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Methodology statement: Esri Diversity Index

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Introduction

Tracking the diversity of our society is crucial to understanding the shifting demographics of race and ethnicity in the United States. Esri's Diversity Index captures the racial and ethnic diversity of a geographic area in a single number, from 0 to 100. The Diversity Index allows for efficient analysis and mapping of seven race groups that can be either of Hispanic or non-Hispanic origin—a total of 14 separate race/ethnic groupings.

Based on the data standards established by the Office of Management and Budget, the U.S. Census Bureau considers race and ethnicity to be two separate and distinct concepts. Hispanic Origin refers to ethnicity, not race, and is viewed as the heritage, nationality, lineage, or country of birth of the person or the person's parents or ancestors before arriving in the United States. Due to the use of the decennial census as a base, Esri Updated Demographics reflect these same standards. Race is reported as White, Black or African American, Asian, American Indian and Alaska Native, Native Hawaiian and Other Pacific Islander, Some Other Race, and Multiple Races. Ethnicity is reported as Hispanic or Non-Hispanic. By treating race and ethnicity as two independent data points, Esri's Diversity Index compounds racial diversity with ethnic diversity to provide an inclusive understanding of diversity. Explore the [Esri Diversity Index: Growth in Diversity from 2020 to 2028](#) ArcGIS StoryMaps story to see patterns in the Diversity Index for Census 2020, Esri's 2023/2028 Updated Demographics, and the forecasted compound rate of growth in the Diversity Index from 2020 to 2028.

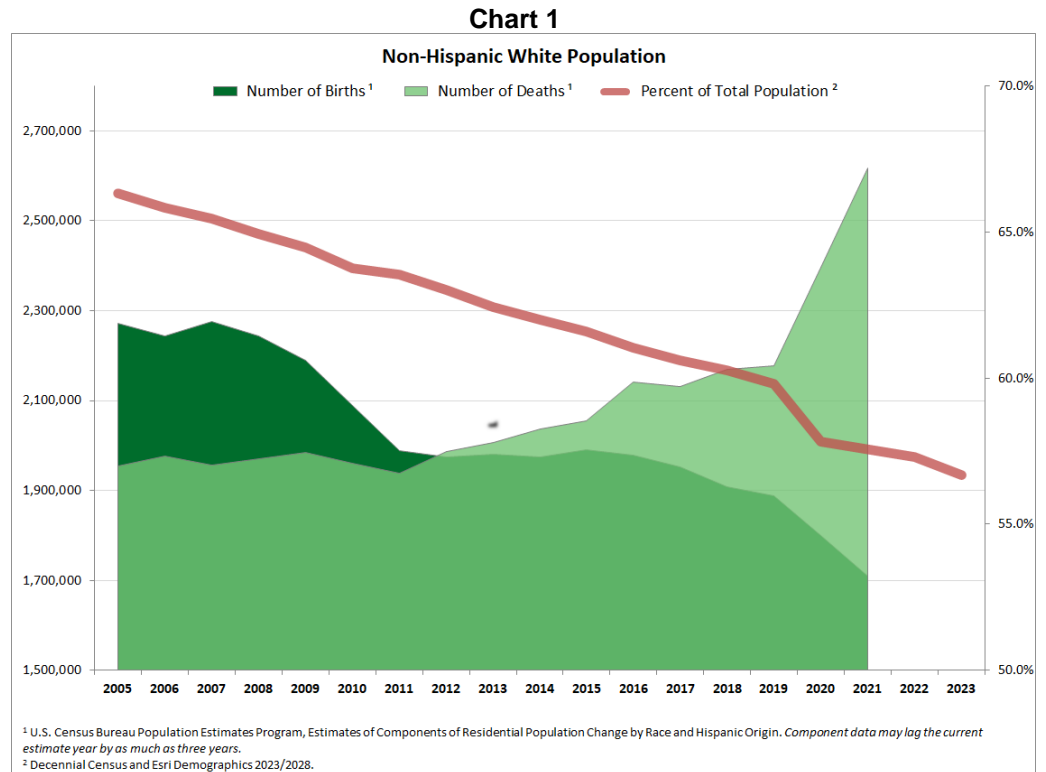
Over the last 50 years, the racial and ethnic compositions of the United States have changed dramatically. Much of the increased diversity has been due to the Hispanic population. From 2010 to 2020, the Hispanic population increased by 23 percent whereas the non-Hispanic population grew by 4.3 percent. In 1970, Hispanics accounted for 4.7 percent of the population. Today, Hispanics represent 19.4 percent of the 2023 population, which is expected to grow to 20.4 percent by 2028. Although immigration has largely contributed to gains in diversity over the past half-century, there are new forces driving diversity across the country. Native births have become a primary source of diversification. It is estimated that births currently account for around 75 percent of the Hispanic population growth since 2010.¹

