



WITNESSING A CITY'S CHANGE

UNDERSTANDING GENTRIFICATION IN BOSTON

INTRODUCTION

Gentrification occurs when an area undergoes economic and demographic changes as a result of new investment and development (Hall, 2020). This process often leads to the displacement of long-existing low-income communities in exchange for an influx of higher-income residents (Hall, 2020). Gentrification is rapidly occurring in the city of Boston. Increasingly anti-local development and rising home sale prices are concerning many Boston residents (Jennings, 2016). Although many propose these developments to revitalize the city's urban infrastructure and economy, evidence suggests that these developments could undermine local resources and displace long-time residents of racially and socio-economically disadvantaged backgrounds (Jennings, 2016). In order to understand where gentrification is happening and who it applies to, I examined several demographic features of census tracts in Boston to determine where Boston is currently experiencing the most risk of gentrification and what neighborhoods have experienced the most significant demographic shifts from 2010 to 2018.



METHODS

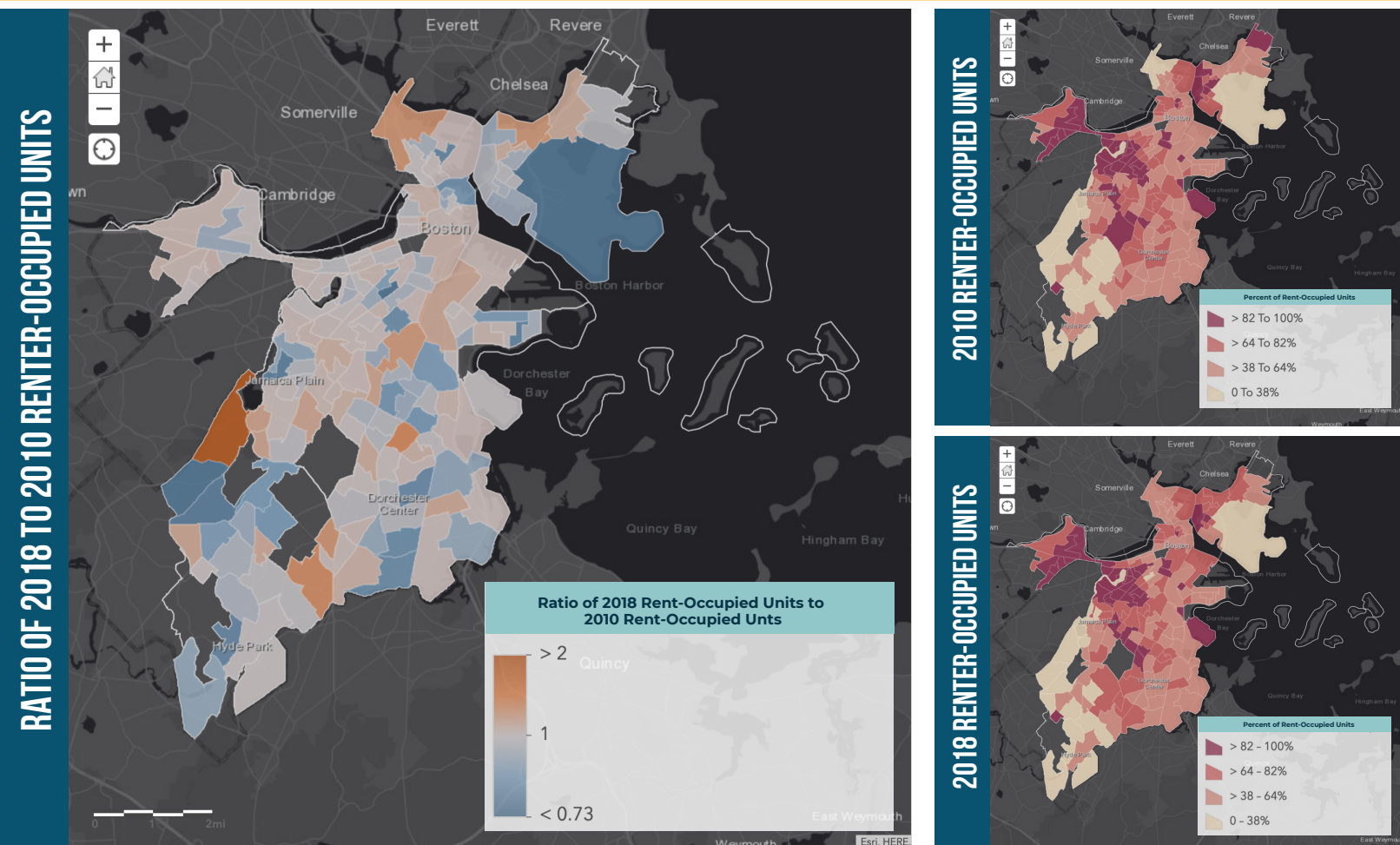
There is currently no one universal methodology to measure gentrification. However, gentrification has a long-standing history of displacing low-income communities of Color (Hall, 2020). Furthermore, government GIS projects have used several demographic variables to understand population changes that are induced by gentrification (Pudlin, 2019a; Pudlin, 2019b; Portland Bureau of Planning & Sustainability, 2018). Based on my review of demographic factors related to economic vulnerability, I chose four key demographic features that were analyzed in many GIS gentrification indices in each Boston census tract:

