

AN ESRI  
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# Methodology statement: Esri Diversity Index

380 New York Street  
Redlands, California 92373-8100 usa  
909 793 2853  
info@esri.com  
esri.com



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# Methodology statement: Esri Diversity Index

## 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 U.S. 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 2029](#) ArcGIS StoryMaps story to see patterns in the Diversity Index for Census 2020, Esri's 2024/2029 Updated Demographics, and the forecasted compound rate of growth in the Diversity Index from 2020 to 2029.

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 19.6 percent of the 2024 population, which is expected to grow to 20.7 percent by 2029. 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.<sup>1</sup>

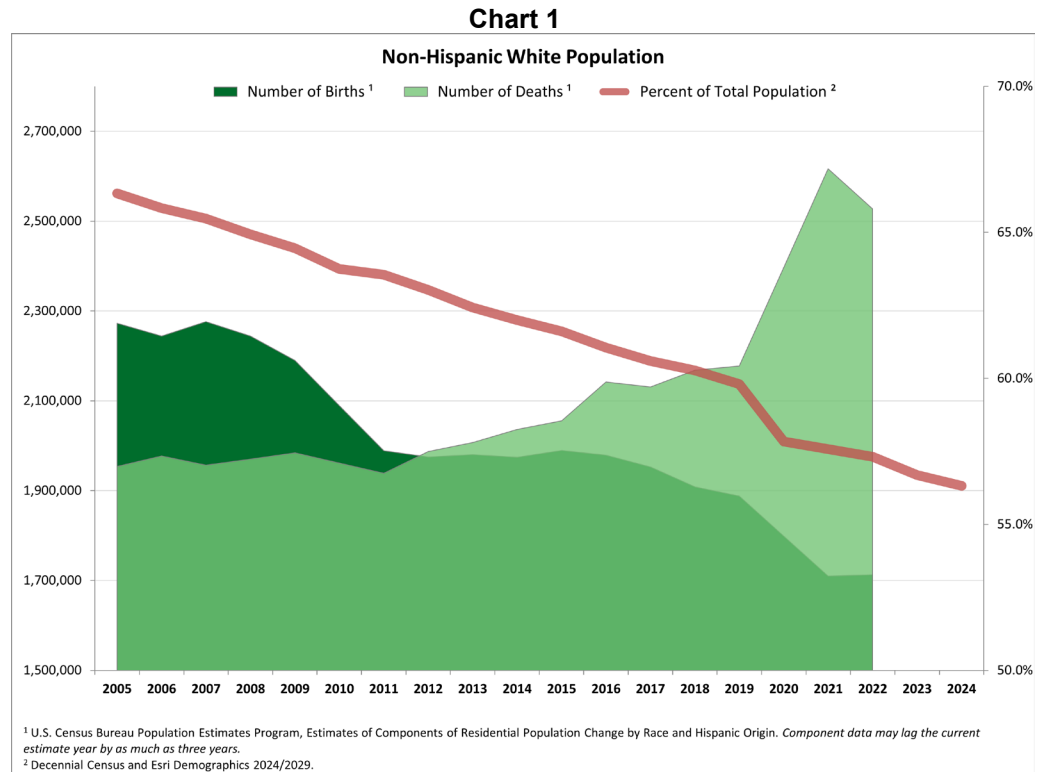
More than half of all children born in the United States are minorities, defined as any race/ethnicity other than non-Hispanic White. Minorities accounted for 36.1 percent of the population in 2010 and are expected to make up 45.4 percent of the population by 2029. That reduces the majority (non-Hispanic Whites) share of the population from 63.9 percent to 54.6 percent. An important contributing factor to this shift is the

