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Technical Report for Covid-19 Map

Introduction: For the past centuries, mining has been one of the main ways natural resources are extracted from the Earth. The Bear Ears Monument in Southern Utah contains large deposits of oil sands, uranium, and potash. Since energy independence in the United States is becoming increasingly more important, so is knowledge of mineral resource deposit. In this assignment, we will georeference an image of the monument’s boundaries that existed in 2016 and use an already georeferenced image that depicts locations of mineral deposits that also has reduced boundaries.

Methods:

Steps used to solve the problem:

* Used the feature to polygon tool since I wasn’t able to trace the polygons
* Traced the two polygons of the new feature polygon
* Used the eliminate polygon tool to create a new feature class without the polygons in the middle (they aren’t included on the map because they’re national monuments and it is illegal to mine there)

Georeferencing:

* Used 7 control points
* 2nd order transformation
* RMS error was 109.272325

|  |  |  |
| --- | --- | --- |
| Type of Resource | Area in Original Boundary (km) | Area in Reduced Boundary (km) |
| Uranium | 1912789556 | 1201202104 |
| Potash | 230435306 | 35699711.7 |
| Oil Sands | 43035760.51 | 0 |
|  |  |  |
|  | Wells in Original Boundary | Wells in Reduced Boundary |
|  | 232 | 31 |

Conclusion: I didn’t complete the challenge as well as I wanted to. I really wanted to do a chart, but I had to manually calculate the shape area fields because I had some issues with some of my feature classes and some of the tools weren’t working like I wanted them to. For instance, my reduced boundaries feature class has the correct number of wells in the data, there was only one type of well, so I couldn’t symbolize the data. I also had a lot of issues trying to eliminate the polygon using erase, so I had to go another avenue to find another method. Long story short, I don’t know if any of my calculations are correct, just because I had so many technical issues. I’m not sure what went on, but most of my time was spent trying to fix the data, so I didn’t end up with a lot of time to create a decent map. I wasn’t able to create charts either because I had such a hard time with the data. From the data we do have here, we can see that the reduced boundaries have absolutely no oil sands and the amounts of potash and uranium are decent considering the proportion of mineral deposits to barren land. It would make sense that there are only 31 wells within the reduced boundaries since there are less resources there to mine.

Map:

