

Visualizing the Effects of Population Growth And Diversification on Congressional Politics in Arizona



Background

Arizona has undergone an explosion of population in the last 20 years. Between 2000 and 2010, the population grew by 25%, on top of 40% growth between 1990-2000.¹ Before the recession, Arizona was the fastest-growing state in the Union, growing at more than 5% a year. In 2015, the ACS 5-Year Estimate placed Arizona as the 5th-fastest-growing state.²

The Arizona Sun Corridor between Phoenix and Tucson in 2010 made up 86% of the state population and was part of all eight of its congressional districts, with 3 entirely enclosed in the Greater Phoenix Statistical Metropolitan Area.³ After 2013, Arizona gained a 9th Congressional district, with 5 districts (including the 9th) inside the Phoenix Metropolitan Area.

In this context, it's relevant to consider whether this significant change was made a difference in shifting Arizona from its historical identity as a Republican state.

1. U.S Department of the Census, "1990 Census: Total Population by State"; "2000 Census: Total Population by State"; "2010 Census: Total Population by State"
2. U.S Department of the Census, "2015 American Community Survey: Rate of Population Change by State"
3. U.S Department of the Census, "2010 Census: Urban Area by Population"; "Statistical Metropolitan Area by Population"
4. U.S. Department of the Census, "2010 Census: Population by Ethnic Identification"

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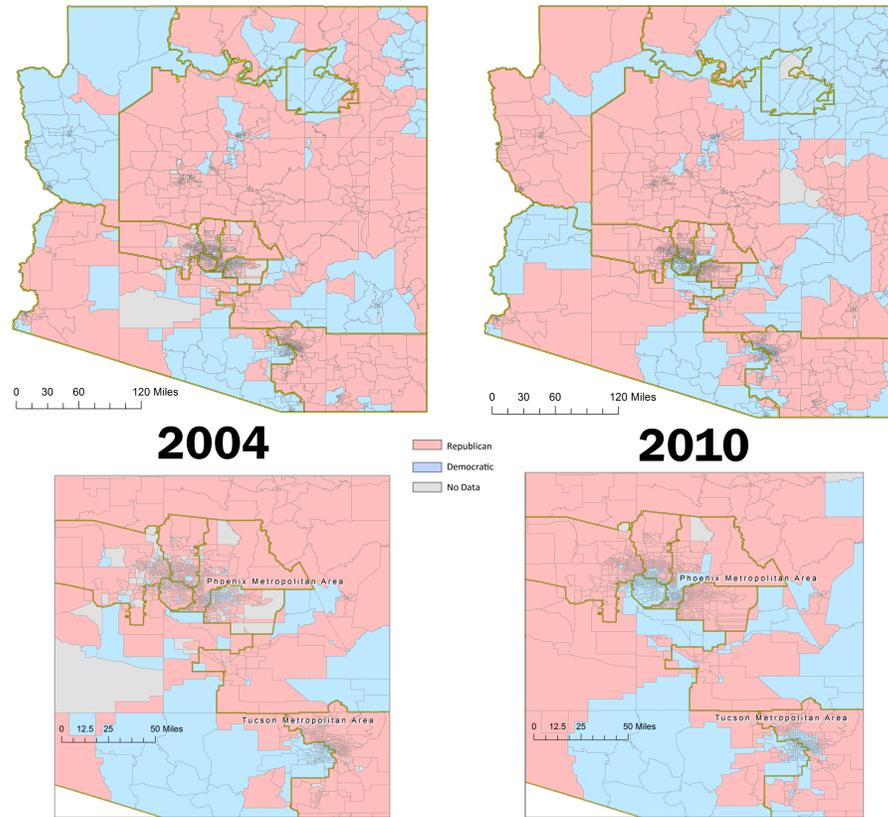
Data Sourcing

GIS Shapefiles were United States Department of the Census TIGER Products for the 2000 Census, 2004 Community Survey, 2010 Census, and 2010 Voting Precinct Project. The choice of years for analysis was determined by the availability of public-access shape files and data. At present the United States Census only has voting precincts data covering 2004-2012, and only has equivalent geocoded census data covering 2005 (ACS 5-Year Estimate) and 2010. At this time there are no publically available shape files covering the current voting precincts in Arizona; though many other states make them available for public use, local governments in Arizona provide them only with a commercial license.

