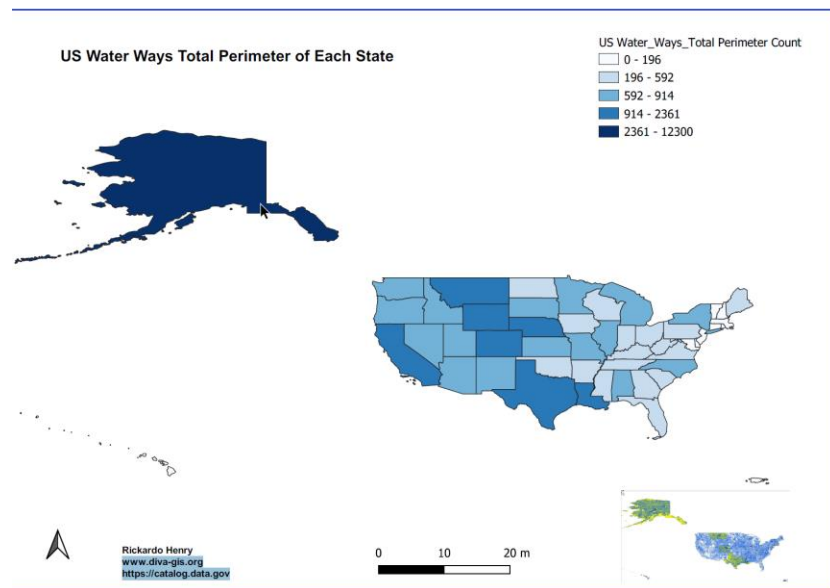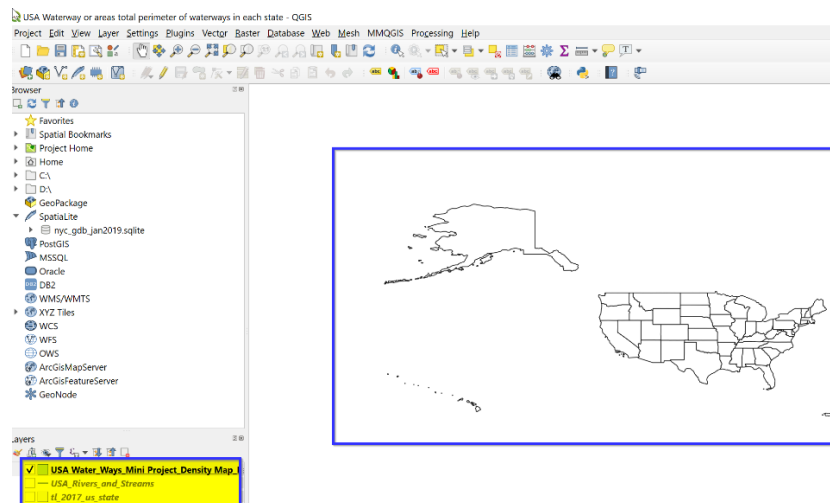Rickardo Henry
IS380
12/4/2019

During the final stages of my GIS course, I realized that my data allocation would lend itself well to my GIS project and everything I've learned to this point, so I asked myself how I can make the GIS data combined with QGIS deliver a remarkable storyline and a unique project. it was exciting and scary at the same time, scary because when I started the semester, I knew next to nothing about GIS and all of its capabilities. So exciting that I could not stop wanting to learn more.

The QGIS community resources were very helpful, especially with the knowledge-base, how-to-guides (remember those), white-papers and online help has been instrumental. I also benefit from a growing community of local users and with the help of my fellow GIS learners and my professor. I've learned a great deal on how to utilize the following resources, spatial joins & its related Field calculator, MMQGIS plugin, Spatial tool, and various other project tools for Adding/editing shapefile when joining vector layers. It's all about your needs. if you are going to use QGIS to solve your problem, then you will find an appropriate tool in QGIS to solve it. But if you just want to play with QGIS, you might not learn a lot that way. Therefore, you should have the problem first, then you can find the appropriate tools in QGIS to solve it. With this motivation (problem), I am sure you will learn how to solve the problem using QGIS very quickly.

Let say, if you really have a problem to solve, you may just Google the keyword or look to see if there's a YouTube video that can guide you. It is okay to learn part by part rather than learn everything at the same time. Trust me, after a few times using QGIS, you will master it. You might benefit from reading a general ed book about GIS. The resources provided by my professor helped tremendously, but I'm not sure how it would compare to others. All in all, it was a good overview of my overall GIS experience.

For my final project, I needed to find a unique data source and explore a possible question that can be answered using geographic data analysis. One of the items I needed to include in the project is a map showing the final solution. Along with that map, I needed to summarize the information related to my solution. Here's my proposed question using the following data sources: www.diva-gis.org and https://catalog.data.gov. I needed to utilize the data source of inland rivers and streams throughout the United States and the other data source which consist of the States file. The objective is to find "the total perimeter of the waterways per each state". The capture below, was made by utilizing QGIS, shows the various data sources used (the areas delimited by various shades of blue colors, with numeric values ranging high to low symbolized the various states with darker shades of blue illustrates the location within the united states where the total water perimeters measure high, the lighter shade of blue will reflect the opposite.

US Water Ways Total Perimeter of Each State

US Water_Ways_Total Perimeter Count
- 0 - 196
- 196 - 592
- 592 - 914
- 914 - 2361
- 2361 - 12300

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www.diva-gis.org
https://catalog.data.gov

0   10   20 m

In the same way that my relational example showed two tables of related data, this map shows two spatial datasets: the perimeter of the waterways per each state. The waterways are represented as features that have a spatial extent (or area) and location; the states are represented as points, which have location only. Both datasets include attributes that help identify each feature defined in the dataset; for example, the perimeter of the waterways linked by points of the various location in the United States.

