The Center of Population for Florida and Its Counties: An Updated Perspective from Florida's Early History to Present Time

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Florida's population has changed significantly throughout the nearly two hundred years since the first Census in 1830. With a population of only 34,730 people concentrated mostly in the Panhandle region, the first Census outlined a drastically different Florida than in recent years (Cody, 2012)[1]. By 2020, 84 cities in Florida had a larger population than the entire state in 1830, as did 47 of the state's 67 counties. Furthermore, the administrative structure and geopolitical layout of the state changed substantially over time. In 1830, there were only 16 counties, a number that gradually increased from decade to decade. By 1880, the state's population exceeded a quarter million for the first time, and with 39 counties, the state's administrative structure resembled the modern layout more closely than it did in 1830; however, there were still only four counties in the southern part of the state. In this article, we focus on the changes in the location of the state's population center since 1880; earlier changes are shown in Cody (2012).

Data and Methodology

Population data from 1880 to 2020 came from the decennial censuses conducted by the U.S. Census Bureau. The coordinates for the Florida centers of population came from the U.S. Census Bureau's "State Centers of Population 1880–2020"[2]. Throughout the years of the calculation, the Census Bureau has used different units of geography to weigh the population; however, since 2000, the population centers have been based on block-level

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[1] Florida's Population Center Migrates Through History | B.E.B.R. - Bureau of Economic and Business Research (ufl.edu)

[2] State Centers of Population 1880-2020: Florida (census.gov)

data. The large seasonal population in Florida is excluded from this article; all census counts are for permanent residents only.

Calculating the center of population, or population centroid, is straightforward. For example, to calculate the center of population for Florida, one divides the total population of an area – such as a county, census tract, or block group – by the total population of Florida to determine each area's percentage of the state population. Next, this percentage is multiplied by the degrees of longitude of the area's center. This is repeated for each area and the results are summed. The total identifies the degrees of longitude of the centroid. Finally, the entire process is repeated using degrees of latitude.

The geographic units that are used for calculating the population center matter, and using smaller geographic units for the calculation yields more accurate results. For example, a population center calculation for Florida using the mid-point of counties will be less precise than one based on census tracts or smaller units. To illustrate, following the statewide analysis, we will compare the geometric county centroids with centers of population that were calculated at the census tract level. This was done using the coordinates of all census tracts within each county. Based on the population weighting by the U.S. Census Bureau, the geometric centroid for each census tract was calculated manually. Then, the coordinates of those centroids are used to apply weights for the population across the county based off the 2020 Census count in each census tract.

Population Center of Florida

Throughout its modern history, the state's geographic center of population has been trending to the southeast. This is due to the development and urbanization of Central and South Florida, including many of the peninsula's coastal areas. In 1880, the state's center of population was located in what is now northwestern Dixie County (then part of larger Lafayette County), in the Big Bend region of northern Florida bordering the Florida Panhandle (Map 1). With a population of only 269,493, the majority of the population of Florida still lived in the northern part of the state. Leon County, the state's largest county at the time, had a population of 19,662, and 14 of the 15 largest counties in population were in the northern or north-central part of the state (Monroe, the only southern county in the Top 15, was the tenth largest county at the time, with a population of 10,940). The movement of the centroid prior to 1900 reflects the gradual increase in settlement of areas in the southern and eastern parts of the state that previously were sparsely settled. The continued movement to the south and southeast after 1900 was associated with the growth of railroads, the highway system, and the availability of modern conveniences –

especially air-conditioning – that allowed for the settlement of sub-tropical Florida. By 1910, the population center had moved south to Levy County, and in 1930 it was located in northern Citrus County. By 1940, it reached northern Hernando County, and in 1950 it was located in southeastern Pasco County. Since 1960, the population center has been located within Polk County. The center moved southward within the county from 1960 to

