusted Hispanic Nonwhite - (Census Non-Hispanic Black + Census Non-Hispanic American Indian/Eskimo/ Aleut)
  - Hispanic Asian/Pacific Islander = Census Total - (Hawaii-adjusted White + Census Black + Census American Indian/Eskimo/ Aleut + Hawaii-adjusted Non-Hispanic Asian Pacific Islander)
- The adjusted Hawaii data were merged with the other county level data.
- One record was created by year, county, race, Hispanic origin, sex and age.
- Race/Hispanic origin populations were summed to create races White, Black and Other.

The 2010–2019 estimates received from NCHS included population estimates for new counties in Alaska established in June 2008. Petersburg Census Area, Wrangell City and Borough, Prince of Wales-Hyder Census Area, Ketchikan Gateway Borough were derived from Wrangell-Petersburg Census Area, Prince of Wales-Outer Ketchikan Census Area and Ketchikan Gateway Borough. To be consistent with the way numerator data are reported (i.e., mortality and incidence) estimates for 2010–2013 were derived for the original three Alaska counties that existed prior to the creation of the new counties. The vintage 2008 series of Census Bureau estimates are the last estimates to have the original three counties and were used to derive the estimates. The estimates for 2014–2019 are still based on the new counties. The following steps were taken:

- One record was created from the 2010-2013 data by year, race, Hispanic origin, age and sex with variables containing the total population for Petersburg Census Area, Wrangell City and Borough, Prince of Wales-Hyder Census Area, and Ketchikan Gateway Borough.
- One record was created from the older 2008 data by race, Hispanic origin, age and sex with variables containing the populations for the individual and sum of the counties for Wrangell-Petersburg Census Area, Prince of Wales-Outer Ketchikan Census Area and Ketchikan Gateway Borough counties. Proportions were calculated for each of the 3 counties to the total of the 3 counties by race, Hispanic origin, age and sex.
- The proportions calculated above for each of the 3 counties were applied to the current total population estimates for the 4 counties in 2010-2013.
- One record was created by year, county, race, Hispanic origin, sex and age.
- The 2010-2013 population estimates received from NCHS for the 4 counties were replaced by the 3 county derived estimates.

## 2000–2009

A set of July 1, 2000-2009 bridged race population estimates were obtained by NCI from the Census Bureau through an interagency agreement. This file contains intercensal populations by year, county, race, Hispanic origin, sex and age. The race groups included in the Census estimates are White, Black, American Indian and Alaska Native and Asian/Pacific Islander. The age groups consisted of the following 86 categories: <1, 1, 2, 3, ...84, and 85+ years. The following steps were taken to create 2000-2009 single year of age estimates:

- One record was created by year, county, race, Hispanic origin and sex with variables for each of the age-specific populations.
- Census Federal Information Processing Standards (FIPS) county codes were collapsed to match the county list used by the NCI (See Appendix 1 (<https://seer.cancer.gov/methods.html#appendix1>) of methods documentation).
- Adjustments to the Census Bureau's populations for the state of Hawaii were made using the 2000 Census SF1 (<https://seer.cancer.gov/https://www.census.gov/data/datasets/2000/dec/summary-file-1.html>) and 2010 Census SF1 (<https://seer.cancer.gov/https://www.census.gov/data/datasets/2010/dec/summary-file-1.html>) files. The proportion of the White Alone population estimate to the total (all racial/ethnic groups combined) population was calculated from the SF1 data for 2000 and 2010 by county, sex, and age. Using the proportions for 2000 and 2010, proportions for 2001-09 were interpolated. The proportion of the White Alone population estimate to the total (all racial/ethnic groups combined) population was calculated from the SF1 data for 2000 by county, sex, and age. The proportion was applied to the total (all racial/ethnic groups combined) population estimate from the Census Bureau to produce the Hawaii-adjusted White population. Additional racial/ethnic populations for Hawaii were developed in the following manner:
  - $\text{Hispanic White} = \text{Hawaii-adjusted White} \times (\text{Census Hispanic White} / \text{Census White})$
  - $\text{Non-Hispanic White} = \text{Hawaii-adjusted White} - \text{New Hispanic White}$
  - $\text{Hispanic Nonwhite} = (\text{Census Total} - \text{Hawaii-adjusted White}) \times (\text{Census Hispanic Nonwhite} / \text{Census Nonwhite})$
  - $\text{Non-Hispanic Asian/Pacific Islander} = \text{Hawaii-adjusted Hispanic Nonwhite} - (\text{Census Non-Hispanic Black} + \text{Census Non-Hispanic American Indian/Eskimo/ Aleut})$
  - $\text{Hispanic Asian/Pacific Islander} = \text{Census Total} - (\text{Hawaii-adjusted White} + \text{Census Black} + \text{Census American Indian and Alaska Native} + \text{Hawaii-adjusted Non-Hispanic Asian Pacific Islander})$
- The adjusted Hawaii data were merged with the other county level data.
- One record was created by year, county, race, Hispanic origin, sex and age.
- Race/Hispanic origin populations were summed to create races White, Black and Other.

