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GIS 5555 Basic Spatial Analysis

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Time\_Spent = 2-3 days (after-class)

*[Windows+Shift+S for screenshot of your analysis]*

*[Fill the above-listed info and then submit the completed document in Canvas (try to include all analysis results that can help reflect your workflow and thoughts, i.e., images, information about data, your statements, etc.)]*

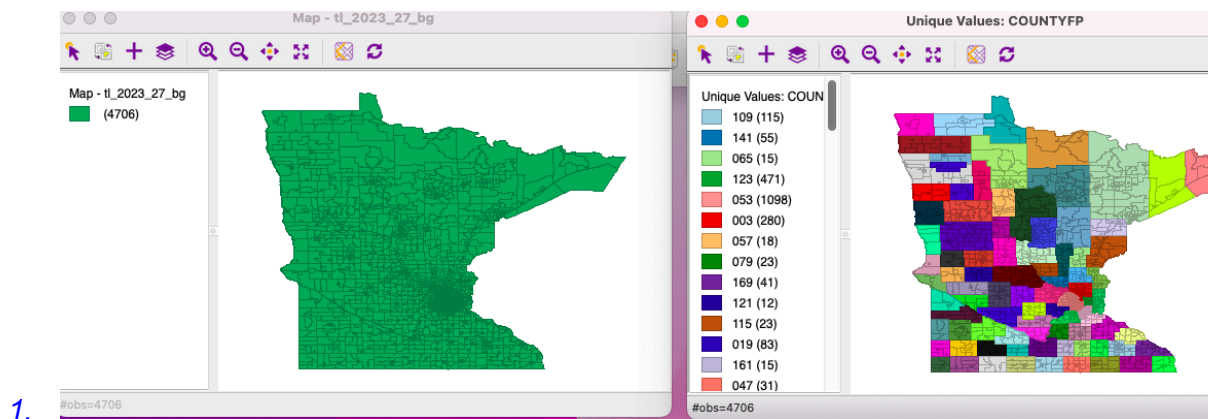
## Assignment for Lab 2a

### "EDA1 - Mapping"

#### ➤ Task 1 Variable selection

- Display your data in a themeless map with your preferred base map, then select a specific variable that is of ratio type for further mappings. Explain the reason for choosing it.

*I choose ALAND variable (land area) because it is a ratio variable that helps analyze the spatial distribution of land in Minnesota. A themeless map provides a baseline before applying classifications.*