**Map 1: Florida's Center of Population: 1880–2020**
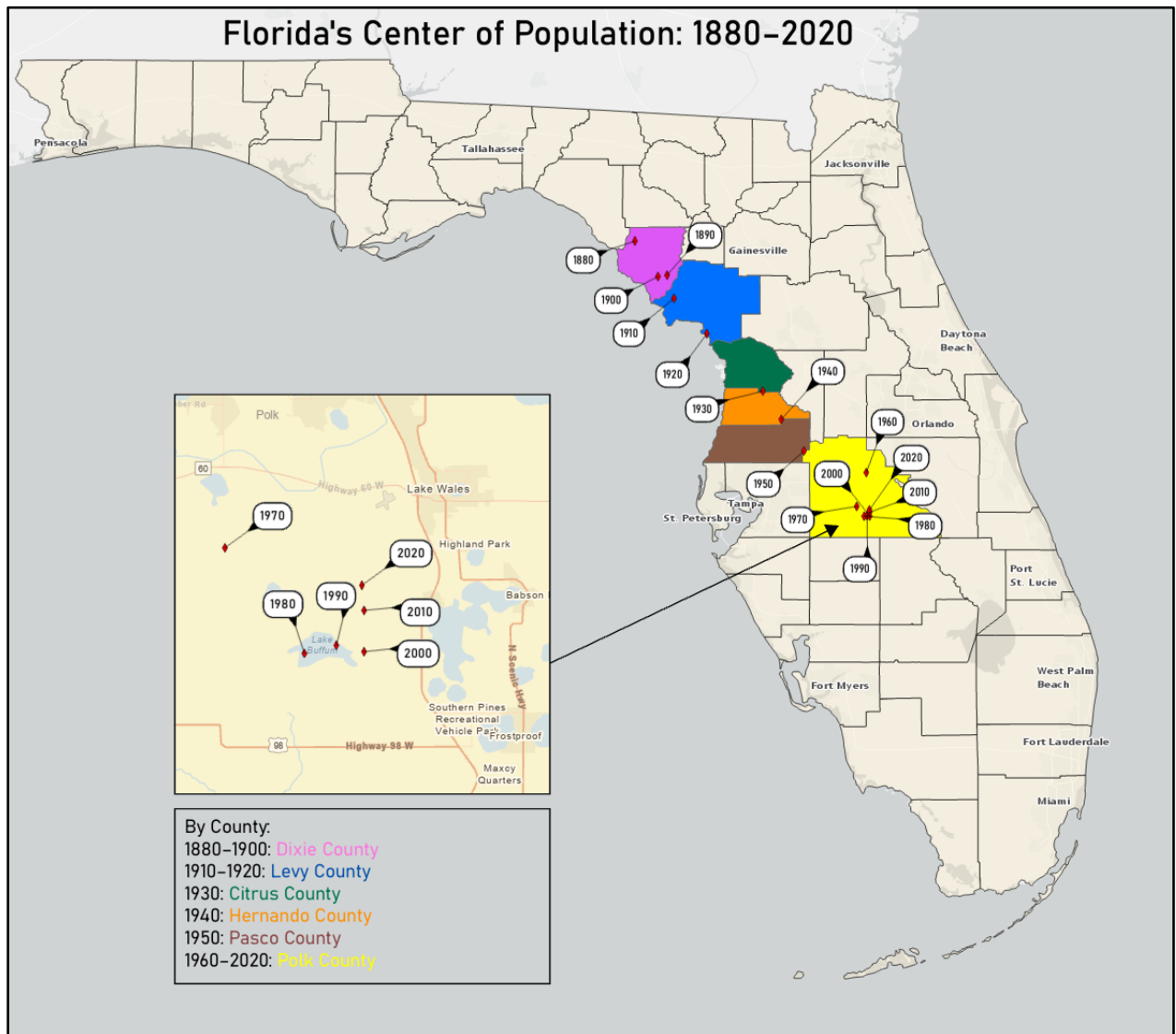
1970, and again from 1970 to 1980. Since 1980, Florida's center of population has changed little geographically, moving less than five miles to the east and one mile to the north from 1980–2010. The small shift towards the north continued from to 2010 to 2020. This

represents a change from the prior trend where the centroid generally traveled to the southeast. The slight shift to the north is due to higher rates of growth in the central Florida region in recent years.

County Centroids

Map 2 shows each county's geometric centroid compared to its center of population. The geometric centroid is the point geometrically in the center of the county where area is equal in all other directions, whereas the center of population is a weighted point where population is equal in all other directions. In coastal counties within the peninsula, the center of population is generally located closer to the coast than the geometric centroid.