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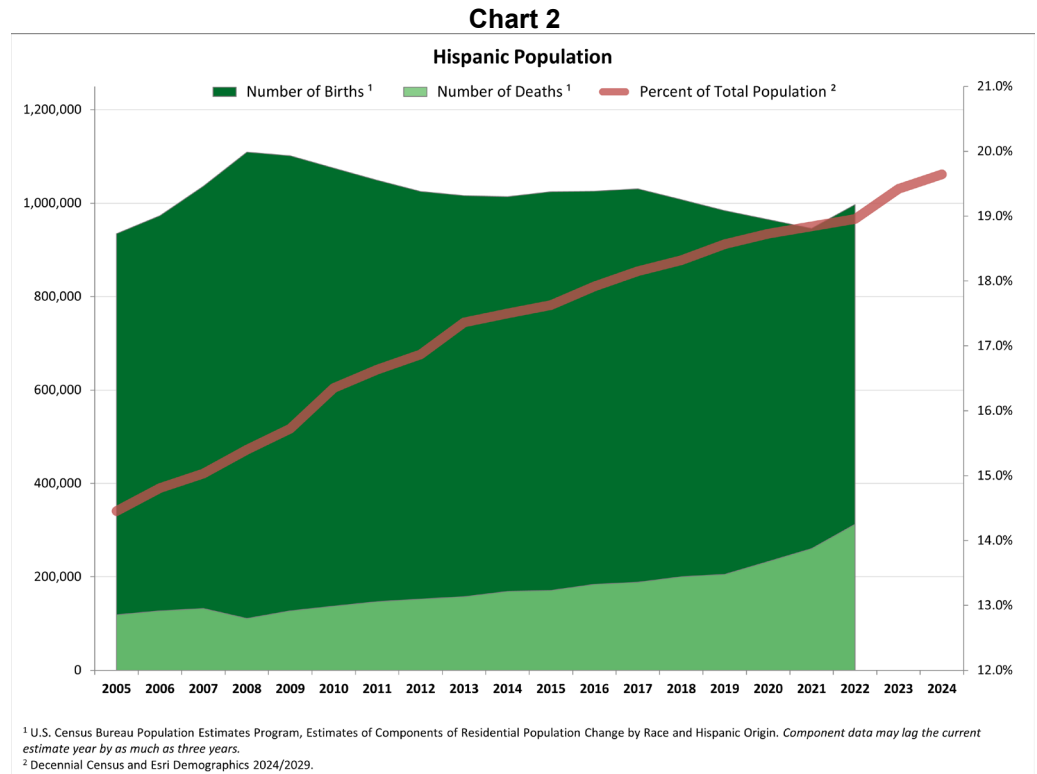
<sup>1</sup> U.S. Census Bureau Population Estimates Program, Estimates of the Components of Resident Population Change by Race and Hispanic Origin for the United States.

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 question<sup>2</sup>, 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.



<sup>2</sup> 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. 2020-2024 Diversity Index Annual Change by Geography

Geography	Census 2020	Update 2024	Annual Change
US	71.0	72.5	0.5%
Midwest	51.8	53.5	0.8%
Northeast	66.9	68.4	0.5%
South	72.5	73.9	0.5%
West	80.3	81.2	0.3%
Metropolitan areas*	73.7	75.0	0.4%
Micropolitan areas*	50.1	51.7	0.7%
Rural areas*	43.1	44.5	0.8%

\*Based on 2023 CBSA status

Table 2. 2024-2029 Diversity Index Annual Change by Geography

Geography	Update 2024	Update 2029	Annual Change
US	72.5	74.0	0.4%
Midwest	53.5	55.4	0.7%
Northeast	68.4	70.2	0.5%
South	73.9	75.4	0.4%
West	81.2	82.1	0.2%
Metropolitan areas*	75.0	76.4	0.4%
Micropolitan areas*	51.7	53.6	0.7%
Rural areas*	44.5	46.2	0.7%

\*Based on 2023 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 is 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 Cassal, and economist Douglas Skuta, Esri's Data Development team uses sophisticated quantitative methods to produce small area demographic and socioeconomic data to support informed decision-making. The team builds on a rich history of market intelligence to produce trusted independent estimates and forecasts for the United States based on innovative methodologies that use public and private data sources with the power of ArcGIS. Esri's Data Development team provides more than 7,000 proprietary data items to better understand the characteristics of people and places across multiple statistical and administrative boundaries and custom trade areas.





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### Contact Esri

380 New York Street  
Redlands, California 92373-8100 USA

1 800 447 9778  
T 909 793 2853  
F 909 793 5953  
[info@esri.com](mailto:info@esri.com)  
[esri.com](http://esri.com)

Offices worldwide  
[esri.com/locations](http://esri.com/locations)

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