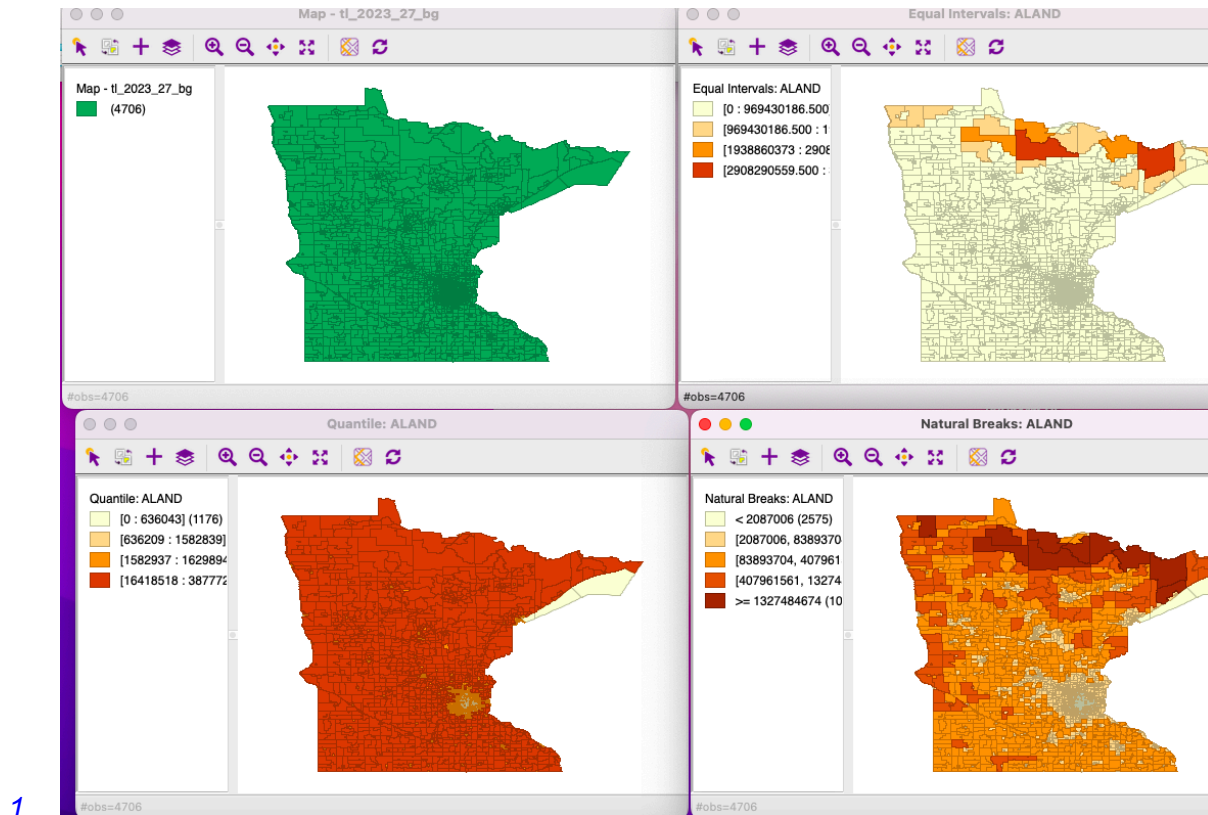


#### ➤ Task 2 Map classifications

- Create three choropleth maps (with base map) based on different classification schemas: quantile, natural break, and equal interval. Explain why you chose a certain number of breaks in each visualization.

*I created three choropleth maps using different classification methods for ALAND Variable:*

- *Quantile (4 classes) ensures equal-sized groups but may distort actual differences.*
- *Natural Breaks (5 classes) identifies gaps in data distribution, making patterns clearer.*
- *Equal Interval (4 classes) provides uniform breaks but may not handle outliers well.*

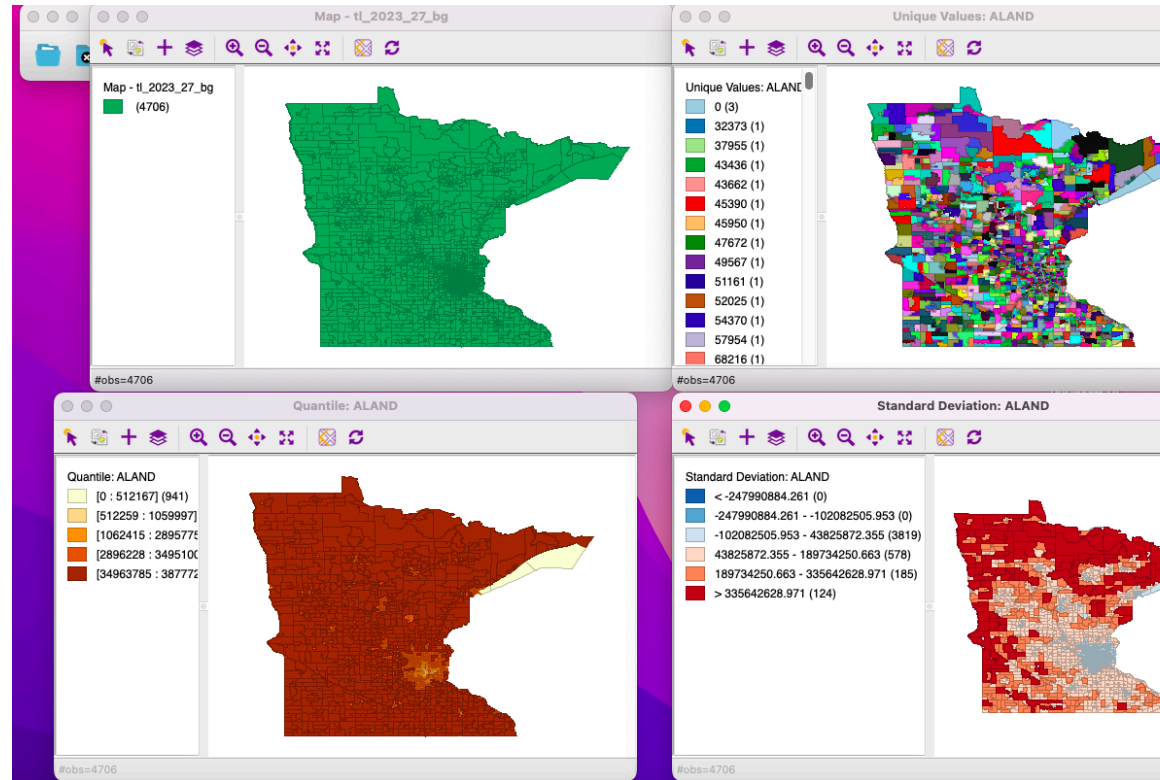


2.

➤ **Task 3 Highlight extreme values**

- Are there any extreme values in your selected variable that require other map classifications to be highlighted in the map? Apply one of the introduced methods that can help highlight extremes in your data and explain the highlighted areas.