Map 2: County Center of Population v. Geometric Centroid (Census 2020)
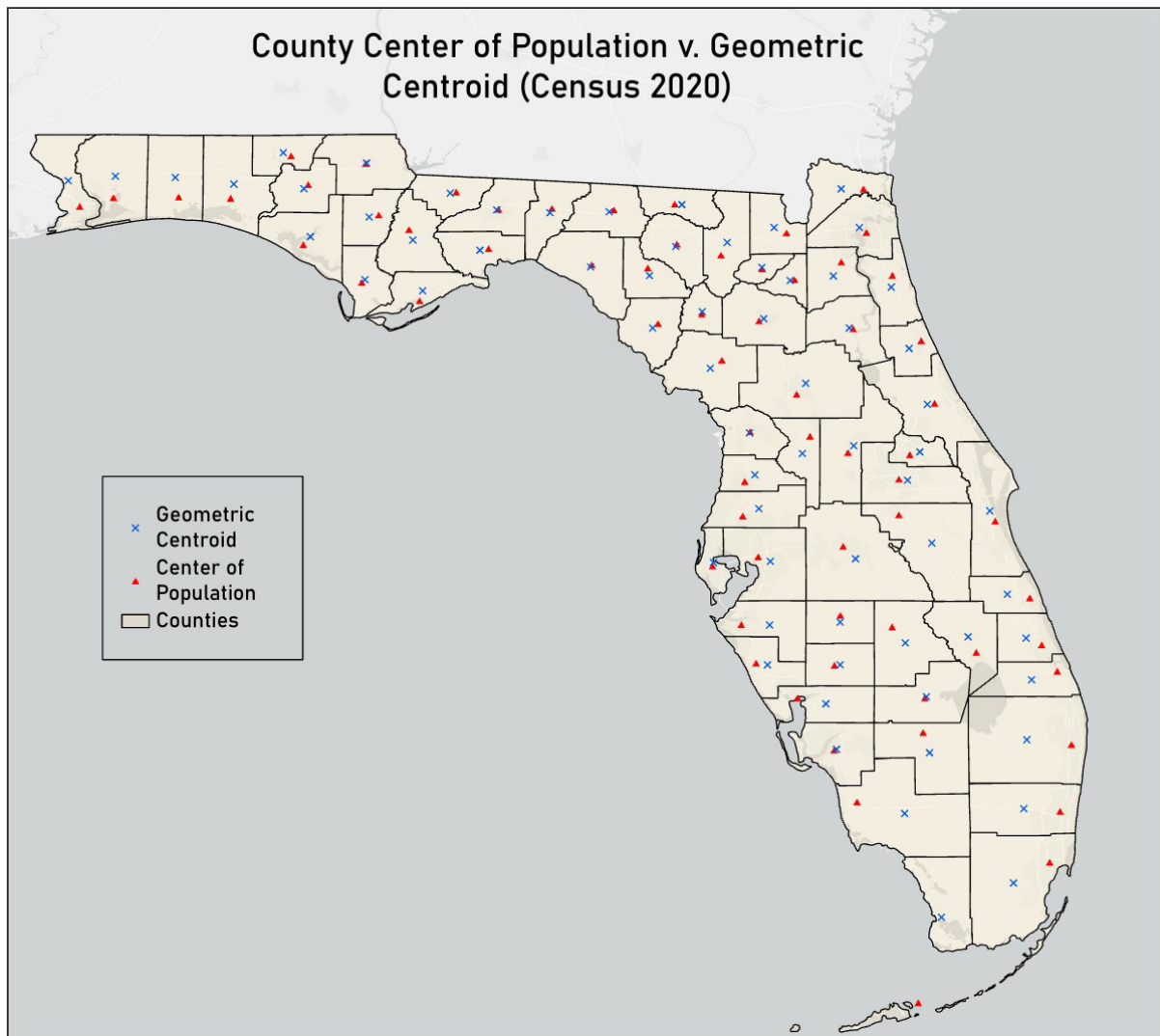
This is true for all counties on the Atlantic Coast (Miami-Dade to Duval), and for all counties on the Gulf Coast from Collier County, north to Hernando County; it is also true for most coastal counties in the Florida Panhandle. On the east coast, most county population centers are located within close vicinity to I-95 – the main north-south highway in the eastern part of the state. All counties within the Treasure Coast (Martin, St. Lucie, and Indian River) and Space Coast (Brevard) have centers of population east of I-95, with Indian River and Brevard counties having the two closest centers to the Atlantic Ocean.