More than half of all children born in the United States are minorities, defined as any race/ethnicity other than non-Hispanic White. Minorities accounted for 36.1 percent of the population in 2010 and are expected to make up 44.1 percent of the population by 2028. That reduces the majority (non-Hispanic Whites) share of the population from 63.9 percent to 55.9 percent. An important contributing factor to this shift is the

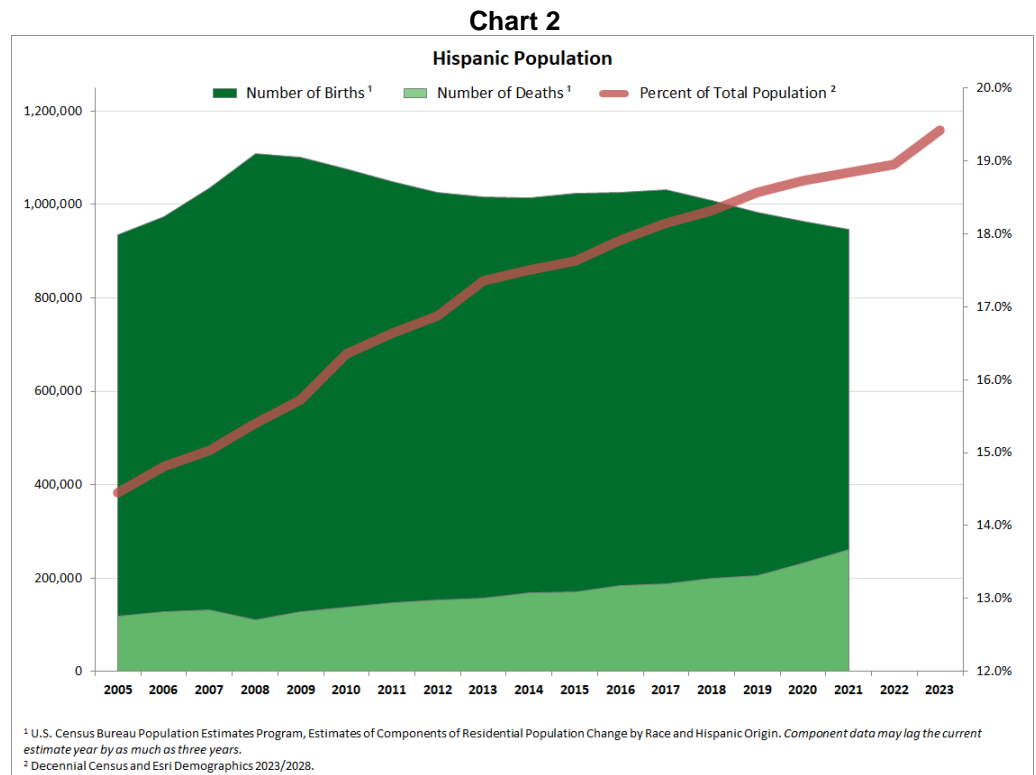
¹ U.S. Census Bureau Population Estimates Program, Estimates of the Components of Resident Population Change by Race and Hispanic Origin for the United States.

increase in the size of the population reported as belonging to multiple racial groups, which changed from 2.9 percent of the total population in the 2010 Census to 10.2 percent in the 2020 Census. This shift can be attributed to multiple factors including changes to the census race question², changes to how the Census Bureau processed the data, and changes to how respondents self-identified compared to the last decade.

The non-Hispanic White population is aging. Younger non-Hispanic Whites are marrying later in life and having fewer children. There are now more deaths than births for the non-Hispanic White population, a process called natural decrease. This shift can be seen in Chart 1 below and juxtaposed with Chart 2 showing the natural increase in the Hispanic population. Never in U.S. Census history has this majority race/ethnic group experienced this type of decline. Meanwhile, a steady increase in marriages across racial and ethnic lines pushes the rate of diversification for the next generation. All these factors combine to accelerate the rate of diversification.



