

Lab 1

1. How many census blocks are there in Lane County?

14,532

2. What is the average(mean) size in acres of the blocks?

207.95 acres

3. What coordinate system did you use to calculate this area?

The Oregon Lambert Coordinate System

4. Look closely at the Eugene-Springfield area - what is the mean size of the blocks inside the Urban Growth Area that covers Eugene?

9.26 Acres

5. How many census tracts are there in the Eugene UGA? What is the mean size in acres?

There are 39 census tracts in the Eugene UGA with a mean size of 689.83 Acres

6. Examine the geographic distribution (shape/size) of the blocks, block groups, and tracts within Lane County

Blocks, block groups, and tracts are much larger in rural areas. They are smaller and more numerous in urban areas. They also do not have a uniform shape. These factors make it difficult to group people based on proximity to one of these features, since the amount of people and land within a certain distance of a shape is highly dependent on the area and perimeter of the shape.

7. Where can you find an explanation of the coded column names in the data

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tables that you join to the tracts or blocks? What are the codes and meanings for three data columns in the SF1_H011 data table?

This info can be found in the corresponding metadata table, or on the census website where the data was retrieved.

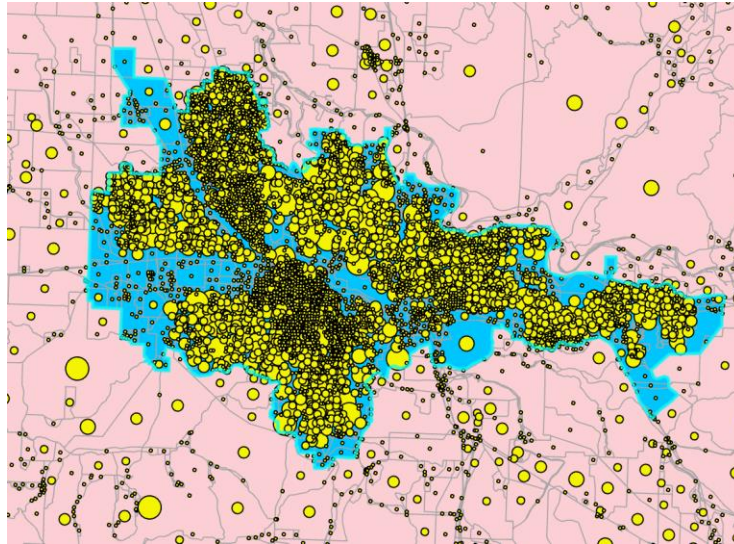
H011001 – total population in occupied housing units

H011002 – total population in occupied housing units owned with a mortgage or loan

H011003 – total population in occupied housing units owned free and clear

8. For the Blocks and housing information:

a. Provide Screenshot with a descriptive caption



Housing Units in the Eugene-Springfield Urban Growth Area (UGA)

b. What number of classes did you use and why?

I used 5 classes because that left enough of a difference in symbol radius to differentiate between classes.

c. What type of classification/grouping did you use and why?

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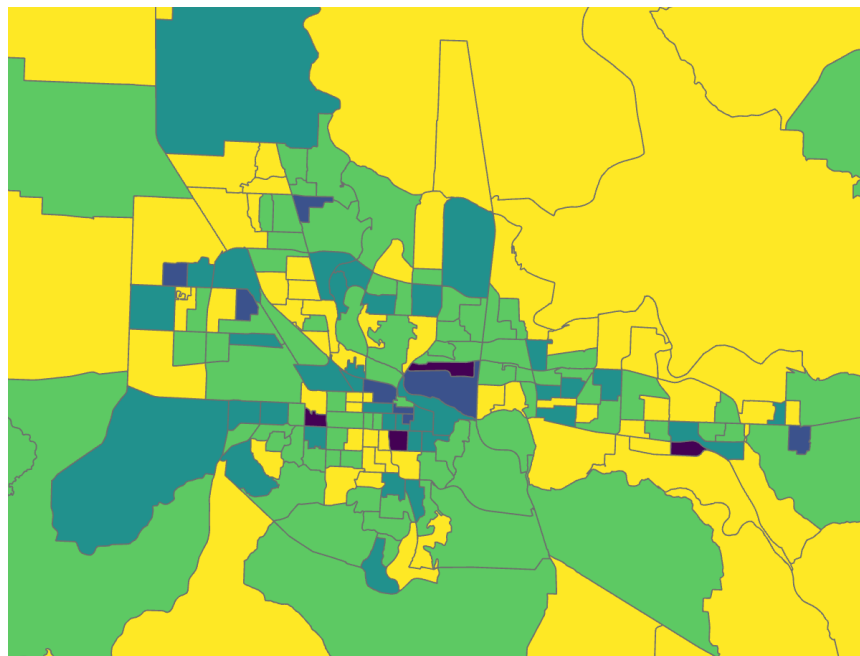
I used the quantile method because it distributes the observations equally across the class interval.

d. What symbolization (colors/patterns) did you use and why?