South Florida

In South Florida, defined here as the Miami metropolitan area (Palm Beach, Broward, and Miami-Dade counties), all centers of population are located west of I-95. This is due to urbanization – in South Florida, there is extensive residential development to the west of I-95, which is not the case in many other counties on the Atlantic Coast where development is typically closer to the Atlantic. However, since the Everglades take up a large portion in the western half of each of the three counties in South Florida, their centers of population are still much farther east than their geometric centroids. Unlike other large metro areas in the state, the centers of population for each county in South Florida are located towards the center of each county (on a north-south axis) due to there being multiple urban cores in the region. In metro areas where there is only one urban core, the centers of population are generally near the vicinity of that core area.

Greater Orlando

Only one county along the Atlantic coast (Volusia) has a center of population significantly to the west of I-95. This is because Volusia County is unique in the sense that it is not only a coastal county, but also includes parts of suburban Orlando. Portions of the county, such as Daytona Beach and Port Orange, are coastal cities along the Atlantic Ocean, while cities in the western part of the county, such as Deltona and DeBary, are bedroom communities to Orlando. Because of its unique geography, it is also the only county in the state that has within it portions of I-95 and I-4 – the latter of which stretches from Daytona Beach to Tampa.

Two counties in the Orlando metro area have centers of population closer to the city of Orlando than their geographic centroid would suggest. Seminole County's center of population is located west of its geometric centroid, closer to the city of Orlando; Osceola

County's center of population is to the far north of the county, about 5 miles south of the Orange County border – about as close as it can get while still remaining within the county.

Tampa Bay

West of Orlando, in the Tampa Bay metro area, the centers of population for Pasco and Hernando counties – both with prominent commuter communities – are in the southern parts of the counties closer to the urban centers in Hillsborough and Pinellas counties. In Pasco and Hernando counties, the largest communities border the county south of them [Wesley Chappel, Pasco County, population: 64,866; Spring Hill, Hernando County, population: 113,568 (Census 2020)]. Like the counties in South Florida, Pinellas County also has a center of population in the middle of the county – which is due to it having multiple urban centers and being nearly entirely developed.
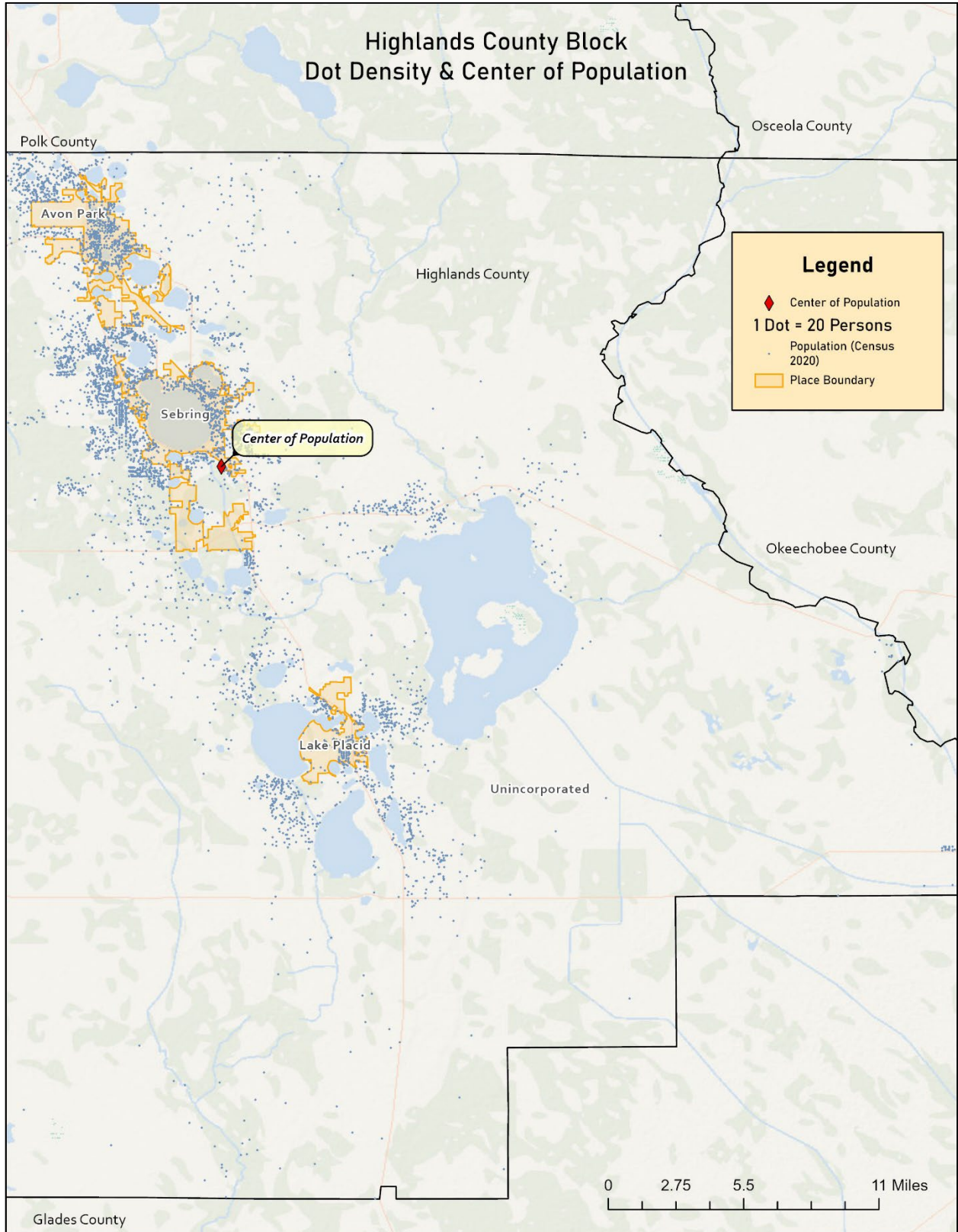
Big Bend & Panhandle