The 2000-2009 estimates received from the Census Bureau included population estimates for Broomfield County in Colorado, which was created in November, 2001 from parts of Adams, Boulder, Jefferson, and Weld counties. To be consistent with the way numerator data are reported (i.e., mortality and incidence) in 2000 and 2001, however, we derived estimates for the original four

Colorado counties (Adams, Boulder, Jefferson and Weld) that existed prior to the creation of Broomfield County. An earlier series of Census Bureau estimates that did not include Broomfield County were used to derive the 2000 and 2001 estimates. The following steps were taken:

- One record was created from the 2000-2009 data for 2000 and 2001 by year, race, Hispanic origin, age and sex with variables containing the total population for Adams, Boulder, Broomfield, Jefferson, and Weld counties.
- One record was created from the older 2000-2001 data by race, Hispanic origin, age and sex with variables containing the populations for the individual and sum of the counties for Adams, Boulder, Jefferson and Weld counties. Proportions were calculated for each of the 4 counties to the total of the 4 counties by race, Hispanic origin, age and sex.
- The proportions calculated above for each of the 4 counties were applied to the current total population estimates for the 5 counties in 2000-2001.
- One record was created by year, county, race, Hispanic origin, sex and age.
- The population estimates received from census for the 5 counties were replaced by the 4 county derived estimates.

The 2000-2009 estimates received from the Census Bureau included population estimates for new counties in Alaska established in June 2008. Petersburg Census Area, Wrangell City and Borough, Prince of Wales-Hyder Census Area, Ketchikan Gateway Borough were derived from Wrangell-Petersburg Census Area, Prince of Wales-Outer Ketchikan Census Area and Ketchikan Gateway Borough. To be consistent with the way numerator data are reported (i.e., mortality and incidence) estimates were derived for the original three Alaska counties that existed prior to the creation of the new counties. The vintage 2008 series of Census Bureau estimates were used to derive the estimates. The following steps were taken:

- One record was created from the 2000-2009 data by year, race, Hispanic origin, age and sex with variables containing the total population for Petersburg Census Area, Wrangell City and Borough, Prince of Wales-Hyder Census Area, and Ketchikan Gateway Borough.
- One record was created from the older 2000-2008 data by year, race, Hispanic origin, age and sex with variables containing the populations for the individual and sum of the counties for Wrangell-Petersburg Census Area, Prince of Wales-Outer Ketchikan Census Area and Ketchikan Gateway Borough counties. Proportions were calculated for each of the 3 counties to the total of the 3 counties by race, Hispanic origin, age and sex.
- The proportions calculated above for each of the 3 counties were applied to the current total population estimates for the 4 counties in 2000-2008. The proportions calculated for 2008 were also applied to the 2009 data.
- One record was created by year, county, race, Hispanic origin, sex and age.
- The population estimates received from Census for the 4 counties were replaced by the 3 county derived estimates.

Two sets of population estimates are available for 2005: the standard set based on July 1 populations and another set adjusted for population shifts due to hurricanes Katrina (August 29) and Rita (September 24). These estimates are lower than the values for counties/parishes that had direct hurricane impact and higher for counties/parishes that were destinations for those displaced. See Adjusted Populations for the Counties/Parishes Affected by Hurricane Katrina and Rita ([https://seer.cancer.gov/popdata/hurricane\\_adj.html](https://seer.cancer.gov/popdata/hurricane_adj.html)) for more information.

