Spatial Analysis of People and Registered Historic Landmarks in New England

Background

New England is a region with great pride in its part of national history. Historically This project attempts to assess spatial relations between landmarks registered by National Park Service and social characteristics of populations in New England. This is to gauge not only access certain populations have to sites of national importance, but also to indicate which sites are worthy of recognition in relation to social factors. The premise of this analysis is to identify whether there is a proportional relationship between the location of registered historic landmarks, non-white populations, or a population at large. Given how the purpose of the NPS Registered Historic Landmarks was to enforce American values and promote patriotic heritage (Lindgren), this analysis explores where state recognized sites align with other social and economic identities.

Methodology

The premise of the analysis is to create a landmark density raster and a raster layer for population distributions, and use map algebra to find where the density of one layer is disproportionate to the other. The raster layer of landmark densities was created using an unpopulated point density analysis, then reclassified into 10 quantile groupings. The income, population, and non-white population distribution layers were created by transforming census tract layers into centroids, then joining US Census Bureau ACS data to these points, and using these values in the population field of a dot density analysis which was also reclassified into 10 quantile groupings. For example, the non-white distribution layer joined each census block with the total block population minus the white population. The income layer joined the median family income ($) for each census block. The final steps of the methodology were to use the raster algebra function to subtract the social layer from the landmark layer, then reclassify the results once more into 5 categories, with the middle category being a result between −1 and 1, while the results in categories above and below represent more or less disproportionate densities.

Input Rasters

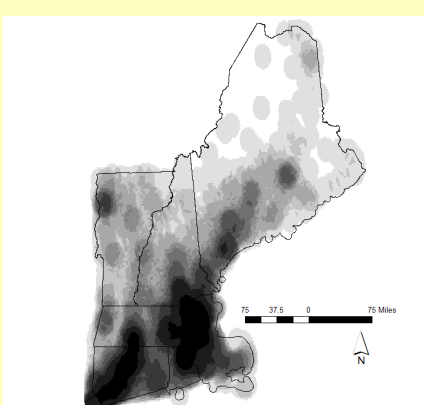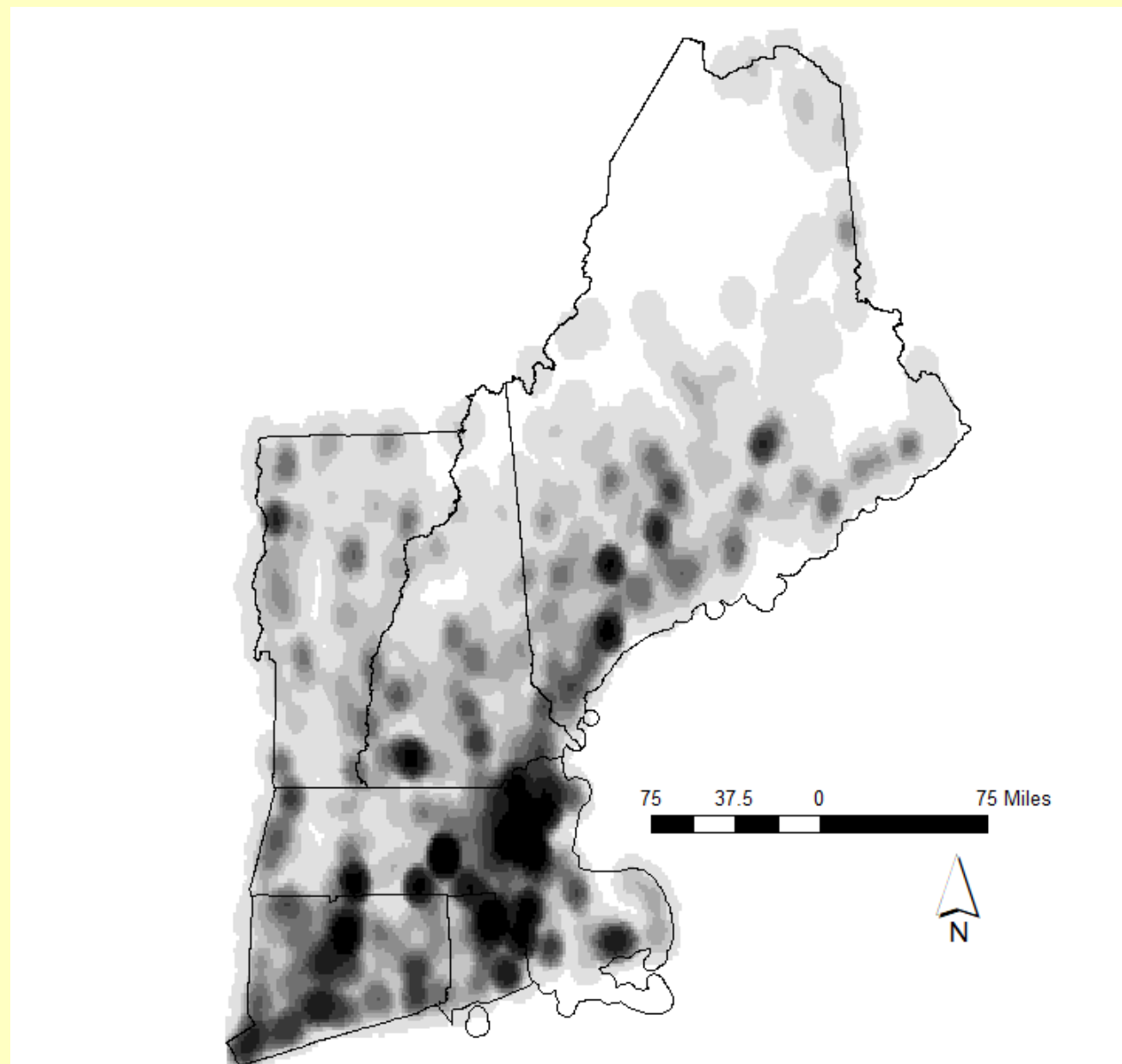*Least to most dense (10 groups)*