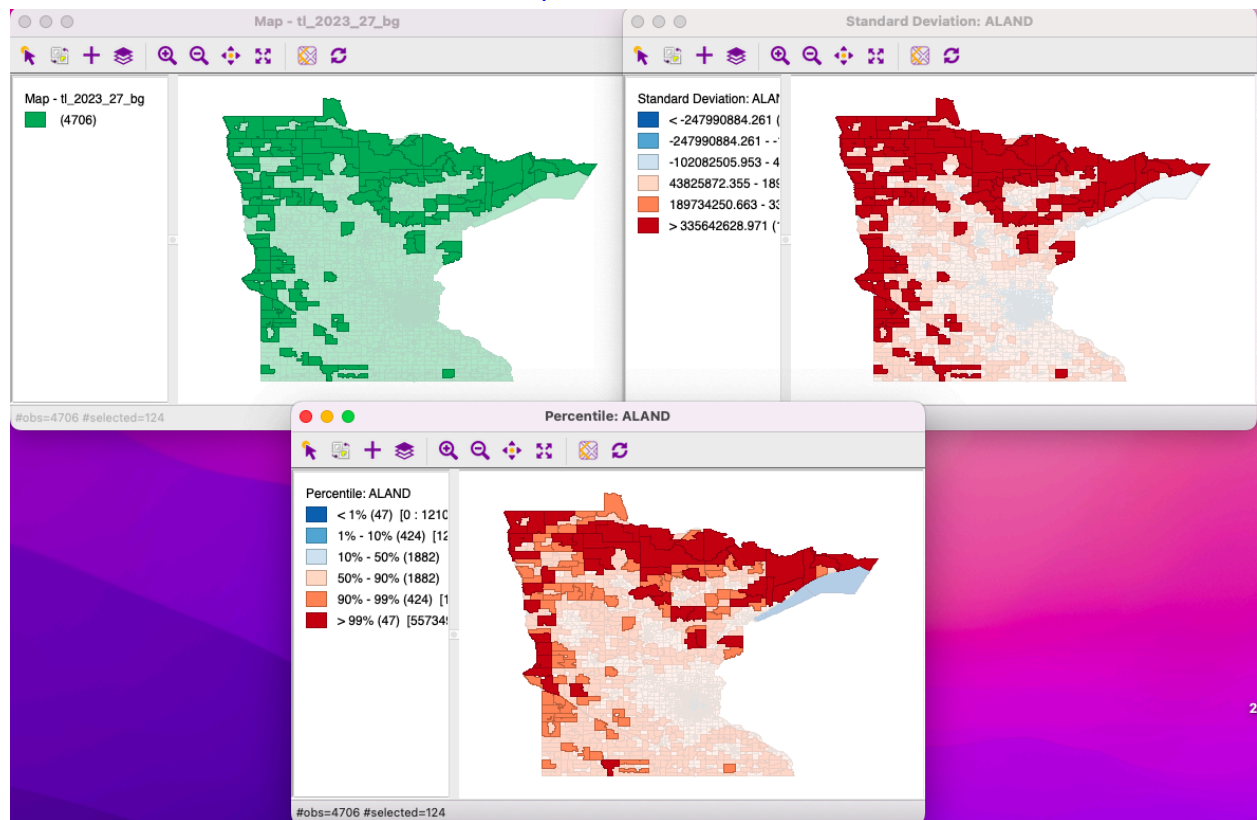
Standard Deviation classification is used to highlight extreme values of ALAND. This method shows areas with significantly larger or smaller land sizes than the mean, helping identify outliers in the dataset.



1.

Aland variable and Areas with values >2 standard deviations above the mean is highlighted (dark red)