Along the Gulf Coast to the north of the Tampa Bay area is Florida's Nature Coast and Big Bend region: a marshy and forested region with little sand and no barrier islands; consequently, there has been little coastal development. This is reflected in the location of the region's centers of population, all of which are located near, but further inland, than their geometric centroids. From south to north, this region includes Citrus, Levy, Dixie, Taylor, Jefferson, and Wakulla counties.

The geometric centroids and centers of population are typically within proximity of each other in many of the other rural counties in the Florida Panhandle. However, in the coastal counties in the Panhandle (Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf, and Franklin), the centers of population tend to be closer to the coast.
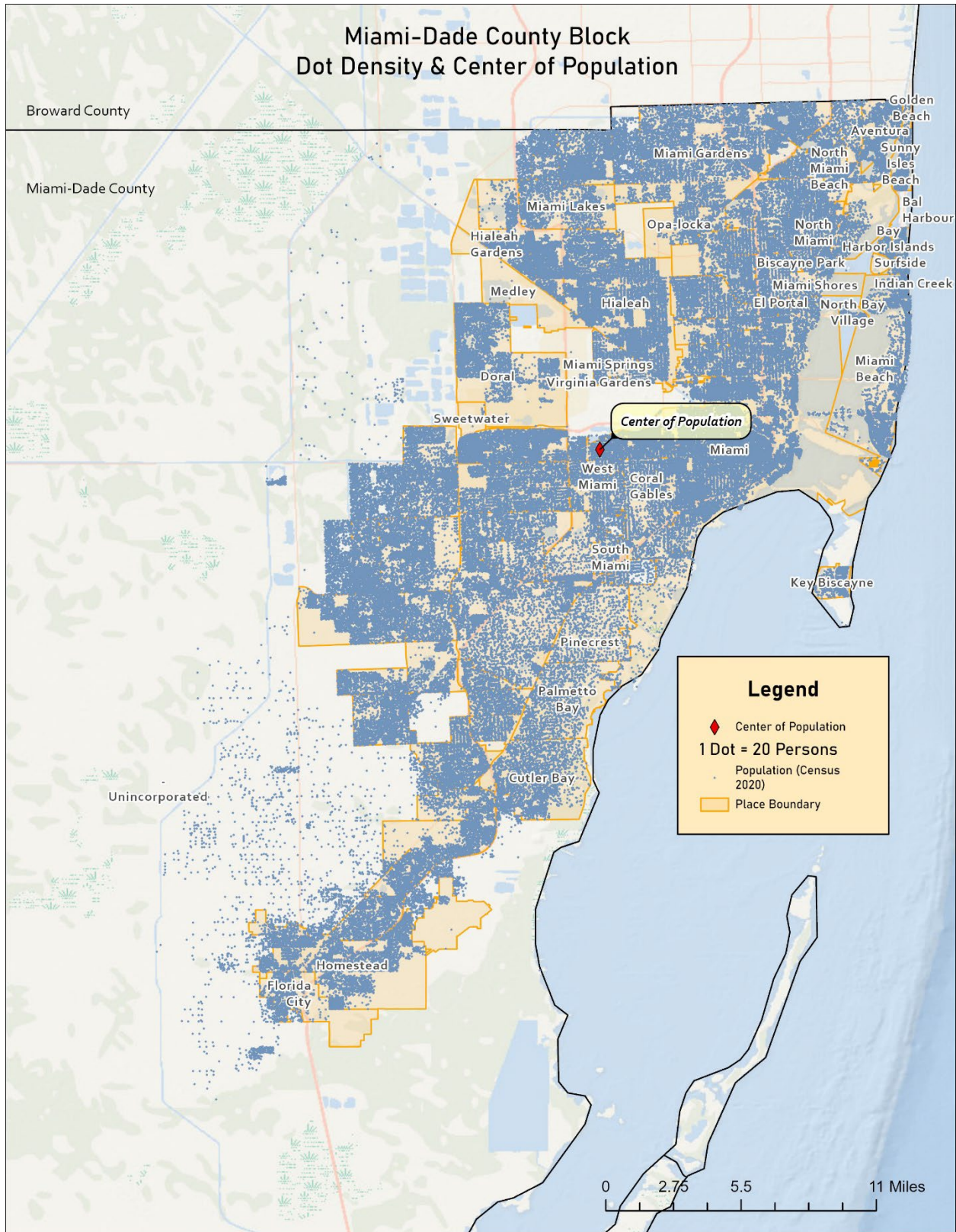
Urban Versus Rural Counties

Overall, there is a distinct difference between most centers of population for urban and rural counties. Urban counties tend to have centers of population closer to their principal cities. In urban counties where there are multiple principal cities or urban centers, such as Palm Beach, Broward, Miami-Dade, and Pinellas, centers of population are towards the center of the urbanized area. Rural counties, on the other hand, tend to have centers of population near where their towns, cities, or other communities are located. For example,

Map 3a: Highlands County Block Dot Density & Center of Population

Highlands County Block
Dot Density & Center of Population

Osceola County

Polk County

Avon Park

Highlands County

Legend

◆ Center of Population

1 Dot = 20 Persons

· Population (Census 2020)

▭ Place Boundary

Sebring

Center of Population

Okeechobee County

Lake Placid

Unincorporated

0   2.75   5.5   11 Miles

Glades County

Map 3b: Miami-Dade County Block Dot Density & Center of Population

Highlands County's center of population is located south of Sebring – the largest of three incorporated communities in the county, whereas Miami-Dade's center of population is in the middle of multiple, sprawling cities, towns, and villages. To illustrate, Map 3 displays population dot density maps for both counties and their respective centers of population.

Conclusion

The population centroid is a simple summary measure which helps to visualize population settlement patterns across space; viewed over longer periods of time, it also shows the directional movement of population change. In the 19th century, the majority of Florida's population lived in the northern part of the state. In the following decades, growth spread from the Panhandle to Central Florida before finally shifting towards the southern part of the peninsula. This pattern can clearly be seen in the consistent shift of Florida's population centroid in a southeasterly direction from 1880 to 1980. Since then, there has been little additional movement in the location of the Florida's population center, and over the past two decades, the center has moved slightly northward. This is due to high rates of population growth in the central part of the state. Given the small changes in Florida's center of population over the past five decades, we anticipate that the centroid will likely remain near its present location for the foreseeable future. At the county level, the centers of population can vary widely in their location due to smaller overall populations that are often clustered in distinct parts of the county. Settlement patterns within a county are also more likely to change than for the entire state, especially for counties that are growing rapidly. The larger counties, however, are less likely to experience substantial shifts in their centers of population in the short to medium term.