- Percent (%) of renter-occupied units
- Percent (%) of residents that identify as non-Hispanic White
- Median income of households
- Percent (%) of adults with at least a four-year bachelor's degree

Demographics were classified into 4 classes based on 2010 quantiles. I then created ratio maps comparing 2018 to 2010 for each demographic feature to understand how census tracts were changing over time. Each resulting ratio map is on a spectrum that includes values of less than 1 (signifying a decrease in gentrification-related demographic feature), 1 (no change), and >1 (signifying an increase in gentrification-related demographic feature). Maps are further analyzed below.

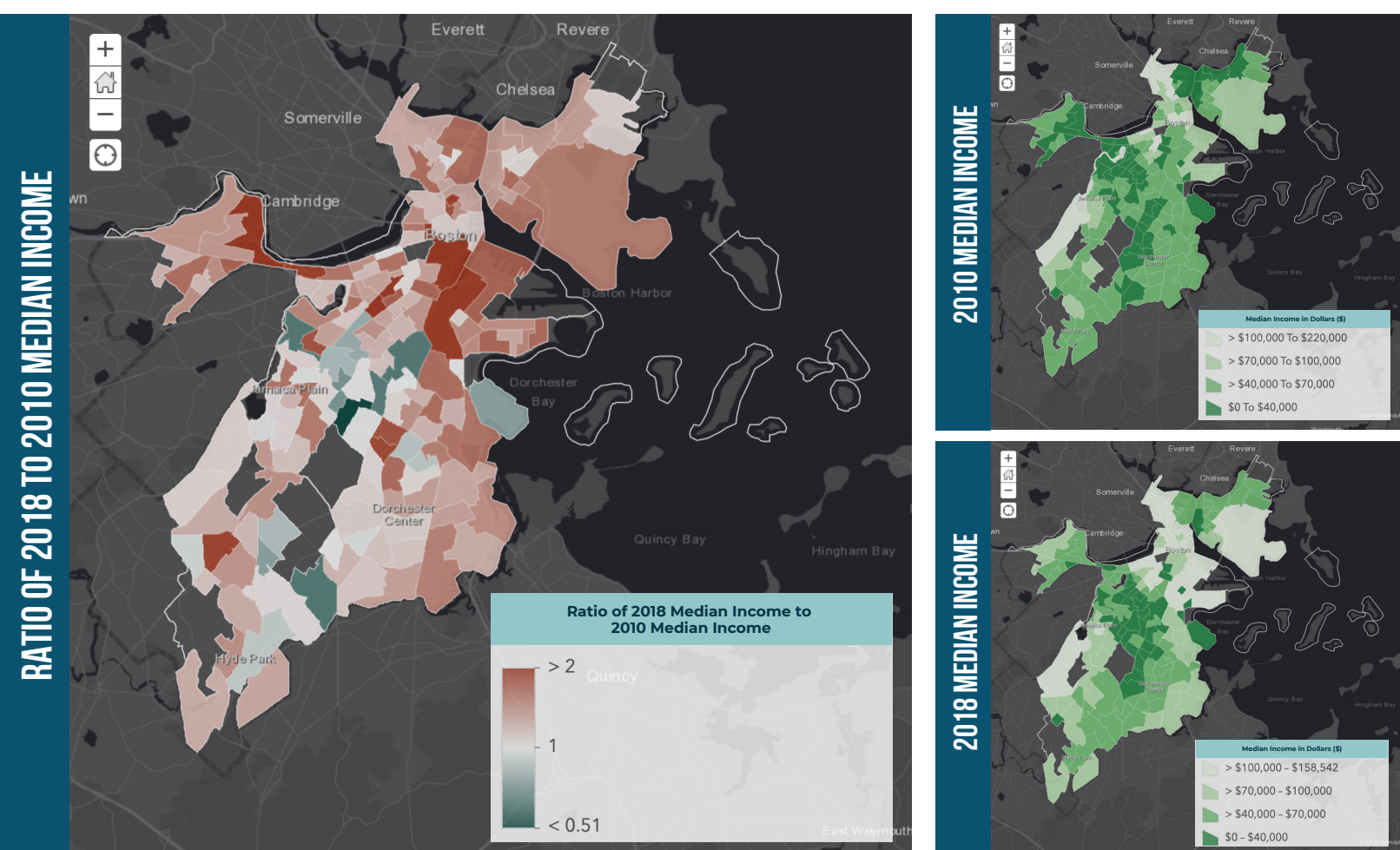
All maps were created on ArcGIS Online. Census tracts were excluded on certain sub-maps if there was no available data on that topic for that area. Census tracts that encompassed bodies of water were also excluded for easier analysis.

