

LAB 4 Part 1

INTRODUCTION TO GIS

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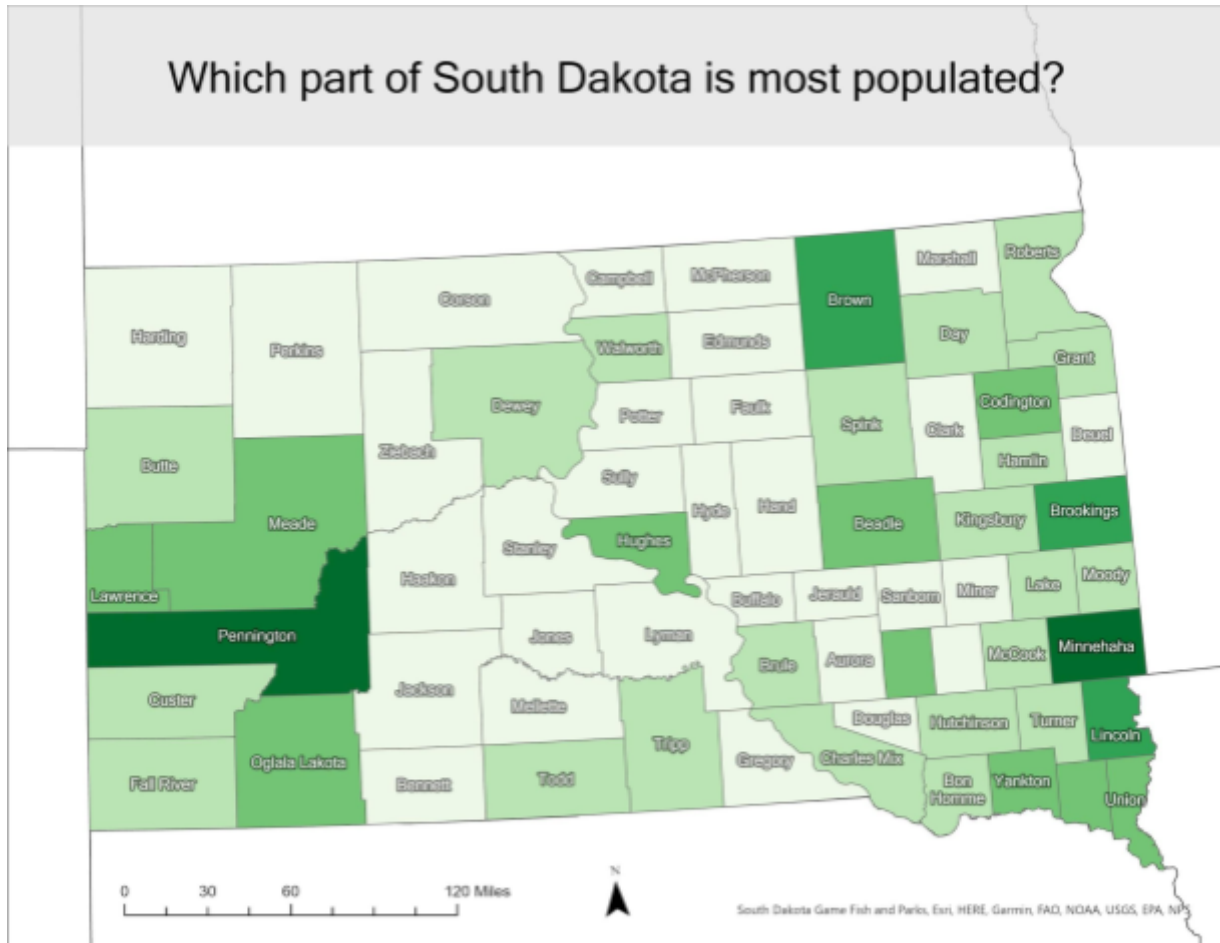


Figure 1. A graduated color map based on South Dakota's total population.

GIS Tools & Techniques Applied: In this lab, I learned that a rule of thumb in choropleth maps is to keep the number of classes an odd number, such as 3 / 5 / 7. Also, it should almost never be bigger than 7 as at that point human brains will have a harder time processing that much of information.

Question: Which part of South Dakota is most populated?

Methodology: Choropleth map

Conclusions: Pennington and Minnehaha are the most populated counties in South Dakota.