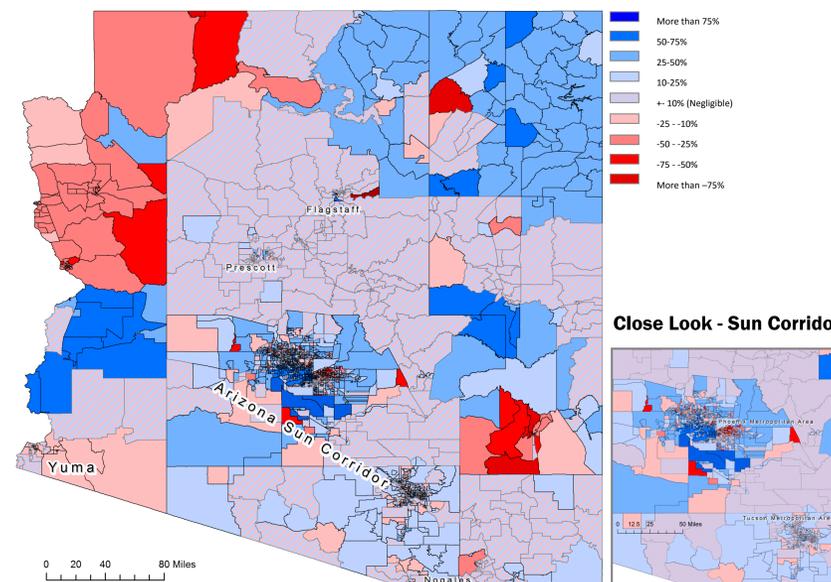
Data on precinct voting returns was provided by the Arizona Secretary of State's Office in raw form and geocoded by the author.

Coordinate System: GCS North American 1983; no other projection used.

Voting Results by Precinct—2004 and 2010 Congressional Elections



Change in Democrat Voter Returns by Proportion of Total Votes



Statistically, new residents of Arizona are younger, more ethnically diverse, and more Democratic than existing residents.

Other major reasons for a shift toward Democratic politics include issues such as illegal immigration, state spending, and economic policy. Arizona between 2004-2010 took hardline stances that may have resulted in loss of support among voters in the north, which tends to be less wealthy and more dependent on state money for national parks, while the southwest and southeast are heavily effected by immigration.

In the Sun Corridor, new affordable construction in the south and luxury construction in the hills to the north has resulted in shifts of wealth and population away from the urban center. Tucson did not experience this degree of demographic change.

Results

Analysis of precinct-level results indicates that the number of registered voters and votes both increased by a significant degree, with all districts reporting statistically significant population growth. Growth was centered in Maricopa (Phoenix), Yavapai (Greater Phoenix), Pima (Tucson), Yuma, and Cochise (Flagstaff) counties. Growth was strongest in the 5th, 6th, and 7th districts which are part of Greater Phoenix and weakest in the 2nd District which includes the Grand Canyon and Lake Mead and few population centers. Democratic turnout and victory was higher in 2010 than in 2004 and Democrats won three districts (4, 7, 8; covering Yuma, South Phoenix, and Tucson) as opposed to two (4 & 7) in 2004

More data would need to be publically accessible from older census records to be able to do a full, statistically accurate comparison of precinct-level voting habits in Arizona. This analysis should not be seen as suggesting any causal relationship between population growth and diversity and the changes in precinct voting results, as it was limited by the unavailability or poor quality of historic data sets.

Methodology

Census Demographic data was associated with TIGER Shapefiles using provided GEOID Keys. GEOIDs were appended to 2000 Census Data where not initially present. Some tracts were not accounted for by due to lack of population and are represented in grey.

2004 and 2010 Electoral Returns were acquired in their original format provided by county government electoral commissions. Returns came in two forms: CSVs produced by the Diebold election management software, and 128-character alphanumeric strings produced by the ES&S election management software. In both cases, the data were separated into discrete columns and each precinct was given a key that matched the keys used in the 2010 Census Redistricting Data Program. Due to missing entries in the 2004 electoral returns not all precincts in the 2004 returns could be given keys and are represented in grey. All analysis of differences between 2010 and 2004 returns was done with missing 2004 entries removed.

Proportion of Census Tract Residents Who Speak Spanish At Home

