SOC 4650/5650: Lab-11 - Coal Infrastructure in Illinois and Missouri

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Directions

Using data accessed from the course data release, create the following maps describing coal mining infrastructure and geology in Missouri. Your entire project folder system, including data and map output, should be uploaded to GitHub by **Monday, April 8th** at 4:15pm.

Analysis Development (Review from Lectures 01 and 02)

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, a well formatted notebook, and a README.

Part 1: Coal Fields in Missouri

While Missouri does not have any active coal mines, there are coal fields within the state. Create a map showing only these coal fields within Missouri.

1. In a new map, add the data on coal fields from the directory USInfra to your map document as well as the Missouri state boundary data.

2. Set the projected coordinate system to an appropriate system for mapping statewide data in Missouri.

3. Clip the coal fields data to the Missouri state boundary. Export the clipped data to your project geodatabase so that they can be re-used in the next part.

4. Remove the original coal fields data from your map document so that only the newly created data for Missouri remains.

5. Make sure the coal fields data are symbolized in a way that makes them easy to distinguish from the Missouri state layer.

6. Export the map image as a pdf at 300dpi,

Part 2: Bituminous Coal Fields in Missouri

There are two types of coal fields in Missouri, bituminous coal (which causes high amounts of air pollution) and lignite coal (which has limited potential to create heat when burned). Bituminous coal is used in coal-fired power plants. Create a map showing bituminous coal fields in Missouri symbolized as a *single* polygon.

7. Using the clipped coal fields data, execute the following query[1] on the data:

    COALTYPE = 60

8. Dissolve the features that contain medium and high volatile bituminous coal into a single polygon using an attribute that each polygon has a common value for.

9. Remove the Missouri coal fields data from the previous section so that only the newly created data for bituminous coal remains.

10. Make sure the coal fields data are symbolized in a way that makes them easy to distinguish.

11. Export the map image as a pdf at 300dpi.

[1] Go to Layer Properties ▷ Definition Query