Data Sources: Population data from 2015 U.S. Census

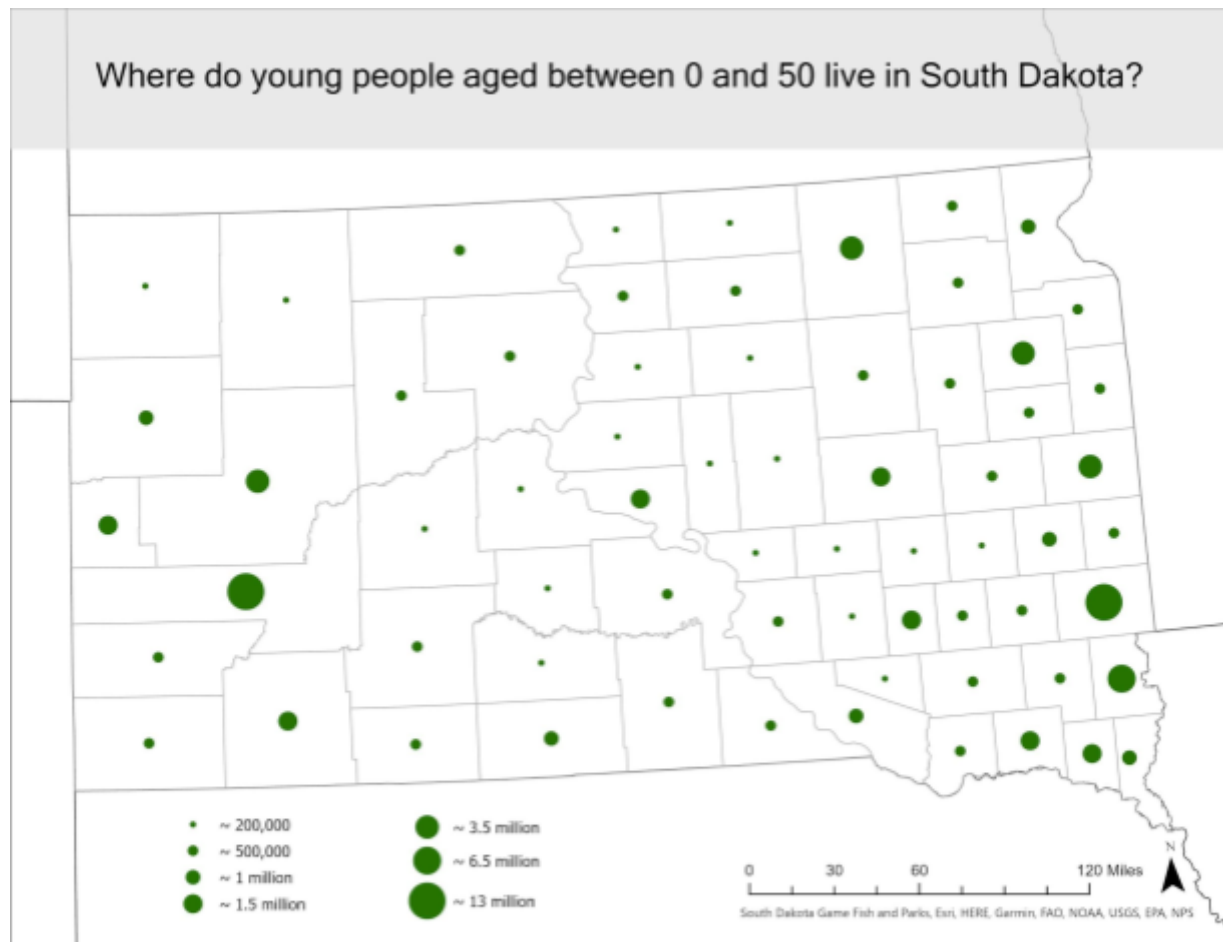


Figure 2. A graduated symbol map showing where young people live.

GIS Tools & Techniques Applied: To create a new data field for this map, I had to combine Pop_under5, Pop_under5to9, ... to Pop_under45to49 so that I can get all the population under the age of 50. For this, I used the “Calculate” function and wrote the following code that does exactly that:

```
!TotPop!*(!Pop_under5!+!Pop_5to9!+!Pop_10to14!+!Pop_15to19!+!Pop_20to24!+!Pop_25to29!+!Pop_30to34!+!Pop_35to39!+!Pop_40to44!+!Pop_45to49!)
```

Question: Where do young people aged between 0 and 50 live in South Dakota?