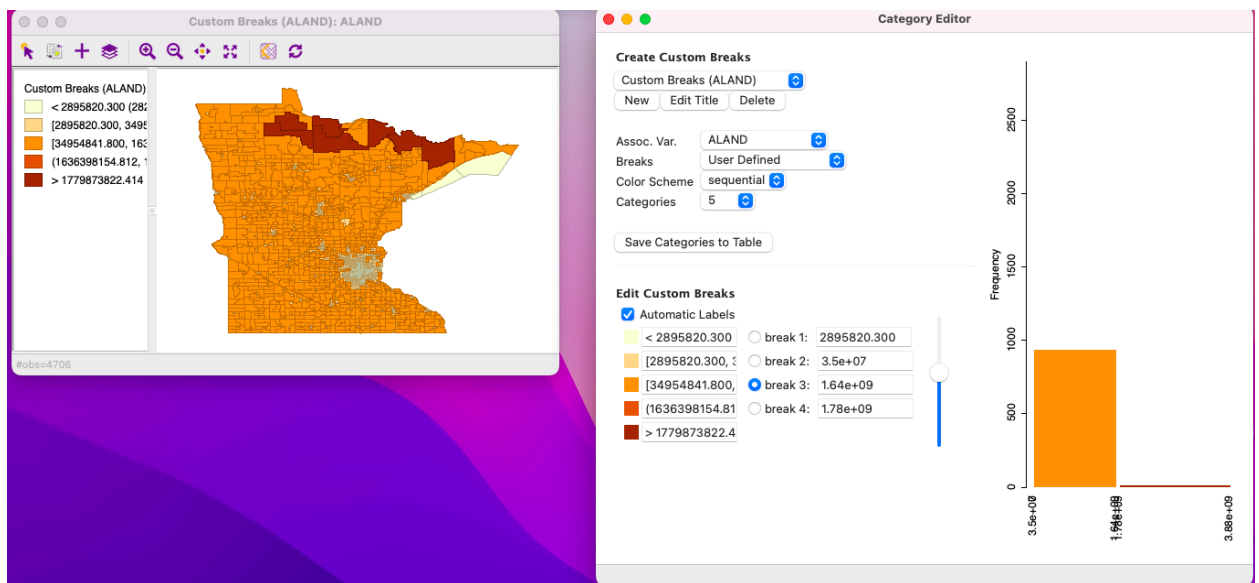
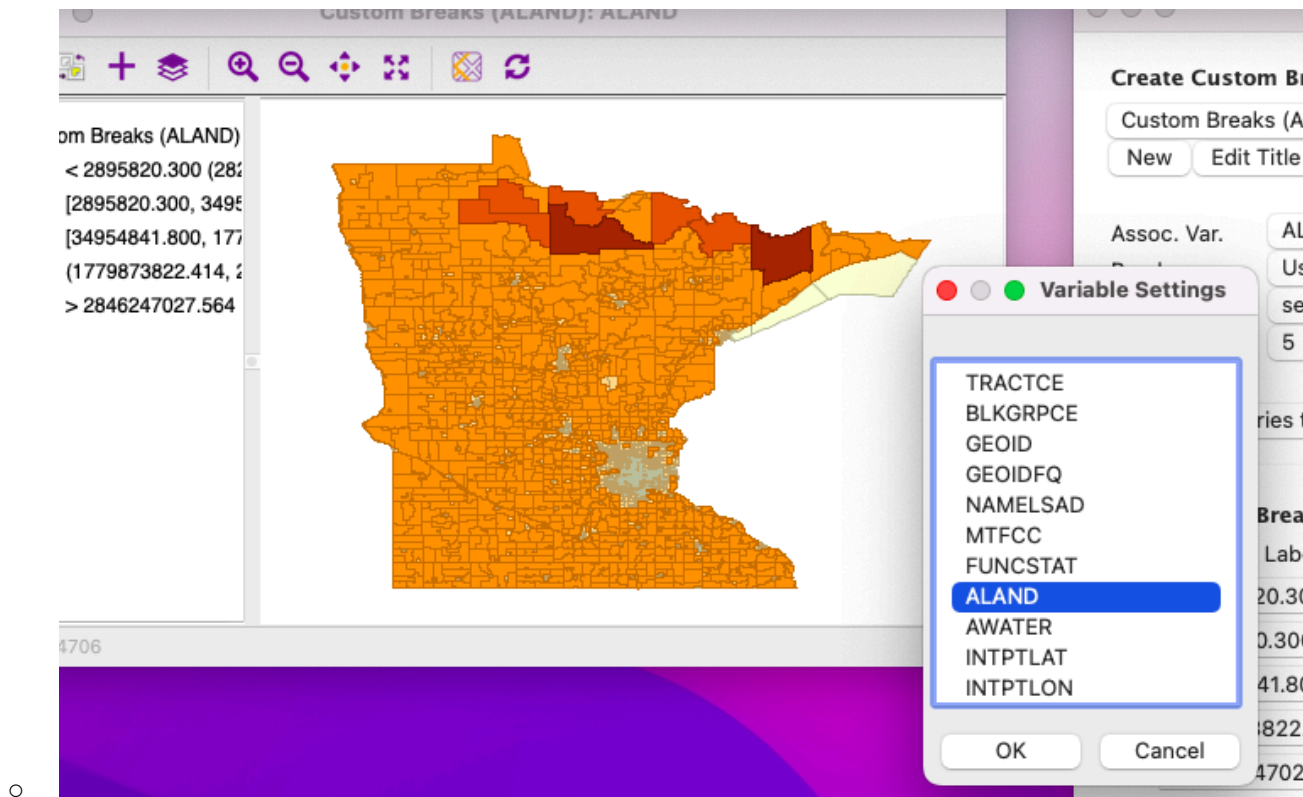
## UPDATED ONE- standard Deviation and percentile



### ➤ Task 4 Custom classification

- Create custom breaks on your selected variable, and show us the histogram based on your breaks. Save the custom classification, and apply it to another variable of your choice.