PERCENT OF RENTER-OCCUPIED UNITS



The mean percentage of renter-occupied units for 2010 and 2018 was 66%. Allston, Brighton, Fenway, mid-Dorchester, Roxbury, and Charlestown have a high overall percentage of renter-occupied units, with more than 82% of units being occupied as rentals. This could partially be due to their proximity to higher-educational institutions, such as Boston University, Boston College, and UMass Boston, whose students may choose to live off-campus. Meanwhile, East Boston, West Roxbury, Roslindale, and Hyde Park had a lower percentage of renter-occupied units compared to other neighborhoods in Boston. Although there did not seem to be major pockets of changes in rent tenure across the city, parts of Jamaica Plain seem to be shifting towards a larger percentage of rent tenure, while other parts of the neighborhood, as well as East Boston, seem to be experiencing significantly less rent tenure. While Southern neighborhoods in Boston are experiencing somewhat less rent tenure, areas closer to Downtown Boston and near Charlestown are experiencing somewhat of an increase. However, these changes did not show up prominently in this spatial analysis. Overall, the percentage of renter-occupied units did not change dramatically from 2010 to 2018.

MEDIAN INCOME OF HOUSEHOLDS



Low-income communities in both 2010 and 2018 are centralized in Roxbury, Mission Hill, and on the Western Dorchester, while Charlestown and West Roxbury witness the highest median incomes. Although Brighton and Fenway reported low median incomes in 2010, this may be due to their proximity to higher-educational institutions, whose students may skew income levels. From 2010 to 2018, there was mostly an overall increase in the median income of households throughout the city. Parts of South End and Allston specifically saw the median income level double. This overall rise could indicate that households are making more money, or low-income households are moving out of Boston and being replaced with higher-income households. However, some areas did report lower median incomes, including parts of Mattapan and Roxbury.