Methodology: Graduated symbol map

Conclusions: This map basically looks almost the same as the Part 1 map; counties with the biggest population tend to have the most number of young people.

Data Sources: Population data from 2015 U.S. Census

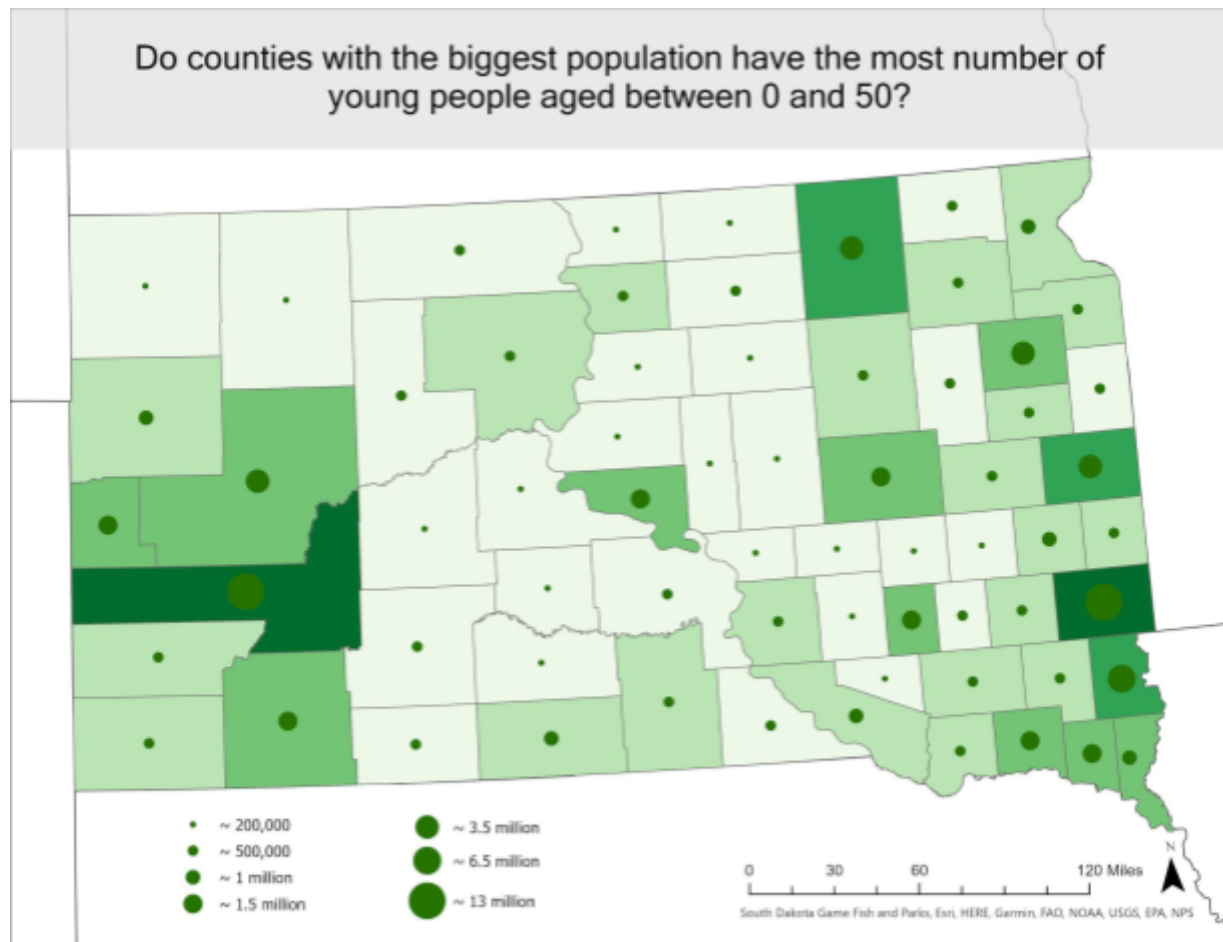


Figure 3. A combination choropleth & graduated symbol map.

GIS Tools & Techniques Applied: I noticed from Part 1 and Part 2 that those two maps look really similar. After all, counties with the biggest population should have the most number of young people. So, in Part 3, I test this hypothesis.

Question: Do counties with the biggest population have the most number of young people aged between 0 and 50?

Methodology: Combination choropleth & graduated symbol map

Conclusions: Yes, there seems to be a high correlation between the total population and the number of young people in a county.

Data Sources: Population data from 2015 U.S. Census