Figure 4 landmark distribution

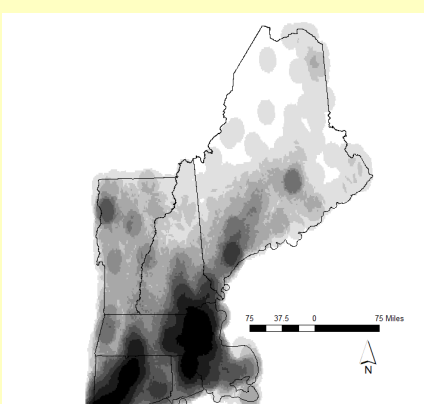

Figure 5 population distribution
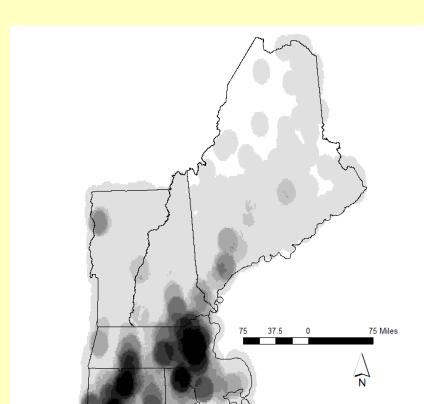

Figure 6 income distribution
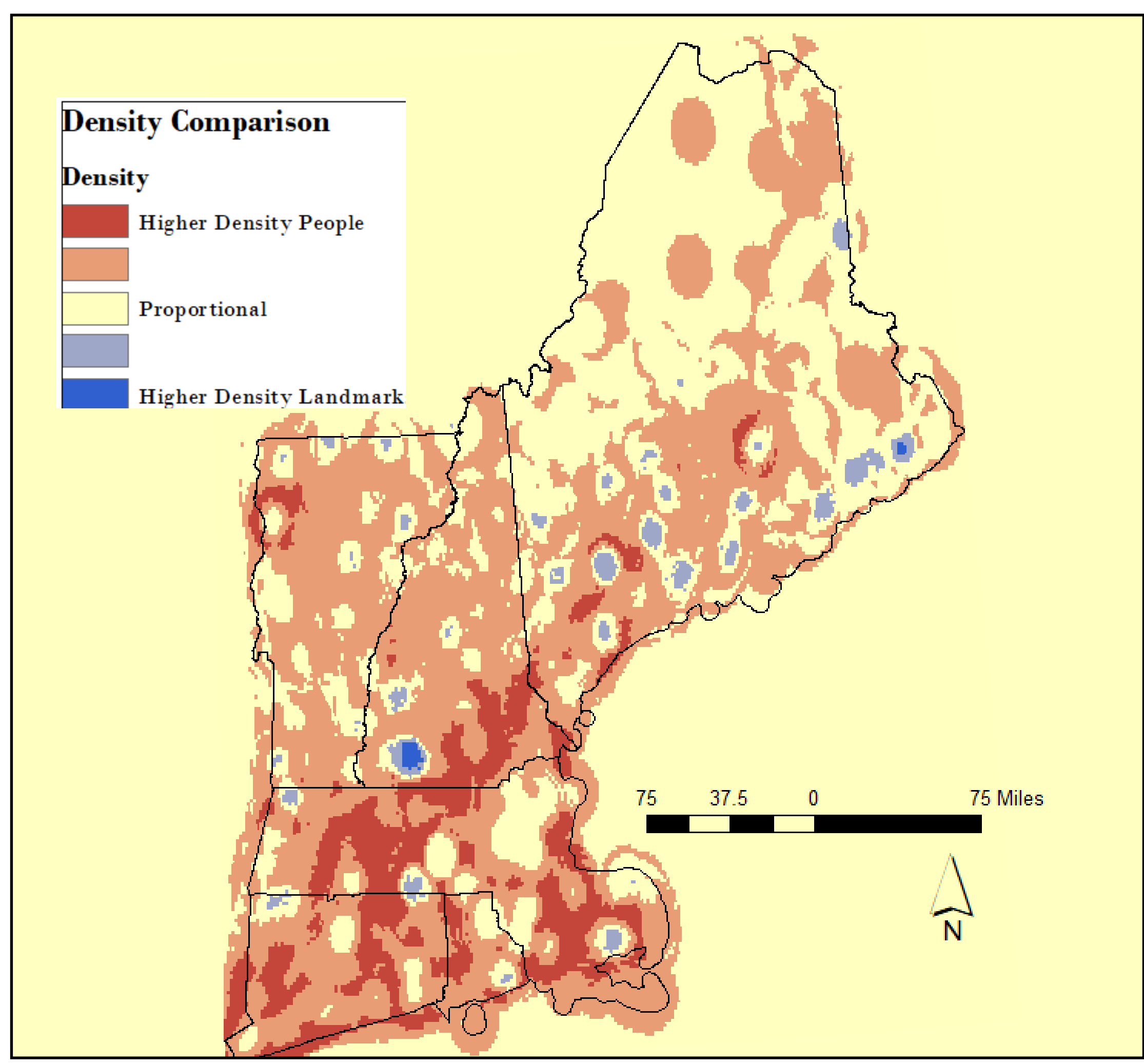

Figure 7 non-white distribution

Figure 1 landmark and population comparison

Results

Given the nature of the procedure (linking social attributes to census block geometry) he resulting 3 maps all reveal information about the distribution between population density and landmark density. One trend shows that small towns in northern New England have a higher density of landmarks than people, as evidenced by the light and dark blue centers. Another pattern is the further southwest on the map in Connecticut, there are consistently more people than landmarks. A third observation is how Boston and its local suburbs have the most even correlation between people and landmark density. *Figure 2*, which displays income distribution, has results very similar to *Figure 1*, except there are spots of even higher densities of landmarks than income in the center of towns in northern New England. *Figure 3*, which compares non-white population density to landmarks reveals throughout northern New England, there is a higher density of registered landmarks than people of color, Similarly, large swaths of rural land which are red for the other maps, meaning lower density of landmarks than people or income, are proportional here. *Figure 7*, the input raster for non0white distribution, proves the lowest density for people of color are in northern New England.

Cartographer: Nathan Rutberg
Date: May 7th, 2020
Course: ENV-107 Spring 2020 w/ Dr. Thorn
Projection: NAD 1983 UTM Zone 19N
Software: ArcMap 10.7.1
Data Citation: Age and Sex, 2018, American Community Survey, United States Census Bureau. Race, 2018, American Community Survey, United States Census Bureau. Family Income, 2018, American Community Survey, United States Census Bureau Census Tracts 2019 Tiger/Line, U.S Census Bureau. US States 2019 Tiger/Line, U.S Census Bureau