## 1990-1999

The single year of age populations estimates for 1990-1999 were created using bridged race intercensal population estimates by year, county, single-year of age, Hispanic origin and sex available from the National Center for Health Statistics (NCHS) Web site ([https://seer.cancer.govhttps://www.cdc.gov/nchs/nvss/bridged\\_race.htm](https://seer.cancer.govhttps://www.cdc.gov/nchs/nvss/bridged_race.htm)). The NCI county level populations used in SEER\*Stat (<https://seer.cancer.gov/seerstat/>) were used to adjust the Hawaii estimates. The following steps were taken to create the single year of age estimates:

- The NCHS populations for selected counties were combined to be consistent with the county codes used by the NCI (See

Appendix 1 (<https://seer.cancer.gov/methods.html#appendix1>) of methods documentation).

- The NCHS population data contained several cells with negative counts, likely due to incomplete application of the raking techniques used to control more detailed population estimates to marginal totals. We adjusted the NCHS populations to remove negative counts in the following manner. The population for the age with the negative count was set to zero and the age with the highest population in the five year age group was decreased by one. This was done so that the sum of the individual ages in a five year age group stayed the same.
- For Hawaii, the proportion for each single year of age to the age group total was calculated for each of the age groups (1-4,5-9,10-14,...,80-84) in the NCI estimates by year, race (White, Black, American Indian/Eskimo/Aleut, Asian/Pacific Islander), Ethnicity (Hispanic, Non-Hispanic) and sex.
- Using the NCI 1990-1999 Hawaii-adjusted population estimates, the proportions from the NCHS data were applied to each age group by year, race, ethnicity and sex.
- The adjusted Hawaii data were merged with the other county level data.
- One record was created by year, county, race, Hispanic origin, sex and age group.
- Race/Hispanic origin populations were summed to create races White, Black and Other.

## 1969-1989

The single year of age county population estimates for 1969-1989 were created from the 19 age group county population estimates used in the NCI SEER\*Stat (<https://seer.cancer.gov/seerstat/>) software. The SEER\*Stat populations are available for download (see U.S. Population Data (<https://seer.cancer.gov/index.html>)) and the methods used to create them are described in documentation also available in Population Estimates Used in NCI's SEER\*Stat Software (<https://seer.cancer.gov/methods.html>). Single year of age population estimates provided by a private vendor (Woods and Poole Economics, Inc., 2001 Regional Database, Copyright January 2001) were used to create the NCI single year of age estimates in the following manner:

- The Woods and Poole single year of age populations for one to eighty four year olds were used by year (1970-1989), state/county, race (White, Black, Other) and sex (male, female). To be consistent with the county codes used by the NCI (See Appendix 1 (<https://seer.cancer.gov/methods.html#appendix1>) of methods documentation), various counties available in the Woods and Poole data needed to be combined or recoded (See Appendix 2 (<https://seer.cancer.gov/methods.html#appendix2>) of methods documentation). There were also several counties, mainly in Virginia, that are not combined in the NCI data that are combined in the Woods and Poole data. For the purposes of developing the NCI single year of age populations, the information for the combined counties in the Woods & Poole data was used for each of the individual NCI counties (See Appendix 3 (<https://seer.cancer.gov/methods.html#appendix3>) of methods documentation).
- Using the Woods & Poole data, a proportion was calculated for each single year of age to age group total for the following age groups (1-4,5-9,10-14,...,80-84) by year, state/county, race (White, Black, Other) and sex.
- Using the NCI 1969-1989 population estimates, the proportions calculated from the Woods and Poole data were applied to each age group by year, state/county, race (White, Black, Other) and sex. The proportions for 1970 were used for 1969.
- For age groups where the Woods & Poole data had zero population and the NCI estimate was greater than zero, the population was distributed equally among the single year ages within the age group.
- The sum of the new single year of age populations were compared to the original NCI SEER\*Stat age group populations by year, state/county, race (White, Black, Other) and sex. Due to rounding, it was necessary to adjust some of the single year of age populations so that their sum matched the original combined age group estimates.