To summarize, my map reflects the state or location that has the greatest to the lowest perimeter of waterways within each state. Given that the two datasets already define the spatial nature of the waterways and points, and given that QGIS can read this information and generate a map, can QGIS figure out this relationship for me?

Getting the data

I've added the following layer "tl_2017_us_state" to my assignment.

The layer introduced the State two-digit code as well as the full state name.

Data Source: https://catalog.data.gov/dataset/tiger-line-shapefile-2017-nation-u-s-current-state-and-equivalent-national/resource/e4cd223d-7e9b-4dc8-8e92-7bba2d8d2821

The 2nd selected data source reflects: United States →Inland waterways (with location code per state)

Source URL/data source: https://www.diva-gis.org/datadown

Below is an example of my attribute table for my state file.


My state file "tl_2017_us_state "was added:

Go to Layer → Add Layer → Vector →File →Vector Datasets source→Point to the source file obtained.

Solution: I've performed the following steps to calculate my results "total perimeter counts of the waterways in each state"
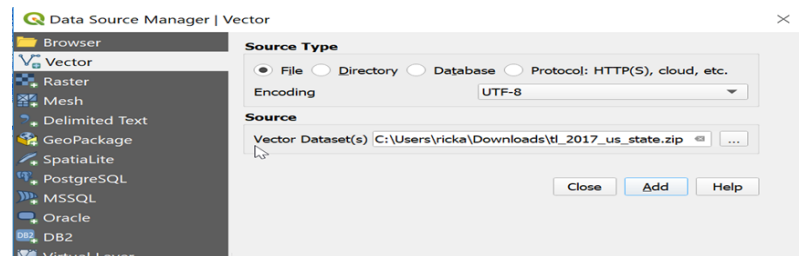
Getting ready to do the spatial join

Go to Vector Analysis Tools →Sum Line Lengths →Select Lines → Select Polygons →Enter your count Field name → Run to compute your results.
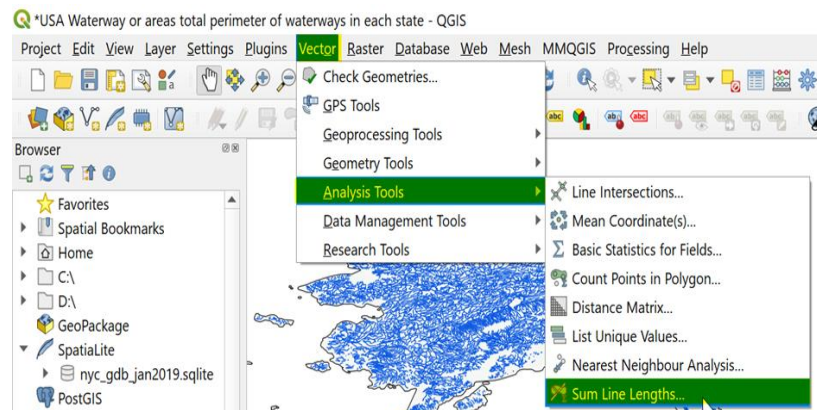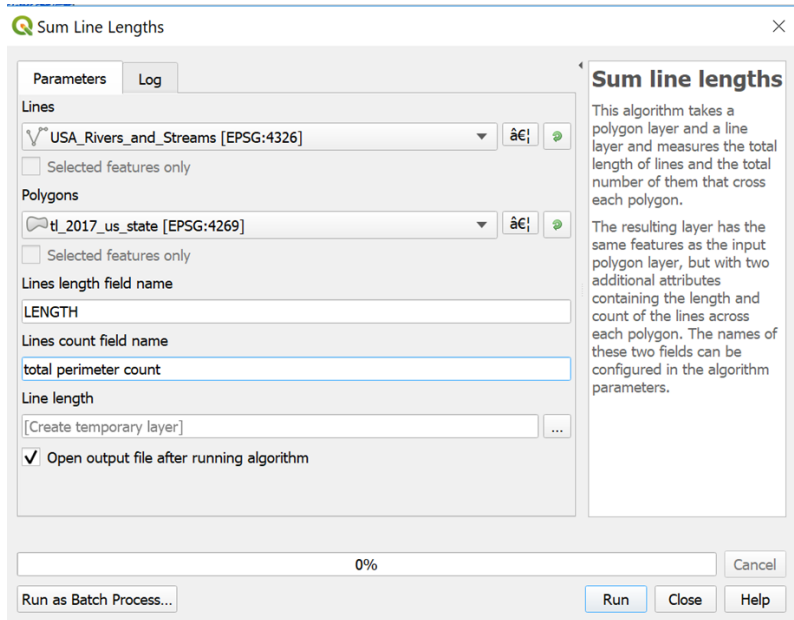
Once completed, I've sorted the unwanted data/columns and kept the desired fields based on the total perimeter count, filtered from highest to lowest.

Displayed here reflects my results were filtered for the highest perimeter count per state (Top 5 highest count results).

I wanted to have something more pleasant to look at, so I:

1. Added some label by going (right-click > Properties > Labels);
2. Added a description via a textbox selected from the toolbar
3. Change the names shown on the layers (right-click > Rename);
4. Zoom to fit layer (using the zoom tool on the toolbar).

Here's the result: