2014 POPULATION ESTIMATES FOR NC HOUSE AND NC SENATE DISTRICTS: DATA & METHODS

2000 AND 2010 CENSUS DATA IN 2011 NC HOUSE AND NC SENATE DISTRICT BOUNDARIES

1) Obtain total population data from the Census SF1 for each NC tabulation block for 2000 and 2010 from the National Historical Geographic Information System.

2) Bridge 2000 Census data into 2010 Census geographies using the U.S. Census Bureau's 2010 Block Relationship Files (Census 2000 tabulation census block to 2010 Census tabulation block).

3) Assign blocks to NC House districts according to the Lewis-Dollar-Dockham 4 block assignment files and the NC Senate districts according to the Rucho Senate 2 block assignment files.

4) Aggregate total population to NC House and NC Senate districts.

2014 POPULATION ESTIMATES

NC House and Senate districts can cover multiple counties, or counties can contain multiple districts. The 2014 population was estimated using 2014 county population estimates from the U.S. Census Bureau and the share-of-growth method. In this method, the district's proportion of each county's growth between 2010 and 2014 is assumed to be proportional to its share of the county's population growth between 2000 and 2010. For each district/county intersection, the 2014 population estimate was calculated as:

$$PPop_{2014} = PPop_{2010} + \left(\frac{PPop_{2010} - PPop_{2000}}{CPop_{2010} - CPop_{2000}}\right) \times (CPop_{2014} - CPop_{2010})$$

In the above equation, PPop refers to the population of each part of the district in a given county, and CPop refers to the county population.

Under certain circumstances, the share-of-growth method can yield unrealistic estimates, such as when the county population and the district/county intersection grew in opposite ways during the base period (2000-2010). In instances where a county contained any district/county intersections that lost population while the overall county grew (or gained population while the county population declined), a population estimate based on constant-share was substituted for all district/county intersections within the county. In this method, the district's proportion of each county's population in 2014 is assumed to be the same as its proportion of the county population in 2010. For each district/county intersection in the impacted county, the 2014 population estimate was calculated as:

$$PPop_{2014} = \left(\frac{PPop_{2010}}{CPop_{2010}}\right) \times CPop_{2014}$$

The total population estimates for each district for 2014 is equivalent to the sum of the estimates for all of the district's individual district/county intersections.

For additional information, please contact Rebecca Tippett at rtippett@unc.edu or (919) 966-2829.

REFERENCES

Minnesota Population Center. National Historical Geographic Information System: Version 2.0. Minneapolis, MN: University of Minnesota 2011.

U.S. Census Bureau. 2015. County Population Estimates: Vintage 2014. Retrieved from http://census.gov/popest.