² The Census Bureau implemented subtle but important changes to improve the race and ethnicity questions on the 2020 decennial census questionnaire. These consisted of changes to the wording and examples provided on the form for questions related to race and ethnicity. The word *Negro* was removed, and the choice *Guamanian or Chamorro* was changed to *Chamorro*. Most importantly, the write-in instructions for *Some Other Race* were changed from *Print race* to *Print race or origin*. The maximum number of characters processed by the census for write-in responses was lengthened from 30 to 200 characters. Write-in responses were processed into a maximum of six categories, which is up from two in the 2010 Census.



Geographically, the largest gains in diversity are occurring in areas that previously had the least diversity. Micropolitan and rural areas are experiencing higher rates of diversification than metropolitan areas. Regionally, diversification in the Midwest, Northeast, and South is outpacing the West. These trends are likely to continue as the population of minority groups expands into areas that are currently dominated by the non-Hispanic White population. Variations in the Diversity Index and the annual rate of change for different geographic areas are shown in Tables 1 and 2:

Table 1. 2020-2023 Diversity Index Annual Change by Geography

| Geography | Census 2020 | Update 2023 | Annual Change |
|---------------------|--------------------|--------------------|----------------------|
| US | 71.0 | 72.1 | 0.5% |
| Midwest | 51.8 | 53.1 | 0.8% |
| Northeast | 66.9 | 68.0 | 0.5% |
| South | 72.5 | 73.5 | 0.4% |
| West | 80.3 | 81.1 | 0.3% |
| Metropolitan areas* | 73.6 | 74.6 | 0.4% |
| Micropolitan areas* | 50.2 | 51.5 | 0.8% |
| Rural areas* | 42.7 | 43.9 | 0.9% |

*Based on 2020 CBSA status

Table 2. 2023-2028 Diversity Index Annual Change by Geography

| Geography | Update 2023 | Update 2028 | Annual Change |
|---------------------|-------------|-------------|---------------|
| US | 72.1 | 73.8 | 0.5% |
| Midwest | 53.1 | 55.4 | 0.8% |
| Northeast | 68.0 | 70.0 | 0.6% |
| South | 73.5 | 75.0 | 0.4% |
| West | 81.1 | 82.2 | 0.3% |
| Metropolitan areas* | 74.6 | 76.2 | 0.4% |
| Micropolitan areas* | 51.5 | 53.3 | 0.7% |
| Rural areas* | 43.9 | 45.3 | 0.6% |

*Based on 2020 CBSA status

Definition of Diversity Index

The Diversity Index from Esri represents the likelihood that two persons, chosen at random from the same area, belong to different races or ethnic groups. Ethnic diversity, as well as racial diversity, is included in Esri’s definition of the Diversity Index. Esri’s diversity calculations accommodate up to seven race groups: six single-race groups (White, Black, American Indian, Asian, Pacific Islander, Some Other Race) and one multiple-race group (two or more races). Each race group is divided into two ethnic origins, Hispanic and non-Hispanic. If an area is ethnically diverse, diversity is compounded. The Diversity Index is available down to the block group level geography.

Esri’s definition of diversity is two-dimensional and combines racial diversity with ethnic diversity. This measure shows the likelihood that two persons, chosen at random from the same area, belong to different races or ethnic groups. If an area’s entire population belongs to one race group and one ethnic group, an area has zero diversity. The Diversity Index is a continuum that ranges from 0 (no diversity) to 100 (complete diversity), where an area’s index tends toward 100 when the population is more evenly divided across race and ethnic groups. If an area’s entire population is divided evenly into two race groups and one ethnic group, the diversity index equals 50. As more race groups are evenly represented in the population, the diversity index increases. Race and Hispanic origin data are reported by the Census Bureau and other agencies as grouped summary data; therefore, in practice, the Diversity Index will not reach the maximum value of 100.

Esri's data development team

Led by chief demographer Kyle R. Cassal, Esri's data development team has more than 40 years of experience in market intelligence. The team's economists, statisticians, demographers, geographers, and analysts produce independent small-area demographic and socioeconomic estimates and forecasts for the United States. The team develops exclusive demographic models and methodologies to create market-proven datasets, many of which are now industry benchmarks, such as Tapestry™ Segmentation, Consumer Spending, Market Potential, and annual Updated Demographics. Esri® demographics power ArcGIS® through dynamic web maps, data enrichment, reports, and infographics.



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