Background Citation: Lindgren J, (1991) "A Constant Incentive to Patriotic Citizenship" Historical Preservation in Progressive Era Massachusetts. *The New England Quarterly 64(4)*, 594-608. doi 10.2307/366189
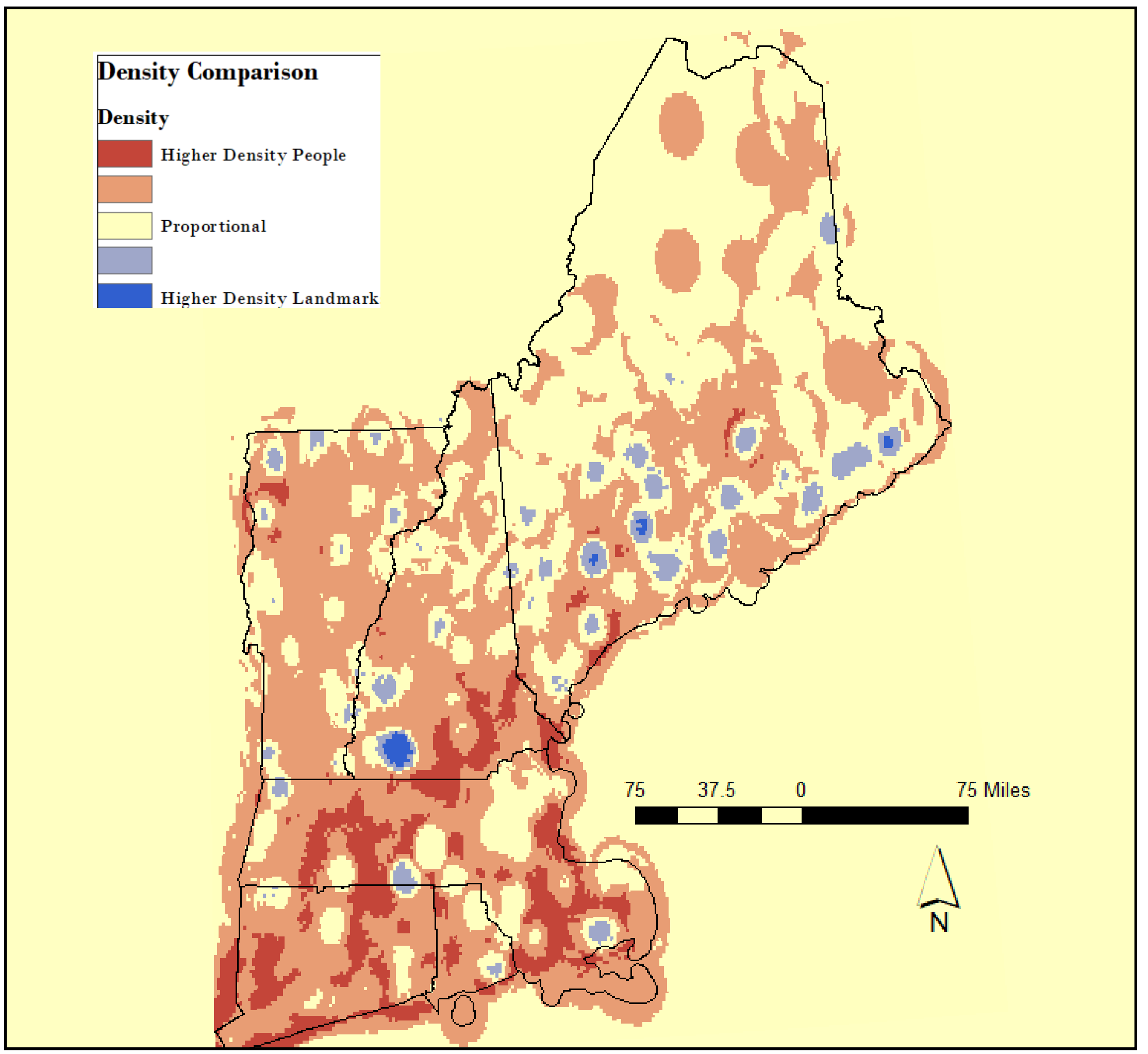