CONCLUSION

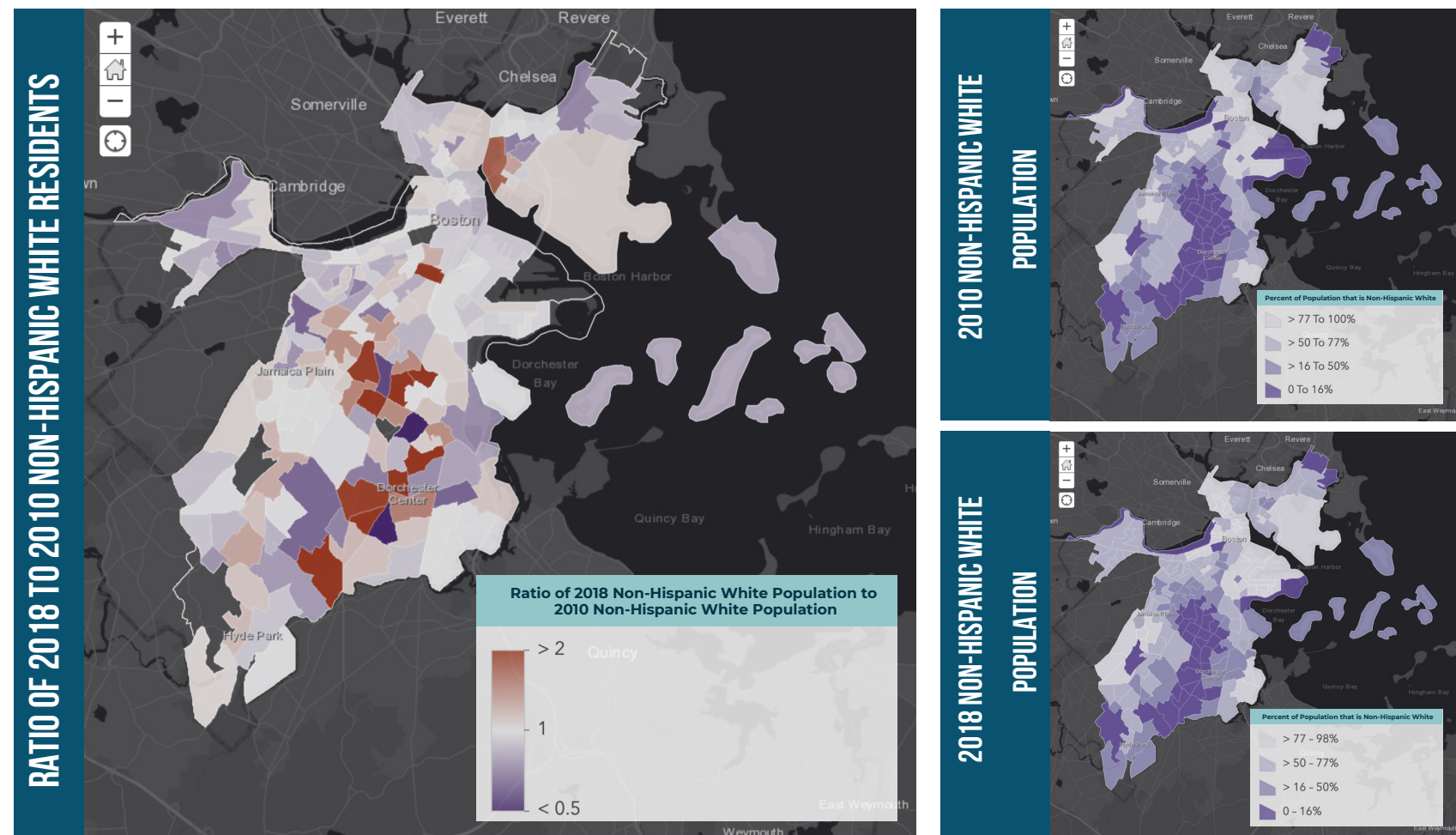
Although demographic shifts are not always related to gentrification, understanding how populations are changing could be a window into the impacts of this process. This spatial analysis reveals that some neighborhoods, including Mattapan, Roxbury, and Dorchester, overall host communities of multiple marginalized identities, while other communities, like West Roxbury, Charlestown, and parts of East Boston host more privileged communities. However, demographic changes that could be correlated to gentrification are spread out throughout the city to a small degree, showing that Boston is slowly becoming a higher-income, higher-rented, higher-education, and less diverse city. No neighborhood was drastically changed on all demographic measures from 2010 to 2018, but pockets of change occurred in various neighborhoods. Because gentrification is a slow process and may have already change the landscape of neighborhoods in Boston, future analyses should consider incorporating demographic changes with built-environment changes over longer stretches of time.

DATA SOURCES

All demographic data originated from the American Community Survey 5-year tables for 2010 and 2018. Census tracts for Suffolk County were taken from MassGIS. Basemap was provided by ArcGIS Online.

