The Politics of Coal: Analyzing Changes in the Geography of Coal Production Across Presidencies in the United States

Introduction

Coal has a long and storied past in the Appalachian region of the United States, directly or indirectly serving as a source of a living and, in turn, a cultural touchstone for countless families. As such, the decay of the coal industry in Appalachia has had a profound impact on the region and its politics. Promises to bring back the industry by rolling back new regulations on coal have started to have impacts on electoral votes so this project seeks to explore whether the environmental agenda of the Obama administration is as large a factor as suggested in the disappearance of coal jobs in Appalachia as some politicians would suggest.

This will be explored by looking at levels of raw coal production in the U.S. as guided by these Research questions:

1) How has the center of American coal production shifted geographically since the 1980’s (if at all)?
2) How has total coal production fluctuated since the 1980’s

Methods

This project was conducted using datasets breaking down historic US coal production by county and by eastern vs western (relative to the Mississippi river) production. This data was joined into a map of all the counties in the country provided by the U.S. Census Bureau for analysis.

The first method of analysis led to the series of maps at the bottom of this post-er. In this section total production was visualized by county in six different years since 1983. Specifically data was examined in the closing years of each president since 1983’s final term. These maps are also presented with pie charts symbolizing the East/West breakdown of production as described above.

The rest of the analysis went into producing the map in the next column. The production data by county was used to perform spatial analysis to calculate the Mean Center of coal production in each year from the first analysis as well as to calculate and plot a standard deviation ellipse around the area of the country that contributes 68% of the total coal production for the same years.

Findings

The data provided by this analysis suggest that the coal industry has undergone a significant geographical shift North and West over the past four decades. Based on this trend it seems clear that while coal production levels in the U.S. declined severely during the Obama Administration the shift of coal production in the U.S. out of Appalachia had begun years before under more conservative, pro-fossil fuel administrations (Reagan, H.W. Bush). In fact, before Obama even began his “War on Coal” the center of coal production had already shifted about 275 miles North and West: a distance longer than West Virginia is wide.

While this is simply an investigative study, this migration away from Appalachia taken with the clear consolidation of the industry in the West points to the possibility that Appalachia has been hemorrhaging coal jobs not just since 2008, but rather, since 1983 if not earlier.

Opportunities for Further Research

This study opens up the door for many follow up questions. First among these is why coal production tanked in the early 2010’s and if that was correlated more strongly with legislative changes or with advances in natural gas production and extraction techniques. Another interesting follow up research area would be to investigate whether the consolidation of coal production in the West is most associated with Geographical, Geological or Legislative factors.

Potential Sources of Error

One source of error is the fact that mines are points but were treated as though they take up an entire county. This could have disrupted the accuracy of tracking the center of production across years. Another potential source of error comes from issues in the data. There were numerous entries that were erroneous and were corrected or removed. Error may have come from this process.