Figure 2 landmark and median income comparison

Conclusions

The results suggest that there is a bias in Landmark Registration towards mostly white small towns in northern New England compared to the rest of the states. Using this methodology, income does not appear to be a major indicator of landmark density, however that might be due to income not having a major impact on the point density raster.. But the small differences between *Figure 1* and *Figure 2* suggest there might be a low concentration of wages, but a high concentration of recognized historical importance. This is compared with Southwest Connecticut where there is a high concentration of wealth, but not of landmarks. Limitations to this analysis is using census block centroids as a way to measure where people are, which becomes inconsistent in regions where census blocks are very large. Also the analysis could be improved if there was data available on when landmarks were certified, which could provide a more insightful conclusion. A potential improvement of this study might compare landmark densities with mundane structure densities, or exploring other factors such as median age to further investigate using the same methodology.
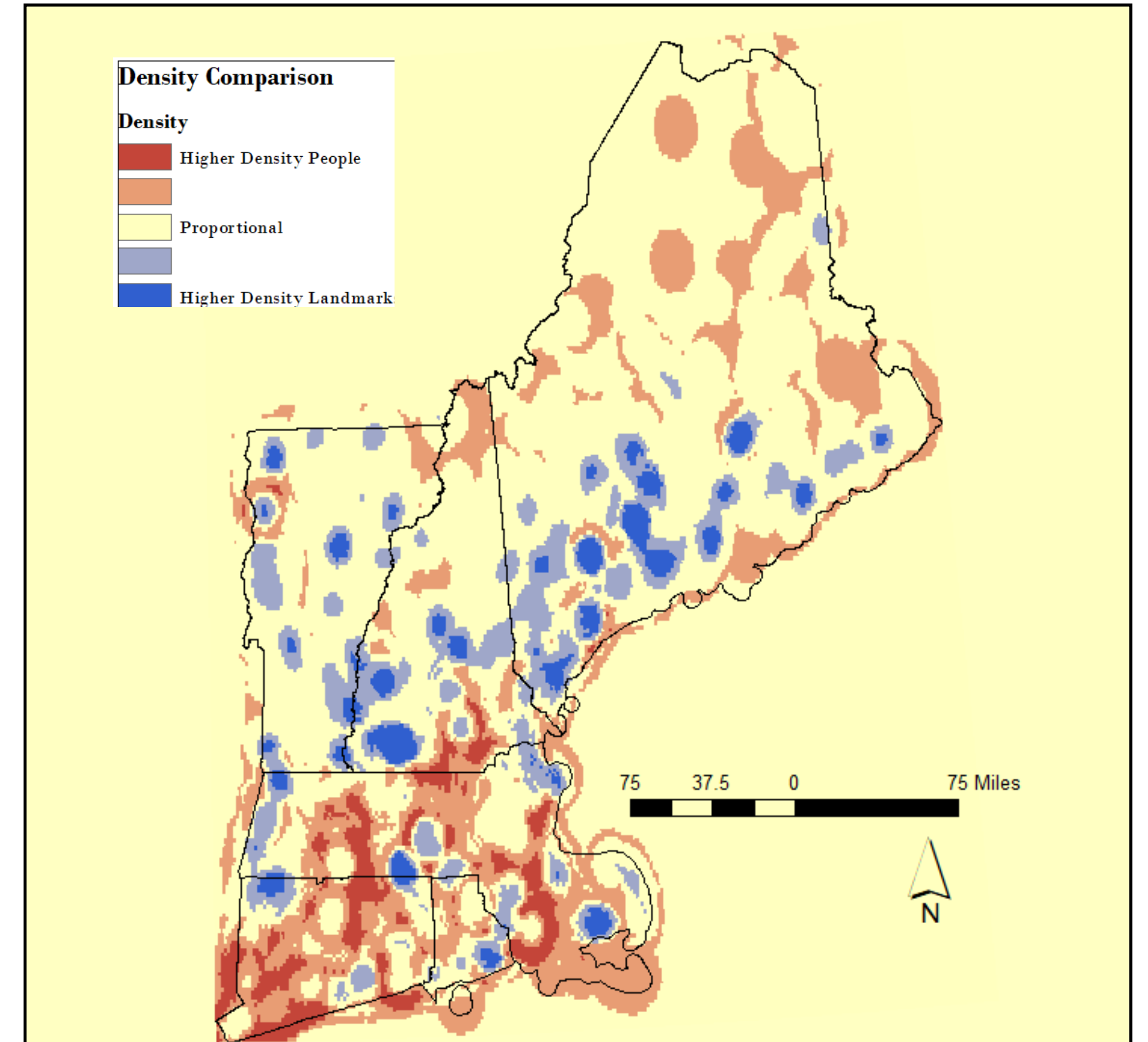

Figure 3 landmark and non-white population comparison