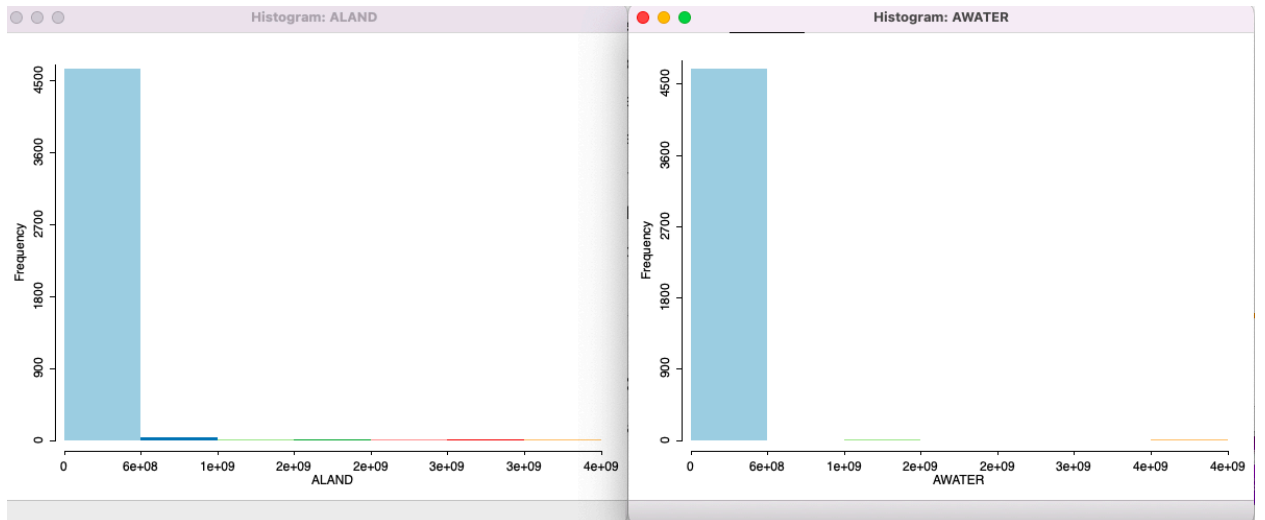
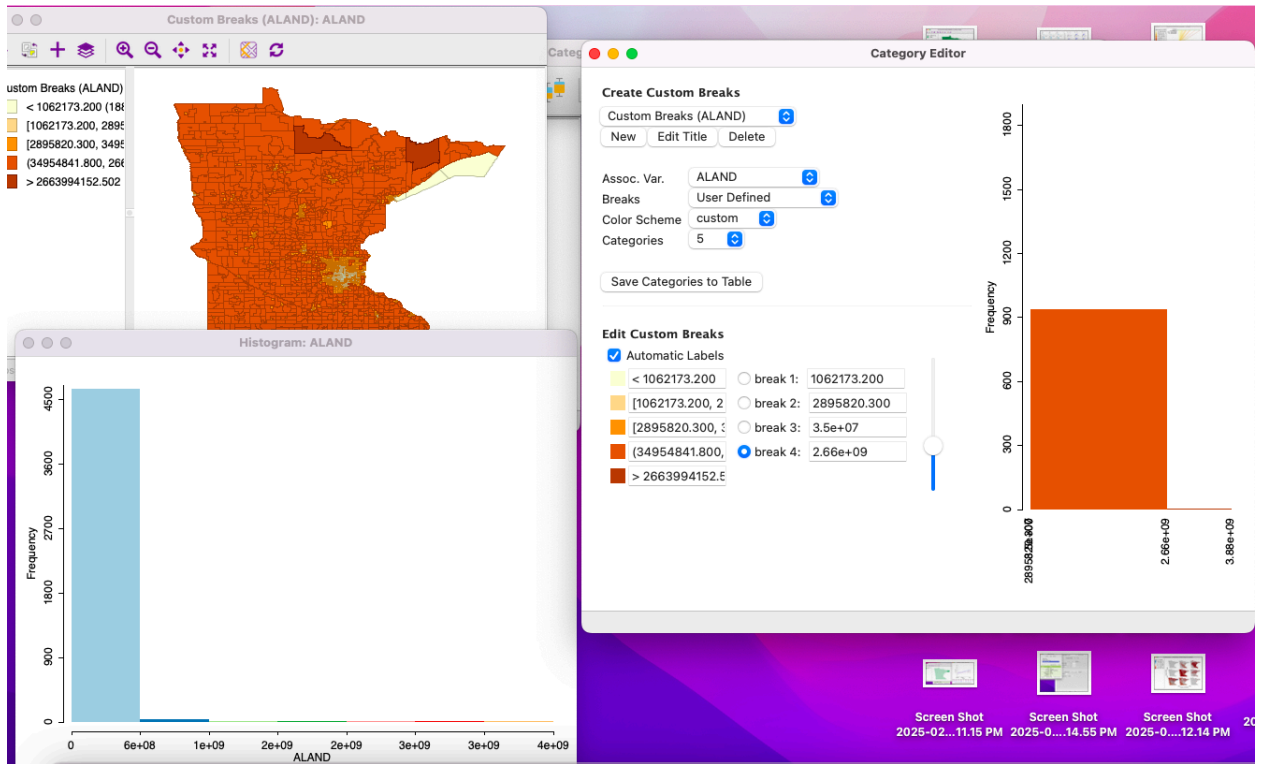
*A custom classification with four breaks was created based on meaningful size differences in land areas. A histogram visualizes the frequency of each class.*