I used Graduated Symbols with a yellow circle as the radius because it allows the 5 different classes to be differentiated by the circle's radius.

9. For the Block Groups and Race information

a. Provide Screenshot with a descriptive caption



Comparative White Homogeneity in the Eugene-Springfield UGA

b. What number of classes did you use and why?

I used 5 classes because it seemed like a good amount to be able to visually compare and contrast block groups.

c. What type of classification/grouping did you use and why?

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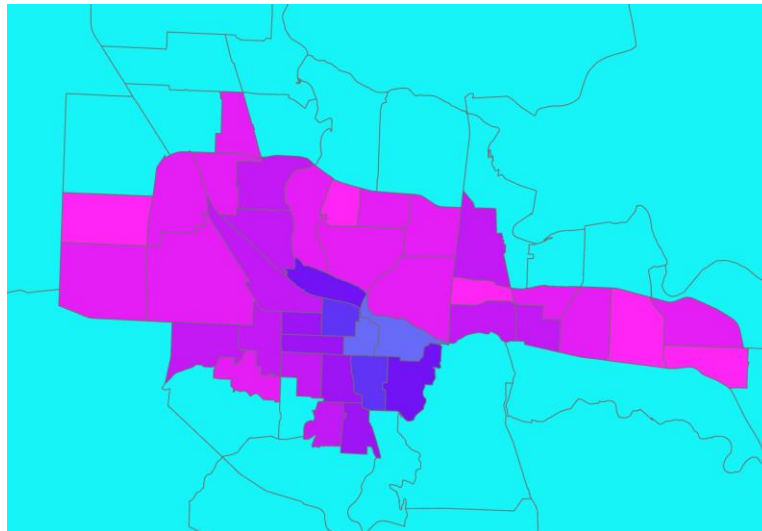
The 'White' field values are normalized by the Total Population values, so the values sit between 0 and 1. I therefore chose Equal Intervals, which allow for an equal class width with varying frequency of observations per class.

d. What symbolization (colors/patterns) did you use and why?

I used the 'Viridis' choropleth color pattern. Using graduated colors seemed like the right way to display this information, since it is easier in this case to compare the color fills of each block group than it would have been to compare the radius of different block group's symbols.

10. For the Tracts and Commuting information

a. Provide Screenshot with a descriptive caption



Percentage of Workers Who Commute by Car in the Eugene-Springfield UGA

b. What number of classes did you use and why?

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I used 10 classes because the field “Percent by Car” is a percentage. Breaking it up into 10 classes divided it by increments of 10, which seemed a logical way to classify the percentages.

c. What type of classification/grouping did you use and why?

I used defined intervals because it allowed me to create classes of equal percentage size. I considered normalizing the data by the total number of workers, but decided not to, since the variable is a percentage and therefore already reflects the relative amount of the population that drives.

d. What symbolization (colors/patterns) did you use and why?

I used Graduated Colors because it seemed better to fill the tracts with a color that reflects the percentage than a symbol whose radius reflects it. I used the “Cyan to Purple” color scheme. This allows the percent by car of each track to easily be compared to those of the other tracks in the area, and allows us to notice areas of town where this percentage is much higher or lower.

11. Which density search radius seems to be the most reasonable representation in terms of showing patterns of housing density in a meaningful way?

A density search radius of 3000ft seemed to be the best representation, since it showed the housing density patterns to a reasonable degree of detail without getting too “messy”.

12. Compare the Kernel Density raster with the Point Density raster of the same search radius and describe the differences.

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The Kernel Density raster for 3000ft was much smoother than the 3000ft raster of Point Density. For the Point Density, it was possible to see the circles generated by the 3000ft radius. These circles were not visible for the Kernel Density raster.

13. Explain what is causing these differences.

For Point Density, the housing density around each output cell is calculated based on the radius. For Kernel Density, the total number of the accumulated intersections of the individual spread surface is calculated (based on a quadratic formula where values taper to 0 at the edge of the search radius) for each cell.