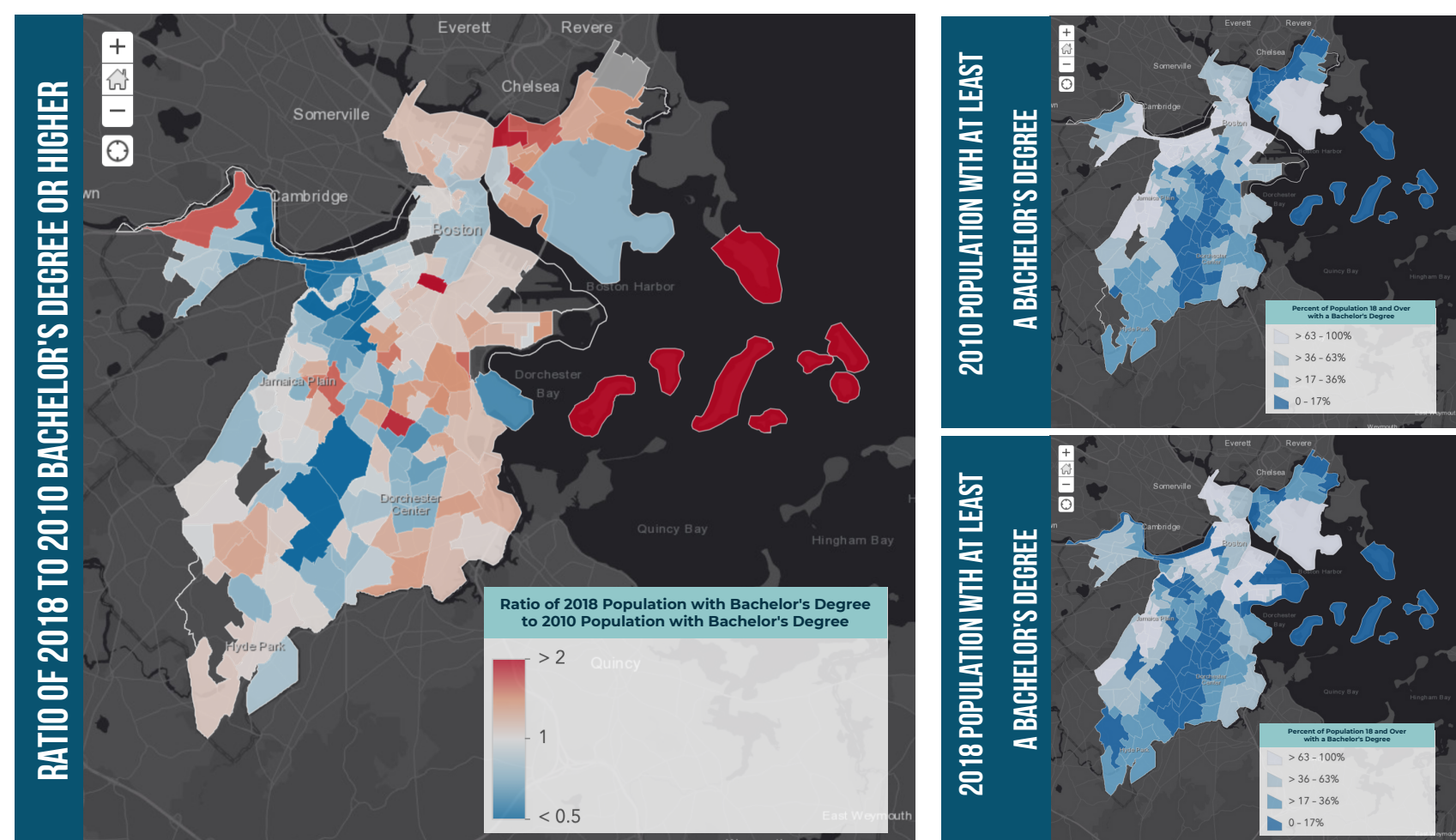


PERCENT OF NON-HISPANIC WHITE RESIDENTS



The long history of redlining in Boston permeates into the residential segregation that is witnessed in Boston's racial composition. More than 70% of the population identified as White in parts of East Boston, Charlestown, West Roxbury, and along the border of South End and South Boston. Meanwhile, large communities of Color exist in the edge of South Boston Roxbury, Mattapan, Western Dorchester, Roslindale, and Hyde Park, with less than 20% of White-identifying people in these areas. However, major shifts in racial demographics are occurring in parts of these neighborhoods. Several census tracts in Roxbury, Dorchester, and Mattapan are seeing at least a doubling of their White population, while at least one census tract in Roslindale has less than half of their White population from 2010 to 2018. Because gentrification can induce significant changes in racial demographics, these shifts could mean that neighborhoods that have historically had large communities of Color are beginning to experience the impact of gentrification in Boston. However, communities of Color still remain predominant within these neighborhoods, so a massive displacement of these communities has yet to occur.

PERCENT OF ADULTS WITH A BACHELOR'S DEGREE OR HIGHER



Percent of people with a bachelor's degree varies across the city. In 2010 and 2018, a large concentration of areas with small populations of higher-educated people exists in Roxbury, Mattapan, parts of Dorchester and Roslindale, and the Boston Harbor Islands. Meanwhile, there is a higher concentration of people with four-year degrees in West Roxbury, Back Bay, and East Boston. Although not many areas have witnessed significant change in educational attainment, Brighton, parts of East Boston, and the Harbor Islands witnessed a near doubling of higher-educated percentage of the population, although very few people live on the islands themselves. Furthermore, Mattapan and parts of Allston and Fenway have half the four-year educated population that they did in 2010. There is a slight increase in percentage of higher-educated people in a large part of Dorchester and South Boston.

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