SOC 4650/5650: PS-08

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Directions

Using data accessed from the `lecture-13` repository, create the following maps describing petrochemical infrastructure in Missouri and Illinois. Your entire project folder system, including data and map output, should be uploaded to GitHub by **Monday, April 22nd** at 4:15pm.

Analysis Development

The goal of this section is to create a self contained project directory with all of the data, map documents, results, and documentation a project needs. Make sure to include all relevant directories and a `README` that traces the changes you make to all of your data. You will need to create a new File Geodatabase in your `data/` directory as well.

Part 1: Petrochemical Production Zones in Missouri and Illinois

Petrochemicals are derived from petroleum and are used in a variety of manufacturing applications as well as plastics. A large amount of infrastructure exists to move petrochemical products around the United States. The file `US_GEO_SedBasins.shp` contains data on sedimentary basins in the United States that are conducive to petroleum extraction.

Using the sedimentary data and your combined feature class created for Lab-12, create a new feature class that contains the Missouri and Illinois state boundaries combined with the sedimentary basin data. The sedimentary basin data should be modified so that it has the attributes from the Missouri and Illinois state boundary data, and the polygons for the sedimentary basins should be divided at the state boundaries.

Once you have it created, query it to remove data outside of Missouri and Illinois, and symbolize it so that distinct symbols for the four different sedimentary basins as well as a distinct symbol for the area *not covered* by a sedimentary basin are selected. Pick your

symbol choices carefully - the symbol for the area *not covered* by a sedimentary basin should be markedly different than the other areas. Then, create a well designed and well laid-out map layout that shows the locations of petrochemical production zones within Missouri. Be sure to pay close attention to the layout elements you add to your map (including, title, details on data sources, etc.). Export the map layout as a `pdf` at `300dpi`.

Part 2: Petrochemical Pipelines in Missouri and Illinois

Using a copy of the map you created in Part 1, re-symbolize the map so that you remove the value for areas of both states that *do not* have a sedimentary basin, and un-check the `all other values` box. Change the color ramp so that it is more appropriate for a ground layer. Then, symbolize the petrochemical pipeline data so that the lines are colored distinctly based on the state they are located in (i.e. Missouri or Illinois). Pipelines outside of Missouri and Illinois should be symbolized as ground layers. Then, create a well designed and well laid-out map layout that shows the locations of petrochemical infrastructure within the Metro West area. Be sure to pay close attention to the layout elements you add to your map (including, title, details on data sources, etc.). Export the map layout as a `pdf` at `300dpi`.