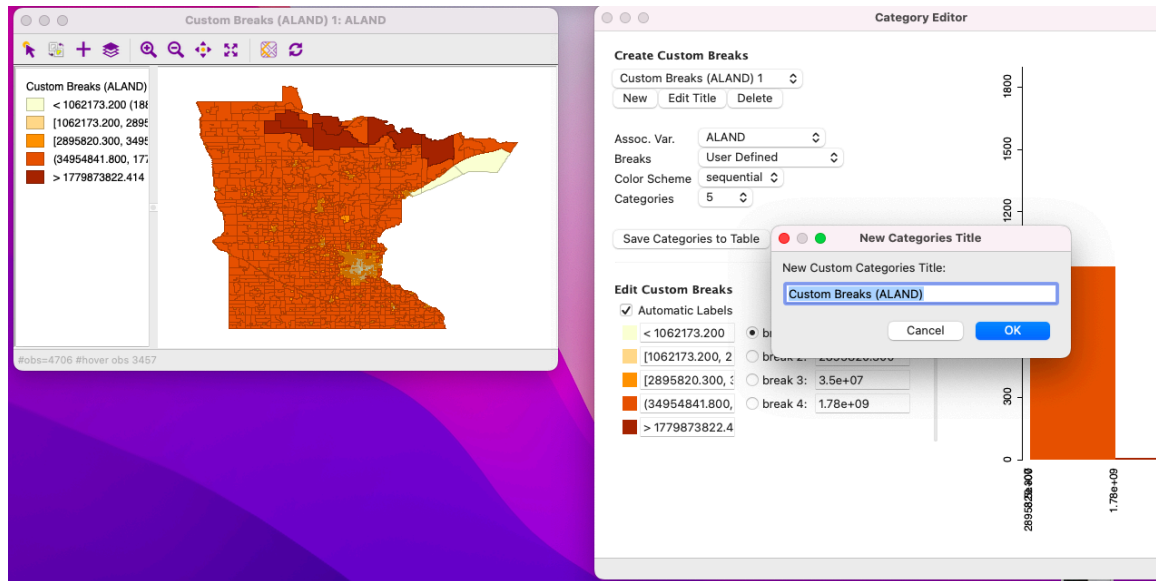


- Explain why the custom breaks work (or not work) on the new variable

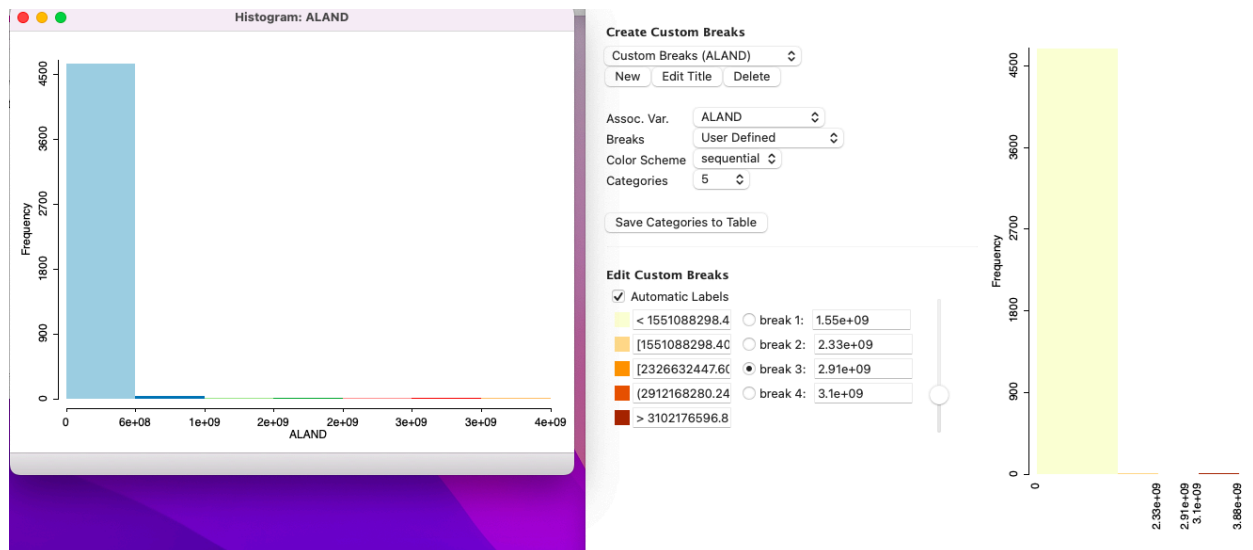
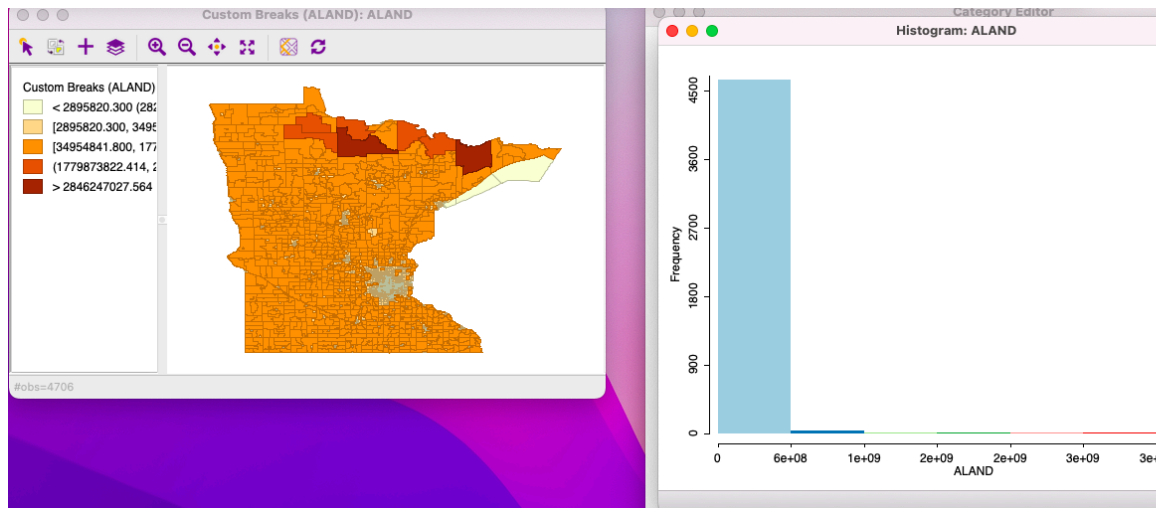
No, It does not work on another variable because **AWATER** has a different scale (e.g., very small water bodies) the breaks might not capture meaningful patterns, requiring adjustment.

UPDATED ONE-





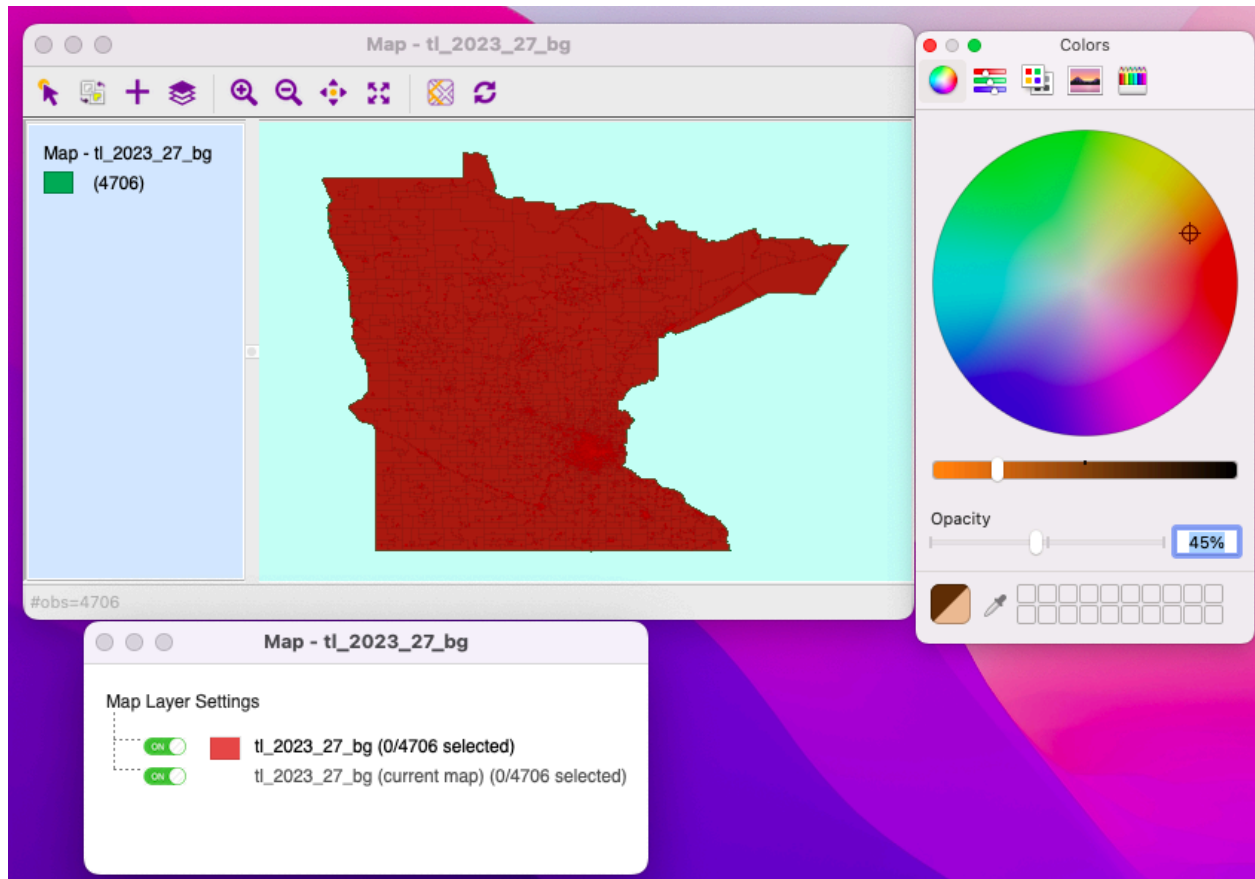
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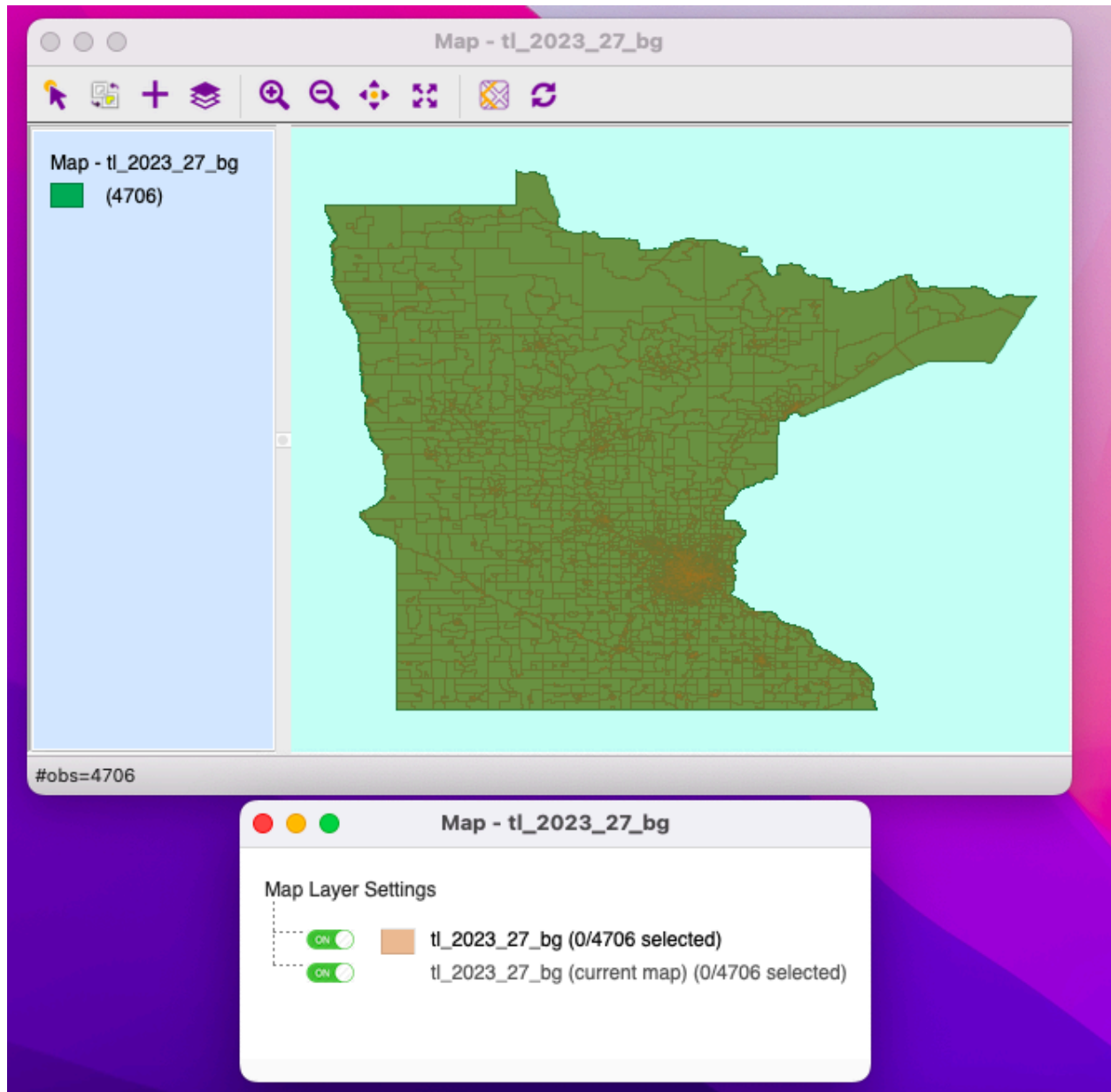


➤ **Task 5 Open assignment**

- Try to produce a good (aesthetically) mapping of your data. Export the map as an image file, then paste it here.







- What can we interpret from the map you just generated?

*A final map is created using color adjustments to enhance readability. This improves the visual interpretation of map, making spatial patterns more apparent.*

1.